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1. Company health and safety Policy

1.1 Health and safety policy

EMBERS is committed to the health and safety of all our staff. We believe that protecting employees from injury or occupational disease is important for the well-being of our staff and our organization. We will make every effort to provide and maintain a safe and healthy work environment.

Embers recognizes the right of workers to work in a safe and healthy work environment. To achieve this goal, we develop, implement and evaluate our health and safety program to be as effective as possible. All supervisors and workers must be dedicated to reducing the risk of injury.

EMBERS as an employer, is ultimately accountable and responsible for our workers' health and safety. As CEO, I personally promise that every reasonable precaution will be taken to protect our workers.

No job is so important that it cannot be done safely.

It is in the best interest of all parties to consider health and safety in every activity. Every worker must protect his or her own health and safety by working in compliance with the law and with safe work practices and procedures established by the company.

Your assistance and support are needed and expected to protect the health and safety of our workforce, workers and company. The responsibility to ensure a safe and healthy workplace is everyone's responsibility, from the CEO to the workers, to work in a spirit of consultation and cooperation.

This policy is reviewed annually by the CEO with consultation by the Health and Safety Representative.

April 09, 2023

Date		Marcia Nozick CEO, EMBERS

1.2 Roles and responsibilities

1.2.1 Employer Responsibilities

- To provide safe tools, equipment, and materials to facilitate the work being performed.
- To ensure all workers are trained and perform the scope of work safely.
- To ensure that all Supervisors understand that workers must comply with all safety aspects of this procedure and that the Material Safety Data Sheet is provided when required and understood by all workers.

1.2.2 Employee Responsibilities

- To ensure he is properly trained and performs the task safely.
- To ensure he uses only safe tools, equipment, and materials to facilitate safe construction.
- Use common sense; if you don't know the procedure or proper equipment to use, then ask.

1.2.3 Safety Equipment Required

The prime contractor of a multiple-employer workplace must

- The following PPE is required by all workers while working on site:
- CSA approved safety boots. Boots must be in good repair.
- CSA approved hard hat. Hard hat must be in good repair with no modifications.
- Adequate clothing consisting of long pants and shirts with a minimum of 4" sleeves to protect from routine hazards on site.
- Additional PPE may be required in the form of:
- Respiratory equipment.
- Rubber gloves.
- Hearing protection.
- Eye protection.
- Other PPE called for in the applicable MSDS/SDS.

- Check with your supervisor for additional PPE requirements.

1.2.4 Training

EMBERS must

- Workers must be trained prior to commencing work on the procedures detailed below. This training will be done by your supervisor or our safety manager as required.
- Proof of training is required and must be readily available on site. Use the attached page to record the names of all workers who have participated in a crew talk on this SJP.

2. Safe Job Procedures (Low-Mod)

preliminary activities

Where multiple trade activity is scheduled, the general contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete its scope of work.

Prior to any work commencing supervisors must conduct a hazard assessment of all applicable work areas. Any hazards that are found during the hazard assessment must be addressed prior to any work commencing.

2.1 Access Ramps and Temporary Stairs

1. Install access ramps where rolling loads will be moved over floors of two different heights.
2. Install access ramps, or a temporary stair, where the heights of two different floors cause a hazard to workers walking over it.
3. Access ramps and temporary stairs are to be a minimum of 20 inches wide and have cleats or another form of foot traction to prevent slips or falls but not pose a threat of tripping.
4. Ramps must not exceed a 20% slope.
5. Where access ramps cross over an excavation greater than four feet in depth, the ramp is to contain guardrails to both sides to prevent falls.
6. Access ramps must be constructed of materials capable of supporting loads intended to be placed upon them such as workers or machinery.
7. After installation has been completed, the Supervisors must then advise the General Contractor and Subcontractors that access is now available to all trades.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.2 Adhesives and Putties

There is an extensive range of products that are used for adhering or repairing wood, countertops, cabinets, and other finish surfaces. These products have different chemical compositions, therefore, it is essential to understand the specific protocol outlined in the Material Safety Data Sheets/Safety Data Sheets (MSDS / SDS) when transporting and using the product. For example, some adhesive products have solvents that give off fumes as they cure, and some filler putties create fine dust when sanded.

1. All workers shall have knowledge of the location of MSDS / SDS for any product which they may use or come in contact with.
2. All workers should demonstrate knowledge of the Workplace Hazardous Materials System program or the Globally Harmonized System (WHMIS / GHS).
3. All products shall be handled in accordance with manufactures instructions and requirements of the WHMIS / GHS program and properly identified with current MSDS / SDS.
4. Workers shall wear and use personal protective equipment (PPE) as determined by a review of the product label and MSDS/SDS.

Refer to the section on WHMIS Section in our OH&S program for a detailed account of product labels, MSDS / SDS, and responsibilities in regards to working with hazardous substances.

5. All sources of ignition must be adequately controlled, locked out or eliminated to minimize fire and or explosion hazard: This is especially relevant for adhesive application, in which both the adhesive product and its vapours are flammable.
   - Smoking is prohibited during this scope of work and only permitted in designated areas.
   - Ensure that all spray equipment, electrical cords, and tools are properly grounded.
   - Post signs indicating “No Sources of Ignition Beyond this point”.
   - Ensure that necessary precautions in regard to fire prevention have been taken, including accessible fire extinguishers rated for the product under MSDS / SDS.
6. Where possible, substitute the product for one that is non-flammable and less toxic. (For example, water-based materials are less flammable, less toxic and even more environmentally friendly than solvent-based products).

7. Eye protection, including goggles or full-face respiratory protective equipment, shall be worn while spraying to protect your eyes from the products.
8. Signs and or barricades are required when the application processes or substance(s) are being used, which require specific types of PPE in order to protect workers from inadvertent exposure to hazards.
9. Ensure the area is well-ventilated and provide additional ventilation or a localized exhaust ventilation (LEV) if required under product-specific MSDS / SDS.

Refer to the section on the Exposure Control Plan for Silica Section in our OH&S program for a detailed account of local exhaust ventilation systems

10. If the MSDS / SDS requires respiratory protection, ensure that the appropriate cartridge(s) are being used. Respirators are to be clean, maintained, and fit-tested. Cartridges are only good for a limited time. They must be replaced if you can smell vapours through a mask, have difficulty in breathing, or have been used for their specific lifetime.

Refer to the section on the Respiratory Protection Program in our OH&S program for more detailed information regarding the respiratory hazard assessment, respirator use, training, fit testing, cartridges and responsibilities in regard to respiratory protection.

11. Maintain good personal hygiene practices. Wash contaminated clothing before reuse. Do not eat, drink, or smoke in work areas. Wash hands and exposed skin before eating, drinking, or smoking.
12. Some products can be absorbed through clothing and irritate or damage the skin. Use of protective clothing including gloves and coveralls is recommended in addition to PPE and protocol requirements
13. Be especially careful when working with fast-drying adhesives as some of these can bond virtually any combination of surfaces including skin and equipment. Always wear protective eyewear to protect your eyes from potential contact with the adhesive.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.3 Application of Form Release Oil

1. Form oil will be sprayed as late as possible on the day that the deck is completed but prior to the rebar being placed.
2. No oil will be sprayed within 12 feet of the deck edge.
3. Workers are to inspect their footwear to ensure that there is adequate tread which will assist in reducing the hazard associated with oil on the deck such as slipping.
4. Workers must review their work area which includes access/egress to that work area prior to commencing work. The access/egress to their work area may have water and oil which may be tracked into their work area thus causing a potential slipping hazard.
5. Supervisors will conduct a daily assessment of the deck to determine what the slipping hazard is. The condition of the deck will be passed on to the site superintendent or the Safety Coordinator.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.4 Backfill Procedures

1. A designated spotter above will guide the dump truck to the backfill area. The spotter must wear a high-visibility jacket.
1. The spotter will communicate to the dump truck operator to standby while he signals to the designated lower-level spotter.
2. All workers at the backfilling location must wear high-visibility vests.
3. Before starting, all personnel involved will be made aware of the dangers in this area and then notify all those on site.
4. The lower-level spotter will communicate to equipment operators and workers to back away.
5. When backed away far enough, the lower level spotter will signal to the above spotter an ‘all clear’ sign.
6. The above spotter then signals the truck driver to proceed with the dump.
7. Equipment and workers shall not approach until the load is completely dumped.
8. Adherence to the WorkSafeBC Regulation with regards to inspections, logbooks, proper apparel and procedure is necessary during backfilling.

2.4.1 Backfilling: Utilities

In addition to the steps above, these steps are to be followed when backfilling utility trenches:

1. Backfill trenches and excavations immediately after the pipe are laid, unless other protection is directed or indicated.
2. Select and deposit backfill materials with special reference to the future safety of the pipes.
3. In the lower portion of the trench, deposit approved backfill and bedding material in layers of 6" maximum thickness, and compact with suitable tampers to the density of the adjacent soil until there is a cover of not less than 12" using special care not to damage pipe and pipe coatings.
4. Except for special materials for pavements, backfill the remainder of the trench with material free from stones larger than 6" or ½ the layered thickness, whichever is smaller, in any dimension.
5. Under roads, streets and other paved areas:
    a. Mechanically tamp in 6" layers using heavy-duty pneumatic tampers or equal.
    b. Tamp each layer to a density equivalent of not less than 100% of an ASTM D698 Proctor Curve.
    c. Provide additional compaction by leaving the backfilled trenches open to traffic while maintaining the surface with crushed stone.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.5 Barricades, Flagging Tape and Signage

1. Install barricades wherever a hazard to another worker or other person exists.
2. Barricades can be provided by means of:
3. Flagging, cones or delineators.
4. Barrier tapes (i.e. red "Danger - Do Not Enter" tape or yellow "Caution" tape).
5. Identified wooden or metal gates etc.
6. Flagging tape is to be used as follows:
7. Danger tape must be used when the area to which the tape provides protection poses an imminent danger.
8. No one is to enter any area cordoned off with Danger Tape.
9. Danger tape is to be removed when the scope of work is completed.
10. Warning tape is to be used to control access to an area. If there is imminent danger to a person entering an area then Danger Tape must be used.

11. Danger or warning tape is only to be removed by the person who installed it and only when the hazard to which the tape provides protection has been controlled or removed.
12. Signs are required when there are processes or substances being used or created which required specific types of PPE to protect workers from those hazards.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.6 Boom Trucks

1. Only trained operators who are authorized by management are allowed to operate the boom truck. Training shall consist of the following parts:
   a. Classroom training furnished by the Department of Environmental Health and Safety.
   b. Careful study of the Operator's Manual.
   c. Operations and safety training provided by experienced personnel within the department or shop authorized to use the boom truck.
   d. Read and sign this safe work practice.
2. Do not modify or attempt to modify the structure or operation of the truck or aerial device without management approval.
3. Operator cannot be subject to epileptic seizures, dizziness or any other disability which may impair his ability to operate the aerial device. If an operator becomes physically or mentally unfit, he shall disqualify himself.
4. To operate the aerial device, the operator shall have completed Fall Protection training, wear an approved body harness and lanyard in good condition, and must hook up the lanyard to the attachment point on the basket prior to elevation.
5. The aerial device shall not be operated with fewer than two qualified operators. The attendant on the ground shall remain in the immediate area of the truck, shall pay attention to the vehicle and the aerial device operator, and shall assist the operator as needed. As directed by management, the attendant may do related work as long as he does not leave the immediate area of boom truck operation.
6. Before conducting boom truck operations on the streets, operators shall review or receive instructions on working safely in traffic. When formal instruction on

working safely in traffic becomes available, operators shall have received the instruction before working in traffic.

7. A copy of the Operator's Manual shall remain with the vehicle at all times.
8. Maintenance inspections.
    a. Garage technician inspections.
        - ❖ The boom truck shall be inspected monthly by Garage technicians per operator/maintenance manual guidelines. An inspection log shall be maintained showing inspection results and actions taken to correct deficiencies.
    b. Pre-operation inspections.
        - ❖ Before beginning boom truck operations, the operator shall conduct a basic inspection of the boom truck. An inspection checklist shall be kept in the cab of the truck. If the checklist is absent and cannot be located, check the following items:
            - Truck: Tires, wheels, steering, brakes, mirrors, horn, signals, lights, clutch, outriggers, and Operator's Manual in the cab.
            - Aerial Device: Visual inspection for cracks, hydraulic leaks, and other defects; function of lift controls (lower and upper controls).
            - Lift controls must be operated from the ground position prior to being operated from the basket. When the device is used on a continuing basis during the day, the ground position lift controls need to be tested only once at the beginning of the day.
9. Report any unusual observation or occurrence during truck and/or aerial device operation that may indicate required maintenance, repair or a safety defect.
10. Before using the aerial device, the truck transmission shall be placed in neutral, the parking brake shall be set, and the outriggers set. The outriggers shall be positioned on pads or a solid surface. If outrigger footing is positioned onto weak soil or mud, use boards, gravel, or whatever means necessary to obtain firm conditions. Use the following stability guideline:
    a. Firm conditions: concrete, cool asphalt.
    b. Weak conditions: bare soil, gravel, lawn, hot asphalt, and similar materials.
11. Position the truck on as level a surface as possible before beginning aerial device operations. If the truck must be parked on an incline of 12 percent or greater, wheels shall be choked. Provided they can be safely installed, wheel chocks shall be installed before using the aerial device on an incline.

2.6.1 Operational Safety

1. Keep objects and personnel clear of aerial device operations at all times.
2. After positioning and levelling the truck (the truck must be approximately level) and before beginning aerial device operations, set up a perimeter system of cones or barricades and caution tape to keep pedestrians away from the work area.
3. Only one person at a time may occupy the basket and operate the aerial device.
4. The weight of the operator and equipment shall not exceed 300 pounds or the maximum weight allowable under the manufacturer's recommendations.
5. Operator shall wear personal protective equipment (PPE) appropriate to the work to be done. PPE shall be removed from the truck when finished for the day. Each department is responsible for furnishing and storing of the PPE.
6. The aerial basket shall not be supported by an adjacent structure when a worker is in the basket while in an elevated position.
7. Belting off to an adjacent pole, tree or structure while working from the aerial device is prohibited.
8. The operator shall not sit or climb on the edge of the basket or use planks, ladders or other means to gain greater working height.
9. Boom and basket load limits, as specified by the manufacturer, shall not be exceeded.
10. The operator shall plan the work to ensure the tree debris being cut or construction materials being worked on do not fall onto or against the basket, boom or truck, jeopardizing the weight and stability of the boom.
11. Climbers (for tree climbing) shall not be worn when working from the basket of the aerial device.
12. Never operate the aerial device closer than six feet from electrical power lines or 10 feet from high-tension lines.
13. The truck shall not be moved when the aerial device is elevated with an employee in the basket.
14. While the basket is occupied and in use, lower-level controls shall not be operated unless permission has been obtained from the employee in the basket. Exception: in case of emergency.
15. Before moving the boom truck for travel, the boom shall be inspected to ensure that it is properly cradled and outriggers are in the stowed position.

16. Trash shall be removed from the truck and aerial device when tasks are complete or when the work day is over.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.7 Cabinet Installation Procedures

1. Read installation instructions from the manufacturer prior to commencing installation work.
2. Ensure that the wall to which the cabinet is to be installed meets the load capacity requirements of the proposed installation.
3. When installing cabinet sections, frames, shelves or doors ensure that the material is securely fastened or supported, so that it does not fall from above while attempting to secure the other end. Know your limits and ask for help- large and awkward pieces shall be installed by at least two (2) individuals.
4. Ensure that all hardware (hinges, joints, and fasteners) are installed properly. Omitting hardware pieces could potentially lead to cabinet/cupboard collapse.
5. Do not apply excessive force to the front side of cabinet/cupboard sections. These surfaces are not designed to take excessive load and the aesthetic finish may be damaged. (For example, do not use cabinets as the upper support for a ladder).
6. During overhead installation, avoid placing materials and tools on the top section of the cabinetry, as these could fall during cabinet adjustment.
7. Often cabinet installation requires the use of safety screws to secure the load so minor adjustments can be made afterwards. If the scope of work requires safety screws or is designated by the manufacturer, they must be used.
8. Cabinet installation often involves slightly elevated work. Often workers choose to use stepladders. In these cases, safe job procedures for step ladder use must be adhered to.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.8 Ceiling Grinding

1. Proper eye protection and personal protection equipment must be used.
2. Evaluate the area for hazards and the impact on other workers in the clean-up and disposal area. Where a worker, other than the concrete finisher, is

exposed to concrete dust, the area should be restricted by the use of caution tape.

3. Signage must indicate that ceiling grinding is in progress and that respiratory protection is required.
4. Each worker performing ceiling grinding is to be assigned a respirator for his sole use.
5. The respirator is to be fitted correctly by a qualified person. A record of assigned safety equipment is to be kept on-site.
6. Provide adequate lighting.
7. Clean and sanitize the respirator facepiece and clean the remaining components of air respirators after each use.
8. Only authorized and trained personnel with an assigned respirator are to perform ceiling grinding.
9. Check that the brush on the stone and vacuum head is in place and properly adjusted. And that the rubber dust guard is not damaged.
10. Inspect the ceiling grinder before turning on the power.
11. Test ceiling grinder for proper operation.
12. Work area to be clean, dry, and unobstructed.
13. Commence all ceiling grinding.
14. When ceiling grinding near edges without a guardrail in place, the ceiling grinder must be secured with a safety line.
15. Replace all guardrails if required.
16. Disconnect the grinder from the power source when making equipment adjustments to the ceiling grinder.
17. Store the ceiling grinder and respirator in a clean dry area.
18. All workers who are exposed to falls above 10 feet will use fall protection (arrest or restraint) in accordance with the site-specific fall protection plan.
19. Respirator Fit Test
20. Negative Pressure Sealing Test
21. Block the inlet tube to prevent the passage of air. Inhale gently, taking care not to distort the face piece, and hold your breath for 10 seconds. If the face piece collapses slightly and no infiltration of air into the face piece is detected, it is considered that the fit of the respirator is satisfactory for the wearer.
22. Positive Pressure Sealing Test
23. Close off outlet valves and exhale gently. The fit is considered adequate if a slight pressure can be built up inside the face piece without detection of any outward leakage of air between the sealing surface and the wearer's face.
24. Maintenance
25. Each respirator wearer shall clean and sanitize his respirator face piece and clean the remaining components of air respirators after each use. The respirator is to be stored in a clean dry area, sealed in a plastic bag.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.9 Concrete Chipping and Jackhammering

Once the above planning has been achieved, then:

1. Evaluate the area for hazards and the impact on other workers in the Chipping area. Where a worker, other than the user, is exposed to concrete dust, the area must be restricted by the use of caution tape, signage, and when working in stair case, a poly cover must be installed at each entrance to prevent the dust from accumulating. Always keep one staircase per floor available for access/egress.
2. Inspect all dust control equipment and tools to make sure they are in good working order. Use and maintain all tools and equipment as specified by the manufacturer.
3. Ensure that workers inspect their respirators before start-up. Respirator will be fit tested if required. The respirator is to be fitted correctly by a trained person. A record of Fit Test must be kept by the employer.
4. The respirator wearer is to perform the two fit tests (positive and negative) each time he places the mask over his face.
5. Persons who are required to wear a respirator will not wear contact lenses.
6. Respirators will be used, cleaned, and stored in accordance with the respiratory protection program.
7. Workers will wear approved safety goggles and hearing protection when chipping or jack hammering concrete. This equipment will not interfere with the fit of the worker's respirator.
8. Workers will wear washable work coveralls that do not retain dust. These coveralls will be laundered and changed regularly, and workers will not wear them outside the work area. For example, workers must remove coveralls before eating lunch.
9. Chipping machines, guns and jack hammers, must only be used for what the manufacturers intended them for. Maintenance and good working order of all components in the Chipping process must be maintained.
10. Adequate ventilation must be maintained when required.

11. Check for chipping gun/jack hammer handles are in place and properly adjusted.
12. Inspect the chipping bit to ensure that it is secure before turning on the power. Do not use bits that are broken or cracked.
13. Work area to be clean, dry, and unobstructed.
14. Provide adequate lighting.
15. When Chipping use the operating face of the bit only.
16. Before putting down a chipping gun/jack hammer, the bit movement must be stopped.
17. A chipping gun/jack hammer is to be put down, laying completely on a flat secured surface.
18. Start working from the outside and move inwards. Press the switch or trigger and let the equipment do the work. Don't lean over the equipment or try to force it down or try lifting it around. It will be able to penetrate and break up the surface without much help from you.
19. You will let it lean at a slight angle. The trigger is usually located on the right handle.
20. Once you have reached a point that is deep enough, turn off the jackhammer: do not pull it out.
21. Keep the chipper/jackhammer in the ground and angle it. This way you can use the chipper/jackhammer as leverage and loosen up the piece that has been broken.
22. Clean up the area that you have broken down. This allows the chipper/jackhammer a chance to rest and cool down.
23. Disconnect the chipping machine from the power source when making equipment adjustments or bit changes.
24. Store equipment and respirators in clean dry area.
25. Clean and sanitize the respirator face piece and clean remaining components of air respirators after each use.
26. Cleanup and disposal of concrete debris/Silica dust must be done in a controlled manner ensuring that there is no accidental release of the dust. The following points must be adhered to:
    - All concrete debris is to be collected and place into a bucket/container for posterior disposal.

- Buckets/containers containing concrete debris will be transported to ground level on their own (i.e. not with other garbage types such as scrap wood).
- Buckets/containers containing concrete debris should, as much as is possible, be removed from the site for disposal in separate concrete containers.
- Dry sweeping and the use of compressed air are prohibited for removing dust and debris containing silica. Dry sweeping should not be done unless used in conjunction with a dust suppressant.
- Work areas and equipment covered by dust will be cleaned at the end of every shift using a HEPA filter vacuum.
- Wet cleanup may also be used to remove dust.

27. All workers who are exposed to fall above 10 feet will use fall protection (arrest or restraint) in accordance with the site specific fall protection plan.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.10 Concrete Cutting

2.10.1 Hand-held sawing

Hand-held saws are more prone to potentially fatal kick-back, push-back and pull-in movements.

Fuel-driven saws are more likely to cause a build-up of hazardous fumes in enclosed spaces (i.e. in cold stores or low lying areas such as pits). Electrical, compressed air or hydraulically-driven saws should be used in these situations.

Note: Never use hand-held saws for inverted cutting.

2.10.2 Preparation

1. Make sure all drill areas have been scanned for electric cables.
2. Check all electrical equipment has current safety tags.
3. Suspend all electric cables safely above floor or ground level.
4. Check all mechanical parts for loose components.
5. Ensure there is a hand-hold for the operator's non-trigger hand and there are suitable grips for both right and left handed operators.

6. Use a saw that is light and practicable for the type of work, to reduce the risk of strain injury.
7. Ensure the blade is appropriately guarded.
8. Use balanced equipment with anti-vibration hand-grips that are comfortable to use and provide sufficient support so the operator's hands aren't placed in dangerous positions near the blade or vibrate unnecessarily.
9. Use correct diamond cutting blade or abrasive disc for the material being cut, as recommended by the manufacturer, so the operator does not have to force the cut (some concrete cutting blades are not designed to cut steel).
10. For horizontal cutting, use a saw that is capable of cutting right-to-left as well as left-to-right without having to reposition the blade or guard.
11. Ensure an automatic cut-off switch is fitted and no modifications have been made from the saw's original manufactured form.
12. If pipes are to be cut, ensure that they are properly supported and chocked to prevent the pipe from moving and the saw cut from closing in on the blade.
13. Set the work piece at a suitable height for cutting (approximately waist height).
14. Inform others at the workplace that cutting is about to begin.
15. Barricade the area with appropriate signs warning of noise and drilling.
16. Ensure any person assisting the operator is positioned so they are not in any danger from sudden saw movements or ejecting material.
17. Carry out fuelling with the saw turned off and well away from ignition sources such as hot exhausts.
18. Check the cutting area has a clear and level working surface.
19. Ensure the cutting area is well ventilated.
20. Collect all slurry with a wet and dry vacuum cleaner and dispose of it safely.
21. Suspend all electric cables safely above the floor or ground level.
22. Ensure the operator and others stand away from the path of the blade when starting the machine and the blade is not touching any object.
23. Use the handles (rather than the belt guard) to support the equipment.

2.10.3 Operation

1. Mark the cut line with a waterproof crayon or permanent marker.

2. When cutting, stand with one foot firmly in front of the other, with the body balanced and the back close to vertical.
3. Maintain an upright posture with both feet flat on the ground.
4. Do not cut above shoulder height – use a safe platform or scaffold if required.
5. When cutting horizontally across a wall, the operator's hands should be at waist level.
6. Operate cutting and drilling equipment away from combustible material, fumes, wet slurry and electrically powered equipment.
7. Make the first cut about 25–50 mm deep to enable a straight cut.
8. Use sufficient water or coolant to suppress dust and cool the blade.
9. If cutting a pipe, ensure cutting always takes place in the lower quadrant of the blade.
10. Do not force the machine; let the machine do the work.
11. Stop work immediately if any fault in the blade or machine is detected.

2.10.4 Cutting slabs on the ground and road sawing

2.10.4.1 Preparation

1. Establish an exclusion zone around the work area.
2. Place bunding around the cutting area to contain excess water and slurry.
3. Secure the area to be cut.
4. Pre-mark the cut line with a waterproof crayon or permanent marker pen.
5. Measure the length of cut that needs to be made.
6. Select the correct saw blade diameter to suit the requirements of the cut and technical conditions.
7. Carry out a pre-start check in accordance with manufacturer's instructions.
8. Lift the blade off the ground before starting or stopping the machine.

2.10.4.2 Operation

1. Fit all blades with guards before starting the machine – refer to the appropriate training manual or manufacturer's guide.
2. Ensure sufficient amounts of water are used while operating.
3. Cut in a straight line.

4. Saw only as deep as the job specifications and conditions require.
5. When using concrete saws, lower the blade into the cut slowly and proceed to cut forward.
6. Use consistent pressure that does not force the blade to 'climb' out of the cut.
7. To avoid overworking the saw, set engine revolutions to the cutting speed recommended by the manufacturer for the material.

2.10.5 Road sawing suspended slabs

2.10.5.1 Preparation

1. Use a qualified person, such as a structural engineer, to determine the correct load bearing capacities of the slab.
2. Shut off, cap or otherwise control all electric, gas, water, sewer, steam and other service lines not required at or outside the building line, before any cutting commences.
3. Establish an exclusion zone around the work area.
4. Place bunding around the cutting area to contain excess water and slurry.
5. Secure the area to be cut.
6. Pre-mark the cut line with a waterproof crayon or permanent marker pen.
7. Measure the length of cut that needs to be made.
8. Select the correct saw blade diameter to suit the requirements of the cut and technical conditions.
9. Carry out a pre-start check in accordance with manufacturer's instructions.
10. Lift the blade off the ground before starting or stopping the machine.

2.10.5.2 Operation

1. Fit all blades with guards before starting the machine – refer to the appropriate training manual or manufacturer's guide.
2. Ensure sufficient amounts of water are used while operating.
3. Cut in a straight line.
4. Saw only as deep as the job specifications and conditions require.
5. When using concrete saws, lower the blade into the cut slowly and proceed to cut forward.
6. Use consistent pressure that does not force the blade to 'climb' out of the cut.

7. To avoid overworking the saw, set engine revolutions to the cutting speed recommended by the manufacturer for the material.

2.10.6 Wall sawing / track mounting

2.10.6.1 Preparation

1. Establish a controlled method for removing waste blocks.
2. Establish an exclusion zone around the work area.
3. Place bunding around the cutting area to contain excess water and slurry.
4. Secure the area to be cut.
5. Pre-mark the cut line with a waterproof crayon or permanent marker pen.
6. Measure the length of cut that needs to be made, allowing extra track length for the saw head.
7. Drill bolt holes to fix tracks to the wall, using suitable drop-in steel anchors.
8. Select the correct saw blade diameter to suit the requirements of the cut and technical conditions.
9. Carry out a pre-start check in accordance with manufacturer's instructions.
10. Check the pressure on the hydraulic gauge.

2.10.6.2 Operation

1. Use sufficient water or coolant to suppress dust and cool the blade.
2. Stand away from the path of the blade when starting the machine.
3. Refer to the manufacturer's manual when determining the maximum saw blade.
4. When changing to a second blade, align the blade with the previous cut before cutting again.
5. To avoid overworking the saw, set engine revolutions to the cutting speed recommended by the manufacturer for the material.
6. In case of an emergency, turn off the main switch on the power unit – this is the quickest way to stop the blade and the power unit.
7. Use correct manual handling techniques when lifting the wall saw onto the rails (i.e. where practicable, use the track to move the saw head (otherwise, use team lifting).
8. Cordon off the area at the back of the wall where the blade comes out when cutting through to avoid injury to other people and damage to materials.

9. Use a spotter if necessary.
10. Ensure any person assisting the operator is positioned so they will not be exposed to danger from sudden saw movement, ejecting material, a dropped machine or falling off-cuts.
11. Turn off the power pack and remove the saw blade before lifting the cutting head from the rails.

2.10.7 Wire sawing

2.10.7.1 Preparation

1. Obtain approval from the site supervisor.
2. Mark out the cuts with a waterproof crayon or permanent marker.
3. Ensure the crane or lifting device is designed for the load and the weight of the concrete block does not exceed the maximum permitted floor loading.
4. Determine the cutting sequence and remove the structural components.
5. Secure the danger area.
6. Create drill holes for the passage of wire if necessary.

2.10.7.2 Operation

1. Position/mount the diamond wire saw.
2. Use anchoring elements appropriate for the base material to secure the wire saw and roller supports.
3. When mounting the rollers supports and diverting rollers, ensure that the diverting rollers are positioned at the entry and exit points to intercept the diamond wire at the end of cutting.
4. Connect the power supply.
5. Round off the corners.
6. Insert the diamond wire and grind in the wire manually.
7. Twist the diamond wire, join the wire together and align the guide rollers.
8. Install water supply and waters lances.
9. Secure the concrete blocks that will be cut out to ensure they cannot overturn or fall out.
10. Allow the diamond wire to start up at low tension in order to avoid jamming, increase the tension and wire speed.

11. Switch off and clean the diamond wire saw and roller supports.
12. Disconnect the wire and disassemble the diamond wire saw and roller supports.
13. Remove the concrete blocks.
14. Secure the opening.
15. Dispose of the sawing slurry.

2.10.8 Coring techniques

2.10.8.1 Preparation

1. Ensure all drill areas have been scanned for electric cables.
2. Check all electrical equipment has current safety tags.
3. Suspend all electric cables safely above floor or ground level.
4. Check all mechanical parts for loose components.
5. Ensure the power supply is protected by a residual current device (RCD).
6. Erect barricades and clear no-entry signs to areas where drilling or coring is in progress and isolate the area below drill sites on horizontal slabs with either a spotter or danger signs.

2.10.8.2 Operation

1. Ensure holes have been marked and centres given with a waterproof crayon or permanent marker.
2. Secure the core drill with anchor bolts or in accordance with the manufacturer's specifications.
3. Ensure the drill machine is solidly fixed with no movement of the mast.
4. Attach the drill to the mast and make sure it is secure.
5. Start the drilling of all holes in low gear, stopping the motor before changing to a higher gear and operate the machine in accordance with the manufacturer's instructions.
6. Feed tap pressure water into the hole to bring up slurry and keep the hole saw bit cool.
7. Where possible, fill holes or fit safety covers over drilled core holes and attach warning signs if necessary.
8. Remove slurry and cores to prevent slip and trip hazards.

9. Never drill inverted holes using an electric drill unless the equipment is fitted with a specifically designed water collection ring – use hydraulically driven equipment as a safer alternative.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.11 Concrete Finishing (General)

Grinding and concrete finishing generate extremely high levels of hazardous silica dust. Breathing in silica dust can cause a serious lung disease called silicosis. Safe work procedures must protect individual workers performing concrete finishing tasks and also ensure surrounding workers are not exposed to this respiratory hazard. Two key elements of safe work procedures for concrete finishing are, but not limited to:

1. Exposure Control Plan for Silica Dust

   Exposure Control Plan (ECP): A hierarchy of controls should be selected in the following order:

   a. Elimination: Choose work methods that do not produce silica dust.
   b. Engineering Controls: Local exhaust ventilation (LEV), wetting method, barriers and enclosures.
   c. Administrative Controls: Work scheduling, planning, and coordination.
   d. Respirators and PPE:
      - Use HEPA local exhaust ventilation systems to capture and control the dust at its source whenever possible.
      - Check with your supervisor to determine if an enclosure structure will be erected and how this is to be done.
      - Check to make sure that the vacuum system you are assigned is approved for use with silica dust, and operating properly, with appropriate HEPA filters.

Refer to the section on the Exposure Control Plan for Silica in our OH&S program for detailed information regarding local exhaust ventilation, silica information, exposure limits, controls, and responsibilities regarding silica exposure control.

2. Respiratory Protection Program:

   - Ensure proper use of respiratory protection. Make sure you have the right respirator and filters/cartridges for the job task. A full-face respirator

equipped with 100 (HEPA) series filters will be required when grinding and chipping concrete.

- Ensure that respiratory protection equipment is inspected prior to each use, clean, well maintained, and that you are fit tested for your specific respirator.
- Grinding and polishing tools should have vacuum attachments to limit silica dust exposure at the source, and prevent transmission and contamination.
- Smoking is prohibited unless in designated smoking area.

Refer to the section on the Respiratory Protection Program in our OH&S program for detailed information regarding respiratory hazard assessment, respirator use, training, fit testing, cartridges and responsibilities pertaining to respiratory protection.

3. Dry (powder) Portland cement/mortar, which is used for the dry-packing and hand mixing of concrete patching material and masonry work is corrosive and contains silica dust: Eye contact with these powders can cause serious eye injury and burns.

    - Protect your eyes from exposure by wearing tight fitting goggles (not loose fitting glasses) or full face respirator when handling or mixing powdered cement.
    - Do not handle cement mixtures if you have open cuts or scratches on exposed skin surfaces such as your arms or hands (wear appropriate gloves and PPE).
    - Do not wear contact lenses when working with powdered cement.
    - Use closed containers with tight fitting lids when transporting powdered cement.
    - Avoid methods of handling or dispersing cement. For example, do not sweep or blow powdered cement or allow it to become airborne. Use a vacuum fitted with a HEPA filter, when cleaning up powdered cement (only vacuum dry material to avoid vacuum hazard and damage).
    - If silica dust contaminates the area, be sure to clean up work area. Collect and dispose of silica dust in a manner that minimizes dust transfer and further contamination.

4. Protective clothing should also be worn when finishing concrete:

    - Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts. Coveralls should be worn when finishing in stairwells.

- Maintain good personal hygiene practices. Wash contaminated clothing before reuse. Do not eat, drink, or smoke in work areas. Wash hands and exposed skin before eating, drinking, smoking.
- Avoid contaminating the public with silica dust, by not wearing work clothing to and from work (bring a change of clothes).
- Do not use compressed air to blow dust from your clothing or your equipment.

2.11.1 Grinder Safety

1. Always use proper guard with grinding wheel. A guard protects operator from broken wheel fragments.
2. Accessories must be rated for at least the speed recommended on the tool warning label. Wheels and other accessories running over rated speed can fly apart and cause injury.
3. Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator. Hold the tool firmly.
4. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
5. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.
6. Keep guards in place when required and keep hands away from rotating parts
7. Use only wheels having a maximum operating speed at least as high as "No Load RPM" marked on the tool's nameplate. When using depressed center wheels, be sure to use only fiberglass-reinforced wheels.
8. Check the wheel carefully for cracks or damage before operation. Replace cracked or damaged wheel immediately.
9. Use only flanges specified for the tool.
10. Be careful not to damage the spindle, the flange (especially the installing surface) or the lock nut. Damage to these parts could result in wheel breakage.
11. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

12. Make sure the wheel is not contacting the work piece before the switch is turned on.
13. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
14. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
15. Inspect the shroud on your grinder to make sure it is in good condition. Very little visible dust should be released at the shroud. If dust is released, the vacuum attachment may not be working properly

2.11.2 Vacuum Safety

1. Stay alert, watch what you are doing and use common sense when operating a vacuum. Do not use vacuum while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating vacuum may result in serious personal injury.
2. Avoid accidental starting. Be sure vacuum and tool switches are OFF before plugging in or putting vacuum switch into power tool activation mode or filter cleaning mode. Do not keep power tool plugged into the vacuum cleaners power tool outlet during normal vacuuming.
3. Plugging in vacuums or tools that have the switch ON invites accidents. Do not overreach. Keep proper footing and balance both for you and the vacuum at all times. Use extra care when cleaning on stairs. Proper footing and balance enables better control of the vacuum in unexpected situations.
4. Do not vacuum burning, smoking or smoldering things like cigarettes, matches or hot ashes. Fire inside the vacuum tank may occur.
5. Do not use to vacuum flammable liquids, alcohol, gases, or explosive dusts, like gasoline or other fuels, lighter fluid, varnish, polyurethane coatings, cleaners, oil-based paints, natural gas, hydrogen, coal dust, magnesium dust, grain dust, or gun powder. Electric motors create sparks which may ignite the dust or fumes.
6. Do not use vacuum if switch does not turn it ON or OFF. Any vacuum that cannot be controlled with the switch is dangerous and must be repaired. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the vacuum. Such preventive safety measures reduce the risk of starting the vacuum accidentally.
7. Never connect a tool with a rating greater than the maximum amperes listed on the receptacle. This vacuum has a power tool outlet for use in conjunction with

other appliances such as sanders, jigsaws and planers; tools with greater ratings may cause a fire.

8. Do not vacuum dust when liquid/fluid is contained in the vacuum tank. Do not vacuum liquids/fluids when dust is in the tank. In either case empty the tank and/or remove dust bag before use so that dust does not cake and harden inside the tank.
9. Dry filters completely after wet vacuuming or use a second dry filter set for dust vacuuming. Damp or wet filters will cake with dust or develop mold or mildew.
10. Do not use with any opening blocked; keep free of dust, lint, hair and anything that may reduce air flow. Any alteration or modification is a misuse and may result in a dangerous condition.
11. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the vacuums operation. If damaged, have the vacuum serviced before using. Poorly maintained vacuums cause many accidents.
12. Periodic maintenance will be completed on all vacuums. Clean the vacuum and change the filters on a regular basis; when cleaning vacuum systems, safe work procedures must be followed.
13. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one vacuum may become hazardous when used on another vacuum.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.12 Concrete Grinding

1. Proper eye protection and personal protection equipment must be used.
2. Evaluate the area for hazards and the impact on other workers in the grinding area. Where a worker, other than the grinder, is exposed to concrete dust, the area should be restricted by the use of caution tape.
3. Grinding machines must only be used for what the manufacturers intended them for. This is particularly important with ceiling and floor grinders.
4. Proper work rests and protective equipment must be used.
5. Maintenance and good working order of all components in the grinding process must be maintained.
6. Signage must indicate that cement finishing is in progress and that respiratory protection is required.

7. Barricades must be erected to ensure that unsuspecting or unprotected personal do not enter into an area where there is active cement finishing in progress.
8. The use of abatement system must be used in areas where vacuums, water or barriers will not provide adequate protection from silica dust or where these controls are ineffective.
9. Adequate ventilation must be maintained.
10. Each worker doing concrete grinding is to be assigned a respirator for his sole use.
11. The respirator is to be fitted correctly by a qualified person. A record of this fit test is to be kept on site.
12. Only authorized and trained personnel with an assigned respirator is to perform grinding work.
13. Persons who are required to wear a respirator will not wear contact lenses.
14. The respirator wearer is to perform the two fit tests each time he places the mask over his face. This is detailed below.
15. Check wheel guards are in place and properly adjusted.
16. Check grinding wheel is firmly secured.
17. Inspect the grinding wheel before turning on the power. Do not use wheels that are chipped or cracked.
18. Test equipment for proper operation.
19. Work area to be clean, dry, and unobstructed.
20. Provide adequate lighting.
21. Provide mechanical ventilation when using half-mask respirator.
22. Do not operate a grinder with one hand.
23. Stand to one side of the wheel before turning on the power.
24. When grinding use the operating face of the wheel only.
25. Do not use a wheel that vibrates.
26. Do not over reach when operating grinder.
27. Before putting down a grinder the wheel must be stopped.
28. A grinder is to be put down with the wheel facing up.
29. Disconnect the grinder from the power source when making equipment adjustments or wheel changes.
30. Store grinder and respirator in clean dry area.
31. Clean and sanitize the respirator face piece and clean remaining components of air respirators after each use.

32. Cleanup and disposal of silica dust must be done in a controlled manner ensuring that there is no accidental release of the dust. The following points must be adhered to:
    - All dust from vacuums is to be double bagged.
    - Garbage bags containing silica dust will be transported to ground level on their own (i.e. not with other garbage types such as scrap wood which may cause bags to be penetrated).
    - Bags containing silica dust should, as much as is possible, be removed from the site for disposal in separate garbage containers.
    - Emptying of vacuums or cleaning of tools should be, as much as is possible, done in an area which is away from common areas such as lunch rooms or access/egress routes.
    - Under no circumstances is air to be used for clean-up.
    - Dry sweeping should not be done unless used in conjunction with a dust suppressant.
33. All workers who are exposed to fall above 10 feet will use fall protection (arrest or restraint) in accordance with the site specific fall protection plan.

PREPARATION

1. Installer shall examine and approve concrete substrate for conditions affecting performance of finish. General Contractor shall correct conditions that are found to be out of compliance with the requirements of this section. Repairs are not acceptable unless specifically approved on a case by-case basis by the Architect.
2. Verify the base slab meet finish and surface profile requirements.
3. Provide floor clean of materials and debris.
4. Protect adjacent surfaces as required to prevent damage by the concrete polishing procedure.
5. Setup grinding machine, dust extraction system, tooling, and generator.
6. Ensure floor cured to accept polishing application.

2.12.1 POLISHED CONCRETE APPLICATION

1. Applicator shall examine the areas and conditions under which work of this section will be provided and the General Contractor shall correct conditions detrimental to the timely and proper completion of the work and the Applicator shall not proceed until unsatisfactory conditions are resolved.
2. Grind the concrete floor to within 1 -2 inches of walls with 25, 80 and 150 grit removing construction debris, floor slab imperfections and until there is a uniform scratch pattern and desired concrete aggregate exposure is achieved. Vacuum the floor thoroughly.
3. Apply material approved by architect for color effects in accordance with the architectural drawings and the manufacturers recommended guidelines.
4. Fill construction joints and cracks with filler products as specified in accordance with manufacturer's instructions coloured to match (or contrast) with concrete color as specified by architect.
5. Apply densifying impregnator in accordance with manufacturer's instructions.
6. Grind the floor to within 1 - 2 inches of walls with metal bonded diamond grits of 150, grinding 90 degrees from each previous grind and removing all the scratches from the previous grit. Vacuum the floor thoroughly after each grind.
7. If specified, grind the edges with 25, 80 and 150 grit grinding pads, removing all of the scratches from the previous grit. Vacuum the floor thoroughly after each grind.
8. Polish the floor, to desired sheen level, with phenolic resin bonded diamond grits of 100, 200, 400, 800, 1500 and 3000, first polishing the edges (If specified) with pads of the same grit and then the field of the floor, removing all scratches from the previous grit. After each polish, clean the floor thoroughly using clean water and an auto-scrubber or a mop and a wet vacuum.
9. Apply a seal coat in accordance with the manufacturer's specifications.
10. Cleanup and disposal of silica dust must be done in a controlled manner ensuring that there is no accidental release of the dust. The following points must be adhered to:
    - All dust from vacuums is to be double bagged.
    - Garbage bags containing silica dust will be transported to ground level on their own (i.e. not with other garbage types such as scrap wood which may cause bags to be penetrated).
    - Bags containing silica dust should, as much as is possible, be removed from the site for disposal in separate garbage containers.

- Emptying of vacuums or cleaning of tools should be, as much as is possible, done in an area which is away from common areas such as lunch rooms or access/egress routes.
- Under no circumstances is air to be used for clean-up.
- Dry sweeping should not be done unless used in conjunction with a dust suppressant.

11. All workers who are exposed to fall above 10 feet will use fall protection (arrest or restraint) in accordance with the site specific fall protection plan.
12. Upon completion, the work shall be ready for final inspection.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.13 Concrete Patching and Sacking

1. All workers involved in concrete patching and sacking activities must comply with WorkSafeBC Regulations.
2. Foremen and/or Supervisor shall make crew aware of safety concerns unique to the location of the work assignment.
3. All workers are to wear the required personal protective equipment, and to ensure that the tools to be used are in proper working condition.
4. All workers must ensure that the general public is protected.
5. Skilled finishers based on their experience are to be assigned to a specific work area.
6. The area being patched or sacked shall be properly taped off to ensure that no one is that area when it is being patching.
7. Ensure that guardrails are adequate and/or the necessary fall protection is available and used.
8. Five gallons buckets are to be used to mix patching materials. Water sprayer or water brushes for patching and/or sacking.
9. Reasonable caution should guide the preparation, process, and clean up phases of activities involving potentially hazardous and toxic chemicals.
10. If hazardous materials are used in the patching operation, make sure that the workers know about the hazards involved. Follow manufacturers' instructions.
11. Manufacturer's recommendation to protect occupational health and environmental quality should be carefully followed.

12. Material safety data sheets MSDS must be obtained from the manufacturers of such materials.
13. Prepare the area to be patched or sacked. Ensure the lighting is adequate and all unnecessary equipment and workers are removed. Collect necessary tools to be used and place in a safe location.
14. Check all equipment to be used and ensure it is certified, as required (i.e. fall protection equipment) and they are in proper working order.
15. If work platforms are required, only engineered approved platforms must be used and installed by qualified personnel.
16. Do not stand on buckets. Use proper benches/horses/ladders in order to patch or sack the concrete!
17. Proceed in an orderly manner when patching/sacking, moving from one area to the next.
18. In the cases where the effects of chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated a potentially hazardous toxic materials.
19. A record of tools, materials and patching/sacking procedures should also be kept so that new workers can take over duties if the usual worker is absent.
20. Give the finishers the time to do their job correctly on the first attempt.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.14 Curbs and Pouring

1. All workers involved in pouring concrete must comply with WorkSafeBC Regulations.
2. All workers must ensure that the general public is protected.
3. The area being poured shall be properly closed off to ensure that no one is under the slab when it is being poured.
4. Ensure that guardrails are adequate and/or the necessary fall protection is available AND USED. The DANGER ZONE for pouring will be 8 feet inside the slab edge plus the height of any work platform.
5. Prepare the area to be poured. Ensure the lighting is adequate, and all unnecessary equipment and workers are removed. Collect necessary tools to be used and locate in a safe place.

6. Check all equipment to be used and ensure it is certified, as required (i.e. concrete buckets) and they are in proper working order.
7. Ensure all workers involved are informed of the items to be poured, and the procedure to be used.
8. All workers are to wear the required personal protective equipment, and to ensure that the tools to be used are in proper working condition.
9. Install adequate work platforms (i.e. scaffold jacks/double planks, or scaffold towers) complete with guardrails, if required.
10. Do not stand on formwork. Use proper work platform or ladder in order to pour the concrete!
11. Open the bucket gradually, and discharge the concrete slowly, in small amounts. If the bucket cannot be positioned over the desired pour area, then a chute must be attached to the bucket.
12. Ensure that the rate of pour is not exceeded. Do not overload formwork.
13. Vibrate concrete briefly, and spread to fill all voids.
14. If any formwork movement is suspected or detected, STOP WORK IMMEDIATELY and investigate. Do not recommence pouring until the supervisor is satisfied that all is well, and the OK is given to resume.
15. Pour concrete to designated depth. DO NOT OVERFILL.
16. Proceed in an orderly manner when pouring curves, moving from one area to the next.
17. Radio communication with crane operator and rigger.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.15 Cutting Fire and Pressure Treated Wood

1. Wear protective goggles or eye glasses, rubber gloves, a dust mask and protective clothing which will cover exposed skin. The chemicals on the wood can be absorbed through the skin.

1. When cutting treated lumber, take safety precautions to prevent injury from dust and debris.

2. Make sure the area where construction will occur is free from food and food preparation areas either directly or indirectly. Water, drinks and faucets should not come into contact with either wood, wood dust or wood debris.

3. Cut the wood outside where open ventilation will not recirculate the wood dust. If the wood must be cut inside, make sure all windows and doors are open to allow for adequate ventilation.

4. Wear all required personal protective equipment, such as a breathing mask, safety glasses and ear protection. Wear gloves to prevent absorption of dangerous chemicals through the skin.

5. Place the piece of lumber on a flat, workable surface, such as the ground, a saw horse or a table. When cuts are made into the lumber, the saw blade must not strike or come in contact with any other objects.

6. Use a pencil or measuring tool to place marks where the cut needs will be made.

7. To minimize the potential of chipping and cracking, use 2-inch wide blue painters tape. Draw clear cut lines on the treated lumber and place tape over the lines so that the tape is centered evenly over the line. Turn the lumber over and cut it from the other side through the tape.

8. Place the tip of the cutting tool to the line where the cut will be made.

9. Turn the tool on and cut along the marked line.

10. Keep all body parts away from the saw blade.

11. Instead of pulling the treated lumber toward you push it toward the blade. The spinning blade will pull the lumber toward it.

12. If required, brush the freshly cut lumber with a sealer. Apply the sealer according to the manufacturer's instructions. For best results, use the same product that the wood was treated with, in order to create a proper seal against the elements.

13. Allow sealer to dry completely before construction to ensure the entire board is adequately protected.

14. Debris from pressure-treated lumber projects need to be swept up with a traditional broom while still wearing all safety gear. Try to collect as much of the wood and saw dust as possible. Be sure to place the dust in a tied plastic bag before throwing the debris in the household trash can.
15. Wash all hands and skin immediately after working with and cutting pressure-treated lumber.
16. Work clothes should be separated from other laundry and washed separately.
17. It is recommended to take a shower after cutting pressure-treated lumber to get all debris out of the hair and off of the scalp.

2.16 Dead Animal Clean-up

1. Upon finding animal waste or the carcass of a dead animal, clean up and removal should proceed as soon as possible. In most instances, potential clean-up will be limited to animal feces and small dead animals such as rodents, birds, or raccoons. The Safety Manager should be notified of anything larger or material that cannot be handled and disposed of safely. In these cases, a 3rd party removal and clean up service will likely be arranged.
2. Do not remove carcass/animal waste or clean up impacted area unless you have been trained to do so and have the proper equipment and PPE to do it safely.
3. Kits that contain the supplies needed to clean up spills are available from safety supply companies.
4. Procedures for cleaning up dead animals or animal waste should include the following steps:

a. Restrict access to the area.

b. It is important to note that disinfection of the animal carcass/waste and impacted areas should be performed BEFORE clean up or removal. Animals and their waste are vectors of many diseases, some of which can be transferred through air or physical contact. Thus, procedures for cleaning up dead animals and animal waste differ from procedures for cleaning up human blood.

- Thoroughly soak all infected surfaces with a disinfectant before cleaning or removal. Disinfect the area with a spray bottle of fresh bleach solution. A solution of 1 part of common household bleach to 10 parts of water (1:10 ratio) will kill most disease causing viruses and bacteria except with spills involving a large area.

- With spills involving a larger area, apply a solution of 2 parts common household bleach to 10 parts of water (2:10 ratio). In both cases, leave the solution on for about 20 minutes.

c. Make sure double plastic bags are available for removal of dead animal, animal waste or other contaminated items. Have fresh, dilute bleach ready.

d. Wear disposable, waterproof gloves (such as natural rubber latex, neoprene, nitrile, and vinyl). If necessary, wear other PPE, such as a face shield and a gown, or respirator to act as a barrier against contact with contaminated fluids, dilute household bleach, or contaminated aerosols.

e. Cover your shoes or boots with disposable, waterproof covers if they could become contaminated during clean-up. The use of rubber boots is also acceptable.

f. Use prongs or a shovel to scoop up obvious material, and place in double plastic bag(s). Avoid directly picking anything up with your hands.

g. Wipe up visible material first with disposable towels (or in another way that prevents direct contact with blood and certain body fluids). Dispose of the material and paper towels in waterproof garbage bags.

h. After you have carefully removed the carcass or all the obvious material, decontaminate the area a second time by carefully pouring over the contaminated area a fresh solution of household bleach and water, as mentioned in step 'b'.

i. Wipe up the remaining spill with disposable towels and discard the towels in waterproof garbage bags.

j. Clean and decontaminate all soiled, reusable equipment and supplies. Properly discard any disposable items in double plastic bags.

k. Handle the bag(s) in a way to minimize puncture or abrasion. Label the bag(s) appropriately and only dispose of in regular garbage if permitted by local authorities. If not permitted, a specialized pick up may need to be arranged. Dispose of the garbage bags in accordance with the guidelines outlined in the MSDS for the product(s) used in the cleaning solution.

l. Wear the gloves to remove other protective equipment such as face shields and footwear covers. Dispose of or clean PPE (for example, face shields, aprons, boot covers) according to the manufacturer's directions.

m. Properly remove and dispose of your gloves. Wash your hands thoroughly.

5. The following equipment will be required during cleanup:

- Disposable gloves.
- Face shield and rubber apron as required.

- Absorbent cloths or towels.
- Bucket to hold cleansing solution.
- Fresh water for mixing cleansing solution.
- Household bleach and spray bottle.
- Waterproof garbage bags.
- Prongs or shovel.
- Red “Danger” flagging tape.

2.16.1 Dead Crows (West nile virus)

Crows and other birds can be part of the West Nile Virus infection cycle. Most local health authorities test dead birds to provide early warning of presence of the virus in BC. If a dead crow is found on site, contact local health authorities for potential pick up. Pick up is not guaranteed, but proactive steps like these help the entire community, from which all workers comprise. There is no evidence that disease transmission can occur by handling live or dead birds but the safe job procedure for clean-up of dead animals is to be followed.

2.16.2 Dead bats (rabies)

Rabies is perhaps the most well-known disease associated with bats. An exposure to rabies most commonly occurs when a person is bitten by a rabid animal. It can also be transmitted when the saliva from a rabid animal comes in contact with a person's mouth, eyes, nose, or a fresh wound.

If you come across a dead bat, some areas require you to call animal control services to safely remove the animal. In some instances, such services might not be necessary. Under these circumstances, follow the below steps to safely discard the dead bat:

- Put on disposable gloves and other necessary PPE.
- Pick up the dead bat with a plastic bag over your hand.
- Seal the bag.
- Place both the bat and the bag into another plastic bag.
- Spray inside the second bag with disinfectant.
- Close the bag securely.

- If animal control services are not required to dispose of the bat in your city/municipality, discard the bag with the regular garbage.
- If your area dictates that animal control services must to dispose of the bat, remove the bat from the area until animal control services can arrive to safely dispose of the bat.
- Thoroughly wash your hands and any clothing that comes into contact with the bat.
- If you see a band on the wing or a small device with an antenna on the back of a bat, contact the animal control agency, and advise them of such findings.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.17 Drywall Cutting and Installation

2.17.1 GENERAL

In construction, the sanding of drywall compounds creates large amounts of dust including respirable silica. Breathing in silica dust can cause a serious lung disease called silicosis. Safe job procedures must protect individual workers performing drywall work tasks and also ensure surrounding workers are not exposed to this respiratory hazard. Two key elements of safe job procedures for concrete finishing are, but not limited to:

2.17.2 Exposure Control Plan for Silica Dust

Exposure Control Plan (ECP): A hierarchy of controls should be selected in the following order:

1. Elimination: Choose work methods and materials that do not produce silica dust.
2. Engineering Controls: Local exhaust ventilation (LEV), wetting method, barriers and enclosures.
3. Administrative Controls: Work scheduling, planning, and coordination.
4. Respirators and PPE:

- Use HEPA local exhaust ventilation systems to capture and control the dust at its source whenever possible.
- Check with your supervisor to determine if an enclosure structure will be erected and how this is to be done.

- Check to make sure that the vacuum system you are assigned is approved for use with silica dust, and operating properly, with appropriate HEPA filters.

Refer to the section on the Exposure Control Plan for Silica in our OH&S program for a detailed account of local exhaust ventilation, silica information, exposure limits, controls, and responsibilities regarding silica exposure control.

2.17.3 Respiratory Protection Program

- Ensure proper use of respiratory protection. Make sure you have the right respirator and filters/cartridges for the job task. A full-face respirator equipped with 100 (HEPA) series filters will be required when grinding and chipping concrete.
- Ensure that respiratory protection equipment is inspected prior to each use, clean, well maintained, and that you are fit tested for your specific respirator.
- Grinding and polishing tools should have vacuum attachments to limit silica dust exposure at the source, and prevent transmission and contamination.
- Smoking is prohibited unless in designated smoking area.

Refer to the section on the Respiratory Protection Program in our OH&S program for a detailed account of respiratory hazard assessment, respirator use, training, fit testing, cartridges and responsibilities regarding to respiratory protection.

1. When possible and within reason ensure that drywall delivery is a close to installation location as possible. Also, ensure that delivery/storage area is clear of debris and covered from getting wet.
2. Ensure that proper eye protection is used.
3. Ensure that appropriate precautions and PPE required by the MSDS/SDS for drywall and drywall mud are followed.
4. Use mechanical lifting devices whenever practical to move and lift drywall (this is especially relevant for ceiling installation).
5. Manual lifting of full, single sheets is to be done with two (2) people.
6. Use screw guns with automatic loading devices to help maintain balance when installing ceiling and help reduce hand cuts from constantly handling sharp screws.
7. Keep all cutting tools sharp and well maintained. A dull blade requires excessive force, causes sloppiness, can slip and is the cause of many accidents. Use the tool that is right for the job. Below is a list of knife and cutting tool safety tips:

a. Always cut in the direction away from your body when using knives.
b. When handling knife blades and other cutting tools, direct sharp points and edges away from you.
c. Cut in the direction away from your body when using knives.
d. Use the knife that has been sharpened; do not use knives that have dull blades.
e. Use knives for the operations for which they are made.
f. Do not use knives that have broken or loose handles.
g. Do not use knives as screwdrivers, pry bars or can openers.
h. Do not pick up knives by their blades.
i. Do not carry knives, scissors or other sharp tools in your pockets or an apron unless they are first placed in their sheath or holder.
j. Do not attempt to catch a falling knife.
k. Store knives in knife blocks or in sheaths after using them.

8. Use an appropriately sized straight-edge to guide cuts.
9. Always retract blade once cutting is completed. Do not carry other materials and walk around with an open blade.
10. Dispose of broken replacement blades in a manner that will not endanger other workers. Do not just throw them on the ground.
11. Use tools (i.e. taping tools) with longer handles to allow you to reach areas from the floor, reducing the risk of slips, trips, and falls.
12. Ensure that ladders are tall enough for the job, well maintained, and set up properly. Avoid over-reaching while on the ladder, move the ladder for a better position. Never stand on the top two rungs of any ladder.
13. When sanding or sawing drywall, appropriate respiratory and eye protection equipment should be used. Use manual sanders with longer handles to avoid reaching, loss of balance and improper posture.
14. Electric sanders should only be used, with an accompanying vacuum attachment to limit exposure and transmission of drywall dust.
15. Observe proper use of stepladders. Never climb higher than the second step from the top - use a taller ladder instead. Be certain the spreader bars are locked in place and both pairs of legs are fully open. If leaning the ladder against a wall, a safe distance between the wall and the feet of the ladder is one quarter the height of the ladder. Do not use an aluminum ladder near electrical wires.
16. When stilts are being used, the work floor must be completely clear of debris (including power cords) to eliminate trip and fall hazards.

17. Stilts are not to be used on stairs or in proximity to regular 42 inch guardrails. The extra height of worker makes traditional guardrails too low.
18. Use of an electric drywall sander with vacuum attachment yields many benefits:
    - Reduces exposure to drywall dust for proximal and distal workers.
    - Eliminates repetitive forceful exertion (ergonomic considerations, sanding power come from machine).
    - Provides a tidier work area, less clean up, and less dispersal/transmission of dust.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.18 Electrical Cords, Plugs&Temporary Distribution

2.18.1 Potential Hazards

- Cuts and amputations.
- Hearing loss (noise).
- Flying Objects.
- Repetitive Strain Injuries.
- Electrocution.

2.18.2 procedures for working safely

1. Temporary distribution panels must be installed by qualified electricians and in compliance with the “Electrical Energy Inspections Act” of BC and the electrical code.
2. Doors and covers of electrical equipment shall be kept closed while the equipment is energized.
3. Ensure that circuit breakers and plug-ins are numbered to correspond to each other (i.e. circuit breaker 1, plug 1, circuit breaker 2, plug 2, etc.).
4. Electrical cords and appliances shall be CSA approved and shall be maintained in good order.
5. Open front plugs should be replaced with dead front plugs whenever possible.

6. Only qualified electricians shall repair temporary panels or install any hard wired electric circuits to panels.
7. Do not overload a circuit by plugging several power cords in one outlet.
8. Do not use light duty cords for any heavy load applications.
9. Inspect power cords and electrical fittings for damage prior to each use. Damaged power cords shall be removed from service and repaired or replaced.
10. Always ensure that all three prongs on a grounded power cord are in place. Do not use a power cord where the ground prong has been removed.
11. Always keep power cords away from tools during use.
12. Suspend power cords over walkways or working areas to eliminate tripping hazards.
13. Do not place unprotected power cords where they might be run over by vehicles or equipment on site. Always protect the cord by running it through electrical conduit or placing them between planks.
14. Do not tie knots in power cords. Knots can cause short circuits and electric shocks. Always loop the cords or use a twist lock plug.
15. Always ensure that electrical panel covers are in place and are not damaged.
16. Always store electric cords in a clean dry area off the ground.
17. Electrical cords shall be cleaned and inspected for damage before being placed in storage.

Refer to the section on Electrical Safety in our OH&S Program for details on the Assured Grounding Program.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.19 Electrical Lockout

2.19.1 GENERAL

1. This procedure is generic in nature and is designed to give basic direction regarding electrical lockout. Specific lockout procedures shall be developed for specific applications, prior to undertaking project.

2. Identify all sources of power, which might allow for the operation of the equipment to be locked out.
3. Stop all drives and motors on the machine, by means of the STOP button.
4. Lock out the main power to the equipment, as well as any other power source which may operate the equipment by placing a personal lock and identification tag on each power or disconnect switch while it is in the OFF position.
5. Test the equipment, by pressing the START button, to ensure that it will not start.
6. Press the STOP button again before starting work.
7. Employees working on locked out equipment shall each place their own lock on the power source.
8. On completion of the work, each worker must remove his or her own personal lock.
9. The last person to remove their personal lock from the power source is responsible for the safe startup of the equipment.
10. Personal locks shall only be removed by the person who placed the lock.
11. Under no circumstances shall any worker remove another worker's personal lock.
12. If a lock is left on a power source, and the work is complete, every reasonable effort to locate the owner of the lock must be made so that the owner may remove their lock.
13. Should the owner of a lock not be located, the Supervisor shall undertake a thorough search of the work area in order to ensure that the lock owner is not in the area and that the area is safe.
14. The Supervisor shall ensure that the equipment is safe and that the work is complete, all guards are in place and that the equipment could not accidentally start when the power is turned on.
15. The Supervisor, once assured of the above, shall, along with a worker representative, remove the lock and ensure the safe startup of the equipment.
16. If the safety of the lock owner or the safe startup of the equipment cannot be assured, the lock shall remain in place until such assurances can be made.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.20 Electrical Vault (Lockout and Access)

2.20.1 GENERAL

2.20.1.1 Electrical Vault Safety Protocol

1. Only qualified persons (certified electrical workers) will work on or repair electrical systems, equipment or tools.
2. The electrical room/vault is to be considered LIVE and energized after the first commissioning stage with Electrical Utilities (BC Hydro) even though the electrical vault or room may not be completely live, with some components remaining de-energized awaiting future commissioning stages. The lockout/guarding procedure is to be performed on all electrical cubicles after the first commissioning stage. This absolute lockout procedure is to ensure that workers are protected throughout the various commissioning stages.

2.20.2 Lockout Procedure:

Before working on a power system that, for reasons of safety, must be de-energized, the worker in charge must ensure that the part of the system being worked on is isolated grounded, and locked out as required by the Regulations. Special precautions that must be taken when electrical vault/room components are locked out include:

- Lock out the main power to the equipment, as well as any other power source which may operate the equipment by placing a personal lock and identification tag on each power or disconnect switch while it is in the OFF position.
- Employees working on the equipment shall each place their personal lock on the power disconnect.
- On completion of the work, each worker must remove his or her own personal lock.
- Personal locks shall only be removed by the person who placed the lock.
- Under no circumstances shall any worker remove another worker's personal lock.
- If a lock is left on a power source and the work is complete, every reasonable effort to locate the owner of the lock must be made so that the owner may remove his/her lock.

- Should the owner of a lock not be located, the Supervisor shall undertake a thorough search of the work area in order to ensure that the lock owner is not in the area and that the area is safe.
- If the safety of the lock owner or the safe startup/power-up of the equipment cannot be assured, the lock shall remain in place until such assurances can be made.

2.20.3 Electrical rooms and vaults are to be accessed by authorized personnel only:

- All workers entering an electrical vault must be part of the lockout procedure. Every worker in the vault is to have their personal lock, regardless of their designation as a "certified electrical worker" or an electrician's apprentice.
- The "buddy" system is to be incorporated when work is being performed in the electrical vault or room. Workers are not permitted to be alone in the electrical vault at any time. Workers entering the electrical vault must be "certified electrical workers" (Journeymen electrician).
- If an electrical apprentice or other worker not classified as a certified electrical worker is to enter an electrical room, he or she must be under the direct supervision of certified electrical worker. The ratio of number of apprentices to certified electrical workers must not exceed 2 apprentices per one Journeymen Electrician (2:1). If the Supervisor has to leave, so does the workers under his supervision.
- Worker may only enter an electrical vault after performing and signing a written Job Safety Analysis (JSA). Verbal direction will not suffice. The JSA shall include a risk assessment, assurance of lockout procedure, and a review of the commissioning/energy status of the vault components.
- Upon full completion of commissioning of the electrical vault/room and the transfer of possession of the vault from electrical contractor to the owner or prime contractor, a sign is to be placed on the access to the vault that displays the contact information of electrical contractor and Electrical Utilities.
- At every commissioning stage, the utilities agency must sign a site form that outlines the work that was performed and which personnel oversee the updated "Live" conditions that resulted from the work.
- At all times, a sign is to be placed on the access to the vault clearly displaying the following:
  a. Statement warning that vault is LIVE.

b. Supervisors in charge of work in electrical vault/room.
c. Supervisors contact information (Phone number).
d. Statement of who is authorized to enter.

Note: Information must be kept current

2.20.4 Access to cubicles / panels within an electrical vault / room:

- Barriers or distinctive identification must be used to differentiate high voltage electrical equipment which has been de-energized for safety reasons from similar energized equipment at the work location if lack of such identification would result in undue risk to workers. Each access panel / cubicle is too be marked clearly with a designated sign upon commissioning by the electrical utilities. The sign should state the following:
  a. Date of commissioning.
  b. Statement warning that panel is live.
  c. Supervisors in charge of work in electrical vault/room.
  d. Supervisors contact information (Phone number).
  e. Statement of who is authorized to enter.

  ****Note: Information must be kept current****
- All panels/cubicles are to be locked out or guarded. All workers performing work in the electrical vault are to participate in the lockout procedure, with every worker having his or her own lock.
- If it is impracticable to lock out a power system or part of the power system, guarding of the system can be used to protect workers.
- Panels with bolts are to be tightened with a wrench so that they cannot be unscrewed by hand. Panel doors without tightened bolts, are to be fixed with designated locks from all workers who enter the vault/room, according to lockout procedure. Each lockout procedure must be site specific.
- When guarding, the boundaries of the guarded electrical system must be clearly defined, with the safety protection guarantees of the guarding equipment clearly displayed near or on the equipment.
- Guarding of electrical systems, requires that written work procedures be completed defining the safety protection guarantees of all parties who have electrical systems in the vault/room. Appropriate written procedures must be established and followed to ensure that any safety protection guarantee will be effective.

2.20.5 Lockout Procedure

This procedure is generic in nature and is designed to give basic direction regarding electrical lockout. Specific lockout procedures shall be developed for specific applications, prior to undertaking any specific project.

When energized electrical conductors are LOCKED-OUT, special precautions/procedures must be taken:

1. Identify all sources of power, which might allow for the operations of the equipment to be powered up.
2. Personal worker locks with identification tags are to be issued to all workers impacted by lockout of equipment or power supply
3. Lock out the main power to the equipment, as well as any other power source which may operate the equipment by placing a personal lock and identification tag on each power or disconnect switch while it is in the OFF position.
4. Employees working on locked out equipment shall each place their own lock on the power source.
5. On completion of the work, each worker must remove his or her own personal lock.
6. Personal locks shall only be removed by the person who placed the lock.
7. Under no circumstances shall any worker remove another worker's personal lock.
8. If a lock is left on a power source, and the work is complete, every reasonable effort to locate the owner of the lock must be made so that the owner may remove their lock.
9. Should the owner of a lock not be located, the Supervisor shall undertake a thorough search of the work area in order to ensure that the lock owner is not in the area and that the area is safe.
10. If the safety of the lock owner or the safe start-up/power-up of the equipment cannot be assured, the lock shall remain in place until such assurances can be made.

2.20.6 Lock Removal Procedure

1. The person who placed the lock shall only remove personal locks.
2. Under no circumstances shall any worker remove another worker's personal lock.

3. If a lock is left on a power source, and the work is complete, every reasonable effort to locate the owner of the lock must be made so that owner may remove his or her own lock.
4. Should the owner of the lock not be located, the supervisor shall undertake a thorough search of the work area in order to ensure that the lock owner is not in the area and that the area is safe
5. The supervisor shall ensure that the equipment is safe and that the work is complete, all guards are in place and that the equipment could not accidentally start when the power is turned on.
6. The supervisor, once assured of the above, shall, along with a worker representative, remove the lock and ensure the safe start-up of the equipment or machinery.

NOTE: **If the safety of the Lock Owner or the Safe Start-Up of the Equipment cannot be assured, the Lock shall remain in place until such assurances can be made.**

Common Pitfalls of Lockout Procedure to be Cautious Of:

1. The lockout procedure is not enforced or supervised.
2. Failure of workers to use locks.
3. Locking one lock into another.
4. Leaving key in the lock.
5. Asking others to lock out for you.
6. Failure to identify ownership of the lock.
7. Failure to verify that equipment is inoperative.
8. Pulling fuses and not locking out.
9. Failure to identify and lockout all switches to the equipment.
10. Assuming equipment is inoperative.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.21 Elevated Work Platforms

20.21.1 GENERAL

1. All platforms must be engineered and the applicable drawings must be on site when the platform is being used.

2. Workers must not exceed the loading indicated in the drawings for the platform. The load capacity of the platform must be indicated on the platform.
3. All operators shall be trained in the safe operation of these devices and understand their limitations.
4. If the work platform is attached to a tower crane there must be a means of communication between the worker(s) in the platform and the crane operator.
5. Where the movement of an aerial work platform is controlled from an operation stationed at the base of the machine, the operator shall not leave the controls while workers are on the platform and shall respond only to signals from a designated person on the platform.
6. People on elevating work platforms shall wear fall arrest equipment secured to suitable and substantial anchorage points.
7. Anchor points must be above the hook when platforms are attached to cranes.
8. Workers shall not be transported on aerial work platforms. Workers may remain on platforms while minor adjusting movements are made.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.22 Entry Behind Walls

2.22.1 GENERAL

1. The type of work that will be permitted under this procedure is:
   - Cleaning and backfilling the space between the walls of the excavation and the building.
   - Grinding and chipping in preparation for the application of waterproofing material.
   - Patching and sacking where the mixing of materials has already been completed outside the space.
2. This entry procedure is for low risk activities only, that is, activities which do not involve any type of chemicals capable of producing harmful fumes which may contaminate the space and thus place workers in the space in a potentially hazardous situation. This procedure does not cover any types of processes which may produce harmful fumes.

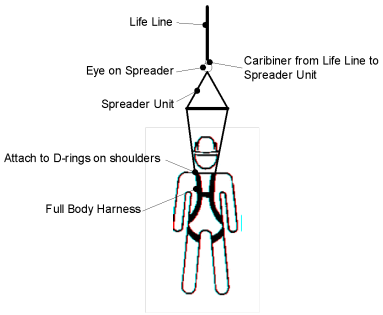
3. Under no circumstances should a worker be behind the wall during the pouring of any backfill. There is a risk of engulfment in these types of activities which must be prevented. Once the load of backfill has been positioned the worker can go behind the wall to spread and level backfill.
4. No gas powered tools are permitted to be operated in the space under this procedure. These tools produce harmful exhaust which the workers will not be protected from.
5. If workers are grinding or chipping in the space, adequate silica dust controls must be implemented including the use of air purifying respirators (i.e. half or full face mask), vacuums or water to control dust.
6. No work will be started behind any wall until a review of the entry procedure has taken place and has been signed off by the Site Superintendent and all personnel involved in the work.
7. The Safety Coordinator must be informed where work will be done on the day of entry so as to be able to coordinate the rescue efforts effectively.

2.22.2 Procedures for working safely

Where multiple trade activity is scheduled, the Prime Contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete the scope of work required.

Once the above planning is achieved by the Prime Contractor, then:

1. Work will not be completed behind any walls unless work is done in teams of two: the person doing the work and a spotter.
2. The spotter will be in constant communication with the worker behind the wall and will have direct communications with the Safety Coordinator.
3. The worker working behind the wall must have a harness equipped with D-rings on the shoulders.
4. Any worker behind a wall will be attached to a life line that will be controlled on the outside of the wall by a safety spotter.
5. The life line will be attached to a spread bar which will be attached directly to the shoulder D-rings of the wearer's harness. As detailed below:



6. The atmosphere sampling unit must be calibrated prior to entry by a competent person. A bump test must be conducted after the unit has been calibrated and prior to entry to ensure that the unit is functioning within the parameters set by the manufacturer.

2.22.3 Entry Procedure

For teams consisting of one spotter and one worker in the confined space:

1. Continuous verbal and visual communication between the spotter and the worker behind the wall is required. There should be no need for radios as there will be visual contact with the spotter and the worker, which should facilitate verbal communication. If this is not the case due to increased noise levels on site then radios should be considered.
2. The spotter must understand their role and what is expected of them. In the event of an emergency they must invoke the emergency protocol without delay.
3. The worker behind the wall must be trained to recognize when the atmosphere sampling unit has gone into alarm.
4. If the atmosphere sampling unit goes into alarm state, the worker behind the wall must evacuate immediately.
5. The access/egress point for the worker behind the wall must be no greater than 10 feet away at any time a worker is behind the wall.
6. The access/egress point must be secured properly and used in accordance the WorkSafeBC Regulations.
7. The crane operator and Safety Coordinator on site will be versed in their roles in case of a rescue emergency event.

When more than one worker is required to work behind the wall at a time the following additional points will be followed:

1. If working in close proximity (less than 12 feet apart) use one atmosphere sampling unit is required. If workers are further than 12 feet apart, each worker must have an atmosphere sampling unit or a designated tester must move

between the two work areas at regular intervals to ensure the atmosphere behind the wall is safe for the workers.

2. Workers need to be aware of their lifelines and must avoid crossing each other. Spotters will ensure that lifelines are kept well apart when workers are in close proximity to each other.

2.22.4 Equipment Requirements

The following equipment will be required for this procedure:

1. Full body harness with a D-ring on each shoulder.
2. Spreader unit.
3. Life line with carabineer.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.23 Falling Objects

2.23.1 GENERAL

1. Ensure that all top-rails, mid-rails and as required, toe boards are in place as required.
2. Always pre plan items such as guard rail placement and replacement as well as site cleanup. This will help to eliminate the confusion often surrounding these issues and greatly reduce the possibility of accidents from falling objects.
3. Ensure that all entrances to the work site, where workers are required to work or travel under overhead hazards, are adequately covered.
4. Ensure that procedures for slab stripping near the edge include methods of preventing materials from falling to the ground.
5. Ensure that all workers on the job are aware of overhead hazards on the site.
6. Ensure that a procedure is in place regarding the movement of material over areas where workers are situated and that the procedure includes the audible warning of workers that a load is moving overhead in proximity to them.
7. Ensure that site inspection procedure includes the review of all guardrails, overhead movement of materials as well as cleanup and housekeeping with regards to falling objects.

8. Whenever workers move around the work site they shall become familiar with the overhead hazards and the risk of falling objects. Workers shall also be made aware of any movement of materials overhead in proximity to their work area.
9. Always ensure that guardrails, including toe boards, are in place when working in elevated areas.
10. If there is a need to temporarily remove guardrails and/or toe boards on the work site, ensure that they are replaced as soon as the need for their removal is completed.
11. All materials transported or stored above grade level must be properly secured during transportation and shall be adequately secured in storage so as to prevent movement. REMEMBER, plywood, gyproc, Q-deck, etc. can be lifted and moved by the wind.
12. Never leave loose materials on scaffolds, swing stages or any elevated work area. Always ensure that elevated work areas have adequate guardrails and toe boards when required.
13. Whenever you are required to work at or near the edge of an unprotected elevated work area, always ensure that you wear proper fall protection. You can also become a falling object on the work site if the proper precautions are not taken.

2.23.2 STEPS

1. Perform daily workplace inspections to identify falling object hazards.
2. Always wear head protection when near overhead hazards.
3. Use barricades to block off work areas where workers are not allowed to enter. Use warning signs, example “Warning: Work Above”.
4. When moving equipment, tools, or materials, always use a cart that is an appropriate size for what you are moving and that the load is secured.
5. Employ the use of tool tethering when working at heights to prevent the hazard posed from falling tools and equipment.
6. When lifting, make sure the load is balanced and secured. Check for small or loose pieces before you lift.
7. Always stack materials on a flat surface and secure them. When working, be aware of your surroundings and watch that you do not inadvertently knock or hit something off the level you are working on.
8. To prevent tipping, store materials and equipment at least six feet from an edge.

9. Always secure material to prevent movement. Always re-secure the pile after removing an object.
10. Stack heavier objects on the lower shelves for stability and safety.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.24 Finishing Carpentry and Woodwork

2.24.1 GENERAL

Finish carpentry refers to the installation of the decorative wood around doors, windows and base board. This also includes much more such as hand railings, cabinets, countertops, stair cases, crown molding, chair rail and can include even more depending scope of work specific to site.

2.24.2 Electrical Safety

1. All electrical equipment shall be CSA Approved and used according to manufactures recommendations. Avoid exposure of tools and cords to heat, moisture, and chemical solvents.
2. Inspect tools power cords and electrical fittings prior to commencing work. If units are damaged, tag and remove from service for disposal or repair.
3. Generally speaking, avoid use of power tools in wet, rainy or moist conditions.
4. Finishing carpentry often involves meticulous and detailed work. Always ensure that power tools are powered off and blade guards enacted before setting tool down to prevent inadvertent damage to yourself, other workers, and workmanship.
5. Do not connect tools that are turned on to any power supply. Ensure that tools are switched off before connecting to power supply. Similarly, disconnect power tool before replacing parts, making adjustments, or adding attachments.
6. Ensure that all cords and tools are properly grounded. Do not use an extension cord that is missing its third grounding prong. Refer to Section 7 of this manual for a more detailed account of electrical safety, assured grounding program, and ground fault circuit interrupters (AGP and GFCI).
7. Do not use light duty power cords for heavy load applications. Similarly, do not overload a circuit by plugging in multiple tools to one outlet (For example, a table saw or other high powered tools should only be plugged into an individual outlet with its own breaker switch).

8. Do not carry tools by their cords or disconnect tools and cords by pulling or jerking them sharply from the outlets. Ensure cords are long enough so that they cannot be pulled apart during cutting operations causing inadvertent kickback.
9. Do not tie knots in power cords as this may lead to electrical failure and short circuit.

2.24.3 General Saw and Woodwork Operation Precautions

1. Keep work areas clean. Cluttered areas and benches invite injuries.
2. For each tool, read the operation manual carefully. If you don't understand or are uncertain regarding the safe operation of a certain tool, ask a supervisor.
3. Consider work area environment. Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit. Don't use tool in presence of flammable liquids or gasses.
4. Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the woodworking area. If you have trouble hearing someone speak from three feet away, the noise level from the machine is too high. Damage to hearing may occur. Hearing protection is mandatory when using woodworking tools.
5. Use gloves to protect hands from splinters when handling wood but do not wear them near rotating blades and other machinery parts where the gloves can catch or interfere with emergency shut off of equipment.
6. Guard against electric shock. Prevent body contact with grounded surfaces.
7. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
8. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.
9. Don't force the tool.
10. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.
11. Dress properly. Do not wear loose clothing or jewelry.
12. Use safety glasses when operating the tool.
13. Generally speaking, only cut one piece of wood at a time.
14. Don't abuse the power cord. Never carry or lift the tool by the power cord.

15. Don't overreach. Keep proper footing and balance at all times while operating the tool.
16. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect regularly to ensure that there are no signs of damage.
17. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.
18. Remove adjusting keys or wrenches before operating the tool.
19. Ensure that you have a good grip on the tool to avoid unintentional starting.
20. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.
21. Stay alert. Be aware of your surroundings and other personal that are in the area.
22. Don't use tools for applications they were not designed for.
23. Don't use attachments that are not recommended for the tool.
24. Don't touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.
25. Operate the tool below the rated input to ensure the tool is not damaged due to overload.
26. Do not wipe plastic parts of the tool with solvents.
27. Make sure the guard is in position, is in good working condition, and guards the machine adequately before operating any equipment or machine.
28. Check and adjust all other safety devices. Make sure the equipment is properly grounded before use.
29. Inspect stock for nails or other materials before cutting, planning, routing or carrying out similar activities.
30. Start buttons should be protected so that accidental contact will not start the machine.
31. Ensure that all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely, and not need to be forced.
32. Use a "push stick" to push material into the cutting area. Jigs are also useful in keeping hands safe during cutting procedures. Keep hands out of the line of the cutting blade.
33. Ensure that the floor space around the equipment is sufficient to enable you to machine the size of work piece being processed safely without bumping into other workers or equipment.

34. Keep work area free of clutter, clean, well swept, and well lit. Spills should be cleaned up immediately. Floor areas should be level and non-slip. Good housekeeping practices and workplace design will reduce the number of injuries and accidents from slips, trips, and falls.
35. Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewelry that can become entangled with moving parts.
36. Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the cutting tool or blade.
37. Do not remove sawdust or cuttings from the cutting head by hand while a machine is running or plugged in. Disconnect machine before making any adjustments.
38. Do not use compressed air to blow sawdust, turnings, etc. from machines or clothing.
39. Do not leave machines running unattended (unless they are designed and intended to be operated while unattended).
40. If a blade binds to material do not try to free a stalled blade before turning the power off. Ensure power is disconnected before loosening blade from cut material.
41. Do not distract or startle an operator while he or she is using woodworking equipment. Similarly, do not try and sustain a conversation when making a cut.

2.24.4 Hand Tools (non-powered) and Tool belts

1. Always ensure you are using the right tool for the job. Do not substitute or use makeshift tools.
2. Ensure that you use the proper PPE when using hand tools. Almost always the use of hand tools in heavy carpentry, require the use of eye protection.
3. Always check tools for damage or wear prior to each use. Watch for loose or broken handles and mushroomed heads.
4. Aim to reduce the torque needed to be applied by selecting tools with longer handles or tools with a ratchet function.
5. Replace cracked or broken handles on files, hammer, screwdrivers, or sledgehammers.
6. Replace worn jaws on wrenches, pipe tools and pliers.

7. Avoid using hand tools with your wrist bent. Always use tools which allow the wrist to remain straight.
8. Always pull on wrenches and pliers. Never push unless you hold the tool with your palm open.
9. Re-dress burred or mushroomed head on striking tools.
10. Carry tools using a heavy belt or apron and hang tools at your sides. Never carry tools in your pockets or hanging behind your back.
11. When using cutting tools, always cut away from yourself.
12. Do not wear bulky gloves when operating hand tools.
13. When using a bar for prying, be sure to stand so that you will maintain your balance should it slip or break.
14. Always think of your co-workers when using picks, and axes. Maintain clearance between you and any other person.
15. Keep close track of tools when working at heights. A falling tool can kill a co-worker.
16. Always keep your tools in top condition. A dull blade or blunt point can lead to injury.
17. Be on the lookout for signs of repetitive stress. Early detection may prevent a serious injury.
18. Maintain tools carefully. Keep them clean and dry, and store them properly after each use.
19. Always keep cutting tools sharp.
20. Never leave tools on ladders, scaffolds or overhead work areas when they are not in use.
21. Always keep tools being used in overhead work areas in containers or tied back in order to prevent them from falling.
22. Ergonomics examines how the combination of force, repetition, duration and awkward postures increases the likelihood of an injury. Your upper limbs and hands and back are especially vulnerable to ergonomic related musculoskeletal injury (MSI). Below are some ergonomic considerations in hand tool choice and use:

a. Avoid tools that are too heavy, improperly balanced or grip span is too large.

b. If possible, choose tools with a ratchet effect, to minimize wrist strain.

c. If possible choose tools with a full hand power grip rather than pinch grip equivalents.

d. Choose and use tools that have a soft, rubber grip that allows for force to be distributed to entire hand and reduce vibrations.

e. Ensure tools are well maintained and sharpened.

23. Tool belts should be appropriately balanced, and of sufficient size to provide adequate freedom of movement for the scope of work.

24. Hang longer tools on the sides of your tool belt. Do not hang hand tools (especially hammers) off the rear of your tool belt, where they may dangle between your legs.

25. Hammers are an essential tool for any carpentry work. Tools such as hammers are commonly misused. Below are some considerations for selection and safe use of hammers:

a. In general choose a hammer with a striking face diameter approximately half of an inch larger than the face of the tool/nail/object being struck.

b. Ensure head of the handle is securely attached and that the handle and grip are in good condition.

c. Discard any hammer that has a mushroomed or chipped striking face.

d. Always wear safety glasses when using a hammer. Safety goggles with side protection offers even better protection.

e. When using a hammer strike squarely to avoid glancing blows. Ensure that your swing is under control.

f. Do not strike with the side (cheek) of a hammer.

2.24.5 Circular/Skill Saw

1. Never operate a skill saw without the blade guards in place. Ensure that guards are in good condition and function properly with appropriate spring back.

2. Wear appropriate personal protection equipment when operating a saw: Wear eye protection, dust mask/respirator, and hearing protection. Do not wear gloves when using a skill saw as this may interfere with trigger operation and emergency shut off.

3. Permit only trained and experienced personnel to operate a saw.

4. Ensure that the retractable blade guard is in place prior to placing saw down. Similarly always wait for rotating blade to stop rotating before putting saw down.

Without this the saw blade could potentially skid across the surface it was placed, potentially causing injury.

5. Never remove a saw from cutting surface until the blade has come to a complete stop.
6. Use both hands to operate saw – one on the handle and one on the front knob. Saws are typically designed for right hand use so extra caution is necessary for left handed individuals.
7. When cutting short work, ensure that stock is securely fastened with clamps or nails to prevent inadvertent slippage and kickback. Do not hold small pieces of stock with your hands when cutting.
8. Do not over tighten the nut holding the blade in place. Also ensure that blade is tightened adequately.
9. Ensure the work is secure prior to cutting. Also ensure that the material is free of defects or features that could make the cut hazardous. For example ensure that all nails are removed from wood prior to commencing cut. Check for obstructions.
10. Do not carry portable saws with your finger on the trigger.
11. Do not twist blade or try and change direction while making a cut. This may cause they blade to stick potentially causing injury.
12. Ensure that all cords, unnecessary tools, debris, and materials are clear of cutting area.
13. Use the blade designed for the materials you are cutting. Keep saw blades sharp and replace them when there are signs of excessive wear. Excessive wear is characterized by rounding of the blade teeth or mounting hole, or warping/imbalance of the blade body. Dull blades bind and overheat.
14. Only use cutting wheels with a "safe speed" – at least as high as the "no-load rpm" indicated on the saw nameplate. Allow the saw to reach full speed before commencing cut.
15. When cutting at an angle (bevel), the spring loaded blade guards of circular saws often bind and need to be retracted with one hand otherwise the guard will jam against the cutting material and create a kickback hazard. In these instances extra caution must be taken, as this only allows for one hand solid grip on the saw.
16. Wait for the cutting blade to come to a complete stop before lifting saw from cutting surface.

17. Ensure that you have enough free cord length to allow you to fully complete the cut. Cords that are too short may unplug and cause the saw to kick back suddenly.
18. Do not use a saw that vibrates or seems to be unsafe in any way.
19. Do not force a saw at any time during a cut.
20. Disconnect power supply before adjusting or changing the blade.
21. Do not cut anything without first checking for obstructions such as nails and screws. They could shatter the blade, sending metal fragments flying about, or could be violently ejected from the blade and cause a serious injury.
22. Never overreach. Maintain a firm footing and proper balance at all times.
23. Do not rip the work without using a guide that is clamped or nailed to the workplace.
24. Set the depth of the blade to no more than 1/8th of an inch below the thickness of the material to be cut. Too much blade exposed below the material to be cut results in a greater chance of kick back and blade binding. The more the blade is exposed, the greater risk of injury.
25. Let go of the trigger if the blade binds. Do not try and force the saw – just guide it with a little pressure.
26. Ensure that blade guard and motor are clean and that wood sawdust and pitch does not build up in the guard. Regularly lubricate the guard mechanism to limit hang back of guard.
27. Stand to the side when making a cut in case the wood is kicked back. Also, ensure that you have a solid footing with both feet firmly planted on the floor. Do not over reach. Stop and reposition yourself so that you are in control of the wood and saw.
28. Do not extend yourself when making long cuts such a cross cutting sheets of plywood. Long cuts like these should be performed on a table saw.
29. Never cut a board in the middle that is just lying on two saw horses; it will sag or collapse about 2/3's of the way through the cut and bind the saw and cause the saw to kickback at you. The only time you can safely cut a board using only two sawhorses and no frame table is when you are only cutting an end off. The same applies for cutting boards that are bowed down or bendy.

2.24.6 Table Saw

1. Avoid wearing clothing, accessories and even fall protection, or anything else that could come in contact with the rotating blade. Wear long hair back and roll up shaggy long sleeved shirts.
2. Wear appropriate personal protection equipment when operating a saw: Wear eye protection, dust mask/ respirator, and hearing protection. Do not wear gloves when using a table saw as this may interfere with trigger operation and emergency shut off.
3. Only trained and experienced operators of table saws are permitted to use the saw.
4. Always verify the location of the switch and or emergency turn off switch.
5. Ensure that table is clear of tools and debris, other than the material being prepped for cutting. An unclean or rough table requires you to use more force to push the stock through the blade. The more force that you are required to use, the more chance that you may slip or lose your balance.
6. All table saws shall have hood guards, and anti-kickback devices that are not damaged and in good working order. If it absolutely necessary to disengage on of these safety mechanisms (for complex cuts), they are to be re-engaged immediately after use so that other workers do not inadvertently use the modified table saw.
7. At no times is an operators hand to pass within 6 inches of the rotating saw blade. Use appropriate push sticks, fencing and or guides.
8. As a general rule, any boards greater than 3 feet in any dimension should be cut with an assistant. Know your limits and ask for help. The helper must also be trained and experienced in the safe operation of a table saw.
9. Use push sticks/blocks to guide stock through table saw, to avoid passing your hand too close to, or across the rotating blade. Push stick is to be designed for use on the table saw- don't simply use any scrap material that is lying around.
10. Blade height shall be set so that the top of the teeth are no greater than ¼ to 1/8 of an inch (6 mm) above the cutting material. Greater blade exposure increases chance of kickback, and thus injury. Minimizing blade exposure ensures that, in the event of accidental hand slippage, the severity of the resulting laceration can be minimized.
11. The operator shall maintain a solid footing with two feet on the ground. Do not over reach. The operator should also be standing so that he/she is to the side of the wood being fed through the saw to avoid saw dust and wood debris from flying back in the direction of the blade. Maintenance of solid footing and

avoidance of awkward positions also reduces the risk of falling into the blade from slipping or losing your balance.

12. Once completing a scope of cutting work, the saw blade should be lowered below the table and or blade guard in place.
13. Table saws shall be set up in a location where operators are not confined and free to move. As a general rule, a 3 foot perimeter should be established around the saw and kept clear of debris, tripping hazards and sawdust.
14. Ensure that power is disconnected prior to changing blades or making adjustments.
15. Do not carry on a conversation while making a cut. Similarly do not distract individuals that are in progress of making a cut. Pay attention to the work being performed.
16. Do not leave the saw until the blade has come to a complete stop.
17. Check that the material to be cut is free of nails, knots and other obstructions that could cause inadvertent kick back or become projectiles.
18. When cutting the work should only be released once it has been fully cut and has gone past the blade. Letting go of the wood or accidental loss of grip can cause kickback.
19. Maintain the rip fence parallel to the blade so that the cutting material does not pinch against the fence and bind, causing kickback.
20. Do not make free hand and unguided cuts on the table saw. The material to be cut must be guided through the blade by the rip fence or mitre gauge. The spreader must be aligned with the blade.
21. When choosing material for cutting on a table saw, avoid bent and wet pieces, or pieces that are full of knots and twisted grains.

2.24.7 Reciprocating/Jig Saw

1. Ensure that you use both hands at all times when using a reciprocating saw. Do not use this saw with only one hand.
2. Ensure that you use the appropriate PPE such as eye protection, and hearing protection when utilizing a reciprocating saw.
3. Do not force the blade when cutting.
4. When installing a blade into the saw, ensure that the unit is turned off and unplugged before you begin.
5. Ensure that all cords are clear of the cutting area.

6. Do not force blade sideways in order to curve the cut. Allow the saw to turn its cut with ease.
7. Do not put down or rest a reciprocating saw until the blade has come to a complete stop.
8. Ensure that the blade is up to speed before contacting cutting surface. Starting a saw with a resting blade on a surface may lead to kickback.

2.24.8 Pneumatic (compressed air) Nail or Screw Guns

1. Inspect the tool before connecting to an airline. Ensure that the safety mechanism is operating and that all screws and cylinder caps are in place and tight.
2. Only authorized, trained, and experienced personnel possessing a current qualified operations permit for the specific tool to be used.
3. Wear approved safety glasses or a face shield to protect your eyes. Wear approved hearing protection Check for secure and correct air supply and pressure before connecting tool.
4. Check to ensure that the tool is properly connected and that the safety mechanism is operating. Ensure that the compressed air supplied to the tool is clean and dry. Dust, moisture, and corrosive fumes can damage a tool. An in-line regulator filter and lubricator increases tool life.
5. Review the manufacturer's instruction before using a tool. Always operate the gun at the air pressure recommended by the manufacturer.
6. When using pneumatic nailers/staplers in sub-freezing or winter conditions, ensure that water or ice do not buildup in the hose, gun, or compressor chambers.
7. Do not operate the gun at higher than recommended pressures from manufacture's rating.
8. Always ensure that the airline connected to the gun is in good condition and that it has free movement throughout the work area.
9. Do not point the gun at yourself or any other person. Always assume and handle the gun as if it was loaded. Always maintain your balance and footing while operating the gun.
10. Never over reach. Overreaching does not guarantee proper 90 degree (perpendicular) orientation of gun nose to surface.

11. Never depress the trigger unless the nose piece is directed onto a safe work surface.
12. Do not transport the tool or load it with fasteners with the trigger depressed.
13. Always disconnect the tool from the air supply when it is left unattended or when it is being cleaned or adjusted.
14. Before clearing a blockage from the tool, disconnect the air supply and ensure the air is exhausted from the tool by directing the nose piece onto a safe work surface and depressing the trigger.
15. When finished with the tool, always ensure that it is disconnected from the air supply, all fasteners have been removed from the gun and the air has been exhausted from the gun.
16. Ensure that the mechanical linkage between the work contracting element and the trigger is enclosed.
17. Make sure that the mechanical linkage between work-contacting element and trigger is enclosed.
18. Disconnect tool from air supply when not in use and during cleaning or adjustment. Before clearing a blockage, be sure to depress the trigger to exhaust all air from the tool.
19. Use only fasteners recommended by the manufacture.
20. Do not depress the trigger unless the nose piece of the tool is directed onto a safe work surface.
21. Do not carry a tool with the trigger depressed. Do not load the tool with the trigger depressed.
22. Do not use compressed air to blow or clean debris or dust from clothes or surfaces.
23. Keep tools clean and lubricated, and maintain them according to the manufacturers' instructions. Use only the attachments that the manufacturer recommends for the specific tool.
24. Do not carry pneumatic tools by the attached hose.
25. Use the proper hose and fittings of the correct diameter. Use hoses specifically designed to resist abrasion, cutting, crushing and failure from continuous flexing. Choose air-supply hoses that have a minimum working pressure rating of 1035 kPa (150 psig) or 150% of the maximum pressure produced in the system, whichever is higher. Check hoses regularly for cuts, bulges and abrasions. Tag and replace, if defective. Make sure hose connections fit properly and are

equipped with a mechanical means of securing the connection (e.g., chain, wire, or positive locking device).

2.24.9 Compound Mitre Saw/ Radial Arm Saw

1. Ensure only properly trained and experienced personnel are permitted to use radial arm saws.
2. Ensure you have the appropriate PPE such as eye and hearing protection. Safety glasses or goggles must be worn. A face shield may also be required and it should be used in conjunction with proper eye protection.
3. Allow the saw to reach full speed before commencing a cut.
4. Do not stand directly in line with the cutting blade. Stand on the handle side when making cuts.
5. Radial arms saws require many adjustments before each use. Ensure that the saw is locked out before making these adjustments.
6. The saw should never be operated with the blade in a position where it protrudes or extends beyond the table.
7. Wait until the blade has come to a complete stop before lifting the handle, removing the wood and leaving the saw. Do not take your hand away from the operating handle unless the cutting head is behind the fence.
8. Hold the material to be cut firmly against the tabletop and the rear fence. Never cut freehand. Ensure that the hand holding the work piece is clear of the cutting blade. A general rule of thumb is 6 inches of clearance. Do not cut from material that is too short and does not allow for a proper handhold clearance – choose a longer piece of material instead to cut from.
9. The blade should never be pulled beyond the point necessary to make the cut as the blade could lift and flip the work piece against or over the fence.
10. Ensure that the saw is properly secured to a worktable by bolts or clamps at approximately hip height.
11. Ensure all safety guards are in position and operational.
12. Do not exceed the maximum cut of the saw. Refer to the manufacturer's instructions.
13. Do not cut more than one piece at a time and do not cut pieces that are too small to be securely held by hand or clamp.

14. Disconnect the saw from the power supply and let the blade come to a complete stop before making any adjustments. After making adjustments, it is advised that the operator perform a “dry run” (power still off) of the cutting operation, to proactively asses the cut and any potential problems.
15. When using one hand to pull the saw down, keep the other hand (especially the thumb) well clear of the cut line.
16. Avoid cutting bent or warped material. If you have to cut bowed, bent or warped material, clamp it against the back fence with the curved side against the fence.
17. After finishing the cut, release the trigger with the blade still held down. Wait for the blade to stop before removing any cut material.
18. Avoid reaching over the saw line. Similarly, do not cross arms when cutting.

2.24.10 Drills

1. No worker shall operate any power tool or similar type of equipment unless they are familiar with the use and operation of the equipment and has received instruction on its use and operation.
2. Check drill bits prior to use. Always ensure the drill bits are sharp and that they are not bent.
3. Secure the work piece being drilled. Small pieces should be clamped to avoid movement. Never hold a piece with one hand while drilling with the other. Do not reach under or around the material being drilled.
4. Drill a small pilot hole prior to drilling large holes. Never use a hole saw without the pilot drill.
5. Follow the manufacturers’ instructions when selecting and using a bit or attachment. Use an auxiliary (second) handle for large work.
6. Instruction in the use, handling, and maintenance of power tools or similar tools, will be given to the workers by the supervisor responsible for the job.
7. Only qualified or specially trained workers may alter, repair, or otherwise be granted access to electrical equipment or electrical tools.
8. No worker shall commence work on any electrical equipment until the equipment has been shut off and locked out as per the lock out procedure. Ensure power supply is completely disengaged.

9. Ground Fault Circuit Interrupters must be installed at the power source for tools, which are not equipped with a ground plug. This includes double insulated tools as well. This is to take place when work is being done in wet environments.
10. Use of eye protection is mandatory for all workers using or assisting in the use of drill motors of any type.
11. Small parts must be clamped in a vice or to a large piece of material before attempting to drill them.
12. Before using an electric drill, the power cord must be checked for breaks or tears in the insulation. Defective drills must be returned to the shops for repair.
13. Plug ends of electric drills must be capped and have the grounding prong intact.
14. Chuck keys must not be taped to a drill electric cord, as electrocution might occur the insulation around the cord becomes damaged at the location where the chuck key is taped. Hang the chuck key at the end of the power cord where it plugs into the extension cord or receptacle.
15. Do not use bent or damaged drill bits. Ensure that you use the proper drill bit and that the bit is sharp.
16. Do not reach under or around material being drilled. Similarly, do not drill with one hand while holding the material being drilled in the other.
17. Remove the chuck key before connecting drill to the power source.

2.24.11 Belt and Palm Sanders:

1. Wear proper eye and hearing protection and, where necessary, respiratory protection.
2. Disconnect the sander from the power supply before changing the paper. When replacing the paper of a belt sander, ensure the paper is orientated in the proper direction indicated on the machine and manufacturer's instructions. Inspect sanding belts before using them. Replace worn, cracked, or frayed belts.
3. When using a belt sander, use both hands and keep hands away from the sanding belts and rotating parts. Keep one hand on the trigger and one hand on the knob handle. Palm sanders only require one hand on the sander.
4. Clean the dust from the motor, the vents, and the dust collection bag/container at regular intervals.
5. Do not use a belt sander on unsecured material that could become a projectile.

6. Do not use any electric sander without a dust collection system or local exhaust ventilation system. Empty the dust collection system proactively when it is ¼ full.
7. Do not exert excessive pressure on the sander. If you find you are not progressing within a reasonable time frame, change the grit of paper to better suit the task.
8. When sanding wood that has been treated with paint, varnishes, or filler putty, ensure you understand the material safety data sheet (MSDS/SDS) for the product. Special consideration is to be given to older painted- wood products as they, could potentially contain lead and other toxic compounds that pose a respiratory hazard when made airborne by sanding.
9. Generally speaking, belt sanders are designed for horizontal/flat work, because of their excessive tool weight. Overhead and vertical sanding operations should be done with a smaller palm sander.

2.24.12 Sawdust

1. Sawdust represents fire, explosion, and respiratory hazards. Remember that sawdust can potentially contain other chemicals that may pose a health hazard when made airborne. (For example, “green chemically treated lumber” often contains arsenic).
2. Ensure proper eye protection is worn when working with sawdust.
3. Ensure respiratory protection is used when working with sawdust.
4. During all powered sanding operations, dust is to be collected in the attached dust collection systems. These canisters/bags are to be emptied when they are ¼ full. If there is no dust collection system, a local exhaust ventilation system is to be used.
5. Regular housekeeping and cleanup is essential to minimize the build-up up sawdust.
6. When cleaning up sawdust, use methods such as vacuuming to minimize dust transfer and dispersal. Use anti-dust sweeping compound such as dustbane when sweeping up sawdust.
7. Some wood products are treated with chemical agents to slow degradation and rot. Be sure to check the product specific MSDS/SDS for each wood product before use.

8. Eliminate all ignition sources in areas where there is a significant buildup of sawdust.

2.24.13 Adhesives and Putty's

1. There is an extensive range of products that are used for adhering or repairing wood, countertops, cabinets, and other finish surfaces. These products have different chemical compositions, therefore, it is essential to understand the specific protocol outlined in the material safety data sheet (MSDS/SDS) when transporting and using the product. For example, some adhesive products have solvents that give off fumes as they cure and some filler putty's create a fine dust when sanded.
2. All workers shall have knowledge of the location of material safety data sheets (MSDS/SDS) for any product which they may use of come in contact with.
3. All workers should demonstrate their knowledge of the workplace hazardous materials system program (WHMIS/GHS).
4. All products shall be handled in accordance with manufacturer's instructions and requirements of the WHMIS/GHS program and be properly identified with current MSDS/SDS.
5. Workers shall wear and use personal protective equipment (PPE) as outlined on the product label and in the MSDS/SDS.

Refer to the section on WHMIS/GHS in our OH&S program for a detailed account of product labels, MSDS/SDS, and responsibilities in regards to working with hazardous substances.

6. All sources of ignition must be adequately controlled, locked out or eliminated to minimize fire and or explosion hazard. This is especially relevant for adhesive application in which both the adhesive product and its vapours are flammable.
    - Smoking is prohibited during this scope of work and only permitted in designated areas.
    - Ensure all spray equipment, electrical cords, and tools are properly grounded.
    - Post signs indicating "No Sources of Ignition Beyond this Point".
    - Ensure the necessary precautions in regards to fire prevention have been taken, including access to fire extinguishers rated for the product under the MSDS/SDS.

7. Where possible substitute the product for one that is non-flammable and less toxic. For example, water based materials are less flammable, less toxic and even more environmentally friendly than solvent based products.
8. Eye protection including goggles or full face respiratory protective equipment shall be worn while spraying to protect your eyes from the products.
9. Signs and/or barricades are required when the application processes or substance(s) are being used which require specific types of PPE in order to protect workers from inadvertent exposure to hazards.
10. Ensure the area is well ventilated and provide additional ventilation or a localized exhaust ventilation (LEV) if required under product specific MSDS/SDS.

Refer to the section on the Exposure Control Plan for Silica in our OH&S program for a detailed account of local exhaust ventilation systems

11. If an MSDS/SDS requires respiratory protection, ensure the appropriate cartridge(s) are being used. Respirators are to be clean, maintained, and fit tested. Cartridges are only good for a limited time. They must be replaced if you can smell vapours through mask, have difficulty breathing, or have been used for their specific lifetime.

Refer to the section on the Respiratory Protection Program in our OH&S program for a detailed account of respiratory hazard assessment, respirator use, training, fit testing, cartridges and responsibilities in regards to respiratory protection.

12. Maintain good personal hygiene practices. Wash contaminated clothing before reuse. Do not eat, drink, or smoke in work areas. Wash hands and exposed skin before eating, drinking, or smoking.
13. Some products can be absorbed through and irritate or damage skin. Use of protective clothing, including gloves and coveralls, are recommended in addition to PPE and protocol requirements under product specific MSDS/SDS.
14. Be especially careful when working with fast-drying adhesives as some of these can bond virtually any combination of surfaces including skin and equipment. Always wear protective eyewear to protect your eyes from potential contact with adhesive.

2.24.14 Handheld Routers

1. Ensure that you use appropriate personal protective equipment when operating a router. Hearing and eye protection must be worn. Respiratory protection may be required.
2. Inspect router prior to use. The router should be in good condition and well maintained. Defective routers, shall be tagged and removed from service for disposal or repair.
3. Ensure the router power and speed (rotations per minute/rpm) are compatible with the depth of cut and bit selection. These details can be found in the manufacturer's specifications. Generally, as the size of the bit increases, the speed at which they can be operated decreases.
4. Always ensure the power is disconnected before making adjustments or changing bits.
5. Ensure the bits are in good condition, free of defects, and sharp. Dull, worn, or bent router bits pose a binding and kickback hazard. In addition, ensure that the shank length, cutting length and diameter are in good condition and of proper size. If you notice the router rides upwards and requires more than regular force, this is a likely indication that the bit is too dull.
6. When routing material, be sure to allow bit to come to a complete stop before removing it from the stock.
7. When routing, the rotating bit presents an entanglement hazard. Be sure to dress appropriately when using powered woodworking tools. Do not wear loose fitting clothing or accessories that could get caught on router bit. Wear long hair back and roll up long sleeved shirts when operating a router.
8. Be sure to secure the woodstock that is to be cut prior to routing. Clamp or nail the stock down to prevent movement/shift of material during routing. Avoid routing small pieces of stock. Route a large piece and then cut a small section from it.
9. Use both hands at all times when using a router. Routers give an initial "kickback" upon initial contact with bit and both hands are required for stability. If the work requires a "third hand", a foot switch/pedal may be warranted.
10. Before turning on the power, ensure the bit portion of the router is not in contact with the work piece or any other material. If an inadvertent contact is made at low rpm, the router may catch and spin out of control. Instead, bring the router up to full speed and then make contact with work piece.
11. When operating a router, look, listen, and feel for irregularities or changes in vibrations. Immediately turn off the router at the first sign of unfamiliar noise of vibration.

12. Ensure that stock is clear or obstructions that could pose a hazard while routing, such as knots in the stock, nails, or screws.
13. Routers are only meant for router-type bits. Do not use mounted abrasives, carving burrs, drill bits, screwdriver bits, or any other non-routing attachments. Just because an item has the same sized shank as the router's collet, it does not entail their usage. Refer to manufactures specifications.
14. Do not try to increase the length of the shank and the depth of the cut by partially inserting shank into collet. Parts must be fully attached and secured.
15. Handheld routers should be fed into the work piece against the direction of the bit rotation.
16. Do not apply excessive force (force feed) to the router in any situation.
17. Be careful of the "gyroscopic" force/motion of hand held routers when operating at full speed. For this reason, routers shall be operated with two hands when powered on.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.25 Fire Protection and Prevention

2.25.1 GENERAL

Our company believes that the best way to fight fires is to prevent them. Procedures for fire prevention include:

1. Workers are responsible for doing everything they can to prevent a fire.
2. Smoking is only permitted in designated smoking areas.
3. All sub-contractors are to have their own firefighting equipment on site.
4. All lunchroom and equipment trailers are to be equipped with a fire extinguisher.
5. There must be one fire extinguisher beside each piece of portable equipment, including welders, oxy-acetylene torches and open flame heaters.
6. Workers must know the locations and the types of fire extinguishers in their work area. There are four general classes of fires and each requires a certain type of extinguishing agent. Portable fire extinguishers are labeled to indicate the class of fire they should be used on. Be sure to ensure you have the right extinguisher before starting work.

7. If a fire cannot be put out with hand held fire extinguishers, sound an alarm and evacuation procedures must be implemented.

8. The worker who first reported the fire must inform the immediate Supervisor of the circumstances of the fire.

9. Fire equipment must always be kept accessible and in working condition. Do not tamper with fire protection equipment, as it is a serious offence.

10. Aisles, passageways, doorways, and stairways must never be obstructed.

11. Ensure all fire extinguishers are clearly marked as to current inspection dates and most recent pressure tests.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.26 Fisrt Aid Procedures

1. The employer must keep up-to-date written procedures for providing first aid at the workplace including:

- The equipment, supplies, facilities, first aid attendants and services available.
- The location of, and how to call for, first aid.
- How the first aid attendant is to respond to a call for first aid.
- The authority of the first aid attendant over the treatment of injured workers and the responsibility of the employer to report injuries to the Board.
- Who is to call for transportation for the injured worker, and the method of transportation and calling.
- Prearranged routes in and out of the workplace and to medical treatment.

2. The employer must post the procedures conspicuously in suitable locations throughout the workplace or, if posting is not practicable, the employer must adopt other measures to ensure that the information is effectively communicated to workers.
3. The first aid attendant and all other persons authorized to call for transportation for injured workers must be trained in the procedures.

2.26.1 Procedures for Working Safely

4. First aid procedures must comply with the WorkSafeBC Regulation.

5. A first aid kit must be available at or near the work area while workers are present. First aid kits must conform to the requirements of the WorkSafeBC Regulation.
6. The site CSO/OFA is responsible to have a running inventory list that shall be completed monthly by using the Marcon form S-211. After the inventory list is completed, supplies are to be ordered and form S-211 is to be sent to the safety@marcon.ca email for review.
7. After Hours Work: any Supervisors or workers wanting to work outside the projects regular work hours must comply with local, WorkSafeBC and First Aid Regulations.
8. The following precautions should be taken with regards to Blood and Bodily Fluid:
9. Rubber or latex gloves must be worn when an employee may come into contact with the following:

- Blood.
- Open sores or lesions.
- Urine or Feces.
- Other bodily fluids.
- Cloth or equipment soiled with bodily fluids.

10. Hands must be washed immediately and thoroughly after contact with a patient, equipment or other surface soiled with bodily fluids.
11. Equipment, instruments, stretchers, floors and any other surface that becomes contaminated with blood or bodily fluids must be washed thoroughly with a disinfectant and warm water.
12. Contaminated or soiled linen should be handled as little as possible. Gloves must be worn. The linen must be placed in a bag with a WHMIS/GHS label displayed on the bag explaining that there is blood or bodily fluid contamination (Bio hazardous and Infectious). Soiled linen must not remain in the first aid room for more than 24 hours. Always wash your hands.
13. Construction sites in areas where there is a risk of contact with discarded needles or condoms will be issued plastic sharps containers and metal tongs for disposal use. An orientation on the proper precautions to take surrounding dirty needles or condoms will be conducted.

14. Workers who sustain a job-related injury or illness, regardless how minor, must immediately report it to the First Aid Attendant for treatment and recording, and where practicable, must also report it to their immediate Supervisor.
15. An employee who receives medical treatment, or who anticipates receiving medical treatment, for any work related injury or industrial disease must complete a WorkSafeBC form 6A.
16. In addition, should there be a potential of a loss time injury, the injured worker shall be provided with a "Consent to Release of Medical Information" form to give to the physician. These reports must be faxed to the Head Office within 24 hours of the injury.

2.26.2 First Aid Records

1. The employer must maintain at the workplace, in a form acceptable to the Board, a record of all injuries and exposures to contaminants covered by this Regulation that are reported or treated.
2. First aid records must be kept for at least 3 years.
3. First aid records are to be kept confidential and may not be disclosed except as permitted by this Regulation or otherwise permitted by law.
4. First aid records must be available for inspection by an officer of the Board.
5. Workers may request or authorize access to their first aid records for any treatment or report about themselves.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.27 Flammable Liquids

2.27.1 GENERAL

1. All flammable liquids will be properly identified and monitored. Ensure that all containers have WHMIS/GHS labels attached, where applicable.
2. Obtain and read the Material Safety Data Sheets or Safety Data Sheet (MSDS / SDS) for all of the materials you work with.
3. Be aware of all of the hazards (fire/explosion, health, chemical reactivity) of the materials you work with.

4. Eliminate or adequately control all ignition sources (sparks, smoking, flames, hot surfaces) when working with flammable and combustible liquids.
5. Know which of the materials that you working with are flammable or combustible liquids.
6. In all cases, allow only trained, authorized people into storage areas. Before storing, inspect all incoming containers to ensure that they are not damaged and are properly labelled. Do not accept delivery of defective containers.
7. In general, store containers of flammable and combustible liquids separately, away from process and production areas, and away from other materials. This separation will reduce the spread of any fire to other materials in storage. It will also protect the stored flammable and combustible liquids from exposure to fires in other areas, and accidental contact with incompatible materials.
8. Metallic or conductive containers used to transfer flammable liquids must be electrically bonded to each other or electrically grounded while their contents are being transferred from one container to the other.
9. If glass, plastic or other non-conductive containers with a capacity of 23 litres (5 imperial gallons) or more is used to transfer a flammable liquid, the accumulation of electrostatic charge near the surface of the liquid must be eliminated or controlled (see the WorkSafeBC Regulations).
10. Keep containers closed when not in use.
11. Keep storage areas cool and dry.
12. Keep the amount of materials in storage as small as possible. It is a good practice to keep no more than one day's supply of flammable and combustible liquids in the immediate work area. Return any leftover material to the proper storeroom or storage cabinet at the end of the day.
13. Wear the proper personal protective equipment for each of the jobs you do.
14. Know how to handle emergencies (fires, spills, personal injury) involving the flammable and combustible liquids you work with.
15. Follow the health and safety rules that apply to your job.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.28 Floor Grinding

2.28.1 GENERAL

1. Proper eye protection and personal protection equipment must be used.
2. Evaluate the area for hazards and the impact on other workers in the floor grinding area. Where a worker, other than the concrete finisher, is exposed to concrete dust, the area should be restricted by the use of caution tape.
3. Signage must indicate that floor grinding is in progress and that respiratory protection is required.
4. Each worker performing floor grinding is to be assigned a respirator for his or her sole use.
5. The respirator is to be fitted correctly by a qualified person. A record of assigned safety equipment is to be kept on site.
6. Ensure adequate lighting.
7. Clean and sanitize the respirator face piece and clean remaining components of air respirators before and after each use.
8. Only authorized and trained personnel with an assigned respirator are to perform floor grinding.
9. Electrical or gas powered floor grinders should be used according to the manufacturer's recommendations and specifications.
10. All floor grinding done in enclosed spaces to be completed with electric floor grinders with dust control i.e. HEPA filters.
11. All floor grinding done in open-air spaces to be completed with water suppressant.
12. Inspect the floor grinder before turning on the power.
13. Test the floor grinder for proper operation.
14. The work area is to be clean, dry, and unobstructed.
15. Commence all floor grinding.
16. Disconnect the floor grinder from the power source when making equipment adjustments to the floor grinder.
17. All workers who are exposed to fall above 10 feet will use fall protection (arrest or restraint) in accordance with the site specific fall protection plan.

2.28.2 RESPIRATOR FIT TEST

2.28.2.1 NEGATIVE PRESSURE SEALING TEST

Block the inlet tube to prevent the passage of air. Inhale gently, taking care not to distort the face piece, and hold your breath for 10 seconds. If the face piece collapses slightly and no infiltration of air into the face piece is detected, it is considered that the fit of the respirator is satisfactory for the wearer.

2.28.2.2 POSITIVE PRESSURE SEALING TEST

Close off outlet valves and exhale gently. The fit is considered adequate if a slight pressure can be built up inside the face piece without detection of any outward leakage of air between the sealing surface and the wearer's face.

2.28.3 MAINTENANCE

Each respirator wearer shall clean and sanitize his respirator face piece and clean remaining components of air respirators after each use. The respirator is to be stored in a clean dry area, sealed in a plastic bag.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.29 FLOOR OPENINGS

2.29.1 GENERAL

Prior to commencing any work onsite a hazard assessment must be completed to ensure that all floor openings have been identified, covered or barricaded, marked, and that a crew talk has taken place during which the floor coverings were discussed.

1. All floor openings must be properly covered using ¾ inch plywood then secured from movement. Mark "Do not remove" and surrounded with a circle or an "X" with a circle around it. This marking must be visible and may require re-application from time to time.
2. During the ongoing construction process, decisions regarding the methods to be used for guarding the various types of floor openings must be made.

3. The method used to guard a specific opening shall be determined prior to the opening being created.
4. All openings which might pose a hazard or risk to workers on the site must be covered or otherwise guarded. This is any opening greater than 4 inches across.
5. The plywood cover must extend a reasonable distance beyond the opening edges in order to prevent it from falling through the opening.
6. Plywood cover shall be marked to indicate that they are covering an opening. The marking shall be legible and readable from all directions when approaching the opening.
7. Any cover over a floor opening must be capable of supporting the loads intended to be placed over them. If the load will be large (i.e. a vehicle) an Engineer may be required to design an adequate cover. Under no circumstances will a load be placed over a cover if the capacity of that cover is not known.

2.29.2 SMALL OPENINGS

1. A small opening is one that is less than 3 feet across.
2. Smaller floor openings can be covered using a secure cover made of plywood fixed to a 2x4 frame which has been cut to fit snugly into the floor opening.
3. These covers must be held securely in position by either nails or Hiltipins.

2.29.3 LARGE OPENINGS

1. A large opening is one that is greater than 3 feet across.
2. Larger openings shall be protected using a standard guardrail system consisting of top rail, mid rail and toe board.
3. Guardrails shall be constructed and installed in accordance with applicable WorkSafeBC Regulations.
4. Large openings will be marked to be visible from the ground and from above, particularly when there is mobile equipment operating in the vicinity of the opening.

2.29.4 TRENCHES

1. Covers on trenches must be fit in such a way to prevent the cover from falling into the trench. Cutting the cover to fit on the inside recess on either side of the trench will ensure the cover stays in position.

2. For trenches above 2' across 2x4 bracing may be required to ensure the cover does not break when a load is placed on it. Test the cover on the trench before applying any load to verify that the strength of the cover is adequate.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.30 Formwork - Falsework

2.30.1 GENERAL

1. Formwork and falsework drawings and supplementary instructions must be available on the project site during erection and use of the formwork and falsework.
2. Formwork and falsework must be formed of materials and in the manner specified by the plans. Deviations from the original plans must be authorized in writing by a professional engineer.
3. Manufactured formwork pieces should be used and maintained in the manner specified by the manufacturers.
4. Foundation load-bearing capacity must be protected from potential deterioration resulting from weather or other causes.
5. Protruding reinforcing rod ends must be guarded to prevent tripping and impact hazards.
6. All guardrails should be installed in areas described under Guardrails in the OH&S Regulations.
7. Immediately prior to the pour, the formwork and falsework for the pour must be inspected by a professional engineer who will certify in writing that the specifications have been met.
8. Workers underneath formwork during a pour must only be under those areas where concrete has not been placed.
9. Pouring of concrete or placing of other loads must stop when any weakness, undue settlement or distortion of the framework occurs and should restart only after the formwork has been repaired or strengthened in a manner specified by a professional engineer.
10. Only specified loads must be placed on secured concrete structures.

11. Directions specified in the plans should be followed when dismantling formwork.
12. Good housekeeping requirements should be met when stacking dismantled formwork.
13. Clear and simple communication between all those in the area of the activity involving formwork and falsework is good for prevention of accidents.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.31 GUARDRAILS

2.31.1 GENERAL

1. Supervisors are responsible for ensuring that all guardrails are to WorkSafeBC requirements.
2. In cases where it is impractical to use fall prevention devices such as guardrails, FULL fall arrest equipment must be used.
3. Warning signs must be posted at locations where guardrails are not in place to notify all trades that fall arrest is required.
4. Guardrails that have been removed by trades in order to complete any scope of work must be replaced before leaving the area.
5. At work areas in excess of 10 feet (3m) above grade, all workers shall be protected from injury by falling from unguarded portions of the structure. One method of achieving this is by installing proper guardrails.
6. Guardrails are also required on all fixed and rolling scaffold systems in excess of 10 feet (3m) in height as well as all stairs and walkways in excess of 4 feet (1.22m) above grade.
7. Areas where guardrails might be used for protection would include:

- Open edges of floors, mezzanines and balconies.
- Open edges of scaffolds, platforms, and ramps.
- Openings in floors, roofs, and other working surfaces not otherwise covered or protected.
- Edges of slab formwork.
- Edges of bridge surfaces.
- Locations where a worker may fall into water, operating machinery or hazardous substances.

8. All guardrail systems must be built in accordance with WorkSafeBC Regulation (8.70 exists as a guideline).
9. Basic requirements for wood guardrails:

- Wood guardrails shall have a top rail, mid rail and a toe board secured to vertical posts or supports with top rail approximately 42 inches (107cm) above the floor level mid rail approximately 21inches (53cm) above the floor level a toe board.
- Approximately 4 inches in height, the bottom of which is not more than ½ inch above the floor supported by vertical posts not more than 8 feet (2.4m) apart.
- Guardrails shall be constructed in such a manner that they will withstand a minimum force of 125 pounds of force applied laterally and 100 pounds per foot of guardrail when the force is applied vertically.

10. Guardrails should be installed as close to the edge as possible.
11. Should it be necessary to remove guardrails, the open edge shall be roped off and marked with warning signs. In addition, workers inside the area will wear fall protection and make sure they are tied off.
12. Missing or removed guardrails shall be replaced immediately.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.32 Hand Tools (Non-Powered)

2.32.1 GENERAL

1. Always ensure you are using the right tool for the job. Do not substitute or use makeshift tools.
2. Always check tools for damage or wear prior to each use. Watch for loose or broken handles and mushroomed heads.
3. Replace cracked or broken handles on files, hammer, screwdrivers or sledgehammers.
4. Replace worn jaws on wrenches, pipe tools and pliers.
5. Avoid using hand tools with your wrist bent. Always use tools which allow the wrist to remain straight.
6. Always pull on wrenches and pliers. Never push unless you hold the tool with your palm open.

7. Re-dress burred or mushroomed head on striking tools.
8. Carry tools using a heavy belt or apron and hang tools at your sides. Never carry tools in your pockets or hang them behind your back.
9. When using cutting tools, always cut away from yourself.
10. Do not wear bulky gloves when operating hand tools.
11. When using a bar for prying, be sure to stand so that you will maintain your balance should it slip or break.
12. Always think of your co-workers when using picks and axes. Maintain clearance between you and any other person.
13. Keep close track of tools when working at heights. A falling tool can kill someone.
14. Always keep your tools in top condition. A dull blade or blunt point can lead to injury.
15. Be on the lookout for signs of repetitive stress. Early detection may prevent a serious injury.
16. Maintain tools carefully. Keep them clean and dry and store them properly after each use.
17. Always keep cutting tools sharp.
18. Never leave tools on ladders, scaffolds or overhead work areas when they are not in use.
19. Always keep tools being used in overhead work areas, in containers or tied back in order to prevent them from falling.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.33 HANDRAILS

2.33.2 GENERAL

1. Stairs with more than 4 risers must have continuous handrails on:

- Any open side of the stairway.
- One side of enclosed stairways 112 cm (44 in.) or less in width.

- Both sides of enclosed stairways over 112 cm (44 in.) wide.

2. The top of a handrail must be 76 cm to 92 cm (30 in to 36 in.) above the stair tread, measured vertically from the nose of the tread, and the height must not vary on any flight or succession of flights of stairs.
3. A handrail on an open side of a stairway must have a midrail located approximately midway between the top of the handrail and the nose of the stair tread.
4. A handrail must be able to withstand a load of 1.3 kN (300 lbs.) applied vertically or horizontally at any point along the handrail.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.34 HOUSEKEEPING

2.34.1 GENERAL

1. Workers should have a place for everything and KEEP most everything in place.
2. At the end of the day, when the major clean-up takes place, be extra conscientious not to throw tools or relax your thoughts about injury prevention.
3. Garbage must be disposed regularly.
4. Work areas must be kept clean and free from obstructions at all times. Tools, loose objects, oil, grease, cords and other materials left lying around are hazards.
5. Work areas must be cleaned immediately after finishing a job or at the end of a shift.
6. As per MSDS instruction, spilled toxic, flammable or corrosive materials must be cleaned up immediately.
7. Materials, tools and equipment must not be stored in any access / egress, stairways, corridors, catwalks, ramps, passageways, or overhead.
8. Broken glass and other sharp objects must not be disposed of in regular garbage cans.
9. To prevent sliding, falling, or collapse, all material should be properly stacked and secured. Pipe, conduit, and bar stock should be stored in racks or stacked and blocked to prevent movement.

10. Supervisors have the authority to determine when and where housekeeping is needed in order to improve safety conditions and prevent injury to workers.
11. Chemical agents or substances which might react to create a hazardous condition shall be stored and disposed of separately.
12. All electrical cords must be kept in good condition and not used in any way which could create a tripping hazard.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.35 Ladders

2.35.1 GENERAL

1. The lower ends of the ladder shall be placed on a firm and level base. Single and extension ladders must be equipped with no slip safety feet, tied off or otherwise secured to prevent "kicking out" or slipping.
2. The upper part of the side rails shall be rested upon a bearing surface of ample strength to support the load of the ladder and other applied loads.
3. All site constructed ladders are to be built in accordance with WorkSafeBC Requirements.
4. All portable ladders are to be inspected prior to each use. Ladders with loose broken or missing rungs, split side rails or other defects shall be taken out of service and not used until repaired.
5. If work is to be done off of a ladder, the new Regulations require that the ladder must be tied off and full fall arrest must be worn.
6. Standard ladders shall not exceed the following limits:

- Stepladders - 20 feet.
- Single ladders - 30 feet.
- Extension ladders (two sections) - 48 feet.
- Extension ladders (more than two sections) - 66 feet.

7. Standard ladders must be CSA grade 1 or ANSI grade A-1 (Industrial) rated. Grades 2 and 3 ladders (light- residential) are not suitable for heavy construction work.

2.35.2 Handling and Use

1. The feet of single and extension ladders shall be set 25% of the working height away from the supporting object and extend three feet above the supporting object.
2. Ladders in use must be secured to prevent movement.
3. No workers shall work on the top two rungs of a single or extension ladder, or on the top two steps of a step ladder.
4. Always face a ladder when climbing up or down.
5. Never go up or down a ladder without the use of both hands. If materials must be handled, hoist them up or down by rope.
6. No more than one person is to use or climb a ladder at one time.
7. Ladders shall not be placed on boxes, barrels or any unstable surface to gain more height.
8. Do not over reach while working from a ladder.
9. Ladders shall not be placed in front of doors or windows, which open towards the ladder, unless precautions have been taken to ensure there is no contact between the door or window and the ladder.
10. Do not place a ladder against a window pane.
11. Ladders used in corridors, stairwells or aisles must be barricaded.
12. Ladders used in locations where they may be struck by workers or equipment in the area, must have a watcher stationed at the bottom. Ladders must not be left standing in such a location when not in use.
13. Metal ladders or wire reinforced wooden ladders, must not be used in proximity to energized powerless or other electrical equipment unless authorized in writing by the WorkSafeBC.
14. The upper half of an extension ladder shall not be used as a single ladder.
15. Do not use ladders in a horizontal position as runways or scaffolds.

2.35.3 Clean Up and Storage

1. Ladders should be kept clean and free of dirt and other debris.
2. Wooden ladders shall not be painted. If protective coatings are used, they shall be transparent.

3. Ladders shall be stored in proper dry storage areas following use.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.36 Lifting (Manual)

2.36.1 GENERAL

To reduce the risk of back strain to employees, Supervisors should ensure their employees use proper lifting practices.

1. Assess the item to be lifted.

2. Ensure pathway to and from item is clear to avoid a tripping hazard. Also ensure that the area where item is to be placed is clear of obstacles.

3. Stand as close as possible to the item and have feet comfortably spaced.

4. Bend your knees keeping your back straight, DO NOT BEND YOUR BACK!!

5. Test the lift. Grasp the item firmly and attempt to lift it. If the item cannot be lifted without causing discomfort, place item down and get help.

6. If you can safely perform the lift, straighten your legs, keeping your back as straight as possible.

7. If you have to turn with the load, move your feet. Do not twist while holding the item.

8. Short steps are better when carrying them. Ensure that your load is small enough so it will not obscure your visibility while transporting.

9. Set your item down, ensuring you bend your knees while lowering yourself, keeping your back as straight as possible. Be sure not to leave your hands under the item when placing it down.

10. It is easier to lift an item when it is sitting at waist height. If the item to be lifted can be raised mechanically to waist height, do so. (i.e. raising pallet up with forks)

11. In construction, some items may be in awkward positions and these particular procedures cannot be followed. Ensure that you minimize the amount of back strains it takes to maneuver these items to a position of easier lifting.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.37 LIGHTING

2.37.1 GENERAL

1. All jobsite temporary lighting is to be installed by a qualified electrician in accordance with all applicable Acts and Codes.
2. Lighting shall be installed in a manner, which will minimize potential damage to the wiring, fixtures or light bulbs. If lighting is positioned in an area, which places the bulbs at risk of breakage, the bulbs shall be protected with protective cages.
3. If temporary lighting has been installed in public walkways, check that all bulbs are operating on a regular basis.
4. Temporary lighting circuits are to be used for lighting only. No one shall remove a light bulb from a temporary lighting circuit and replace it with an outlet allowing them to plug in an electrical tool or appliance.
5. Always avoid contact with the wires strung for temporary lighting. Frequent relocation of circuits can loosen connections, break insulation and create other hazards.
6. Beware of tripping and shock hazards from wires strung overhead and underfoot.
7. Take care that wires do not contact steel door frames in final stages of the work, when temporary lines often pass through doors that may be accidentally closed on them.
8. Always be sure to replace broken or burned-out bulbs to maintain lighting levels in stairwells, basements, halls and other areas.
9. When temporary lighting is removed from service, check the wiring and fixtures for breakage and damage. Repair any damage and/or replace any broken fixtures prior to placing the lighting in storage.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.38 Loading and Unloading Vehicles

2.38.1 GENERAL

1. Prior to loading or unloading any vehicle, ensure that there is a sufficient work area particularly if there is a requirement to load or unload from both sides of a load and the end.

2. Lay down areas must be designated prior to any unloading taking place. These areas should be flagged off during the unloading process to ensure that workers do not go into those areas when lifting is taking place. The same applies to those areas used during loading.

3. Only the workers required to load or unload a vehicle should be present. All workers involved in the loading or unloading operation should be introduced to each other during a crew talk prior to work commencing.

4. All rigging must be inspected prior to loading or unloading.

5. All rigging must be suitable for the materials or equipment being unloaded. Know the weight of the material being lifted and do not overload the rigging.

6. The work area must be stable and as level as possible. Lay down areas must be level and easily accessible for mobile equipment such as forklifts or cranes. The bearing capacity in where the vehicle will be parked during loading and unloading must be capable of supporting the weight of the vehicle when fully loaded. The area must also be able to support any equipment that will be used to unload or load the vehicle.

7. Materials being loaded or unloaded must not pose a hazard to workers in the area. Materials which are stacked must be done in a manner that ensures they will not fall over.

8. A control zone should be established around lay down areas and material storage areas to keep out unnecessary workers.

9. A control zone should be established around the vehicle being loaded or unloaded.

10. Tag lines should be used for all long loads.

11. All loads must be rigged by a qualified rigger and the rigging design for a load must not be changed by unqualified personnel without approval by either the rigger or a designated supervisor.

12. No load shall be lifted or landed until the all clear has been given by the rigger.

13. Prior to loading or unloading vehicles, the crane operator and rigger must establish the means of communication. This can be either hand signals or radios. If hand signals are to be used, then only the rigger may pass hand signals to the crane operator. The same is true if radios will be used.

14. There may be an order to materials being loaded or unloaded. Ensure the order is maintained and that materials are staged in such a manner to ensure that time is not wasted determining what goes where. This scenario is undesirable as it leads to frustration which may lead to accidents resulting in injured workers or damaged equipment, materials or both.

2.38.2 Loading

1. Ensure the vehicle is level front to rear and side to side to ensure that loaded equipment or materials do not slide off during loading.
2. Ensure that the load is balanced and distributed evenly.
3. Do not move the vehicle until the load is secured.
4. All loads must be covered by tarps unless otherwise specified by a supervisor.
5. Do not exceed the load limit of the vehicle which is being loaded.
6. Do not unhook the load from the crane until it has been fully landed on the vehicle.
7. Do not land loads on vehicles without first placing dunnage down on the deck of the vehicle.
8. No worker is permitted under a live load at any time.
9. Riggers or workers assisting in landing a load must not place themselves in between the load and an immovable object. This area is known as the bight and is potentially fatal.
10. When tensioning load tie downs ensure that no damage is caused to the load. Use force spreaders on edges to spread the tie down force across a larger area. Place pads on sharp edges to reduce the possibility of webbing straps being cut.
11. When applying load binders exercise extreme caution. Do not have any portion of a body between the load and the binder bar while the bar is coming down into the closed position.

2.38.3 Unloading

1. Ensure the vehicle is level front to rear and side to side to ensure that loaded equipment or materials do not slide off when tie down equipment is removed.
2. Remove tie down equipment from one area of the load to ensure that the load will not shift. If shifting occurs, check that the vehicle is level and that the load is stable. Some shifting is to be expected in loads. If it seems the load is

completely unstable and will fall if tie downs are removed, then a method of stabilizing the load must be determined and implemented before the vehicle can be unloaded.

3. Only one worker should undo load tie downs. This worker must identify their escape route prior to releasing pressure on the load in the event that the load falls from the vehicle. If no escape route is available, a method of stabilizing the load may be required to ensure the worker is not injured during tie down removal.
4. Stand clear when releasing the tension of load binders or any other type of tensioning device which requires a bar to relieve pressure.
5. All tie downs must be removed fully from the vehicle before unloading commences to ensure they do not become entangled in mobile equipment or pose a hazard to riggers or other workers in the area.
6. Use dunnage between materials to aid in lifting with a forklift or by hand.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.39 Minor Demolition

2.39.1 GENERAL

1. All appropriate Notice of Project (NOP), permits and licenses shall be in place prior to the start of any demolition project.
2. All workers involved in the demolition shall be briefed as to the scope of the project prior to the start of work.
3. The authority having jurisdiction prior to the start of any work shall disconnect all potentially hazardous utilities (i.e. electrical, gas, etc.).
4. Prior to the start of any demolition, review and testing shall be done to determine the presence of asbestos containing materials or post tensioned slabs. Should either of these be found, appropriate specific work procedures shall be developed to address the safe undertaking of the project.
5. Should demolition work or clean-up infringe on public access (i.e. roads, sidewalks, etc.), provision for traffic control shall be included in the procedure for the project.

6. All workers entering into a demolition site must wear approved safety headgear, safety footwear and work gloves as a minimum requirement. In areas where there is a risk of injury to the eyes, appropriate eye/face protection shall be worn.
7. Demolition work must always be done in a planned, orderly fashion from the top to the bottom, which will not place workers, adjoining properties or the public at undue risk.
8. Where there is a risk to workers, glass and sash materials must be removed prior to other demolition taking place.
9. Demolition materials shall be removed from the site as soon as possible. Materials stored on site shall be stored in such a way to minimize dust and debris being blown around and off site and in a way to minimize the risk of fire.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.40 Mobile Equipment Operation

2.40.1 GENERAL

1. All Mobile Equipment Operators:

- Shall possess the necessary licenses and/or certificates to operate the specific piece of equipment.
- Must always ensure that they have a clear, unobstructed work area.
- Must examine each day, prior to use and thereafter, as required. Any deficiencies, defects, or unsafe conditions shall be reported to the Supervisor or other authorized person.
- Shall not operate the mobile equipment unless they:
  - Have received adequate instruction and have demonstrated to a Supervisor that they are competent to operate the equipment.
  - Are familiar with operating instructions pertaining to the equipment, and have been authorized to operate the equipment.
  - Have been authorized to operate the equipment.
- Directly responsible for the safe operation of the equipment. They shall maintain full control of the equipment at all times and comply with all laws and regulations regarding the equipment.

- Must comply with recommended gross vehicle weight and ensure the equipment is not overloaded.
- Must be familiar with the applicable Regulations regarding working in proximity to overhead Power Lines.
- Shall not remain in the cab of any vehicle while loads are elevated over the cab. Unless adequate overhead guards are installed to prevent injury to the operator.
- Are the only person allowed to ride the equipment, unless additional approved seating is provided by the manufacturer.

2. Where vision is obstructed, operators must not move the equipment until a watcher is in place to guide the equipment and warn other workers onsite of any danger.
3. Backhoe Operators or other similar equipment over an excavation where workers are present, shall not move the equipment with any material suspended from it in such a way as to endanger the workers.
4. When materials and equipment are being transported, they must be loaded and secured to prevent movement of the load which could create a hazard to workers.
5. Effective means of load restraint must be provided to protect the crew of a vehicle transporting a load which might otherwise shift.
6. Workers shall not stand or sit on the side or the tailgate of any moving equipment.
7. Wearing of seatbelts, in all vehicles and equipment where they are provided, is mandatory whenever the vehicle or equipment is in motion.
8. When mobile equipment is parked or stored, parking brakes shall be set, wheels shall be blocked and all elevated devices (i.e. buckets, forks, etc.) shall be lowered to the ground or their lock position.
9. Mobile Equipment MUST NOT BE refueled with gasoline, propane, natural gas or other vaporizing fuels while:

- The engine is running.
- Anyone is smoking in or about the vehicle.
- There is known source of ignition present in the immediate area.

10. Operators are responsible for keeping equipment clean inside and out including windshields, rear view mirrors, etc.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.41 Operating a Sump Pump

2.41.1 GENERAL

1. Install the sump pump in a hole at least 63cm – 76 cm (25 - 30-inches) deep. The pump should be located in the lowest part of the hole.
2. The hole must be at least 8 in. from the foundation walls to avoid encountering the foundation footing.
3. Properly discharge the pump through the appropriate piping to a clear area where it will not drain back into the hole or create another hazard.
4. Water must be discharged at least 20 feet from the building.
5. Water should not drain back! Cycling water will place unnecessary strain on the pump and can weaken the foundation.
6. Water should not drain onto neighbouring property.
7. Many jurisdictions do not permit pumped water into public sewer systems.
8. Plug the pump into a 20 amp dedicated circuit properly wired to a GFCI breaker. It must be properly grounded.
9. Prime the pump by filling the sump basin with water. The pump will turn on when the water reaches about 7.6 cm (3 inches) above the top of it.
10. Let the pump run through several on/off cycles to ensure it is properly working.
11. Check all connections for leaks.
12. The pump must be kept clean and free of debris. The inlet screen prevents the passage of dirt and other solid material from entering the pump, but it can become overwhelmed. Cleanings should occur often for pumps that run constantly.
13. Inspectors should make sure that the float is not tangled or jammed in one position. A sump pump with a jammed float is useless because it will not sense when it should turn on and shut off.
14. The pump can be tested by pouring water into the pit to make sure it becomes activated and expels the water.
15. If the pump is not performing properly, check the pit for any loose debris that may be blocking the intake.

16. If the sump pump becomes inefficient, unplug it, open the pump and clear any debris from the pump, valve and piping.
17. When testing the pump, no one should ever reach into the pit. The float can be reached and manipulated with a long handled tool with a rubber handle or anything else non-conductive.
18. Make sure the sump pump is properly maintained to keep from burning up the motor.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.42 Overhead Drilling

2.42.1 GENERAL

1. Drilling overhead into concrete is a heavy duty and strenuous task that is associated with shoulder, arm, neck and back musculoskeletal injuries (MSI's) because of the forceful and awkward aspects of the work task. Due to the nature of the work and the direct use of both hands while drilling, a solid work platform other than a ladder should be used. If a stepladder is to be used while drilling, ensure that it is of proper length and position to prevent over reaching and ensure that a co-worker supports the ladder from below. Often the best option is rolling scaffolding, complete with guard rails and locking coasters/wheels. This setup offers a stable, level, platform which allows for safe use of both hands and mobility/rotation freedom. There is currently some floor to ceiling drilling mechanisms that would greatly reduce MSI's from overhead drilling as well.
2. Overhead drilling is a heavy duty work task that requires use of both hands. This scope of work should not be performed on stilts, or on a ladder that is not supported by a co-worker. Overhead work does not allow for complete control of tools by operator leaving the worker more susceptible to kickback or drill bite.
3. Tie off yourself with a safety harness when working 3 m (10 feet) or more off the ground or when working with both hands off a ladder. Do not over reach or drill with both hands while on a ladder.
4. When drilling overhead, be careful not to apply perpendicular pressure to the rotating bit as this may cause lock bite in which the bit catches in the material and the drill handle spins on the bit potentially causing injury.

5. When drilling overhead be cautious of internal rebar that may cause the drilling bit to bind/lockup. If the bit gets stuck in the material do not attempt to free bit with the power still connected to the drill. Disconnect the power supply and then remove the drill from stuck bit. If the drill bit cannot be removed easily with manual force (pliers), cut off the exposed end of the bit and start a new hole with a new drill bit.
6. Ensure that proper ear protection is worn at all times when drilling into overhead concrete.
7. If drilling task is especially difficult and requires a large drill and bit, it may be easier to begin by drilling a smaller started hole.
8. When drilling, be sure to regularly oscillate pressure application to clear hole of drilling material buildup, to avoid sudden bit bite.
9. Ensure that drill power trigger is fully operational and undamaged. Do not use the trigger locking mechanism found on most drills as it may disrupt emergency shut-off.
10. Do not drill into an above material if location or drilling depth is not specified by plans. There are many utilities contained within concrete such as electrical and floor heating, which may represent a safety hazard if contacted and significant building/services damage. If uncertain, always ask a supervisor before commencing drilling work.
11. Always ensure that the drill bit is the proper type and diameter for the material and scope of work. Worn-out bits should be discarded and replaced.
12. Drills and extension cords are regularly maintained and inspected. Broken or damaged tools are to be tagged and removed from service for repair.
13. Ceiling installation and overhead work often involve drilling and fastening to concrete surfaces. These scopes of work can create large amounts of falling dust including respirable silica. Breathing in silica dust can cause serious long term consequences including the lung disease silicosis. Safe work procedures must protect individual workers performing these tasks and also ensure that surrounding workers are not exposed to this respiratory hazard. Two key elements of safe work procedures for concrete finishing are, but not limited to the following:

2.42.2 Exposure Control Plan for Silica Dust

Exposure Control Plan (ECP): A hierarchy of controls should be selected in the following order:

1. Elimination: Choose work methods and materials that do not produce silica dust.
2. Engineering Controls: Local exhaust ventilation (LEV), wetting method, barriers and enclosures.
3. Administrative Controls: Work scheduling, planning, and coordination.
4. Respirators and PPE:

- Use HEPA local exhaust ventilation systems to capture and control the dust at its source whenever possible.
- There does exist various drill bit attachments that act as a cup that runs flush to the ceiling to collect as much of the falling silica dust as possible.
- Check with your supervisor to determine if an enclosure structure will be erected and how this is to be done.
- Check to make sure that the vacuum system you are assigned is approved for use with silica dust, and operating properly, with appropriate HEPA filters.

Refer to the section on the Exposure Control Plan for Silica in our OH&S program for a detailed account of local exhaust ventilation, silica information, exposure limits, controls, and responsibilities regarding silica exposure control.

2.42.3 Respiratory Protection Program

1. Ensure proper use of respiratory protection. Make sure you have the right respirator and filters/cartridges for the job task. A full-face respirator equipped with 100 (HEPA) series filters will be required when grinding and chipping concrete.
2. Ensure that respiratory protection equipment is inspected prior to each use, clean, well maintained, and that you are fit tested for your specific respirator.
3. Grinding and polishing tools should have vacuum attachments to limit silica dust exposure at the source, and prevent transmission and contamination.
4. Smoking is prohibited unless in designated smoking area.
5. Ensure that proper eye protection is worn when drilling overhead as drilling dust and bits of material may fall down vertically right onto the below worker(s)
6. Workers shall wear clean laundered work clothing and bring a change of clothes to work to prevent transport of contaminates. A head cover is also recommended when working overhead.

7. Maintain good personal hygiene practices. Wash contaminated clothing before reuse. Do not eat, drink, or smoke in work areas. Wash hands and exposed skin before eating, drinking, smoking.
8. Clean-up silica dust with a vacuum that is fitted with a HEPA filter to avoid dispersal of contaminates. The use of wet disposable rags or anti-dust material such as dust-bane is also acceptable.

Refer to the section on the Respiratory Protection Program in our OH&S program for further detail regrading respiratory hazard assessment, respirator use, training, fit testing, cartridges and responsibilities regarding to respiratory protection.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.43 Overhead Suspended Ceilings (T-Bars and Tiles)

2.43.1 GENERAL

Suspended Ceiling may be defined as a ceiling that is hung or suspended from a floor/roof and independent of walls for support. Installation of suspended ceiling involves the fastening of t-bar framing to the ceiling and placement of sized ceiling tiles. Work tasks are dominated by overhead / over the shoulder activities.

Ceiling installation must make adequate provisions for other trades as ceilings contain and conceal many other services. Pre-mature work may result in reduced access to or damage of utilities or finished ceilings.

1. Do not crawl through or on a suspended ceiling as suspended ceilings are typically only held by a non-load bearing aluminum frame or wire.

2. Observe correct ladder usage. Ensure ladders are secured against movement and set up on level ground. Do not over extend and do not climb on the top two (2) steps of a stepladder. Refer to Ladder safe work practices section in this manual for detailed safety information on ladder usage.

3. Wear appropriate eye protection when performing overhead ceiling work: Whether using power tools or hand tools, small bits of material can fall directly downward, representing an eye hazard.

4. When cutting metal t-bar strips with snips or saw, be cautious of sharp ends.

5. Use the appropriate dust mask or respirator when or cutting or sawing ceiling tiles. Refer to product specific MSDS/SDS for more detailed information on respirator and cartridge information.

6. Keep all cutting tools sharp and well maintained. A dull blade requires excessive force, causes sloppiness, can slip and is the cause of many accidents. Use the correct cutting tool that is right for the job. Below is a list of Knife and cutting tool safe work procedures:

a. Always cut in the direction away from your body when using knives.

b. When handling knife blades and other cutting tools, direct sharp points and edges away from you.

c. Cut in the direction away from your body when using knives.

d. Use the knife that has been sharpened; do not use knives that have dull blades.

e. Use knives for the operations for which they are made.

f. Do not use knives that have broken or loose handles or blade fasteners

g. When breaking off disposable replacement blades, ensure that proper eye protection is worn and that the blade is directed away from other workers.

h. Do not use knives as screwdrivers, pry bars or can openers.

i. Do not pick up knives by their blades.

j. Do not carry knives, scissors or other sharp tools in your pockets or an apron unless they are first placed in their sheath or holder.

k. Do not attempt to catch a falling knife.

l. Store knives in knife blocks or in sheaths after using them.

7. Use an appropriately sized straight-edge to guide cuts.

8. Always retract blade once cutting is completed. Do not carry other materials and walk around with an open blade.

9. Dispose of broken replacement blades in a manner that will not endanger other workers (do not just throw them on the ground).

10. All workers shall have knowledge of the location of Material Safety Data Sheets / Safety Data Sheets (MSDS / SDS) for any product which they may come in contact with.

11. All workers should demonstrate knowledge of the Workplace Hazardous Materials System program or the Globally Harmonized System (WHMIS / GHS).

12. All products shall be handled in accordance with manufactures instructions and requirements of WHMIS / GHS program and properly identified with current MSDS / SDS.

13. Workers shall wear and use personal protective equipment (PPE) as determined by a review of product label and MSDS.

14. Observe proper use of stepladders. Never climb higher than the second step from the top - use a taller ladder instead. Be certain the spreader bars are locked in place and both pairs of legs are fully open. If leaning the ladder against a wall, a safe distance between the wall and the feet of the ladder is one quarter the height of the ladder. Do not use an aluminum ladder near electrical wires. Ensure that ladders are tall enough for the job. Refer to safe work procedure for ladders in this manual for a detailed account of ladder safety.

15. Do not bring tools and metal ceiling materials in proximity to charged conductors. Ensure that charged conductors or wires that any worker may come in contact with during the scope of work are grounded and locked out prior to commencing work.

16. Electrical cords, tools and attachments shall be CSA approved and maintained in good order.

17. Ensure that all tools, cords, and extension leads are properly grounded. Inspect power cords and fittings before each use. Damaged power cords shall be removed from service and repaired and replaced. Always ensure that all three prongs are in place and do not use a power cord that is missing the grounding pin.

2.43.2 Respiratory Protection Program

1. Ensure proper use of respiratory protection. Make sure you have the right respirator and filters/cartridges for the job task. A full-face respirator equipped with 100 (HEPA) series filters will be required when grinding and chipping concrete.
2. Ensure that respiratory protection equipment is inspected prior to each use, clean, well maintained, and that you are fit tested for your specific respirator.
3. Grinding and polishing tools should have vacuum attachments to limit silica dust exposure at the source, and prevent transmission and contamination.
4. Smoking is prohibited unless in designated smoking area.

Refer to the section on the Respiratory Protection Program in our OH&S program for a detailed account of respiratory hazard assessment, respirator use, training, fit testing, cartridges and responsibilities regarding to respiratory protection.

2.43.3 overhead drilling

1. Drilling overhead into concrete is a heavy duty and strenuous task that is associated with shoulder, arm, neck and back musculoskeletal injuries (MSI's) because of the forceful and awkward aspects of the work task. Due to the nature of the work and the direct use of both hands while drilling, a solid work platform other than a ladder should be used. If a stepladder is to be used while drilling, ensure that it is of proper length and position to prevent over reaching and ensure that a co-worker supports the ladder from below. Often the best option is rolling scaffolding, complete with guard rails and locking coasters/wheels. This setup offers a stable, level, platform which allows for safe use of both hands and mobility/rotation freedom. There are currently some floor to ceiling drilling mechanisms that would greatly reduce MSI's from overhead drilling as well.
2. Overhead drilling is a heavy duty work task that requires use of both hands: This scope of work should not be performed on stilts, or on a ladder that is not supported by a co-worker. Overhead work does not allow for complete control of tools by operator leaving the worker more susceptible to kickback or drill bite.
3. Tie off yourself with a safety harness when working 3 m (10 ft.) or more off the ground or when working with both hands off a ladder. Do not over reach or drill with both hands while on a ladder.
4. When drilling overhead be careful not to apply perpendicular pressure to the rotating bit as this may cause lock bite in which the bit catches in the material and the drill handle spins on the bit potentially causing injury.
5. When drilling overhead be cautious of internal rebar that may cause the drilling bit to bind/lockup. If the bit gets stuck in the material do not attempt to free bit with the power still connected to the drill. Disconnect the power supply and then remove the drill from stuck bit. If the drill bit cannot be removed easily with manual force (pliers) cut off the exposed end of the bit and start a new hole with a new drill bit.
6. Ensure that proper ear protection is worn at all times when drilling into overhead concrete.
7. If drilling task is especially difficult and requires a large drill and bit, it may be easier to begin by drilling a smaller started hole.
8. When drilling, be sure to regularly oscillate pressure application to clear hole of drilling material buildup, to avoid sudden bit bite.
9. Ensure that drill power trigger is fully operational and undamaged. Do not use the trigger locking mechanism found on most drills as it may disrupt emergency shut-off.

10. Do not drill into an above material if location or drilling depth is not specified by plans. There are many utilities contained within concrete such as electrical and floor heating, which may represent a safety hazard if contacted and significant building/services damage. If uncertain always ask a supervisor before commencing drilling work.
11. Always ensure that the drill bit is the proper type and diameter for the material and scope of work. Worn-out bits should be discarded and replaced.
12. Drills and extension cords are regularly maintained and inspected. Broken or damaged tools are to be tagged and removed from service for repair.
13. Ensure that proper eye protection is worn when drilling overhead as drilling dust and bits of material may fall down vertically right onto the worker(s) below.
14. Workers shall wear clean laundered work clothing and bring a change of clothes to work in order to prevent inadvertent transport and dispersal of contaminates.
15. Maintain good personal hygiene practices. Wash contaminated clothing before reuse. Do not eat, drink or smoke in work areas. Wash hands and exposed skin before eating, drinking, and smoking.
16. Clean up silica dust with a vacuum that is fitted with a HEPA filter to avoid dispersal of contaminate – Use of wet disposable rags or anti-dust compound such as dust bane is also acceptable.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.44 Painting

2.44.1 GENERAL

1. When doing any painting work, all workers must understand their role and comply with applicable Legislative Regulations and Company policies.

2. Workers must be wearing the proper Personal Protective Equipment (PPE) such as a hardhat, safety footwear, safety eyewear, and fall protection as required.

3. When required, a control zone must be set up and flagged properly prior to starting any work.

4. Wherever possible, materials and debris shall be removed from the area as work proceeds. This will reduce the need to walk over or work around things left on the floor or the ground.

5. Workers must receive WHMIS training and MSDS/SDS's (Material Safety Data Sheet/Safety Data Sheet) must be on site.

6. Refer to the MSDS/SDS for the safe handling requirements and appropriate personal protective equipment when painting. Give considerable attention to appropriate respiratory and eye protection when painting.

2.44.2 SUBSTITUTION

1. Where practical a less hazardous substance or work process will be substituted for a higher hazard substance or process.

2. Paints containing toxic heavy metals components will be replaced by alternative, less toxic paints if they exist.

2.44.3 RESTRICTIONS

1. Toxic or flammable chemical or chlorofluorocarbon will not be used as a propellant in spraying operations.

2. Spraying of flammable or other hazardous products is prohibited within a general work area unless effective controls and procedures have been installed to control them in the event of a fire, explosion or toxicity hazard.

3. Materials that are about to be welded should not have a coating applied to them until the welding operation is completed.

2.44.4 WARNING SIGNS

1. A work area or enclosure where hazardous materials are handled or used must be posted with suitable signs or placards warning personnel of the hazards within the identified area as well as precautions that are required to be taken before entering the area.

2.44.5 ENCLOSURES

1. Enclosures are required in general when:

a. An operation involves spraying paint.

b. An application of paint or coating uses very toxic materials.

2.44.6 AIR FLOW

1. If a work must be completed within an enclosure the following applies to air flow through the enclosure:

a. 50 cm/s (100 fpm) if the cross-sectional area is 14 m^2 (150 ft^2) or less.

b. 25 cm/s (50 fpm) if the cross-sectional area is greater than 14 m^2 (150 ft^2).

NOTE: Care must be taken to ensure that the ventilation system in place has electrical and mechanical systems designed to control all potential ignition sources

2.44.7 AIRLESS SPRAY EQUIPMENT

1. An airless spray gun must have:

a. a means to electrically bond the gun to the paint reservoir and pump

b. a guard that will protect against trigger activation if the gun is dropped

c. a trigger function configured to require two distinct operations by the user to activate the release of paint through the nozzle or a safety device which prevents the nozzle tip from coming into contact with a worker

2. An airless spray gun, hose, fitting and pressure vessel must be designed and constructed to withstand the pressure involved in the spraying operation.

2.44.8 INTERIOR PAINTING

1. Primary.

2. Spray first coat.

- Roll wall.
- Cut in ceiling.
- Sand after prime.

Tools: spray machine, roller, and brush.

3. Intermediate.

- Apply second coat of paint.

Tools: sand pole, sand paper, roller, brush.

4. Final.

- Check condition of wall.
- Patch and fix.
- Sand patches.
- Spot prime walls.
- Sand walls.
- Apply finish coat.

Tools: Putty knife, roller, brush, sand paper.

2.44.9 Exterior Painting

1. Clean surfaces.
2. Apply two coats of finish coat.

Tools and Equipment: ladder, swing stage, harness, safety rope, steel sling, carabineer, roller, brush, mobile equipment.

2.44.10 Wood Work

1. Fill nail holes.
3. Caulk.
4. Block sand.
5. Spot prime.
6. Apply finish coats.

Tools: spray machine, sanding block, brush, roller, caulking gun

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.45 Propane Heaters (Safe Use of)

2.45.1 GENERAL

1. Always install heaters as per manufacturer's instructions and according to all applicable Acts, Regulations and Standards.

2. In order to detect any leaks, check all hoses and fittings with soapy water. Repair or replace any leaking hoses, fittings or equipment. REMEMBER, propane is heavier than air and expands to 200 times its volume, or more, when released into the air.

3. Ensure there are not outside sources of ignition in the immediate area of the heating equipment.

4. Ensure heating equipment has an approved automatic shut off device in the event of flame failure.

5. All spaces where heaters are being used must have adequate ventilation and heaters must not be allowed to overheat. NEVER use a gas-fired heater in a confined or enclosed work area as it will use the oxygen in the area for combustion.

6. Good housekeeping is imperative in areas where heaters are used. Combustible materials, papers and other debris must be kept a safe distance away from heaters. Tarps or plastic used to enclose areas must be affixed in such a manner that they cannot be blown into heaters by wind.

7. If the heater flame is extinguished, turn off the gas valve immediately and DO NOT attempt to relight the heater. Allow the heater to cool down and have an authorized person check the heater and relight the unit.

8. DO NOT force fittings together that will not easily thread together or that do not match. REMEMBER, most gas fittings are left hand threads.

9. Ensure that a fire extinguisher is readily available to all areas where heaters are in use.

10. Never have more than two (2) gas cylinders stationed at a heater at any time.

11. Always remove empty cylinders from the work area and store them in a safe storage area that is well ventilated.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.46 Radio Communication

2.46.1 GENERAL

1. Ensure that radio equipment to be used on site is in good working order and is operating on a frequency which does not interfere with or is not being interfered with by surrounding radio equipment.

2. Make sure your radios are all programmed to the same frequencies.

3. When using a two-way radio, you cannot speak and listen at the same time, as you can with a telephone.

4. Radio equipment used for communication between crane operator and spotter or rigger, must be using a radio frequency approved by WorkSafeBC.

5. If blasting work is to be done on site or on an adjacent site, check with the blasting firm before using any radio equipment. Blasting work often utilizes radio type equipment and the site radio equipment. Blasting work often utilizes radio type equipment and the site radio equipment might interfere.

6. Always ensure that your radio is operating properly at the start of each shift and that the battery is fully charged.

7. Treat the radio equipment with care as it is electronic equipment and is easily damaged.

8. Press the push-to-talk button before you start talking. Release the push-to-talk button after you finish talking.

9. When communicating with crane operator by radio, only one person shall give instructions. The crane operator shall cease all movement if more than one communication is given to him by radio or if the information given is not clear or understood.

10. Radio equipment on site is for business use only. The equipment is not to be used for idle chat or lengthy discussion as these may interfere with other radio traffic.

11. Do not interrupt if you hear other people talking. Wait until their conversation is finished unless it is an emergency. If it is an emergency, inform the other parties that you have an urgent emergency message.

12. Do not transmit confidential information on a radio unless you know the proper security technology is in place. Remember, frequencies are shared. You do not have exclusive use of the frequency.

13. Charge your two way radios when they are not in use.

14. When you are finished with your shift, turn the radios off. This will not only preserve the life of your product, but it will also prevent needing to purchase a replacement battery for it.

15. The use of profanity or swearing on the air is strictly forbidden. This is not only unnecessary use of the radio, but is in contravention of the Canadian Radio and Communications Regulations.

GENERAL terms used over the radio

General Terms	Meaning
Radio Check	What is my signal strength? Can you hear me?
Go Ahead	You are ready to receive transmission.
Stand-by	You acknowledge the other party, but are unable to respond immediately.
Roger or Ten Four	Message received and understood.
Negative	Same as "No".
Affirmative	Same as "Yes". Avoid "yup" or "nope" as they are difficult to hear.
Say Again	Re-transmit your message
Over	Your message is finished.
Out	All conversation is finished, the channel is clear for others to use.
Break, Break, Break	You are interrupting in the middle of communication because you have an emergency.
Read you loud & clear	Response to "Radio Check". Means your transmission signal is good. Also use "Read you 5-by-5".
Come in	You are asking the other party to acknowledge they hear you.
Copy	You understand what was said.
Wilco	Means "I will comply".
Repeat	Used before you repeat something. e.g.: "I require 9-5, repeat 9-5, gallons of diesel fuel. Over"

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.47 Rebar Protection

2.47.1 GENERAL

When building footings, foundations or ICF homes, there will be exposed rebar protruding from the concrete. Rebar is as sharp as a knife and when it is standing vertically, it can end up as a spear to anyone that falls onto it. It is usually on the bottom of a hole at the start of a foundation, which means that anyone that trips or falls will gain speed and velocity as s/he falls into the hole.

The following are some methods to protect workers and the public from this potentially lethal disaster:

- When workers must access a platform, no matter how high or low the elevation, they must first ensure that all rebar is properly covered in order to prevent severe injury in the event of a fall.
- Where practicable, bend the rebar over from the top.
- Install a construction or snow fence around the excavation to prevent people from accidently falling into the hole.
- Install plastic rebar caps on top of the rebar at the cut end where the sharp end is exposed. They can also be placed on horizontal rebar, protecting passers-by from being cut.
- The use of wooden troughs (constructed out of standard building materials), conveyor belt or other manufactured covers are acceptable for protecting worker from impalement hazards.
- Attach a 2x4 to the top of the rebar with wire and run it across the top of the sharp rebar.
- When building ICF walls below grade or above grade, install the first row of ICF block (which is made of rigid 16 or 18 inch thick foam), to prevent people from being impaled.
- Orange mushrooms are not acceptable coverings for vertical rebar. Reinforced (those with a flat metal plat inside of them) are permissible for vertical rebar protection.
- Orange mushroom caps can be used on horizontal rebar where there is no risk of impalement to workers.

- High zone steel must be flagged with warning or danger tape so they are visible and easily identified by crane or cement pump operators.
- Use signage to advise the public of the dangers from the hole and the exposed rebar.
- If it is not practical to cover the end of rebar (e.g. horizontal rebar protruding from a wall,) flag it with bright tape or spray paint it with fluorescent paint to warn people of the hazard. Place physical barriers (saw horses or a string of caution tape) in front of it to stop or slow down people walking near it.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.48 Rigging in the Blind

2.48.1 GENERAL

1. Ensure that radio equipment to be used on site is in good working order and is operating on a frequency, which does not interfere with or is not being interfered with by surrounding radio equipment.
2. Radio equipment used for communication between crane operator and spotter or rigger, must be using a radio frequency approved by WorkSafeBC.
3. The rigger must stay with the load and keep the radio communication with the operator until that load arrives to its destination and the operation is finished.
4. The rated capacity of a crane or hoist must not be exceeded.
5. A load must be secured during a lift to ensure that all or any part of the load cannot be dislodged.
6. The rigger is to conduct daily visual inspection of rope, chains, slings, and fittings. If examination reveals any condition that might endanger the workers, the equipment shall not be used until the dangerous condition is remedied. Ensure that hook locks are working properly.
7. Tag lines or other effective means must be used when necessary to control hazardous movement of a load or to assist with positioning a load.
8. A load must not be left suspended from or supported by a crane or hoist when an operator is not at the control.
9. The rigger must be familiar with all aspects of rigging and with the code of signals authorized by WorkSafeBC.

10. When a crane or hoist is travelling with a load, the operator of the crane or hoist must ensure that the load is carried as close to the ground or grade as possible and rigged to control load swing.
11. Hooks are to be facing outward, safety latch on top.
12. Open Hooks are not to be used.
13. Avoid rigging and picking up loads that the crane operator cannot see.
14. Rigging and slinging work may be done only by or under the supervision of trained and authorized workers.
15. The weight of the load must be determined to select the proper ropes, chains, slings, and fittings. The load imposed on the lifting materials must not exceed the manufacturer's recommended safe working load.
16. Cable slips, shackle pins, heel pins, wedge sockets, anchors, shears, and slings must be visually inspected prior to use and installed and used in accordance with WorkSafeBC Regulations and manufacturer's recommendations.
17. Sharp edges and corners of the material being rigged must be protected to prevent damage to the choker.
18. Softeners must be used to prevent slippage and material damage.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.49 Rough Carpentry

2.49.1 Electrical Safety

1. All electrical equipment shall be CSA Approved and used according to manufactures recommendations. Avoid exposure of tools and cords to heat, moisture, and chemical solvents.

2. Inspect tools power cords and electrical fittings prior to commencing work. If units are damaged, tag and remove from service for disposal or repair.

3. Do not connect tools that are turned on to any power supply. Ensure that tools are switched off before connecting to power supply. Similarly, disconnect the power tool before replacing parts, making adjustments, or adding attachments.

4. Ensure that all cords and tools are properly grounded. Do not use an extension cord that is missing its third grounding prong. Refer to Section 7 of this

manual for a more detailed account of electrical safety, assured grounding program, and ground fault circuit interrupters.

5. Do not use light duty power cords for heavy load applications. Similarly, do not overload a circuit by plugging in multiple tools to one outlet.

6. Do not carry tools by their cords or disconnect tools and cords by pulling or jerking them sharply from the outlets. Ensure cords are long enough so that they cannot be pulled apart during cutting operations causing inadvertent kickback.

7. Do not tie knots in power cords as this may lead to electrical failure and short circuit.

2.49.2 General Saw and Woodwork Operation Precautions

1. Keep work areas clean. Cluttered areas and benches invite injuries.

2. For each tool read the operation manual carefully. If you do not understand or are uncertain regarding the safe operation of a certain tool ask a supervisor.

3. Consider the work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Don't use tool in presence of flammable liquids or gasses.

4. Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the woodworking area. If you have trouble hearing someone speak from three feet away, the noise level from the machine is too high. Damage to hearing may occur. Hearing protection is mandatory when using woodworking tools.

5. Use gloves to protect hands from splinters when handling wood but do not wear them near rotating blades and other machinery parts where the gloves can catch or interfere with emergency shut off of equipment.

6. Guard against electric shock. Prevent body contact with grounded surfaces.

7. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.

8. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.

9. Do not force the tool.

10. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.

11. Dress properly. Do not wear loose clothing or jewelry.

12. Use safety glasses when operating the tool.

13. Generally speaking, only cut one piece of wood at a time.

14. Do not abuse the power cord. Never carry or lift the tool by the power cord.

15. Do not overreach. Keep proper footing and balance at all times while operating the tool.

16. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect regularly to ensure that there are no signs of damage.

17. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.

18. Remove adjusting keys or wrenches before operating the tool.

19. Ensure that you have a good grip on the tool to avoid unintentional starting.

20. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.

21. Stay alert. Be aware of your surroundings and other personal that are in the area.

22. Do not use tools for applications they were not designed for.

23. Do not use attachments that are not recommended for the tool.

24. Do not touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.

25. Operate the tool below the rated input to ensure the tool is not damaged due to overload.

26. Do not wipe plastic parts of the tool with solvents.

27. Make sure the guard is in position, is in good working condition, and guards the machine adequately before operating any equipment or machine.

28. Check and adjust all other safety devices. Make sure the equipment is properly grounded before use.

29. Inspect stock for nails or other materials before cutting, planning, routing or carrying out similar activities.

30. Start buttons should be protected so that accidental contact will not start the machine.

31. Ensure that all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely, and not need to be forced.

32. Use a "push stick" to push material into the cutting area. Jigs are also useful in keeping hands safe during cutting procedures. Keep hands out of the line of the cutting blade.

33. Ensure that the floor space around the equipment is sufficient to enable you to machine the size of work piece being processed safely without bumping into other workers or equipment.

34. Keep work area free of clutter, clean, well swept, and well lit. Spills should be cleaned up immediately. Floor areas should be level and non-slip. Good housekeeping practices and workplace design will reduce the number of injuries and accidents from slips, trips, and falls.

35. Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewelry that can become entangled with moving parts.

36. Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the cutting tool or blade.

37. Do not remove sawdust or cuttings from the cutting head by hand while a machine is running or plugged in. Disconnect machine before making any adjustments

38. Do not use compressed air to blow sawdust, turnings, etc. from machines or clothing.

39. Do not leave machines running unattended (unless they are designed and intended to be operated while unattended).

40. If a blade binds to material do not try to free a stalled blade before turning the power off. Ensure power is disconnected before loosening blade from cut material.

41. Do not distract or startle an operator while he or she is using woodworking equipment. Do not try and sustain a conversation when making a cut.

2.49.2 Hand Tools (non-powered)

1. Always ensure you are using the right tool for the job. Do not substitute or use makeshift tools.

2. Ensure that you use the proper PPE when using hand tools. The use of hand tools in heavy carpentry, require the use of eye protection.

3. Always check tools for damage or wear prior to each use. Watch for loose or broken handles and mushroomed heads.

4. Aim to reduce the torque needed to be applied by selecting tools with longer handles or tools with a ratchet function.

5. Replace cracked or broken handles on files, hammer, screwdrivers, or sledgehammers.

6. Replace worn jaws on wrenches, pipe tools and pliers.

7. Avoid using hand tools with your wrist bent. Always use tools which allow the wrist to remain straight.

8. Always pull on wrenches and pliers. Never push unless you hold the tool with your palm open.

9. Re-dress burred or mushroomed head on striking tools.

10. Carry tools using a heavy belt or apron and hang tools at your sides. Never carry tools in your pockets or hanging behind your back.

11. When using cutting tools, always cut away from yourself.

12. Do not wear bulky gloves when operating hand tools.

13. When using a bar for prying, be sure to stand so that you will maintain your balance should it slip or break.

14. Always think of your co-workers when using picks, and axes. Maintain clearance between you and any other person.

15. Keep close track of tools when working at heights. A falling tool can kill a co-worker.

16. Always keep your tools in top condition. A dull blade or blunt point can lead to injury.

17. Be on the lookout for signs of repetitive stress. Early detection may prevent a serious injury.

18. Maintain tools carefully. Keep them clean and dry, and store them properly after each use.

19. Always keep cutting tools sharp.

20. Never leave tools on ladders, scaffolds or overhead work areas when they are not in use.

21. Always keep tools being used in overhead work areas in containers or tied back in order to prevent them from falling.

2.49.3 Circular / Skill Saw

1. Never operate a skill saw without the blade guards in place. Ensure that guards are in good condition and function properly with appropriate spring back.

2. Wear appropriate personal protection equipment when operating a saw. Wear eye protection, dust mask / respirator, and hearing protection. Do not wear gloves when using a skill saw as this may interfere with trigger operation and emergency shut off.

3. Permit only trained and experienced personnel to operate a saw.

4. Ensure that the retractable blade guard is in place prior to placing saw down. Always wait for rotating blade to stop rotating before putting saw down. Without this the saw blade could potentially skid across the surface it was placed, potentially causing injury.

5. Never remove a saw from cutting surface until the blade has come to a complete stop.

6. Use both hands to operate saw – one on the handle and one on the front knob. Saws are typically designed for right hand use so extra caution is necessary for left handed individuals.

7. Do not over tighten the nut holding the blade in place. Also ensure that blade is tightened adequately.

8. Ensure the work is secure prior to cutting. Also, ensure the material is free of defects or features that could make the cut hazardous. For example, ensure all nails are removed from wood prior to commencing cut. Check for obstructions.

9. Do not carry portable saws with your finger on the trigger.

10. Do not twist blade or try and change direction while making a cut. This may cause they blade to stick potentially causing injury.

11. Ensure that all cords, unnecessary tools, debris, and materials are clear of cutting area.

12. Use the blade designed for the materials you are cutting. Keep saw blades sharp and replace them when there are signs of excessive wear. Excessive wear is characterized by rounding of the blade teeth or mounting hole, or warping/imbalance of the blade body. Dull blades bind and overheat.

13. Only use cutting wheels with a “safe speed” – at least as high as the “no-load rpm” indicated on the saw nameplate. Allow the saw to reach full speed before commencing cut.

14. Wait for the cutting blade to come to a complete stop before lifting saw from cutting surface.

15. Ensure you have enough free cord length to allow you to fully complete the cut. Cords that are too short may unplug and cause the saw to kick back suddenly.

16. Do not use a saw that vibrates or seems to be unsafe in anyway.

17. Do not force a saw at any time during a cut.

18. Disconnect power supply before adjusting or changing the blade.

19. Do not cut anything without first checking for obstructions such as nails and screws. They could shatter the blade, sending metal fragments flying about, or could be violently ejected from the blade and cause a serious injury.

20. Never overreach. Maintain a firm footing and proper balance at all times.

21. Do not rip the work without using a guide that is clamped or nailed to the workplace.

22. Set the depth of the blade to no more than 1/8th of an inch below the thickness of the material to be cut. Too much blade exposed below the material to be cut results in a greater chance of kick back and blade binding. The more the blade is exposed, the greater risk of injury.

23. Let go of the trigger if the blade binds. Do not try and force the saw. Just guide it with a little pressure.

24. Ensure that blade guard and motor are clean and that the wood sawdust and pitch does not build up in the guard. Regularly lubricate the guard mechanism to limit hang back of guard.

25. Stand to the side when making a cut in case the wood is kicked back. Ensure you have a solid footing with both feet firmly planted on the floor. Do not over reach. Stop and reposition yourself so that you are in control of the wood and saw.

26. Do not extend yourself when making long cuts such a cross cutting sheets of plywood. Long cuts like these should be performed on a table saw.

27. Never cut a board in the middle that is just lying on two saw horses. It will sag or collapse about 2/3's of the way through the cut and bind the saw and cause the saw to kickback at you. The only time you can safely cut a board using only two sawhorses and no frame table is when you are only cutting an end off. The same applies for cutting boards that are bowed down or bendy.

2.49.4 Table Saw

1. Avoid wearing clothing, accessories and even fall protection, or anything else that could come in contact with the rotating blade.
2. Wear appropriate personal protection equipment when operating a saw. Wear eye protection, dust mask / respirator, and hearing protection. Do not wear

gloves when using a table saw as this may interfere with trigger operation and emergency shut off.

3. Only trained and experienced operators of table saws are permitted to use the saw.
4. Always verify the location of the switch and or emergency turn off switch.
5. Ensure that table is clear of tools and debris other than the material being prepped for cutting. An unclean or rough table requires you to use more force to push the stock through the blade. The more force that you are required to use the more chance that you may slip or lose your balance.
6. All table saws shall have hood guards and anti-kickback devices that are not damaged and in good working order. If it absolutely necessary to disengage on of these safety mechanisms (for complex cuts), they are to be re-engaged immediately after use so that other workers do not inadvertently use the modified table saw.
7. At no time is an operators hand to pass within 6 inches of the rotating saw blade. Use appropriate push sticks, fencing and or guides.
8. As a general rule, any boards greater than 3 feet in any dimension should be cut with an assistant. Know your limits and ask for help. The helper must also be trained and experience in the safe operation of a table saw.
9. Blade height shall be set so that the top of the teeth are no greater than ¼ to 1/8 of an (6mm) inch above the cutting material. Greater blade exposure increases chance of kickback, and thus injury. Minimizing blade exposure ensures that in the accidental hand slippage the severity of the resulting laceration can be minimized.
10. The operator shall maintain a solid footing with two feet on the ground. Do not over reach. The operator should also be standing so that he/she is to the side of the wood being fed through the saw. To avoid saw dust and wood debris from flying back in the direction of the blade. Maintenance of solid footing and avoidance of awkward positions also reduces the risk of falling into the blade from slipping or losing your balance.
11. Once completing a scope of cutting work the saw blade should be lowered below the table and or blade guard in place.
12. Table saws shall be set up in a location where operators are not confined and free to move. As a general rule, a 3 feet perimeter should be established around the saw and kept clear of debris, tripping hazards and sawdust.
13. Ensure the power is disconnected prior to changing blades or making adjustments.

14. Do not carry on a conversation while making a cut. Do not distract individuals that are in progress of making a cut. Pay attention to the work being performed.
15. Do not leave the saw until the blade has come to a complete stop.
16. Check that the material to be cut is free of nails, knots and other obstructions that could cause inadvertent kick back or become projectiles
17. When cutting, the work should only be released once it has been fully cut and has gone past the blade. Letting go of the wood or accidental loss of grip can cause kickback.
18. Maintain the rip fence parallel to the blade so that the cutting material does not pinch against the fence and bind, causing kickback.
19. Do not make free hand and unguided cuts on the table saw. The material to be cut must be guided through the blade by the rip fence or mitre gauge. The spreader must be aligned with the blade.
20. When choosing material for cutting on a table saw, avoid bent and wet pieces, or pieces that are full of knots and twisted grains.

2.49.5 Chainsaw

1. Ensure only personnel trained and experienced in the safe use of chainsaws are permitted to use chainsaws.

2. Chainsaws in construction must be equipped with a chain break and an anti-kickback chain.

3. Wear appropriate personal protection equipment when operating a saw. Wear eye protection, dust mask/ respirator, and hearing protection. Wear clothing that can protect you from the saw dust and debris from cutting.

4. Inspect chain to ensure it is installed correctly.

5. Ensure there is correct tension on the chain.

6. Ensure the chain is sharp.

7. Check oil in all oil chambers.(chain and motor)

8. Ensure chain brake is operating.

9. Do not use the chainsaw if the brake is not operating correctly.

10. Ensure material to be cut is clean.

11. Ensure material to be cut is firmly held, and supported close to the line of cut to prevent binding of blade.

12. A chainsaw is never to be handled with one hand.

13. Ensure work area is clean and free of obstacles.

14. Extreme caution to be exercised when cutting material above the waist.

15. The chain must come to a stop before moving from one cut to another.

16. Store chainsaw in clean dry area.

17. Ensure fuel and oil is not leaking.

18. When refueling the saw, allow the saw to cool for 2 to 3 minutes beforehand. Do not smoke during or after refueling. A fire extinguisher should be present when refueling. Ensure the fuel cap is tightened properly and that spilled fuel is wiped from the surface of the tool.

19. Follow manufacturer's guidelines for maintenance of chainsaw and chain specification.

20. Do not stand directly behind saw when making a cut. Hold the chainsaw to one side of your body in case of kickback.

21. Do not operate the saw above waist level.

22. When carrying the saw, carry it so that the bar (chain end) is to the rear.

23. Maintain a solid grip when operating a chainsaw. Use both hands.

24. Use of a chainsaw requires constant focus and is physically exerting compared to other construction work tasks. Before operating a chainsaw, ensure you are physically capable and not fatigued.

25. Do not attempt to cut any other material other than wood with a chainsaw.

26. Always be aware of where the bar (chain end) tip is at all times. The tip of a chainsaw represents the contact spot on the bar that can potentially lead to large kickback. Keep this tip clear.

27. Be particularly careful to avoid contact with nails, screws and other obstructions. This is especially relevant in making pocket cuts.

28. When cutting large timbers be sure to support the timber in a manner that does not allow for the cut to bind/close, pinching the blade.

2.49.6 Reciprocating/Jig Saw

1. Ensure you use both hands at all times when using a reciprocating saw. Do not use this saw with only one hand.

2. Ensure that you use the appropriate PPE such as eye protection, and hearing protection when utilizing a reciprocating saw.
3. Do not force the blade when cutting.
4. When installing a blade into the saw, ensure the unit is turned off and unplugged before you begin.
5. Ensure all cords are clear of the cutting area.
6. Do not force the blade sideways in order to curve the cut. Allow the saw to turn its cut with ease.
7. Do not put down or rest a reciprocating saw until the blade has come to a complete stop.
8. Ensure that the blade is up to speed before contacting cutting surface. Starting a saw with the blade resting on surface may lead to kickback.

2.49.7 Pneumatic (compressed air) Nail or Screw Guns

1. Inspect the tool before connecting to an airline. Ensure the safety mechanism is operating and that all screws and cylinder caps are in place and tight.

2. Only authorized, trained, and experienced personnel possessing a current qualified operations permit for the specific tool to be used.

3. Wear approved safety glasses or a face shield to protect your eyes. Wear approved hearing protection. Check for secure and correct air supply and pressure before connecting the tool.

4. Check to ensure that tool is properly connected and that the safety mechanism is operating. Ensure the compressed air supplied to the tool is clean and dry. Dust, moisture, and corrosive fumes can damage a tool. An in-line regulator filter and lubricator increases tool life.

5. Review the manufacturer's instruction before using a tool. Always operate the gun at air pressure recommended by the manufacturer.

6. Always ensure the airline connected to the gun is in good condition and that it has free movement throughout the work area.

7. Do not point the gun at yourself or any other person. Always assume and handle the gun as if were loaded. Always maintain your balance and footing while operating the gun.

8. Never over reach. Overreaching does not guarantee proper 90 degree (perpendicular) orientation of gun nose to surface.

9. Never depress the trigger unless the nose piece is directed onto a safe work surface.

10. Do not transport the tool or load it with fasteners with the trigger depressed.

11. Always disconnect the tool from the air supply when it is left unattended or when it is being cleaned or adjusted.

12. Before clearing a blockage from the tool, disconnect the air supply and ensure the air is exhausted from the tool by directing the nose piece onto a safe work surface and depressing the trigger.

13. When finished with the tool, always ensure that it is disconnected from the air supply, all fasteners have been removed from the gun and that air has been exhausted from the gun.

14. Ensure that the mechanical linkage between the work contracting element and the trigger is enclosed.

15. Make sure that the mechanical linkage between work-contacting element and trigger is enclosed.

16. Disconnect tool from air supply when not in use and during cleaning or adjustment. Before clearing a blockage, be sure to depress the trigger to exhaust all air from the tool.

17. Use only fasteners recommended by the manufacturer.

18. Do not depress the trigger unless the nose piece of tool is directed onto a safe work surface.

19. Do not carry a tool with the trigger depressed. Do not load tool with trigger depressed.

20. Do not use compressed air to blow or clean debris or dust from clothes or surfaces.

21. Keep tools clean and lubricated, and maintain them according to the manufacturer's instructions. Use only the attachments the manufacturer recommends for the specific tool.

22. Do not carry pneumatic tools by the attached hose.

23. Use the proper hose and fittings of the correct diameter. Use hoses specifically designed to resist abrasion, cutting, crushing and failure from continuous flexing. Choose air-supply hoses that have a minimum working pressure rating of 1035 kPa (150 psig) or 150% of the maximum pressure produced in the system, whichever is higher. Check hoses regularly for cuts, bulges and abrasions. Tag and replace, if defective. Make sure that hose connections fit properly and are

equipped with a mechanical means of securing the connection (i.e., chain, wire, or positive locking device).

2.49.8 Compound Mitre Saw / Radial Arm Saw

1. Ensure only properly trained and experienced personnel are permitted to use radial arm saws.

2. Ensure you have the appropriate PPE such as eye and hearing protection. Safety glasses or goggles must be worn. A face shield may also be required and it should be used in conjunction with proper eye protection.

3. Allow the saw to reach full speed before commencing a cut.

4. Do not stand directly in line with the cutting blade. Stand on the handle side when making cuts.

5. Radial arms saws require many adjustments before each use. Ensure the saw is locked out before making these adjustments.

6. The saw should never be operated with the blade in a position where it protrudes or extends beyond the table.

7. Wait until the blade has come to a complete stop before lifting the handle, removing the wood and leaving the saw. Do not take you hand away from the operating handle unless the cutting head is behind the fence.

8. Hold the material to be cut firmly against the tabletop and the rear fence. Never cut freehand. Ensure the hand holding the workpiece is clear of the cutting blade. A general rule of thumb is 6 inches of clearance. Do not cut from material that is too short and does not allow for a proper handhold clearance. Choose a longer piece of material instead to cut from.

9. The blade should never be pulled beyond the point necessary to make the cut as the blade could lift and flip the workpiece against or over the fence.

10. Ensure the saw is properly secured to a worktable by bolts or clamps at approximately hip height.

11. Ensure all safety guards are in position and operational.

12. Do not exceed the maximum cut of the saw. Refer to the manufacturer's instructions.

13. Do not cut more than one piece at a time and do not cut pieces that are too small to be securely held by hand or clamp.

14. Disconnect the saw from the power supply and let the blade come to a complete stop before making any adjustments. After making adjustments, it is advised that the operator perform a “dry run” (power still off) of the cutting operation, to proactively asses the cut and any potential problems.

15. When using one hand to pull the saw down, keep the other hand (especially the thumb) well clear of the cut line.

16. Avoid cutting bent or warped material. If you have to cut bowed, bent or warped material, clamp it against the back fence with the curved side against the fence.

17. After finishing the cut, release the trigger with the blade still held down. Wait for blade to stop before removing any cut material.

18. Avoid reaching over the saw line. Similarly, do not cross arms when cutting.

2.49.9 Drills

1. No worker shall operate any power tool or similar type of equipment unless they are familiar with the use and operation of the equipment and has received instruction on its use and operation.

2. Check drill bits prior to use. Always ensure that drill bits are sharp and that they are not bent.

3. Secure the work piece being drilled. Small pieces should be clamped to avoid movement. Never hold a piece with one hand while drilling with the other. Do not reach under or around material being drilled.

4. Drill a small pilot hole prior to drilling large holes. Never use a hole saw without the pilot drill.

5. Follow manufacturer’s instructions when selecting and using a bit or attachment. Use an auxiliary (second) handle for large work.

6. Instruction in the use, handling, and maintenance of power tools or similar tools, will be given to the workers by the supervisor responsible for the job.

7. Only qualified or specially trained workers may alter, repair, or otherwise be granted access to electrical equipment or electrical tools.

8. No worker shall commence work on any electrical equipment until the equipment has been shut off and locked out as per the lock out procedure. Ensure power supply is completely disengaged.

9. Ground Fault Circuit Interrupters must be installed at the power source for tools, which are not equipped with a ground plug. This includes double insulated tools as well. This is to take place when work is being done in wet environments.

10. Use of eye protection is mandatory for all workers using or assisting in the use of drill motors of any type.

11. Small parts must be clamped in a vice or to a large piece of material before attempting to drill them.

12. Before using an electric drill, the power cord must be checked for breaks or tears in the insulation. Defective drills must be returned to the shops for repair.

13. Plug ends of electric drills must be capped and have the grounding prong intact.

14. Chuck keys must not be taped to a drill electric cord, as electrocution might occur the insulation around the cord becomes damaged at the location where the chuck key is taped. Hang the chuck key at the end of the power cord where it plugs into the extension cord or receptacle.

15. Do not use bent or damaged drill bits. Ensure you use the proper drill bit and that the bit is sharp.

16. Do not reach under or around material being drilled. Do not drill with one hand while holding the material being drilled in the other.

17. Remove the chuck key before connecting drill to the power source.

2.49.10 Belt and Palm Sanders

1. Wear proper eye and hearing protection and where necessary respiratory protection.

2. Disconnect sander from power supply before changing paper. When replacing the paper of a belt sander, ensure that the paper is orientated in the proper direction indicated on the machine and manufactures instructions. Inspect sanding belts before using them. Replace worn, cracked, or frayed belts.

3. When using a belt sander, use both hands and keep hands away from the sanding belts and rotating parts. Keep one hand on the trigger and one hand on the knob handle. Palm sanders only require one hand on the sander.

4. Clean dust from motor, vents, and dust collection bag/container at regular intervals.

5. Do not use a belt sander on unsecured material that could become a projectile.

6. Do not use any electric sander without a dust collection system or local exhaust ventilation system. Empty the dust collection system proactively when it is ¼ full.

7. Do not exert excessive pressure on the sander. If you find you are not progressing within a reasonable time frame, change the grit of paper to better suit the task.

2.49.11 Sawdust

1. Sawdust represents fire, explosion, and respiratory hazards.

2. Ensure that proper eye protection is worn when working with sawdust.

3. Ensure that respiratory protection is used when working with sawdust.

4. During all powered sanding operations, dust is to be collected in the attached dust collection systems. These canisters/bags are to be emptied when they are ¼ full. If there is no dust collection system, a local exhaust ventilation system is to be used.

5. Regular housekeeping and cleanup is essential to minimizing the build-up up sawdust.

6. When cleaning up sawdust, use methods such as vacuuming to minimize dust transfer and dispersal. Use anti-dust sweeping compound such as dustbane when sweeping up sawdust.

7. Some wood products are treated with chemical agents to slow degradation and rot. Be sure to check the product specific MSDS for each wood product before use.

8. Eliminate all ignition sources in areas where there is a significant buildup of sawdust.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.50 Steel Stud Framing

2.50.1 Preliminary Activities

Where multiple trade activity is scheduled, the general contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete their scope of work.

Prior to any work commencing supervisors must conduct a hazard assessment of all applicable work areas. Any hazards that are found during the hazard assessment must be addressed prior to any work commencing.

Steel stud framing has several benefits compared to traditional wood framing, such as:

1. Lighter weight material weight that can reduce, fatigue, overexertion injuries, and MSI's.

2. Non-combustible (non-flammable) material with larger and "heavier" dust cuttings that reduce respiratory hazard compared to wood.

3. Consistent material quality (no rot, warp, knots, cracking, swelling etc.) reduces binding while cutting and drilling thus reducing injuries.

This said, the materials, techniques and tools used in steel stud framing have different hazards and different Safe Job Procedures that must be followed at all times.

2.50.2 General

1. When lifting heavy, or awkward, prefab or panelized sections, do it in pairs. Know your limits and ask for help.

2. Be cautious of exposed fastener ends on the internal surfaces of steel stud frames. In addition be cautious of sharp metal edges that may result from cutting of steel studs. We recommended wearing gloves while handling steel framing material. Gloves are not to be worn when operating the chop saw.

2.50.3 Electrical Safety

1. Do not bring steel stud materials in proximity to charged conductors as this could lead to arc flash or electrocution hazard.

2. Ensure charged conductors or wires that you may come in contact with during the scope of work are grounded and locked out prior to commencing work.

3. Electrical cords and appliances shall be CSA approved and shall be maintained in good order.

4. Ensure all tools, cords, and extension leads are properly grounded. Inspect power cords and electrical fittings for damage prior to each use.

5. Do not use aluminum or metal reinforced ladders in close proximity to charged conductors.

6. Damaged power cords shall be removed from service and repaired or replaced. Always ensure that all three prongs on a grounded power cord are in place.

7. Do not use a power cord where the ground prong has been removed.

2.50.4 Edge Work

Steel Stud Frames often comprise the external envelope of buildings. This scope of work often involves the removal of guardrails and replacement with steel studs and rails. If guardrails have been removed by trades in order to complete any scope of work, they must be replaced or in the case of steel stud framing, substituted before leaving the area.

1. Ensure that adequate guarding or barricades are in place to prevent access to areas with no guardrails. Warning signs must be posted at all locations where guardrails have been removed to notify other trades and workers that fall arrest is required.

2. Workers exposed to a fall greater than 10 feet or in situations with significant fall hazard, fall protection equipment must be worn.

3. Once exterior framing is complete, guardrails must still comply with the specifications of WorkSafeBC Regulation (Section 4.55). Refer to the guardrail Safe Job Procedures in this manual for more details.

4. When exterior of edge work incorporates mobile work platforms such as boom or scissor lifts, or scaffolding, appropriate fall protection equipment must be used. Workers using this equipment shall be properly trained and certified in the Safe Job Procedures.

2.50.5 Chop Saw

Chop saws, being a machine with high speed moving parts, has several safety concerns which must be observed when in operation. Read the wheel specifications for the maximum number of rpm (rotations per minute) the wheel can handle, taking care not to exceed those design parameters. The corresponding speed (rpm) at which the chop saw will be running should be outlined in the manufactures and product literature and often times on the machine itself. Note: Be sure you are using the proper saw wheel for the proper material.

1. For operation of the chop saw, a full face shield and safety glasses are required. It is recommended that operators even wear safety glasses under a full face shield. Metal shards, sparks, and cuttings from abrasive cutting represent a significant eye hazard. When cutting, ensure other workers in the vicinity will not be exposed to these eye hazards.

2. Gloves, loose clothing, jewelry, or any dangling objects including long hair should not be worn as they may catch in the rotating parts of the saw.

3. All guards must be in place and operating. If a guard seems slow to return to its normal position or hangs up, adjust it or repair it immediately. Unplug or lockout power when making repairs.

4. Hands and fingers must be kept clear of the path in which the blade travels.

5. Clean the lower guard frequently to help visibility and movement. Unplug the saw before adjusting or cleaning.

6. Use only the recommended RPM and appropriate blade size and type according to both material and chop saw manufactures. Ensure that abrasive blades do not have any cracks or abnormalities. This includes non-circular blades that exhibit “wobble” due to improper balancing.

7. Regularly check and tighten the blade and the blade-attachment mechanism.

8. Prior to installing or changing a blade, be sure to lockout or unplug equipment. Ensure the blade and its related washers and fasteners are correctly positioned and secured on the saw's arbor.

9. To avoid losing control or placing hands in the blade path, hold or clamp all material securely against the fence when cutting. Do not perform operations freehand.

10. Ensure the C-clamps are functioning properly and the appropriate strength and number are used to prevent material slippage while cutting.

11. Avoid re-cutting small pieces. Long material should be supported at the same height as the saw table.

12. Never place hands or fingers in the path of the blade or reach in back of the fence.

13. Use the brake if one is provided. To avoid contact with a coasting blade, do not reach into the cutting area until the blade comes to a full stop.

14. After completing a cut, release the trigger switch and allow the blade to come to a complete stop then raise the blade from the work piece. If the blade stays in the cutting area after the cutting is complete, injury or burn can result from accidental contact. Remember that the abrasive blade can get very hot.

15. When cutting do not drop the blade/wheel onto the material. Slowly let the wheel touch the material and follow through as the cut is made. Be cautious of the blade/wheel fracturing or breaking as this can send high speed particles flying off in any direction.

16. When cutting ensure that cutting surface is non-combustible and is not a finish surface that can be damaged by hot abrasive sparks (characteristic black mark).

17. Ensure that metal and disk residue does not build up in the blade cover, to avoid particles flying out while cutting.

18. When you are cutting flat bar, set it in the clamp to vertical, so that it is cut through the thin way. It is harder for the blade to clear the swarf, when it is cutting through the flat. Do not hold it vertical with your hand. Use a clamp instead.

2.50.7 Pneumatic (compressed air) Nail or Screw Guns

1. Inspect the tool before connecting to an airline. Ensure that the safety mechanism is operating and all screws and cylinder caps are in place and tight.
2. Only authorized, trained, and experienced personnel possessing a current qualified operations permit for the specific tool to be used.
3. Wear approved safety glasses or a face shield to protect your eyes. Wear approved hearing protection Check for secure and correct air supply and pressure before connecting tool.
4. Check to ensure the tool is properly connected and that the safety mechanism is operating. Ensure the compressed air supplied to the tool is clean and dry. Dust, moisture, and corrosive fumes can damage a tool. An in-line regulator filter and lubricator increases tool life.
5. Review the manufacturer's instruction before using a tool. Always operate the gun at air pressure recommended by the manufacturer.

6. Operate the gun at higher than recommended pressures from manufactures rating.
7. Always ensure the airline connected to the gun is in good condition and that it has free movement throughout the work area.
8. Do not point the gun at yourself or any other person. Always assume and handle the gun as if it was loaded. Always maintain your balance and footing while operating the gun.
9. Never over reach. Overreaching does not guarantee proper 90 degree (perpendicular) orientation of gun nose to the surface.
10. Never depress the trigger unless the nose piece is directed onto a safe work surface.
11. Do not transport the tool or load it with fasteners with the trigger depressed.
12. Always disconnect the tool from the air supply when it is left unattended or when it is being cleaned or adjusted.
13. Before clearing a blockage from the tool, disconnect the air supply and ensure the air is exhausted from the tool by directing the nose piece onto a safe work surface and depressing the trigger.
14. When finished with the tool, always ensure that it is disconnected from the air supply, all fasteners have been removed from the gun and that air has been exhausted from the gun.
15. Ensure the mechanical linkage between the work contracting element and the trigger is enclosed.
16. Make sure the mechanical linkage between work-contacting element and trigger is enclosed.
17. Disconnect tool from air supply when not in use and during cleaning or adjustment. Before clearing a blockage, be sure to depress the trigger to exhaust all air from the tool.
18. Use only fasteners that are recommended by the manufacturer.
19. Do not depress the trigger unless the nose piece of tool is directed onto a safe work surface.
20. Do not carry a tool with the trigger depressed. Do not load the tool with the trigger depressed.
21. Do not use compressed air to blow or clean debris or dust from clothes or surfaces.

22. Keep tools clean and lubricated, and maintain them according to the manufacturers' instructions. Use only the attachments that the manufacturer recommends for the specific tool.

23. Do not carry pneumatic tools by the attached hose.

24. Use the proper hose and fittings of the correct diameter. Use hoses specifically designed to resist abrasion, cutting, crushing and failure from continuous flexing. Choose air-supply hoses that have a minimum working pressure rating of 1035 kPa (150 psig) or 150% of the maximum pressure produced in the system, whichever is higher. Check hoses regularly for cuts, bulges and abrasions. Tag and replace, if defective. Make sure the hose connections fit properly and are equipped with a mechanical means of securing the connection (i.e., chain, wire, or positive locking device).

2.50.8 Powder Actuated (explosive actuated fastening tools) Nail Guns

1. Inspect the tool prior to each use. Use the Canadian Standards Association Standard series Z166-M85 "Safety Code for Powder-Actuated Tools" as a guide for safe operation and maintenance of the tool. Only authorized personal possessing a current and qualified operator's permit for the tool to be used.

2. Ensure all parts of the tool operate properly. Tag defective tools "Out of service" and remove from service until properly repaired.

3. Ensure the manufacturer's name and trademark as well as the model and serial numbers are legible on the tool.

4. Check the chamber prior to each use to ensure that the barrel is clean and free from obstruction.

5. Do not allow bystanders in the immediate vicinity of your work. It may be necessary to shield a work area to protect against possible ricochet.

6. Use only projectiles/fasteners (nails, studs, etc.) and cartridges recommended by the manufacturer. Check that the colour of the cartridge is appropriate for work being done. Charge cartridges are colour-coded to show their strength.

7. Powder-actuated tools operate like loaded guns. Handle powder-actuated tools with the same respect and safety precautions as guns.

8. Wear safety glasses / face shield and hearing protection.

9. Always be sure you are on firm footing when operating tools. Brace yourself at all times when working on ladders and scaffolds to maintain balance.

10. Always keep tools pointed in a safe direction. Never carry a loaded tool from area to area. Never place your hand over the front (muzzle) end of a loaded tool or point nozzle at anyone.

11. Always use the tool at right angles to the work. (Nozzle perpendicular to surface).

12. Never use the tool where flammable or explosive vapours are present.

13. Do not load the tool until immediately before use. Never leave loaded tools unattended.

14. Always ensure that the base material is of sufficient consistency that the projectile will not pass right through it. Always ensure that no one is standing in the area immediately behind the work area.

15. Hold the tool in the fixing position for no less than15 seconds should it misfire. Keep the tool pointed in a direction that will not cause injury to you or others and unload a cartridge with extreme caution.

16. Keep the tool pointed in a direction, which will not cause injury. Unload cartridge with utmost caution.

17. Always keep tool and cartridges in a locked container when not in use.

18. Clean and maintain tool in accordance with the manufacturer's instructions.

19. Keep cartridges locked up when not in use. Do not discard unfired cartridges carelessly. Never carry loose cartridges in your pocket. Carry them in the manufacturer's package.

20. Load powder-actuated tools just before use. Do not carry loaded tools from job to job. Also do not carry cartridges in your pocket.

21. Do not leave loaded powder-actuated tools unattended.

22. Store tools and cartridges in a locked container when they are not in use. Ensure the tool is unloaded before storing it.

23. Ensure the base material has no holes or openings and is of sufficient consistency to prevent a projectile from passing right through. Ensure the proper power setting and cartridge power is correct to prevent projectile from passing through material.

24. Do not force a projectile into a working surface that is harder than the projectile being used (nail head sticking out). If the base material is unknown, use a hand hammer to drive the projectile, using it as a centre punch. Conduct a first trial by using the weakest or lowest strength charge cartridge.

25. Provide adequate ventilation in confined spaces where powder-actuated tools are used.

26. Use caution when using tools near live electrical circuits. Make sure the nails (etc.) do not enter live circuits buried or hidden in the base material.

27. Do not discard unfired cartridges carelessly.

2.50.9 Insulation

Steel stud frames are stuffed with Batt insulation (typically yellow or pink glass/slag wool) which consists of fibres blown or spun from molten glass and collected in an entangled mat. Without a Safe Job Procedure, these fibres can also cause short term irritation to the skin, eyes and upper respiratory tract and even digestive system among workers involved in installation of insulation products.

- All workers shall have knowledge of the location of Material Safety Data Sheets/Safety Data Sheets (MSDS / SDS) for any product which they may use of come in contact with.
- All workers should demonstrate knowledge of the workplace hazardous materials system program (WHMIS / GHS).
- All products shall be handled in accordance with manufactures instructions and requirements of WHMIS / GHS program and properly identified with current MSDS / SDS.
- Workers shall wear and use personal protective equipment (PPE) as determined by a review of the product label and MSDS/SDS.

Refer to the section on WHMIS / GHS in our OH&S program for a detailed account of product labels, MSDS/SDS, and responsibilities in regards to working with hazardous substances and materials.

1. When working with insulation use the appropriate personal protection equipment:

a. Respiratory protection: refer to product specific Material Safety Data Sheets/Safety Data Sheets for recommended respiratory equipment. Ensure you are trained in respirator use and maintenance, and fit tested.

b. Eye protection: wear approved safety glasses or tight fitting safety goggles.

c. Skin Protection: wear clean laundered work clothing and bring a change of clothes to work to prevent transport of contaminates home. Leather or other fine woven gloves are also recommended to prevent penetration of fiberglass fibers. In addition loose fitting and long sleeved clothing is recommended. Change

clothes after a fiberglass installation or servicing project. A head cover is also recommended when working overhead.

2. Clean-up fiberglass dust with a vacuum fitted with a HEPA filter to avoid dispersal of contaminates. Use of wet disposable rags is also acceptable.
3. Keep insulation materials in packaging until it is used.
4. When working with fiberglass, handle it as little as possible to minimize exposure and dispersal of fiberglass fibers.
5. Use the correct cutting tool to cut fiberglass insulation - use a sharp knife and a straight edge. (Do not use a serrated edged blade or saw as these generate greater amounts of fiberglass fibers- tools that produce the least amount of dust or fibers should be used).
6. Avoid tearing or ripping insulation to minimize dust generation.
7. Keep insulation in a dry storage location protected from the weather. Install only clean and dry insulation to minimize the potential for mold development.
8. Fire prevention: Keep sources of heat, open flame, cutting/grinding sparks away from insulation. Avoid installation of insulation adjacent to electrical and heat coverings.
9. Dispose of excess and scrap insulation as soon as possible to minimize exposure and dispersal.
10. Do not use compressed air for cleanup of insulation fibers or dust.
11. If insulation fibers or dust accumulate on the skin, do not rub or scratch. If fibers are seen or felt penetrating the skin, the best way the fibers may be removed is by applying and then removing adhesive tape – this way the fibers adhere to the tape and are pulled off instead of pushed into the skin.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.51 Stilts

2.51.1 GENERAL

The use of stilts raises a worker's centre of gravity, making the worker much more unstable and prone to tripping, overbalancing or falling through openings in floors or walls. Guardrails are usually not designed for people on stilts, and will not protect

the user from falling. Workers sometimes use an unstable support, such as a stepladder to put on stilts, exposing themselves to the hazard of falling.

If a worker is employed on stilts or work platforms, or is otherwise elevated above the floor, and the effective height of guardrails, walls, or barricades is thus reduced to less than the height specified in section 4.54 of the WorkSafeBC Regulations. Additional guardrails must be installed or a personal fall protection system must be used in accordance with the relevant requirements contained in Part 11 (Fall Protection) of WorkSafeBC Regulation. Also, refer to Section 4.57, Elevated Workers, in the WorkSafeBC Regulations.

1. Stilts and components shall be inspected by the employee before each work shift. Any stilts that has been weakened or damaged will be repaired or replaced before any workers are allowed to use it. They also must be stored, serviced and maintained in accordance with the supplier's instructions.

2. Stilts must be kept clean and free of accumulation of dirt, plaster, paint and other debris.

3. If an employee is using stilts near a guardrail, the top rail must be increased an amount equal to the height of the stilts or adequate fall protection equipment is used. Try to avoid using stilts in areas that increase risk of fall, such as edge work.

4. Floor surfaces are solid, level, can support stilt activity, and have been cleared, swept and dry. Stilt workers need to move freely and without stepping over or moving around trip hazards, such as extension cords, work lights, hoses, packaging or dropped items such as nails or screws.

5. Floor penetrations, stairwells and voids are covered or guarded in such a way that they can be clearly seen by stilt workers and offer them protection.

6. Plumbing and electrical work has been roughed in with switch positions and access points marked and lighting cables secured or locked out.

7. Stilts should not be used where the ceiling height is greater than three meters. Work should not commence until the work area is "Plaster Ready."

8. The stilt worker's torso should be vertical whenever possible, so tasks that require frequent bending should be avoided.

9. Any one period of working on stilts should be not greater than 2 hours. Any further sessions should be separated by at least thirty minutes of non-stilt tasks. Stilts should not be used by any individual for more than 6 hours per day. A rigid and raised platform should be used for mounting / dismounting stilts with the platform at a height equal to or greater than the height of the stilts.

10. Stepladders are not to be used for mounting /dismounting stilts. Stepping up and balancing on one stilt than bending to fit the second is also not acceptable.

11. Supervisors should regularly check that stilt workers are not experiencing fatigue. If stilt workers begin to experience fatigue, they should immediately remove their stilts.

12. The plasterers' stilts must be from a recognized industry supplier who will provide instructions on their correct use that must be followed at all times.

13. Stilt workers should not commence work before risk control measures ensure that :

a. Other workers cannot affect the immediate work area being used by stilt workers, unless they are working as support for the stilt worker. If this cannot be guaranteed, the work area should be taped off or barricaded to prevent access.

b. There is a safe means of attaching and removing stilts readily available.

c. Any waste produced and material dropped by stilt workers is promptly cleared away (by an assistant) from the floor surface they are working on.

14. Do not use stilts when:

a. The work site is not "Plaster Ready".

b. Fatigue is observed or experienced.

c. The stilts are poorly maintained or not from a recognized industry supplier.

d. Lifting or supporting plaster sheets (WorkSafeBC recommends the use of a pneumatic or mechanically powered plaster sheet lifter with large extension screw gun for this task.

e. Handling long, heavy or cumbersome objects or items, such as decorative cornices.

f. Employees have not been properly trained in their use.

g. Walking on stairs, on sloped or uneven ground, and in any situation in which there is a change of height.

h. Stepping into or over baths, furniture or other obstructions.

i. Working on a non-floor surface (such as tables, boxes, trestles, etc.). Do not use any other object to step on to gain further elevation. Walking backwards. The springs are fully compressed (caused when lifting heavy objects or exerting high upward force, such as drilling through overhead structures) Stilts are to be used for light to medium duty work tasks only.

j. Picking up items from below knee level. All equipment and materials required by a stilt worker should be supported by a purpose-built stand (mobile or stationary) that enables the stilt worker to access them without over-reaching or bending down below knee level. The height of the stand should be appropriate for the task being performed. Alternatively, tools and materials can be passed up to the stilt worker by another person standing on the floor.

k. Using inappropriate equipment such as trowel boxes, tools with extension cords or hoses (use only portable electric tools to avoid tangle and trip hazards).

l. There is absence of a suitable mounting / dismounting platform.

m. The ceiling height is greater than 3 meters or the task requires frequent bending or over-reaching.

15. Workers should also take every opportunity to remove the stilts when they are not necessary for the task and do not use stilts for work that does not require them (only for suitable tasks).

16. Only tools without cords or hoses (leads) such as trowels, hammer, sanding block, and cordless screw guns/drills should be used by workers on stilts.

17. Stilts should only be used when performing light to medium duty tasks such as: placing of insulation batts, installing furring channels, patching, touching up and stopping of joints using a trowel, fixing cornices, and minor hand sanding.

18. Stilts must not be used without the proper training: Trainees should be made aware of how the foot and ankle action changes when wearing stilts. Training should also include information on: work environment hazards; how to correctly adjust stilts so as to reduce fatigue and poor posture; and a briefing on what injuries can occur from the incorrect use of stilts. The stilt worker should gain experience and confidence before working and also before performing tasks such as working with their head up, using tools in both hands or working at maximum height.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.52 Strains and Sprains

2.52.1 GENERAL

The following guidelines are not a full list, but represent good practices that should be adopted by all workers to avoid the potential for sprains or strains. All workers should complete a warm-up prior to beginning work each day. This is particularly

important after a weekend or vacation or if the weather is inclement (i.e. raining, cold, snow).

Always assess the work to be done before you begin and get assistance if you think it will make the job easier and prevent injury to yourself or others.

1. Use mechanical means to lift wherever possible. i.e. forklifts, cranes, pallet jacks or hoists.
2. Use dollies whenever possible to transport tools and materials around the job.
3. Place extra pallets or dunnage under materials that have to be handled by hand. Avoid lifting from below the knees will help prevent many injuries.
4. Avoid lifting over shoulder height when possible. When lifting large sections of pipe into place or other materials, try to use a hoist. If it is too heavy or awkward, get some help.
5. When cross-stacking materials, do not twist your body. Place materials far enough apart so that two steps are required in between stacks. This will avoid the natural tendency to twist.
6. Shoveling operations should be done both left and right-handed. Trading off every once in a while, will help you avoid over using the muscles on one side of your body. Avoid twisting when you pitch a shovel full of material.
7. Working on frozen surfaces requires special attention. Applying sand regularly to ice and snow and wearing slip resistant tread designs on the soles of your footwear will help you avoid slips as well.
8. Housekeeping is one of the most common causes of slips, tips and falls. Keep your area, as well as all access/egress areas, clean. Especially be aware of small pieces of pipe or conduit. Extension cords should be fully unraveled and neat and if not in use, put them away.
9. Slipping off equipment is a very common cause of injury. Use the three-point rule when going on or off equipment or ladders. This means to keep three parts of your body in contact with the equipment at all times: one foot and two hands or two feet and one hand. Do not try to carry something with your hands and climb at the same time! Also, do not jump!
10. Use scaffolding, scissor lifts or aerial baskets if your work requires two hands to accomplish the task. Adhere to applicable Fall Protection requirements. Work from ladders should be limited to light duty only. If you use a ladder, make sure it is in good repair and that it is the proper height and type. Be sure to tie it off to prevent slipping.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.53 Stripping Formwork

2.53.1 PRELIMINARY ACTIVITIES

Where multiple trade activity is scheduled, the general contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete their scope of work.

Prior to any work commencing supervisors must conduct a hazard assessment of all applicable work areas. Any hazards that are found during the hazard assessment must be addressed prior to any work commencing.

If there is such an area (vent or elevator shaft) where an opening could appear after formwork being stripped on lower elevations, e.g. parade, the following must be implemented:

1. Stripping Crew Supervisor must assess the hazard on both levels (elevations);

2. Both levels at immediate areas must be flagged and signs displayed;

3. Any openings on higher elevation or slab must be covered and secured with larger size plywood to eliminate any fall hazards. In addition, these coverings must have a symbol which indicate floor opening. The symbol required shall be a circle with an X in the middle. These could be done via spray paint.

4. A Safety spotter maybe designated from time to time to oversee the operations.

2.53.2 GENERAL

1. When doing any stripping, all workers must understand their role and comply with Regulatory Agency Regulations.

2. When required, a control zone must be set up and flagged prior to starting any work.

3. Watchmen must be used when required and this person shall ensure that the safety of all workers and the general public is the number one priority.

4. Personal Protective Equipment must be worn at all times.

5. Prior to the removal of any formwork, a plan shall be devised to ensure the safe and orderly removal. This plan shall include a review of the Erection Documents and Information as well as design drawings, an orderly removal strategy,

consideration for removal and storage of formwork and items such as fall protection and lighting.

6. Ensure that all overhead formwork, especially that installed at or near the outside edge, is fitted with devices (i.e. holes which ropes can be tied through) which allow the form to be removed without the worker losing control of the formwork.

7. Form stripping crews should always be made up of as small a number of workers as is practical. In small crews, each member can keep track of what others are doing.

8. Other trades and operations, not directly involved in the form stripping process, shall not be allowed to enter into or work in areas where form stripping is taking place. The area shall be roped off and warning signs posted.

9. No form stripping shall be started until all workers involved in the removal have been made aware of the methods, plan and direction the form stripping will take.

10. Wherever possible, materials and debris shall be removed from the area as work proceeds. This will reduce the need to walk over or work around things left on the floor or the ground.

11. Formwork at elevated locations shall be removed using rolling scaffolds or other work platforms. Climbing partially stripped formwork is hazardous to all workers involved.

12. Adequate lighting is essential in the safe removal of formwork. Mobile light stands are the best option in providing lighting for formwork. Brewery cord or Pigtail stringer lighting can easily be damaged and should be avoided.

2.53.3 Knock Down Slab Systems

1. Special attention should be paid in stripping these types of forms as much of the work is overhead. The usual arrangement of this type of form involves shoring frames or a combination of shoring frames and jacks.
2. The removal of this form system shall be done in an orderly fashion and shall proceed from one side.
3. The first step is to back off the adjustable base plates and “U” heads in one area. This will lower the stringers, joists and sheathing.
4. Any sheathing, which is stuck to the concrete work, should be loosened and removed before the shoring structure is dismantled.

5. Stripping is to be done in the reverse order to erection. Plywood sheathing should be removed first, followed by joists and stringers and finally, the shoring frames.
6. The area where stripping starts shall allow access for taking away materials as it is dismantled.

2.53.4 Stripping At High Lift

1. When working above 6 feet there is a requirement to employ more stringent controls to ensure that workers not related to the stripping operation do not become exposed to potential hazards such as falling ply wood or 4x6.

2. The following additional procedures will be followed when stripping formwork at high lift:

➢ Establish a control zone around the area being stripped. Include signage at all access points indicating that stripping is in progress and unauthorized personal are not permitted in the area.

➢ Fall protection is required for all workers who will be above 6'. Anchor points must be reviewed prior to work commencing. Workers are permitted to anchor to scaffold frames providing that the frames are secured (i.e. no possibility of tip-over) and all components remain in place while workers are on them (i.e. braces, pins, etc.).

➢ If scaffold frames are not secured than alternate anchor points must be designated prior to work commencing. Pre-planning during construction of form work can ensure that approved anchor slings are placed on columns and walls in the area of the high lift to facilitate anchoring during formwork stripping.

➢ The stripped form work (i.e. plywood, 4x6, aluminum beams, and scaffold components) must be lowered to the ground under control. Some methods for controlling descent are:

- Using a rope tied to each component to lower it under control.
- Constructing a ramp system to slide components down to ground level. If this type of a system is used then a control zone and barrier system must be established at the bottom of the ramp to prevent accidental entry when materials are coming down the ramp or the possibility of materials being launched out of the

landing area. The landing area must be cleared regularly. This method is not suitable for lifts above 10'.

- Passing materials down the scaffold hand to hand. This method is suitable for lifts over 10'. The diagram below illustrates what the ramp may look like. The ramp could be constructed out of scaffolding frames as well providing that the system is stable and there is no possibility for materials coming off the side of the structure.

➢ Adequate lighting must be available at all work areas. If the lift which is being stripped is high it is possible that floor based lighting will be adequate for workers to work safely. In this case lighting should be provided at the same level as the workers.

2.53.5 Removal of fly forms

1. Ensure that all engineering documentation, layout and lift plans as well as all permits and licenses are in place. Ensure that all movement of the fly forms is done in strict compliance with the engineered plan for the project.

2. Ensure that all workers involved in the movement of the fly forms have received adequate training and have shown demonstrated knowledge of the specific project and the process of moving the forms.

3. Ensure that all warning devices and procedures are in place and that all workers on the jobsite are aware of any movement of the fly forms.

4. To remove the Fly form, locate the chains above the designated Fly form.

5. Secure the chains on the Fly form. The form is only to be rigged and moved under the direction of one rigger. This person shall be responsible for all communication with the crane operator. All workers involved in the movement of the form, who are required to work adjacent to the edge of the structure or higher than 10', shall wear adequate fall protection devices.

6. Ensure that the area directly below where the form will be brought out of the building is secured and that no access by workers or the public is allowed. This process may include the short term stoppage of traffic on adjacent roadways.

7. Always use a ladder to access designated pick points.

8. When the form is loose (final turnbuckle removed), ensure that all loose materials such as concrete or other loose debris are removed from the fly form.

9. If the Fly form requires to be knocked to loosen material, then lowered on its side to allow material to fall, these actions must be performed prior to flying these forms next to Public areas or over general Public.

10. Under no circumstances shall any worker ride the form from one location to another.

11. The crane operator involved in moving the form shall take direction from one person only. If the direction is not understood, or not clear, crane operator shall cease all movement of the crane and/or the form until the directions are clear and understood.

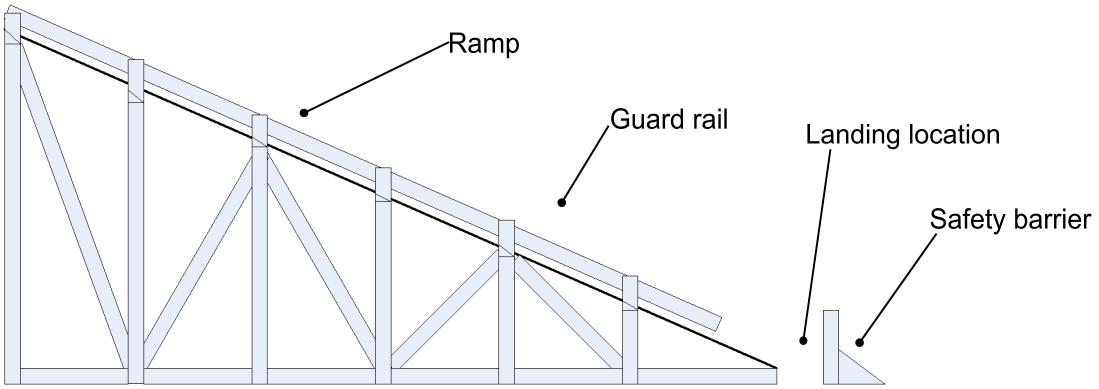
2.53.6 Material Ramp

There may be a requirement to have this structure engineered prior to being installed and used on the work site. Employers are to verify engineering requirements before employing the design illustrated below.

The following points must be observed when using a job built material ramp. The diagram below is only a suggested design.

- The material ramp shown below must have a guard rail on either side of the ramp to prevent materials from sliding off the edge during descent.
- The slide platform must be constructed out of material which is sufficiently strong to support the loads applied to it.
- There must be a safety barrier at the bottom of the ramp which can withstand the force of materials coming into contact with it. The barrier must be far enough away from the bottom of the ramp so that materials are not striking it constantly. The purpose of the barrier is to prevent materials from flying out of the landing location at the bottom of the ramp. Materials coming down the ramp should be stopped by the friction of the slab at the bottom of the ramp. The barrier must be secured into position using nails or some other method.
- The landing location must be cleared on an ongoing basis to limit the potential of materials becoming projectiles as a result of accumulation at the bottom of the ramp.
- No materials are permitted on the ramp when workers are clearing the landing location at the bottom of the ramp.
- Workers are not permitted on the ramp at any time. If materials need to be cleared from the ramp a ladder or pole will be used.
- Workers are not permitted to stand at the bottom of the ramp while it is in use.
- Workers are not permitted to stand behind the safety barrier while the ramp is in use.

- There may be a requirement to place plywood or a similar material in the landing location to protect the slab.
- Supervisors must check with the site superintendent before using this system to ensure there are not additional requirements other than those listed above.



Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.54 Window and Door Casement Grinding

2.54.1 GENERAL

1. Proper eye protection and personal protection equipment must be used.
2. Evaluate the area for hazards and the impact on other workers in the grinding area. Where a worker, other than the grinder, is exposed to concrete dust, the area should be restricted by the use of caution tape.
3. Grinding machines must only be used for what the manufacturers intended them for.
4. Proper work rests and protective equipment must be used.
5. Maintenance and good working order of all components in the grinding process must be maintained.
6. Signage must indicate that cement finishing is in progress and that respiratory protection is required.
7. Barricades must be erected to ensure that unsuspecting or unprotected personal do not enter into an area where there is active cement finishing in progress.

8. The use of abatement system must be used in areas where vacuums, water or barriers are not adequate.

9. Adequate ventilation must be maintained.

10. Each worker doing concrete grinding is to be assigned a respirator for his sole use.

11. The respirator is to be fitted correctly by the Site Safety Officer. A record of assigned safety equipment is to be kept by the Site Safety Officer.

12. Only authorized and trained personnel with an assigned respirator is to perform grinding work.

13. Persons who are required to wear a respirator will not wear contact lenses.

14. The respirator wearer is to perform the two fit tests each time he places the mask over his face.

15. Check wheel guards are in place and properly adjusted.

16. Check grinding wheel is firmly secured.

17. Inspect the grinding wheel before turning on the power. Do not use wheels that are chipped or cracked.

18. Test equipment for proper operation.

19. Work area to be clean, dry, and unobstructed.

20. Provide adequate lighting.

21. Provide mechanical ventilation when using half-mask respirator.

22. Do not operate a grinder with one hand.

23. Stand to one side of the wheel before turning on the power.

24. When grinding, use the operating face of the wheel only.

25. Do not use a wheel that vibrates.

26. Do not over reach when operating grinder.

27. Before putting down a grinder the wheel must be stopped.

28. A grinder is to be put down with the wheel facing up.

29. Disconnect the grinder from the power source when making equipment adjustments or wheel changes.

30. Store grinder and respirator in clean dry area.

31. Clean and sanitize the respirator face piece and clean remaining components of air respirators after each use.

32. Cleanup and disposal of silica dust must be done in a controlled manner ensuring that there is no accidental release of the dust. The following points must be adhered to:

- All dust from vacuums is to be double bagged.
- Garbage bags containing silica dust will be transported to ground level on their own (i.e. not with other garbage types such as scrap wood which may cause bags to be penetrated).
- Bags containing silica dust should, as much as is possible, be removed from the site for disposal in separate garbage containers.
- Emptying of vacuums or cleaning of tools should be, as much as is possible, done in an area which is away from common areas such as lunchrooms or access/egress routes.
- Under no circumstances is air to be used for clean-up.
- Dry sweeping should not be done unless used in conjunction with a dust suppressant.

33. All workers who are exposed to fall above 10 feet will use fall protection (arrest or restraint) in accordance with the site specific fall protection plan.

2.54.2 Fit Test

2.54.2.1 Negative Pressure Sealing Test

Block the inlet tube to prevent the passage of air. Inhale gently, taking care not to distort the face piece, and hold your breath for 10 seconds. If the face piece collapses slightly and no infiltration of air into the face piece is detected, it is considered that the fit of the respirator is satisfactory for the wearer.

2.54.2.2 Positive Pressure Sealing Test

Close off outlet valves and exhale gently. The fit is considered adequate if a slight pressure can be built up inside the face piece without detection of any outward leakage of air between the sealing surface and the wearer's face.

2.54.3 Maintenance

Each respirator wearer shall clean and sanitize his respirator face piece and clean remaining components of air respirators after each use. The respirator is to be stored in a clean dry area, sealed in a plastic bag.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.55 Winter Work

2.55.1 GENERAL

1. Workers are required to have adequate cold weather equipment. Avoidance of such injuries as frost bite or hypothermia must be avoided. Carry extra dry clothing if you are likely to get wet.

2. Work during early morning or late afternoon hours will be impeded due to limited natural lighting. Adequate lighting will be provided to facilitate work during these hours.

3. Ground conditions will be slippery and, as such, workers are required to move more slowly. Limit the amount of materials or equipment that you carry when walking across frozen ground, particularly when there is snow on the ground.

4. All hazards that were visible prior to snow fall must be marked in such a way so as to be visible when snow is on the ground or in low light.

5. Do not operate machinery or equipment at full capacity until they have had adequate time to warm-up.

6. Workers should monitor each other, particularly when working outdoors, for the effects of frost bite or hypothermia.

7. Workers must consume an adequate amount of water during their shift to avoid dehydration.

8. The use of high visibility vests or markings is mandatory when mobile equipment is being used.

9. Supervisors must monitor the temperature and wind chill factor and must move workers into warming huts or crew trailers if conditions become potentially dangerous.

10. Adequate heated facilities must be provided for all breaks.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.56 Working Around Heavy Equipment

2.56.1 GENERAL

1. No one is allowed to work within the machines extended radius.
2. Create a barrier by taping off two distinct areas which in turn will clearly separate employees from the operating machinery.
3. Under no circumstances are the machines to encroach this radius outlined by the reflective tape. This barrier will be moved according to the location of the operating machinery.
4. Under no circumstances is any employee allowed to cross the barrier into the excavators radius.
5. Anyone entering the excavation hole must wear a reflective vest along with all other relevant safety gear.
6. Anyone who is planning to enter within the radius of the excavating machinery, must ensure eye contact with the operator and then wait until the operator recognizes and instructs the person to enter within the radius. The person in question must always remain in full view of the operator when leaving so as to ensure the operator it is safe to proceed with their work.
7. Under no circumstances shall any person walk between a dump truck and trailer.

Always make eye contact with the operator before doing anything around the heavy equipment.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.57 Working Around Mobile Equipment

2.57.1 GENERAL

Step No.	Description of Step	Potential Hazards	Hazard Level	Permits, Safety Precautions, Equipment, PPE, Recommended Action or Procedure
1	Complete Task Hazard Card	• Missed hazards • Miscommunication	3	• Discuss hazards and abatement measures with workers. • Identify off limit or out of bound areas to workers. • Document all changes and additions. • All workers in area must review and sign each other's FLRA.
2	Review Safe Job Procedures (SJP) with all workers	• Missed steps • Misunderstanding • Workers not informed of hazards	3	• Ensure all workers involved with task attend meeting. • Review Emergency Preparedness Section of the OH&S Program and emergency response procedures with workers.

Step No.	Description of Step	Potential Hazards	Hazard Level	Permits, Safety Precautions, Equipment, PPE, Recommended Action or Procedure
	involved with or affected by task	and abatement measures		• Ensure workers understand task and safe work procedures/practices. • If a permit is required, review permit with workers to ensure workers understand the terms and conditions of the permit and their specific responsibilities. All workers in the areas must be aware of the permit requirements. • Supervisor(s) and workers to sign this document, meeting minutes or attendance sheet and permit if application. Ensure date and time of meeting is recorded.
3	Approach Vehicle or equipment	• Mobile equipment • Blind Spots • Fellow Workers	2	• From a distance, signal and make eye contact with equipment operator before approaching. • Wait for operator to signal that is it safe to enter area or to cross equipment paths. • Avoid approaching mobile equipment from the rear of equipment, or from the operator's blind spot.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.58 Belt and Palm Sanders

2.58.1 Work Area

1. Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2.58.2 Electrical Safety

1. Double Insulated tools are equipped with a polarized plug (one blade is wider than the other.) This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.

2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.

3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

4. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

5. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.

2.58.3 Personal Safety

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.

2. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

3. Your finger on the switch or plugging in tools that have the switch on invites accidents.

4. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.

5. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.

6. Use safety equipment. Always wear eye protection. Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

2.58.4 Tool care and Use

1. Use clamps or other practical way to secure and support the work piece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

2. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
3. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
5. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
6. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
8. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool, may become hazardous when used on another tool.

2.58.5 Sander Application

Before operating the machine, be sure the abrasive belt is in the right track. The simple way to test it is to turn on the machine, check whether the abrasive belt is on the right track, then turn it off immediately.

1. Wear proper eye and hearing protection and where necessary respiratory protection.
2. Disconnect sander from power supply before changing paper. When replacing the paper of a belt sander, ensure the paper is orientated in the proper direction indicated on the machine and manufactures instructions. Inspect sanding belts before using them. Replace worn, cracked, or frayed belts.
3. When using a belt sander, use both hands and keep hands away from the sanding belts and rotating parts. Keep one hand on the trigger and one hand on the knob handle. Palm sanders only require one hand on the sander.
4. Clean dust from motor, vents, and dust collection bag/container at regular intervals.
5. Do not use a belt sander on unsecured material that could become a projectile.

6. Do not use any electric sander without a dust collection system or local exhaust ventilation system. Empty the dust collection system proactively when it is ¼ full.
7. Do not exert excessive pressure on the sander. If you find you are not progressing within a reasonable time frame, change the grit of paper to better suit the task.
8. When sanding wood that has been treated with paint, varnish, or filler putty, ensures that you understand the material safety data sheet (MSDS) for the product. Special consideration is to be given to older painted- wood products as they could potentially contain lead and other toxic compounds that pose a respiratory hazard when made airborne by sanding.
9. Generally speaking, belt sanders are designed for horizontal/flat work, because of their excessive tool weight. Overhead and vertical sanding operations should be done with a smaller palm sander.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.59 Chainsaw

2.59.1 GENERAL

1. Ensure that only personnel trained and experienced in the safe use of chainsaws are permitted to use chainsaws.
2. Chainsaws in construction must be equipped with a chain break and an anti-kickback chain.
3. Wear appropriate personal protection equipment when operating a saw. Wear eye protection, dust mask/ respirator, and hearing protection. Wear clothing that can protect you from the saw dust and debris from cutting.
4. Inspect chain to ensure it is installed correctly.
5. Correct tension on chain.
6. Chain is to be sharp.
7. Check oil in all oil chambers (chain and motor).
8. Ensure chain brake is operating.
9. Do not use the chainsaw if the brake is not operating correctly.

10. Ensure material to be cut is clean.
11. Ensure material to be cut is firmly held, and supported close to the line of cut to prevent binding of blade.
12. A chainsaw is never to be handled with one hand.
13. Ensure the work area is clean and free of obstacles.
14. Extreme caution to be exercised when cutting material above the waist.
15. The chain must come to a stop before moving from one cut to another.
16. Store the chainsaw in a clean, dry area.
17. Ensure the fuel and oil are not leaking.
18. When refueling the saw allow the saw to cool for 2 to 3 minutes beforehand. Do not smoke during or after refueling. A fire extinguisher should be present when refueling. Ensure that the fuel cap is tightened properly and that spilled fuel is wiped from the surface of the tool.
19. Follow manufactures guidelines for maintenance of the chainsaw and the chain specifications.
20. Do not stand directly behind saw when making a cut. Hold the chainsaw to one side of your body in case of kickback.
21. Do not operate the saw above waist level.
22. When carrying the saw, carry it so that the bar (chain end) is to the rear.
23. Maintain a solid grip when operating a chainsaw. Use both hands.
24. Use of a chainsaw requires constant focus and is physically exerting compared to other construction work tasks. Before operating a chainsaw, ensure you are physically capable and not fatigued.
25. Do not attempt to cut any other material other than wood with a chainsaw.
26. Always be aware of where the bar (chain end) tip is at all times. The tip of a chainsaw represents the contact spot on the bar that can potentially lead to large kickback. Keep this tip clear
27. Be particularly careful to avoid contact with nails, screws and other obstructions. This is especially relevant in making pocket cuts.
28. When cutting large timbers be sure to support the timber in a manner that does not allow for the cut to bind/close, pinching the blade.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.60 Compound Mitre saw / Radial Arm Saw

2.60.1 Saw and Woodwork Operation Precautions

1. Keep work areas clean. Cluttered areas and benches invite injuries.

2. For each tool read the operation manual carefully. If you do not understand or are uncertain regarding the safe operation of a certain tool ask a supervisor.

3. Consider work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use tool in presence of flammable liquids or gasses.

4. Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the woodworking area. If you have trouble hearing someone speak from three feet away, the noise level from the machine is too high. Damage to hearing may occur. Hearing protection is mandatory when using woodworking tools.

5. Use gloves to protect hands from splinters when handling wood but do not wear them near rotating blades and other machinery parts where the gloves can catch or interfere with emergency shut off of equipment.

6. Guard against electric shock. Prevent body contact with grounded surfaces.

7. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.

8. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.

9. Do not force the tool.

10. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.

11. Dress properly. Do not wear loose clothing or jewelry.

12. Use safety glasses when operating the tool.

13. Generally speaking, only cut one piece of wood at a time.

14. Do not abuse the power cord. Never carry or lift the tool by the power cord.

15. Do not overreach. Keep proper footing and balance at all times while operating the tool.

16. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect regularly to ensure that there are no signs of damage.

17. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.

18. Remove adjusting keys or wrenches before operating the tool.

19. Ensure that you have a good grip on the tool to avoid unintentional starting.

20. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.

21. Stay alert. Be aware of your surroundings and other personal that are in the area.

22. Do not use tools for applications they were not designed for.

23. Do not use attachments that are not recommended for the tool.

24. Do not touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.

25. Operate the tool below the rated input to ensure the tool is not damaged due to overload.

26. Do not wipe plastic parts of the tool with solvents.

27. Make sure the guard is in position, is in good working condition, and guards the machine adequately before operating any equipment or machine.

28. Check and adjust all other safety devices. Make sure the equipment is properly grounded before use.

29. Inspect stock for nails or other materials before cutting, planing, routing or carrying out similar activities.

30. Start buttons should be protected so that accidental contact will not start the machine.

31. Ensure that all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely, and not need to be forced.

32. Use a "push stick" to push material into the cutting area. Jigs are also useful in keeping hands safe during cutting procedures. Keep hands out of the line of the cutting blade.

33. Ensure that the floor space around the equipment is sufficient to enable you to machine the size of work piece being processed safely without bumping into other workers or equipment.

34. Keep work area free of clutter, clean, well swept, and well lit. Spills should be cleaned up immediately. Floor areas should be level and non-slip. Good

housekeeping practices and workplace design will reduce the number of injuries and accidents from slips, trips, and falls.

35. Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewellery that can become entangled with moving parts.

36. Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the cutting tool or blade.

37. Do not remove sawdust or cuttings from the cutting head by hand while a machine is running or plugged in. Disconnect the machine before making any adjustments.

38. Do not use compressed air to blow sawdust, turnings, etc. from machines or clothing.

39. Do not leave machines running unattended unless they are designed and intended to be operated while unattended.

40. If a blade binds to the material, do not try to free a stalled blade before turning the power off. Ensure power is disconnected before loosening blade from cut material.

41. Do not distract or startle an operator while he or she is using woodworking equipment. Do not try and sustain a conversation when making a cut.

2.60.2 Compound Mitre / Radial Arm Safe work Procedures

1. Ensure that only properly trained and experienced personnel are permitted to use radial arm saws.
2. Ensure that you have the appropriate PPE such as eye and hearing protection. Safety glasses or goggles must be worn. A face shield may also be required and it should be used in conjunction with proper eye protection.
3. Allow the saw to reach full speed before commencing a cut.
4. Do not stand directly in line with the cutting blade. Stand on the handle side when making cuts.
5. Radial arms saws require many adjustments before each use. Ensure the saw is locked out before making these adjustments.
6. The saw should never be operated with the blade in a position where it protrudes or extends beyond the table.

7. Wait until the blade has come to a complete stop before lifting the handle, removing the wood and leaving the saw. Do not take you hand away from the operating handle unless the cutting head is behind the fence.
8. Hold the material to be cut firmly against the tabletop and the rear fence. Never cut freehand. Ensure the hand holding the work piece is clear of the cutting blade. A general rule of thumb is 6 inches of clearance. Do not cut from material that is too short and does not allow for a proper handhold clearance. Choose a longer piece of material instead to cut from.
9. The blade should never be pulled beyond the point necessary to make the cut as the blade could lift and flip the work piece against or over the fence
10. Ensure that the saw is properly secured to a worktable by bolts or clamps at approximately hip height.
11. Ensure all safety guards are in position and operational.
12. Do not exceed the maximum cut of the saw. Refer to manufactures instructions.
13. Do not cut more than one piece at a time and do not cut pieces that are too small to be securely held by a hand or a clamp.
14. Disconnect the saw from the power supply and let the blade come to a complete stop before making any adjustments. After making adjustments, it is advised that the operator perform a “dry run” (power still off) of the cutting operation, to proactively asses the cut and any potential problems.
15. When using one hand to pull the saw down, keep the other hand (especially the thumb) well clear of the cut line.
16. Avoid cutting bent or warped material. If you have to cut bowed, bent or warped material, clamp it against the back fence with the curved side against the fence.
17. After finishing the cut, release the trigger with the blade still held down. Wait for the blade to stop before removing any cut material.
18. Avoid reaching over the saw line. Do not cross arms when cutting.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.61 Cut-Off Saw

2.61.1 Work Area

1. Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.

2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.

3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2.61.2 Electrical Safety

1. Double Insulated tools are equipped with a polarized plug (one blade is wider than the other.) This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.

2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.

3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

4. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

5. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.

2.61.3 Personal Safety

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a tool while tired or under the influence of drugs, alcohol,

or medication. A moment of inattention while operating power tools may result in serious personal injury.

2. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
3. Your finger on the switch or plugging in tools that have the switch on invites accidents.
4. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key left attached to a rotating part of the tool may result in personal injury.
5. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
6. Use safety equipment. Always wear eye protection. Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

2.61.4 Tool care and Use

1. Use clamps or other practical way to secure and support the work piece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

2. Do not force the tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.

3. Do not use the tool if the switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.

4. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.

5. Store idle tools out of the reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

6. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.

7. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

8. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.

2.61.5 Safe Use of Cut-Off Saw

2.61.5.1 General operation precautions

1. Keep work areas clean. Cluttered areas and benches invite injuries
2. Consider work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use tool in presence of flammable liquids or gasses.
3. Guard against electric shock. Prevent body contact with grounded surfaces.
4. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
5. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.
6. Do not force the tool.
7. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.
8. Dress properly. Do not wear loose clothing or jewelry.
9. Use safety glasses when operating the tool.
10. Do not abuse the power cord. Never carry or lift the tool by the power cord.
11. Do not overreach. Keep proper footing and balance at all times while operating the tool.
12. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect regularly to ensure that there are no signs of damage.
13. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.
14. Remove adjusting keys or wrenches before operating the tool.
15. Ensure that you have a good grip on the tool to avoid unintentional starting.
16. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.
17. Stay alert. Be aware of your surroundings and other personnel that are in the area.

18. Do not use tools for applications they were not designed for.
19. Do not use attachments that are not recommended for the tool.
20. Do not touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.
21. Operate the tool below the rated input to ensure the tool is not damaged due to overload.
22. Do not wipe plastic parts of the tool with solvents.
23. Never operate the tool without wheel guards.
24. Use only cutting wheels with a “Safe Speed” at least as high as the “No-Load RPM” indicated on the power tool name plate.

The cut-off saw can be used for the following applications: cutting sheet metal, concrete, cinder blocks, bricks, reinforcing rods, concrete wire mesh, and corrugated floor. No other applications are recommended. (Ensure the correct cutting wheel is used).

25. Ensure the power source to be utilized conforms to the power requirements specified for the tool.
26. Ensure the power switch is in the OFF position before plugging the tool in.
27. If an extension cord is being used, it must be of sufficient thickness and rating capacity to ensure tool efficiency is not diminished. Keep extension cords as short as possible.
28. Ensure the wheel guard is properly fitted and fastened before commencing any cutting operation.
29. Ensure the cutting wheel to be used is the correct type for the application. The wheel must be free of cracks or surface defects. Ensure the cutting wheel is properly mounted and the wheel nut is securely tightened.
30. Trial runs are recommended after a new wheel has been installed on the tool or before commencing routine cutting operations.
31. To prolong the life of the machine and ensure a first class finish, it is important that the machine should not be overloaded by applying too much force.
32. After switching off the machine, allow the cutting wheel to stop completely before setting the tool down.
33. Always place the tool down so that the cutting wheel is facing up.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.62 Demolition Hammer

2.62.1 Work area

1. Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2.62.2 Electrical safety

1. Double Insulated tools are equipped with a polarized plug (one blade is wider than the other) which will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation H eliminates the need for the three wire grounded power cord and grounded power supply system.
2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.
3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
4. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
5. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock.

2.62.3 Personal safety

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
2. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
3. Avoid accidental starting. Be sure switch is off before plugging in. Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
4. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
5. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
6. Use safety equipment. Always wear eye protection. Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

2.62.4 Tool care and use

1. Use clamps or other practical way to secure and support the work piece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
2. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
3. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
5. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

6. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
8. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.

2.62.5 Safe use of demolition hammers

1. Hold tools by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a “live” wire will make exposed metal parts of the tool “live” and shock the operator.
2. Wear ear protectors when using the tool for extended periods. Prolonged exposure to high intensity noise can cause hearing loss.
3. Wear a hard hat (safety helmet), safety glasses and/or face shield. Ordinary eye or sun glasses are NOT safety glasses. It is also highly recommended that you wear a dust mask and thickly padded gloves.
4. Be sure the bit is secured in place before operation.
5. Under normal operation, the tool is designed to produce vibration. The screws can come loose easily, causing a breakdown or accident. Check tightness of screws carefully before operation.
6. In cold weather or when the tool has not been used for a long time, let the tool warm up for a while by operating it under no load. This will loosen up the lubrication. Without proper warm-up, hammering operation is difficult.
7. Always be sure you have a firm footing. Be sure no one is below when using the tool in high locations.
8. Hold the tool firmly with both hands.
9. Keep hands away from moving parts.
10. Do not leave the tool running. Operate the tool only when hand-held.
11. Do not point the tool at any one in the area when operating. The bit could fly out and injure someone seriously.

12. Do not touch the bit or parts close to the bit immediately after operation; they may be extremely hot and could burn your skin.
13. Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.
14. Always be sure that the tool is switched off and unplugged before adjusting or checking function on the tool.
15. Before plugging in the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.
16. Switch can be locked in "ON" position for ease of operator comfort during extended use. Apply caution when locking tool in "ON" position and maintain a firm grasp on the tool.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.63 Working with Tools - Drills

1. No worker shall operate any power tool or similar type of equipment unless they are familiar with the use and operation of the equipment and has received specific instruction on its use and operations.
2. Instruction in the use, handling, and maintenance of power tools or similar tools, will be given to the workers by the supervisor responsible for the job.
3. Only qualified or specially trained workers may alter, repair, or otherwise be granted access to electrical equipment or electrical tools.
4. No worker shall commence work on any electrical equipment until the equipment has been shut off and locked out as per the lock out procedure. Ensure power supply is completely disengaged.
5. Ground Fault Circuit Interrupters must be installed at the power source for tools, which are not equipped with a ground plug. This includes double insulated tools as well. This is to take place when work is being done in wet environments.
6. Use of eye protection is mandatory for all workers using or assisting in the use of drill motors of any type.
7. Small parts must be clamped in a vice or to a large piece of material before attempting to drill them.
8. Before using an electric drill, the power cord must be checked for breaks or tears in the insulation. Defective drills must be returned to the shops for repair.

9. Plug ends of electric drills must be capped and have the grounding prong intact.
10. Chuck keys must not be taped to a drill electric cord, as electrocution might occur the insulation around the cord becomes damaged at the location where the chuck key is taped. Hang the chuck key at the end of the power cord where it plugs into the extension cord or receptacle.

2.64 Grinders

2.64.1 Work Area

1. Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2.64.2 Electrical Safety

1. Double Insulated tools are equipped with a polarized plug (one blade is wider than the other) which will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
4. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.
5. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
6. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

7. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock.

2.64.3 Personal Safety

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
8. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
9. Putting your finger on the switch or plugging in tools that have the switch on, invites accidents.
10. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
11. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
12. Use safety equipment. Always wear eye protection. Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

2.64.4 Tool care and Use

1. Use clamps or other practical way to secure and support the work piece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
13. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
14. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
15. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
16. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

17. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
18. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
19. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.

2.64.5 Safe Use of Grinders

1. Always use proper guard with grinding wheel. A guard protects operator from broken wheel fragments.
20. Accessories must be rated for at least the speed recommended on the tool warning label. Wheels and other accessories running over rated speed can fly apart and cause injury.
21. Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.
22. Keep guards in place when required.
23. Use only wheels having a maximum operating speed at least as high as "No Load RPM" marked on the tool's nameplate. When using depressed center wheels, be sure to use only fiberglass-reinforced wheels.
24. Check the wheel carefully for cracks or damage before operation. Replace cracked or damaged wheel immediately.
25. Use only flanges specified for the tool.
26. Be careful not to damage the spindle, the flange (especially the installing surface) or the lock nut. Damage to these parts could result in wheel breakage.
27. Hold the tool firmly.
28. Keep hands away from rotating parts.
29. Make sure the wheel is not contacting the work piece before the switch is turned on.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.65 Hammer Drill

2.65.1 Work Area

1. Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.
2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

2.65.2 Electrical Safety

1. Double Insulated tools are equipped with a polarized plug (one blade is wider than the other) which will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.
3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
4. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
5. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock.

2.65.3 Personal Safety

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol,

or medication. A moment of inattention while operating power tools may result in serious personal injury.

2. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
3. Putting your finger on the switch or plugging in tools that have the switch on, invites accidents.
4. Remove adjusting keys or wrenches before turning the tool on. A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
5. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
6. Use safety equipment. Always wear eye protection. Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

2.65.4 Tool care and Use

1. Use clamps or other practical way to secure and support the work piece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.
2. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
3. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
5. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
6. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

8. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.

2.65.5 Safe Use of Hammer Drill

1. Only authorized personnel are to operate the tool.
2. Inspect the tool prior to each use.
3. Ensure that all parts of the tool operate positively.
4. Ensure that the tool has the required “additional” handle based on the required work.
5. Hammer drills are primarily used to drill into concrete. Extra protection must be used due to the potential generation of silica dust resulting from the tool’s operation.
6. When using any hammer drill, all workers must understand their role and comply with applicable Regulations and Company policies.
7. Workers must be wearing the proper Personal Protective Equipment (PPE) such as a hardhat, safety footwear, safety eyewear, and fall protection as required.
8. When required, a control zone must be set up and flagged properly prior to starting any work.
9. When required, an acceptable abatement method must be used to control any potential silica dust.
10. As a primary objective, all workers must ensure no dust is released. This can be achieved through the application of water directly on the drill bit.
11. Vacuums with HEPA filters are also an acceptable means should the quantity of dust generated not be controllable through the use of water.
12. When it is not possible to control the dust, all workers involved must wear appropriate respiratory protection, signage warning others of the presence of airborne silica as well as area delineation is also mandatory.
13. Always ensure the tool is insulated and the power cord is in good condition.
14. Ear protection is mandatory while using hammer drills as the noise generated is greater than 85 db.
15. Always be sure you are on firm footing when operating tools. Brace yourself at all times when working on ladders and scaffolds to maintain balance.

16. Always keep tools pointed in a safe direction. Never carry the tool with a bit inserted into it. This is an impalement hazard.
17. Never change a bit while the tool is connected to the power source.
18. Ensure the tool is connected to a Ground Fault circuit Interrupter system or have an alternative “acceptable” means of protection (Assured Grounding System).
19. Always use the tool at right angles to the work.
20. Clean and maintain tool in accordance with the manufacturer’s instructions.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.66 Hand Tools / Tool Belt

2.66.1 GENERAL

1. Always ensure you are using the right tool for the job. Do not substitute or use makeshift tools.
2. Ensure that you use the proper PPE when using hand tools. Almost always the use of hand tools in heavy carpentry, require the use of eye protection.
3. Always check tools for damage or wear prior to each use. Watch for loose or broken handles and mushroomed heads.
4. Aim to reduce the torque needed to be applied by selecting tools with longer handles or tools with a ratchet function.
5. Replace cracked or broken handles on files, hammer, screwdrivers, or sledgehammers.
6. Replace worn jaws on wrenches, pipe tools and pliers.
7. Avoid using hand tools with your wrist bent. Always use tools which allow the wrist to remain straight.
8. Always pull on wrenches and pliers. Never push unless you hold the tool with your palm open.
9. Re-dress burred or mushroomed head on striking tools.
10. Carry tools using a heavy belt or apron and hang tools at your sides. Never carry tools in your pockets or hanging behind your back.
11. When using cutting tools, always cut away from yourself.
12. Do not wear bulky gloves when operating hand tools.

13. When using a bar for prying, be sure to stand so that you will maintain your balance should it slip or break.
14. Always think of your co-workers when using picks, and axes. Maintain clearance between you and any other person.
15. Keep close track of tools when working at heights. A falling tool can kill a co-worker.
16. Always keep your tools in top condition. A dull blade or blunt point can lead to injury.
17. Be on the lookout for signs of repetitive stress. Early detection may prevent a serious injury.
18. Maintain tools carefully. Keep them clean and dry, and store them properly after each use.
19. Always keep cutting tools sharp.
20. Never leave tools on ladders, scaffolds or overhead work areas when they are not in use.
21. Always keep tools being used in overhead work areas in containers or tied back in order to prevent them from falling
22. Ergonomics examines how the combination of force, repetition, duration and awkward postures increases the likelihood of an injury. Your upper limbs and hands and back are especially vulnerable to ergonomic related musculoskeletal injury (MSI). Below are some ergonomic considerations in hand tool choice and use:
    - Avoid tools that are too heavy, improperly balanced or grip span is too large.
    - If possible, choose tools with a ratchet effect, to minimize wrist strain.
    - If possible choose tools with a full hand power grip rather than pinch grip equivalents.
    - Choose and use tools that have a soft, rubber grip that allows for force to be distributed to entire hand and reduce vibrations.
    - Ensure tools are well maintained and sharpened.
23. Tool belts should be appropriately balanced, and of sufficient size to provide adequate freedom of movement for the scope of work.
24. Hang longer tools on the sides of your tool belt. Do not hang hand tools (especially hammers) off the rear of your tool belt, where they may dangle between your legs.

25. Hammers are an essential tool for any carpentry work. Striking tools such as hammers are commonly misused. Below are some considerations for selection and safe use of hammers:
    a. In general choose a hammer with a striking face diameter approximately half of an inch larger than the face of the tool/nail/object being struck.
    b. Ensure head of the handle is securely attached and that the handle and grip are in good condition.
    c. Discard any hammer that has a mushroomed or chipped striking face.
    d. Always wear safety glasses when using a hammer. Safety goggles with side protection offers even better protection.
    e. When using a hammer strike squarely to avoid glancing blows. Ensure that your swing is under control.
    f. Do not strike with the side (cheek) of a hammer.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.67 Handheld Routers

2.67.1 GENERAL

1. Ensure that you use appropriate personal protective equipment when operating a router. Hearing and eye protection must be worn. Respiratory protection may be required.
2. Inspect router prior to use. Router should be in good condition and well maintained. Defective routers shall be tagged and removed from service for disposal or repair.
3. Ensure that the router power and speed (rotations per minute (rpm)) are compatible with the depth of cut and bit selection. These details can be found in the manufacturers specifications. As the size of the bit increases, the speed at which routers can be operated decreases.
4. Always ensure that the power is disconnected before making adjustments or changing bits.
5. Ensure that bits are in good condition, free of defects, and sharp. Dull, worn, or bent router bits pose a binding and kickback hazard. In addition ensure that the shank length, cutting length and diameter are in good condition and of proper

size. (If you notice that the router rides upwards and requires more than regular force, this is a likely indication that the bit is too dull).

6. When routing material, be sure to allow bit to come to a complete stop before removing from stock.
7. When routing the rotating bit presents an entanglement hazard. Be sure to dress appropriately when using powered woodworking tools. Do not wear loose fitting clothing or accessories that could get caught on router bit. Wear long hair back and roll up long sleeved shirt when operating a router.
8. Be sure to secure the woodstock to be cut prior to routing. Clamp or nail the stock down to prevent movement/shift of material during routing. Avoid routing small pieces of stock – route a large piece and cut a small section from it.
9. Use both hands at all times when using a router. Routers give an initial "kickback" upon initial contact with the bit, and both hands are required for stability. If the work requires a "third hand", a foot switch/pedal may be warranted.
10. Before turning on the power, ensure the bit portion of the router is not in contact with the workpiece or any other material. If the router makes an inadvertent contact at low rpm, it may catch and spin out of control. Instead, bring the router up to full speed before making contact with workpiece.
11. When operating a router, look, listen, and feel for irregularities or changes in vibrations. Immediately turn off the router at the first sign of unfamiliar noise or vibration.
12. Ensure the stock is clear or obstructions that could pose a hazard while routing, such as knots in the stock, nails, or screws.
13. Routers are only meant for router-type bits. Do not use mounted abrasives, carving burrs, drill bits, screwdriver bits, or any other non-routing attachments. Just because an item has the same sized shank as the router's collet, does not entail their usage. Refer to manufactures specifications.
14. Do not try to increase the length of the shank and the depth of the cut by partially inserting shank into the collet. Parts must be fully attached and secured.
15. Handheld routers should be fed into the work piece against the direction of the bit rotation.
16. Do not apply excessive force (force feed) to the router in any situation.

17. Be careful of the “gyroscopic” force/motion of hand held routers when operating at full speed. For this reason, routers shall be operated with two hands when powered on.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.68 PNEUMATIC NAIL GUN

1. Permit only trained and experienced workers to operate pneumatic nailing tools.
2. Wear hearing protection, and safety glasses that have side shields or wear a full face shield.
3. Inspect the tool before connecting to an airline. Ensure that: the safety mechanism is operating; all screws and cylinder caps are in place and securely tightened; and the air pressure is as specified by the manufacturer of the tool.
4. Check for correct air supply and pressure before connecting tool.
5. Check to ensure that tool is properly connected to the air supply and is in working order with the safety mechanism operable.
6. Do not operate the tool at air pressure above the manufacturer’s specification.
7. Always handle the tool as if it contains fasteners. Only use fasteners which were designed for the gun.
8. Load up your gun with the correct size of nail strip.
9. Ensure that the mechanical linkage between the work contracting element and the trigger is enclosed.
10. Always operate the gun at air pressure recommended by the manufacturer. Never operate the gun at higher than recommended pressures.
11. Always ensure that the airline connected to the gun is in good condition and that it has free movement throughout the work area.
12. Always maintain your balance and footing while operating the gun. Never overreach.
13. Do not secure the trigger in the ON position.
14. Do not point the gun at yourself or any other person.
15. Never depress the trigger unless the nose piece is directed onto a safe work surface.
16. Never transport the tool or load it with fasteners with the trigger depressed.

17. Always disconnect the tool from the air supply when it is left unattended or when it is being cleaned or adjusted.
18. Before clearing a blockage from the tool, disconnect the air supply and exhaust all air from the tool by directing the nose piece onto a safe work surface and depressing/squeezing the trigger.
19. When finished with the tool, always ensure that it is disconnected from the air supply, all fasteners have been removed from the gun and that air has been exhausted from the gun.
20. Do not use compressed air to blow dust or debris from your clothing. Air can be forced through the skin into the blood vessels.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.69 Reciprocating Jigsaw

2.69.1 GENERAL

1. For each tool read the operation manual carefully. If you do not understand or are uncertain regarding the safe operation of a certain tool ask a supervisor.
2. Consider work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use tool in presence of flammable liquids or gasses.
3. Wear hearing protection suitable for the level and frequency of the noise exposure in the woodworking area. If you have trouble hearing someone speaking three feet away, the noise level from the machine is too high. Damage to hearing may occur. Hearing protection is mandatory when using woodworking tools.
4. Use gloves to protect hands from splinters when handling wood but do not wear them near rotating blades and other machinery parts where the gloves can catch or interfere with emergency shut off of equipment.
5. Guard against electric shock. Prevent body contact with grounded surfaces.
6. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
7. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.

8. Do not force the tool.
9. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.
10. Dress properly. Do not wear loose clothing or jewelry.
11. Use safety glasses when operating the tool.
12. Only cut one piece of wood at a time.
13. Do not abuse the power cord. Never carry or lift the tool by the power cord.
14. Do not overreach. Keep proper footing and balance at all times while operating the tool.
15. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect regularly to ensure that there are no signs of damage.
16. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.
17. Remove adjusting keys or wrenches before operating the tool.
18. Ensure that you have a good grip on the tool to avoid unintentional starting.
19. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.
20. Stay alert. Be aware of your surroundings and other personal that are in the area.
21. Do not use tools for applications they were not designed for.
22. Do not use attachments that are not recommended for the tool.
23. Do not touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.
24. Operate the tool below the rated input to ensure the tool is not damaged due to overload.
25. Do not wipe plastic parts of the tool with solvents.
26. Make sure the guard is in position, is in good working condition, and guards the machine adequately before operating any equipment or machine.
27. Check and adjust all other safety devices. Make sure the equipment is properly grounded before use.
28. Inspect stock for nails or other materials before cutting, planing, routing or carrying out similar activities.

29. Start buttons should be protected so that accidental contact will not start the machine.
30. Ensure all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely, and not need to be forced.
31. Use a "push stick" to push material into the cutting area. Jigs are also useful in keeping hands safe during cutting procedures. Keep hands out of the line of the cutting blade.
32. Ensure the floor space around the equipment is sufficient to enable you to machine the size of work piece being processed safely without bumping into other workers or equipment.
33. Keep work area free of clutter, clean, well swept, and well lit. Spills should be cleaned up immediately. Floor areas should be level and non-slip. Good housekeeping practices and workplace design will reduce the number of injuries and accidents from slips, trips, and falls.
34. Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewelry that can become entangled with moving parts.
35. Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the cutting tool or blade.
36. Do not remove sawdust or cuttings from the cutting head by hand while a machine is running or plugged in. Disconnect machine before making any adjustments.
37. Do not use compressed air to blow sawdust, turnings, etc. from machines or clothing.
38. Do not leave machines running unattended (unless they are designed and intended to be operated while unattended).
39. If a blade binds to material do not try to free a stalled blade before turning the power off. Ensure the power is disconnected before loosening the blade from the cut material.
40. Do not distract or startle an operator while he or she is using woodworking equipment. Similarly, do not try and sustain a conversation when making a cut.

2.69.2 Reciprocating/Jig Saw

1. Ensure you use both hands at all times when using a reciprocating saw. Do not use this saw with only one hand.

2. Ensure you use the appropriate PPE such as eye protection, and hearing protection when utilizing a reciprocating saw.
3. Do not force the blade when cutting.
4. When installing a blade into the saw, ensure the unit is turned off, and unplugged before you begin.
5. Ensure all cords are clear of the cutting area.
6. Do not force blade sideways in order to curve the cut. Allow the saw to turn its cut with ease.
7. Do not put down or rest a reciprocating saw until the blade has come to a complete stop.
8. Ensure the blade is up to speed before contacting the cutting surface. Starting the saw with the blade resting on surface may lead to kickback.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.70 Saws

2.70.1 GENERAL

1. Keep work areas clean. Cluttered areas and benches invite injuries.
2. Consider work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use tool in presence of flammable liquids or gasses.
3. Guard against electric shock. Prevent body contact with grounded surfaces.
4. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.
5. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.
6. Do not force the tool.
7. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.
8. Dress properly. Do not wear loose clothing or jewelry.
9. Use safety glasses when operating the tool.
10. Do not abuse the power cord. Never carry or lift the tool by the power cord.

11. Do not overreach. Keep proper footing and balance at all times while operating the tool.
12. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect regularly to ensure that there are no signs of damage.
13. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.
14. Remove adjusting keys or wrenches before operating the tool.
15. Ensure you have a good grip on the tool to avoid unintentional starting.
16. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.
17. Stay alert. Be aware of your surroundings and other personal that are in the area.
18. Do not use tools for applications they were not designed for.
19. Do not use attachments that are not recommended for the tool.
20. Do not touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.
21. Operate the tool below the rated input to ensure the tool is not damaged due to overload.
22. Do not wipe plastic parts of the tool with solvents.

2.70.2 Use Precautions

1. Never operate the tool without guards in place.
2. Use the blade designed for the materials you are cutting. Keep saw blades sharp and replace when there are signs of excessive wear. Excessive wear is characterized by rounding on the teeth, wear at the mounting hole or warping of the blade body.
3. Use only cutting wheels with a “Safe Speed” at least as high as the “No-Load RPM” indicated on the power tool nameplate.

2.70.3 Prior to Operation

The cutoff saw can be used for the following applications: cutting sheet metal, concrete, cinder blocks, bricks, reinforcing rods, concrete wire mesh, and corrugated floor. No other applications are recommended.

1. Ensure the power source to be utilized conforms to the power requirements specified for the tool.
2. Ensure the power switch is in the OFF position before plugging the tool in.
3. If an extension cord is used, it must be of sufficient thickness and rated capacity to ensure that tool efficiency is not diminished. Keep extension cords as short as possible.
4. Ensure the wheel guard is properly fitted and fastened before commencing any cutting operation.
5. Ensure the cutting wheel to be used is the correct type for the application. The wheel must be free of cracks or surface defects. Ensure the cutting wheel is properly mounted and the wheel nut is securely tightened.
6. Trial runs are recommended after a new wheel has been installed on the tool or before commencing routine cutting operations.

2.70.4 Circular Saw Application

1. Hold the retracting blade guard in the open position.
2. Place your hand under the shoe or the guard of the saw.
3. Over-tighten the blade-locking nut.
4. Twist the saw blade while cutting.
5. Do not use a saw that vibrates or seems to be unsafe in anyway.
6. Do not force a saw at any time during a cut.
7. Do not cut anything without first checking for obstructions such as nails and screws. They could shatter the blade, sending metal fragments flying about, or could be violently ejected from the blade and cause a serious injury.
8. Never carry a saw with your finger on the trigger switch.
9. Never overreach. Keep firm footing and proper balance at all times.
10. Never rip the work without using a guide that is clamped or nailed to the workplace.

2.70.5 Cut-off Saw Application

1. To prolong the life of the machine and ensure a first class finish it is important that the machine should not be overloaded by applying too much force.

2. After switching off the machine allow the cutting wheel to stop completely before setting the tool down.
3. Always place the tool down so that the cutting wheel is facing up.

2.70.6 Chain Saw Application

1. If you have never used a chainsaw ask for instructions.
2. Inspect chain to ensure it is installed correctly.
3. Ensure the correct tension is on chain.
4. Chain is to be sharp.
5. Check oil in all oil chambers.
6. Ensure chain brake is operating.
7. Do not use the chainsaw if the brake is not operating correctly.
8. Ensure the material to be cut is clean.
9. Ensure the material to be cut is firmly held, and supported close to the line of cut to prevent binding of blade.
10. A chainsaw is never to be handled with one hand.
11. Ensure the work area is clean and free of obstacles.
12. Use extreme caution when cutting material above the waist.
13. The chain must come to a stop before moving from one cut to another.
14. Store the chainsaw in a clean dry area.
15. Ensure the chain cover is in place.
16. Ensure the fuel and oil are not leaking.

2.70.7 Saw Maintenance

1. A saw must be inspected frequently and maintained in a safe condition.
2. A dull, badly set, improperly filed or tensioned saw, or an inserted tooth saw with poorly fitting shanks or worn bits, must be removed from service.
3. A saw must be inspected for cracks and other defects each time the saw is sharpened, and a cracked saw must be removed from service until repaired by a qualified person.

4. A saw or saw collar damaged by excessive heat or undue stress must be removed from service until inspected and repaired by a qualified person.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.71 Shrouds

1. Keep work areas clean. Cluttered areas and benches invite injuries.
2. Shrouds are designed specifically for each grinder type. Do not attempt to attach a shroud to a grinder other than the one it is designed for.
3. Shrouds are to be in good repair. Check for cracks or missing pieces prior to using.
4. Hose attachments must be secure to prevent leaking.
5. Check the condition of exhaust hoses to ensure there are no leaks.
6. Grinders must be unplugged prior to fitting or removing shrouds.
7. Ensure that the cutting stone does not protrude more than 1/8" below the bottom of the shroud to ensure maximum effectiveness of the vacuum.
8. Prior to operating the grinder with shroud attached ensure that there is clearance around the entire outside perimeter of the stone between the stone and the inside of the shroud.

2.72 Skill Saw (Circular Saw)

2.72.1 GENERAL

1. Keep work areas clean. Cluttered areas and benches invite injuries.
2. For each tool read the operation manual carefully. If you do not understand or are uncertain regarding the safe operation of a certain tool ask a supervisor.
3. Consider the work area environment. Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use tool in presence of flammable liquids or gasses.
4. Wear hearing protection suitable for the level and frequency of the noise exposure in the woodworking area. If you have trouble hearing someone speak

from three feet away, the noise level from the machine is too high. Damage to hearing may occur. Hearing protection is mandatory when using woodworking tools.

5. Use gloves to protect hands from splinters when handling wood but do not wear them near rotating blades and other machinery parts where the gloves can catch or interfere with emergency shut off of equipment.
6. Guard against electric shock. Prevent body contact with grounded surfaces.
7. Keep children away. Do not let visitors contact tool or extension cord. All visitors should be kept away from the work area.
8. Store idle tools. When not in use, tools should be stored in dry and high or locked containers.
9. Do not force the tool.
10. Use the right tool for the job. Do not use small tools or attachments for work which requires a heavy duty tool.
11. Dress properly. Do not wear loose clothing or jewelry.
12. Use safety glasses when operating the tool.
13. Only cut one piece of wood at a time.
14. Do not abuse the power cord. Never carry or lift the tool by the power cord.
15. Do not overreach. Keep proper footing and balance at all times while operating the tool.
16. Proper maintenance of tools is mandatory. Clean the tool at the end of each day and inspect them regularly to ensure there are no signs of damage.
17. Disconnect the tool when not in use, before cleaning and when changing blades, bits or cutters.
18. Remove adjusting keys or wrenches before operating the tool.
19. Ensure that you have a good grip on the tool to avoid unintentional starting.
20. Use the appropriate extension cord for the scope of work you are completing as well as the location you are working in.
21. Stay alert. Be aware of your surroundings and other personal that are in the area.
22. Do not use tools for applications they were not designed for.
23. Do not use attachments that are not recommended for the tool.
24. Do not touch any movable part of the tool unless the power cord is unplugged and you are certain that there is no power going to the tool.

25. Operate the tool below the rated input to ensure the tool is not damaged due to overload.
26. Do not wipe plastic parts of the tool with solvents.
27. Make sure the guard is in position, is in good working condition, and guards the machine adequately before operating any equipment or machine.
28. Check and adjust all other safety devices. Make sure the equipment is properly grounded before use.
29. Inspect stock for nails or other materials before cutting, planing, routing or carrying out similar activities.
30. Start buttons should be protected so that accidental contact will not start the machine.
31. Ensure all cutting tools and blades are clean, sharp, and in good working order so that they will cut freely, and not need to be forced.
32. Use a "push stick" to push material into the cutting area. Jigs are also useful in keeping hands safe during cutting procedures. Keep hands out of the line of the cutting blade.
33. Ensure the floor space around the equipment is sufficient to enable you to machine the size of work piece being processed safely without bumping into other workers or equipment.
34. Keep work area free of clutter, clean, well swept, and well lit. Spills should be cleaned up immediately. Floor areas should be level and non-slip. Good housekeeping practices and workplace design will reduce the number of injuries and accidents from slips, trips, and falls.
35. Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewelry that can become entangled with moving parts.
36. Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the cutting tool or blade.
37. Do not remove sawdust or cuttings from the cutting head by hand while a machine is running or plugged in. Disconnect machine before making any adjustments
38. Do not use compressed air to blow sawdust, turnings, etc. from machines or clothing.
39. Do not leave machines running unattended (unless they are designed and intended to be operated while unattended).

40. If a blade binds to material, do not try to free a stalled blade before turning the power off. Ensure the power is disconnected before loosening the blade from the cut material.
41. Do not distract or startle an operator while he or she is using woodworking equipment. Do not try and sustain a conversation when making a cut.

2.72.2 Skill Saw Safe Work Procedures

1. Never operate a skill saw without the blade guards in place. Ensure the guards are in good condition and function properly with an appropriate spring back.
2. Wear appropriate personal protection equipment when operating a saw. Wear eye protection, dust mask/respirator, and hearing protection. Do not wear gloves when using a skill saw as this may interfere with trigger operation and emergency shut off.
3. Permit only trained and experienced personnel to operate a saw.
4. Ensure the retractable blade guard is in place prior to placing the saw down. Always wait for the rotating blade to stop rotating before putting the saw down otherwise the saw blade could potentially skid across the surface onto which it was placed, potentially causing injury.
5. Never remove a saw from a cutting surface until the blade has come to a complete stop.
6. Use both hands to operate saw – one on the handle and one on the front knob. Saws are typically designed for right hand use so extra caution is necessary for left handed individuals.
7. When cutting short work, ensure the stock is securely fastened with clamps or nails to prevent inadvertent slippage and kickback. Do not hold small pieces of stock with your hands when cutting.
8. Do not over tighten the nut holding the blade in place. Ensure the blade is tightened adequately.
9. Ensure the work is secure prior to cutting. Ensure the material is free of defects or features that could make the cut hazardous. For example, ensure all nails are removed from wood prior to commencing cut. Check for obstructions.
10. Do not carry portable saws with your finger on the trigger.
11. Do not twist blade or try and change direction while making a cut. This may cause they blade to stick potentially causing injury.
12. Ensure all cords, unnecessary tools, debris, and materials are clear of cutting area.

13. Use the blade designed for the materials you are cutting. Keep saw blades sharp and replace them when there are signs of excessive wear. Excessive wear is characterized by rounding of the blade teeth or mounting hole, or warping/imbalance of the blade body. Dull blades bind and overheat.
14. Only use cutting wheels with a "Safe speed" – at least as high as the "no-load rpm" indicated on the saw nameplate. Allow the saw to reach full speed before commencing cut.
15. When cutting at an angle (bevel), the spring loaded blade guards of circular saws often bind and need to be retracted with one hand otherwise the guard will jam against the cutting material and create a kickback hazard. In these instances extra caution must be taken, as this only allows for one hand solid grip on the saw.
16. Wait for the cutting blade to come to a complete stop before lifting saw from cutting surface.
17. Ensure you have enough free cord length to allow you to fully complete the cut. Cords that are too short may unplug and cause the saw to kick back suddenly.
18. Do not use a saw that vibrates or seems to be unsafe in anyway.
19. Do not force a saw at any time during a cut.
20. Disconnect power supply before adjusting or changing the blade.
21. Do not cut anything without first checking for obstructions such as nails and screws. They could shatter the blade, sending metal fragments flying about, or could be violently ejected from the blade and cause a serious injury.
22. Never overreach. Maintain a firm footing and proper balance at all times.
23. Do not rip the work without using a guide that is clamped or nailed to the workplace.
24. Set the depth of the blade to no more than 1/8th of an inch below the thickness of the material to be cut. Too much blade exposed below the material to be cut results in a greater chance of kick back and blade binding. The more blade exposed, the greater risk of injury.
25. Let go of the trigger if the blade binds. Do not try and force the saw – just guide it with a little pressure.
26. Ensure that blade guard and motor are clean and that wood sawdust and pitch does not build up in the guard. Regularly lubricate the guard mechanism to limit hang back of guard.

27. Stand to the side when making a cut in case the wood is kicked back. Ensure you have a solid footing with both feet firmly planted on the floor. Do not over reach. Stop and reposition yourself so that you are in control of the wood and saw.
28. Do not extend yourself when making long cuts such a cross cutting sheets of plywood. Long cuts like these should be performed on a table saw.
29. Never cut a board in the middle while it is lying on two saw horses; it will sag or collapse about 2/3's of the way through the cut and bind the saw, causing the saw to kickback at you. The only time you can safely cut a board using only two sawhorses and no frame table is when you are only cutting an end off. The same applies for cutting boards that are bowed down or bendy.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.73 SMALL POWER TOOLS

2.73.1 PRIOR TO USE

Prior to using any power tools the following must take place:

1. Always inspect tools, power cords and electrical fittings prior to each use. Repair or replace damaged equipment immediately.
2. Do not wear gloves, loose fitting clothing or jewelry when using revolving power tools.
3. Always ensure that tools are switched off before connecting them to a power supply.
4. Always ensure tools are properly grounded or double insulated. Grounded tools must have an approved 3 wire cord with 3 prong plug.

2.73.2 General Procedures

1. Do not bypass the switch and operate the tools by connecting and disconnecting the power cord.
2. Disconnect power cord before making adjustments.
3. Do not use power tools in wet conditions or damp locations unless the tool is connected to a Ground Fault Circuit Interrupter (GFCI) or have an assured grounding system in place.

4. Never operate tools in an area containing explosive gases or vapours.

2.73.3 Powered Tools

1. Always inspect tools, power cords and electrical fittings prior to each use.
2. Repair or replace damaged equipment.
3. Do not wear gloves, loose fitting clothing or jewelry when using revolving power tools.
4. Always ensure that tools are switched off before connecting them to power supply.
5. Always ensure tools are properly grounded or double-insulated. Grounded tools must have an approved 3 wire cord with 3 prong plug.
6. Before using powder actuated tools, you must be trained in the specific make and model of tool and must possess a valid qualified operator's certificate issued by the manufacturer or other qualified instruction agency.
7. Workers who use this type of tool must be familiar with WorkSafeBC Regulations.

Maintain tools carefully. Keep them clean and dry, and store them properly after each use.

2.73.4 Drills

1. Always wear safety glasses or a face shield.
2. Check drill bits prior to use. Always ensure drill bits are sharp and that they are not bent.
3. Secure the work piece being drilled. Small pieces should be clamped to avoid movement. Never hold a piece with one hand while drilling with the other. Do not reach under or around material being drilled.
4. Drill a small pilot hole prior to drilling large holes. Never use a hole saw without the pilot drill.
5. Follow manufacturers' instructions when selecting and using a bit or attachment. Use auxiliary (second) handle for large work.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

2.74 Table Saw

1. Avoid wearing clothing, accessories and even fall protection, or anything else that could come in contact with the rotating blade. Wear long hair back and roll up shaggy long sleeved shirts.
2. Wear appropriate personal protection equipment when operating a saw: Wear eye protection, dust mask/respirator, and hearing protection. Do not wear gloves when using a table saw as this may interfere with trigger operation and emergency shut off.
3. Only trained and experienced operators of table saws are permitted to use the saw.
4. Always verify the location of the switch and or emergency turn off switch.
5. Ensure that table is clear of tools and debris other than the material being prepped for cutting. An unclean or rough table requires you to use more force to push the stock through the blade. The more force that you are required to use, the more chance that you may slip or lose your balance.
6. Ensure all table saws shall have hood guards, and anti-kickback devices that are not damaged and in good working order. If it absolutely necessary to disengage one of these safety mechanisms (for complex cuts), they are to be re-engaged immediately after use so that other workers do not inadvertently use the modified table saw.
7. At no time is an operator's hand to pass within 6 inches of the rotating saw blade. Use appropriate push sticks, fencing and/or guides.
8. As a general rule, any boards greater than 3 feet in any dimension should be cut with an assistant. Know your limits and ask for help. The helper must also be trained and experienced in the safe operation of a table saw.
9. Use push sticks/blocks to guide the stock through the table saw, to avoid passing your hand too close to, or across the rotating blade. The push stick is to be designed for use on the table saw – do not simply use any scrap material that is lying around.
10. The blade height shall be set so that the top of the teeth are no greater than ¼ to 1/8 of an inch (6mm) above the cutting material. Greater blade exposure increases the chance of kickback, and thus injury. Minimizing blade exposure ensures that, in the accidental hand slippage, the severity of the resulting laceration can be minimized.

11. The operator shall maintain a solid footing with two feet on the ground. Do not over reach. The operator should also be standing so that he/she is to the side of the wood being fed through the saw.
12. Avoid saw dust and wood debris from flying back in the direction of the blade. Maintenance of solid footing and avoidance of awkward positions also reduces the risk of falling into the blade from slipping or losing your balance.
13. Once completing a scope of cutting work, the saw blade should be lowered below the table and/or blade guard set in place.
14. Table saws shall be set up in a location where operators are not confined and free to move. As a general rule, a 3 foot perimeter should be established around the saw and kept clear of debris, tripping hazards and sawdust.
15. Ensure the power is disconnected prior to changing blades or making adjustments.
16. Do not carry on a conversation while making a cut. Do not distract individuals that are in the progress of making a cut. Pay attention to the work being performed.
17. Do not leave the saw until the blade has come to a complete stop.
18. Check that the material to be cut is free of nails, knots and other obstructions that could cause inadvertent kick back or become projectiles.
19. When cutting, the work should only be released once it has been fully cut and has gone past the blade. Letting go of the wood or accidental loss of grip can cause kickback.
20. Maintain the rip fence parallel to the blade so that the cutting material does not pinch against the fence and bind, causing kickback.
21. Do not make free hand and unguided cuts on the table saw. The material to be cut must be guided through the blade by the rip fence or mitre gauge. The spreader must be aligned with the blade.
22. When choosing material for cutting on a table saw, avoid bent and wet pieces, or pieces that are full of knots and twisted grains.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3. SJP - Critical Tasks

preliminary activities

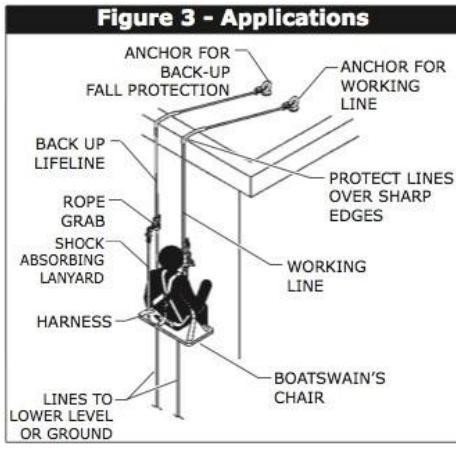
Where multiple trade activity is scheduled, the general contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete their scope of work.

Prior to any work commencing supervisors must conduct a hazard assessment of all applicable work areas. Any hazards that are found during the hazard assessment must be addressed prior to any work commencing.

3.1 Boatswain - Bosun_s Chair

3.1.1 GENERAL

A bosun chair, also known as a boatswain's chair is a device used to suspend a person from a rope in order to perform work aloft. It is distinguished from a climbing harness by the inclusion of a more or less rigid seat, providing more comfort than even the best-padded straps for long-term use. In exchange, the bosun chair does not allow the freedom of movement necessary for climbing, and the occupant is generally hoisted or lowered into place using the rope.



1. All personnel using a bosun chair must be fully trained by the supplier/ manufacturer in the required equipment and training records are documented on site.
2. Bosun's Chairs are designed for single users (including clothing, tools, etc.) with a capacity up to 400 lbs.
3. User of Bosun's Chair must be protected by a separate personal fall arrest system.
4. Bosun's Chairs are designed to be used in temperatures ranging from -40°F to +130°F (-40°C to +54°C).

5. Caution must be taken when using Bosun's Chairs near moving machinery, electrical hazards, sharp edges, or abrasive surfaces, as contact may cause equipment failure or serious injury.
6. Before setting up and using a bosun chair, inspect the hardware (D-rings, buckles, hook gates, carabineers. These items must not be damaged, broken, or distorted and must also be free of burrs, cracks, worn parts, and corrosion. Ensure that lock hooks can move freely.
7. Do not connect any part of the personal fall arrest system or sub-system to the Bosun's Chair.
8. Inspect both chair and fall protection webbing for concentrated wear. Material must be free of frays, abrasions, burns, discoloration, soiling, and paint buildup. Check for chemical and heat damage, indicated by brown, discoloured, or brittle areas.
9. Inspect the wooden seat of the chair for cracks, especially near the webbing holes. Also check for rough edges or gouges that could cause slivers/splinters.
10. A bosun chair supporting cables/ropes shall:
    a. Hung from a fixed support or outrigger beam.
    b. Be parallel if more than one cable/rope is used.
    c. Extend fully to the ground and have a positive stop that prevents the suspended platform suspended scaffold or boatswain's chair from running off the end of the supporting cables.
    d. Be protected from abrasion, especially with lines going against slab edges or other edged surface such as the roof edge. Protection of lines shall be done by trying small pieces of rubber, carpet, or vinyl to the line itself so that the line protection stays put with movement. The operator of the bosun chair should have these pieces prepared before entry to the chair. Do not use a split rubber hose, because the side that is split rotates and catches on the slab, eventually offering no protection.
    e. Use steel wire rope (Minimum thickness of 9mm) if the distance from support to platform exceeds 90m, if corrosive substances are being used in proximity to the platform, and if mechanical grinding or hot work (flame cutting equipment) is used in proximity to rope.
    f. Be free of knots and splices, with the exception of tie-off knots.
    g. When a bosun chair is supported by block and tackle, the synthetic fiber rope must have a breaking strength of at least 5000lbs. The rope must be reeved through not less than one single lower block and a double upper block that is secured to prevent the line form free running. The block hooks

must be moused, or otherwise secured to prevent load from coming off hook.

h. When using a synthetic fiber rope to suspend a bosun chair other than with a block and tackle system, the rope to be used must have a breaking strength of at least 6000 lbs. and be compatible with the rigging hardware suspension system.

11. Bosun chair is to be equipped with a positive device to prevent the platform, scaffold or boatswain's chair from falling freely.
12. If a bosun chair is powered by a mechanical powered winch, it must be inspected daily by a competent person.
13. Every component of a bosun chair system must be capable of supporting at least ten (10) times the maximum load to which it is to be subjected.
14. The platform component of a bosun chair shall be a minimum of 60 cm long and 25 cm wide.
15. Outriggers/ thrust out beams, used for the placement and suspension of the bosun chair must:
    a. Have securely attached counterweights that are designed and manufactures for the purpose.
    b. Be tied back to a fixed support with a secondary line capable of supporting the suspended load and support system.
    c. Secured against horizontal and vertical movement once positioned.
    d. Be used according to manufactures instructions.
16. Fall arrest must be used when getting on, getting off and using a bosun chair when the elevation is 10 ft. (3 m) of greater above grade or a safe lower landing. Fall arrest must also be used is there is unusual risk of injury to the worker. Mandatory features of the fall arrest system include:
    a. Full body harness, lanyard with shock absorber, and a lifeline that secured to an independent chair support. Fall arrest system must have an independent line and an independent anchor per person. Each component is to be fully inspected for defects, and the harness checked for proper fit.
    b. Fall protection is to be completely established prior to the worker attempting to use the bosun chair.
    c. Life line secured to an independent anchor with a load rating greater or equal to 5000 lbs. so that the failure of the chair support does not result in failure of fall arrest system.
    d. The components of the fall protection system are to be inspected prior to use. Double check the security of the rigging.

e. Lanyards are to have a shock absorber and be 2 ft. (60 cm) or less so that the worker can reach up and position the rope grab. Longer lanyards (e.g. 3 ft.) may become inaccessible for shorter workers, upon decent. Keep rope grab as high as possible on the line.

f. Ensure that each rope grab each checked for proper orientation and operation.

3.1.2 Mid-Air Rope Transfer

For transferring from one decent line to another decent line to maneuver around an overhang or overhanging edge or other obstacle. This requires setup to be followed outlined in Bosun's Chair Setup Procedure:

1. Site Specific Fall Protection Plan must be completed and reviewed with the workers prior to starting work. Workers are encouraged to provide suggestions to the Plan. All required PPE must be used by all workers.
2. Inspect the work area and setup a delineation/control zone below the work area posting signs "Danger – Work Overhead" to ensure no public or pedestrian will pass the control zone and eliminate any hazards.
3. Workers must secure their bucket and tools to prevent from falling below and create hazards to public or property below.
4. When working over pedestrian walkways or canopy glass, all tools and equipment must be tethered or tied off using tool lanyards.
5. Strictly follow the fall protection system setup.
6. This system requires the use of a rope for Bosun's Chair suspended by a synthetic main suspension line, with a secondary transfer suspension line, and a 5/8 in diameter poly propylene, or 11-13 mm kernmantle static lifeline.
7. Inspect all equipment for damage or defects before each working day using the Daily Inspection Sheet. Protect equipment from exposure to roof tar and hazardous chemicals during the working day. Lock your equipment overnight (never leave it exposed on the roof) to prevent rain falling on it and exposure to UV light. Tools and equipment must be stored in a way as to not pose any hazards to other workers or persons in the work area.
8. Inspect all roof anchor/anchorage points (as indicated on the roof diagram) prior to use. If any roof anchors are found to be unsafe, contact Management or Head Office immediately.
9. Suspension lines and lifeline must be anchored to separate anchor points not exceeding a 12.5° angle.

10. If angle from anchor to drop location exceeds 12.5°, then use re-direct system (see attached diagram).
11. Outrigger beams and parapet wall hooks (if needed at the workplace) must be properly tied back to an anchor point not exceeding a 25° angle, with an adequate number of counterweights attached to the outrigger beam's end (opposite the tipping point). The safety pin that holds the two-piece beam together must have a wire or small pin holding the pin stationary.
12. Suspension lines and the lifeline must have an edge protection at the roof's edge (e.g. carpet, rubber, hose, etc.) to prevent abrasion or chafing of the ropes.
13. Attach main suspension line to anchor and pass it through the hole drilled in the overhang.
14. Attach transfer line to anchor and pass it over the outside edge of the overhang.
15. Attach safety lifeline and pass it over the outside edge of the overhang.
16. Main suspension and lifeline must be adequate enough to reach the ground.
17. All lines must have a knot tied in the bottom end to prevent the descender or rope grab from passing the end of the rope in case the rope is too short to reach the ground.
18. Attach Bosun's Chair to transfer line, you will need to have an extra descender and carabineer.
19. Attach secondary descender and carabineer to D-Ring on Bosun's Chair.
20. Descend the Bosun's Chair to the point that you can reach your main descent line.
21. Attach the secondary descender to the main descent line and lock it off.
22. Descend slowly on your primary descender and transfer the line until the weight is being held by the main suspension line and secondary descender.
23. Remove the primary descender from the rope, keep it attached to the chair.
24. Work on areas within reach or use an extension pole.
25. Never attempt to work in strong winds.
26. Ladders used to go from roof to below decks must be tied off so they cannot slip or be blown over by wind. Contact Management of Head Office with any problems or questions that may arise at the workplace.

3.1.3 High Risk Work

1. A bosun chair must not be used without the prior permission from the Governing body if :
   a. One bosun chair or work platform will be used above or below any portion of another work platform/ bosun chair.
   b. The suspended height exceeds 91 m (300 ft.).
2. Tools and materials to be used while on a bosun chair are to be adequately secured to the chair or worker. Be cautious, using five gallon buckets as the handles can break off. Drill holes and attach ropes instead.
3. The area immediately below the area where work should be guarded with barriers (red danger tape) and adequate signage to create a control zone, warning workers of the overhead hazard.
4. Entering of a bosun chair can proceed in two ways, both of which require fall protection to be fully established beforehand. Upon entry, ensure that lowering mechanism is locked so that the chair does not move to an unsafe position.
   a. Enter chair and then mount edge, repositioning rope as you descend.
   b. Position chair and then slip into chair, as you reposition the rope for descent.
5. In windy conditions, ensure that the chair is tied back to the building unless in motion.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.2 Clean-up of Blood

1. Once any exposure incident has been attended to, clean up spills as soon as possible.
2. Do not clean up blood or body fluids unless trained with equipment and PPE available.
3. Kits containing supplies needed for clean up are available from safety supply companies.

4. If any sharp objects or broken glass is contaminated with blood, remove objects with tongs or forceps and place in a sharps container. Never remove sharps/broken glass by hand.
5. Procedures for cleaning up spilled blood and body fluids should include the following steps:
    a. Restrict access to the area.
    b. Make sure plastic bags are available for removal of contaminated items from the spill site. Have fresh, dilute bleach or a germicide ready.
    c. Dispose of any sharps first.
    d. Wear disposable, waterproof gloves (e.g. natural rubber latex, neoprene, and nitrile). Wear other PPE, such as a face shield and a gown, as a barrier against contact. If using a germicide, check the MSDS to find out what type of glove to use.
    e. Cover shoes or boots with disposable, waterproof covers or use of rubber boots.
    f. Wipe up visible material first with disposable towels (or in another way that prevents direct contact with blood and certain body fluids). Dispose of the material and paper towels in waterproof garbage bags.
    g. After you have carefully removed all the obvious material, it may be necessary to change gloves. Then decontaminate the area by carefully pouring over the spill site a germicide approved for use as a hospital disinfectant, or a fresh solution of household bleach and water as follows:
        - Disinfect the area with a fresh bleach solution. A solution of 1 part of common household bleach to 100 parts of water (1:100 ratio) will kill HIV and the hepatitis B and C viruses except with spills involving a large amount of blood.
        - Large amounts of blood, apply a solution of 1 part household bleach to 10 parts of water (1:10 ratio). In both cases, leave the solution on for about 10 minutes.
        - You can also use a germicide that is approved for use as a health care disinfectant.
    h. Wipe up spills with disposable towels and discard towels in waterproof garbage bags.
    i. Clean and decontaminate reusable equipment/supplies. Discard disposable items.

j. Wear gloves to remove PPE. Dispose of or clean PPE by manufacturer's directions.

k. Dispose of garbage bags per guidelines outlined in the MSDS for the cleaning solution.

l. Properly remove and dispose of your gloves. Wash your hands thoroughly with soap and water.

The following equipment will be required during cleanup:

- Disposable gloves.
- Face shield and rubber apron as required.
- Absorbent cloths or towels.
- Bucket to hold cleansing solution.
- Fresh water for mixing cleansing solution.
- House hold bleach or germicide.
- Waterproof garbage bags.

3.2.1 Personal Contamination

1. Remove any contaminated clothing or personal protective equipment.
2. If skin has been contaminated, wash with soap and warm water.
3. If eyes have been splashed, rinse under running water (eyewash or faucet) for at least 15 minutes.
4. Administer normal First Aid.
5. Tell your supervisor about exposure incident.
6. If necessary, visit a health care provider for evaluation and follow-up care.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.3 CONFINED SPACE

3.3.1 GENERAL

All persons involved in a confined space entry are to be knowledgeable with this procedure.

No worker may enter a confined space until:

1. Appropriate tests are performed to determine the nature and quantity of any harmful vapours, gases, fumes, mists, dusts and oxygen deficiency that may be present in the space, these tests will be conducted using quantifiable means. (monitors)
2. All work activities and/or materials that may generate airborne contaminants in the confined space have been identified and assessed.
3. Written work procedures are established and are made available at the work location to ensure a safe environment.
4. Workers have received instruction on the risks and safeguards associated with the entry and the work activities to be performed.
5. Workers have donned the personal protective equipment appropriate to the hazards of the confined space.

Where tests indicate unsafe conditions in the confined space, the space must be ventilated or cleaned, or both, and re-tested to ensure that the unsafe conditions have been removed prior to entry.

Where tests indicate that the atmosphere in the confined space is not safe, the permit will terminate and the Supervisor will be contacted. Once the unsafe cause and remedy occurs the Confined Space process will re-commence.

All workers entering a confined space must be in constant communication with the Standby Attendant stationed outside the confined space via visual, radio or direct verbal contact. If communications fail, entrants must leave the confined space until proper communications can be restored.

A confined space must be mechanically ventilated at all times except for a low hazard atmosphere, pre gas tested, with less than 15 minute entry, where a sign is posted stating work area is safe for entry.

If a worker inside a confined space experiences difficulty or becomes incapacitated, the Standby Attendant MUST NOT attempt a rescue by entering into the space. The Standby Attendant is to contact rescue personnel on the site designated radio

channel and stand by to direct them upon arrival. The attendant may make every effort to assist the entrants from outside the space. An effective means of immediate communication must be with the attendant at all times.

3.3.2 Pre- Entry Procedures

1. The Entry Supervisor will ensure that all safety equipment is present and in good working condition prior to starting the work area. This will include a test of communications system to be used by the Standby Attendant to summon assistance if required.
2. The Entry Supervisor will ensure that all personnel involved in the entry are familiar with the procedures to be used, have a clear understanding of the role and duties of the standby person, and have had an opportunity to ask any questions, or satisfy any concerns, prior to the entry. This will be done in a pre-entry toolbox talk and JHA.
3. The Entry Supervisor will ensure that any specialized tasks, such as welding, grinding, painting, coating, or use of power tools within the confined space have been adequately addressed on the hazard assessment as per this program. All appropriate safety measures and devices are in place according to the safe work procedures prior to entry.
4. The Entry Supervisor will ensure that pre entry air quality testing is performed as detailed below.
5. The Entry Supervisor will ensure the confined space has safe access egress and rescue equipment in the immediate area. For example, effective rescue equipment must be immediately available.

3.3.3 Air Quality Testing

All air quality testing of confined spaces shall be done by competent personnel trained in the use of the testing equipment.

Gas detection equipment must be calibrated (bump tested – span the meter) prior to the start of each shift or activity to ensure proper functioning.

The person performing the air testing should:

1. Undertake initial tests before opening the confined space. This may be achieved by placing the remote sensor of the test equipment through holes in the entrance or around the perimeter of the entrance if no holes are present.

All confined spaces must be tested for clean respirable air in the following order:

1. Oxygen levels maintained at 20.9%.

2. Combustibles are 0% of L.E.L. (Lower Explosive Limit).
3. Hydrogen Sulphide equals 0 ppm.
4. Carbon Monoxide (CO) equals 2 to 3 ppm.

All areas of the confined space must be tested prior to employees entering into the confined space. (Example: Manhole entry - test at entry point, test at various levels down the length of the manhole, test at all levels of the well, connection box, etc., if so equipped, check sump in well, connection box, etc.).

If safe conditions are not present - DO NOT ENTER. Ventilate and re-test until safe atmospheric conditions are provided. If safe conditions cannot be achieved with ventilation DO NOT ENTER - keep all personnel away and contact supervisor for assistance.

All information regarding the test equipment used and the test results must be recorded on the Confined Space Entry Permit.

The confined space must be tested at regular intervals and re-tested if vacated for longer than 20 minutes or if there is any interruption in the ventilation system. Wherever possible, continuous monitoring of the space shall be undertaken.

3.3.4 Ventilation

Continuous ventilation is a requirement in all confined space entry projects except:

1. An emergency rescue, if ventilation is not practicable, only to be performed by the rescue personnel after testing to confirm a safe atmosphere exists.

Ventilation must be continuous and commence at least 20 minutes prior to entry. Ventilation must be done by mechanical means and must be accomplished using positive pressure type ventilation equipment. Ventilation must always pump air into the confined space.

A combination of positive pressure ventilation and negative pressure ventilation may be used if work activities in the space create additional atmospheric hazards (welding, spray painting, coating, etc.). The use of supplemental "exhaust" ventilation must be entered on the entry permit and must be installed with the following guidelines:

1. Exhaust ventilator must be positioned "down-wind" of the primary ventilation system for the confined space.
2. The exhaust ventilator ductwork must not restrict the blower ventilation.
3. The exhaust ventilator intake duct must be placed as close to the source of contamination as possible.

4. The ductwork cannot restrict worker's ability to exit the confined space.

The intake for the ventilation system must always be positioned in such a way so as not to draw in contaminants from the outside atmosphere. The standby person must always be aware of changes in wind direction, etc. and adjust the air intake as required.

The flexible duct hose must be placed in the space in as straight a line as possible. The hose should have no kinks and not be placed where workers are working. DO NOT place the intake hose near vehicle exhaust or any source of air contamination.

The ventilation system must provide a minimum of 85.3 m3/hr. (50 cfm) (cubic feet/minute) of clean respirable air is supplied for each worker inside a confined space with a low hazard atmosphere and greater as per work activity and hazard class. If there is any doubt, contact your supervisor for direction.

In the event of a ventilation failure - VACATE THE CONFINED SPACE IMMEDIATELY. Repair or reinstate the ventilation system, complete the pre-entry and entry procedures, complete atmospheric testing and resume the confined space entry work.

Air contaminants, such as welding fumes, produced by the work activities inside the space must be controlled at the source by a local exhaust ventilation (LEV) system if practicable. The exhaust point for the LEV must be positioned well away from the intake for the ventilation air. Typical airflow for LEV systems should be about 100-200 cfm with the exhaust hood less than six inches away from the source.

When activities such as spray painting occur inside a confined space, the ventilation rate must be great enough to ensure that the permissible concentration of the chemicals listed in the Material Safety Data Sheet, is not exceeded. As well, the ventilation rate must be great enough to ensure that flammability limits are not exceeded if there is a component to the paint or chemical that is explosive.

3.3.5 Duties of Entry Supervisor, Entrant and Standby Attendants

3.3.5.1 Entry Supervisor

The Entry Supervisor will receive instruction on the following:

1. That the Entry Supervisor has overall control of the confined space and is not to permit the entry of any person unless that person has:
    a. Completed all required health and safety training.
    b. Has been instructed on the hazards and safeguards specific to the confined space.

c. Has all appropriate personal protective equipment required for entry.

d. Have legitimate reasons for requiring entry into the confined space.

The entry supervisor will verify that workers entering the confined space have received confined space training prior to entry. The supervisor will keep a current list of trained entrants at the job site.

Prior to the start of the work, review the hazards, risks and safe work procedures with all entrants to ensure that all persons understand the specifics of the entry.

To ensure that the First Aid Attendant has been informed that a confined space entry is about to commence and request the First Aid Attendant perform a communications check to verify the proper functioning of the system. This will be done by the testing of the site designated radio channel or by cellular telephone.

To periodically check with the First aid Attendant to ensure the Attendant is monitoring the communications system. If the First Aid Attendant is otherwise occupied with another event, he/she will notify the Entry Supervisor. The Designated First Responder Attendant is now the primary contact for first aid until the First Aid Attendant reports being able to undertake the role.

Review the Confined Space Entry permit and ensure that:

a. An air quality test has been conducted within 20 minutes prior to entry.

b. The space has been ventilated.

c. All values are confirmed to be within the acceptable ranges and safe for entry.

d. All entrants have signed the permit.

Verify that all signage and warning placards are installed as required at all entry points and ventilation points.

Of the specifics of the Emergency Response, program and the Entry Supervisors' role all hazards on the hazard assessment are eliminated, minimized or controlled.

All hazards recorded on the hazard assessment are eliminated, minimized and/or controlled to prevent the possibility of worker injury.

To monitor the work activities and conditions to ensure that any changes are properly documented and that hazards are understood and accounted for in the specific hazard assessments and safe work procedures.

3.3.6 Entrants

All entrants must complete the training courses on Confined Space Entry and Fall Protection, including instruction on the use and care of harnesses.

Where required, entrants will be issued a personal respirator and receive fit testing and instruction on the use and care of the respirator and selection of cartridges.

Entrants will receive instruction on:

1. Identification of the different hazards and confined space classifications.
2. Identification of the safe work procedures associated with the confined space.
3. The personal protective equipment requirements for the confined spaces.
4. The requirements of the confined space entry permit, air testing, ventilation and all other health and safety hazards associated with the entry.
5. Instruction on the proper use of the air testing equipment.
6. Instruction on the emergency response procedures.

3.3.7 Standby Attendant

In addition to completing all the training provided to entrants, the Standby Attendant will also be instructed on his/her role as the Standby Attendant, including but not limited to:

1. The requirement to regularly communicate with the entrants.
2. The restrictions placed on the Standby Attendant to not enter the confined space.
3. The proper use of the tripod and winch system for effecting rescue.
4. The role of the Standby Attendant in the emergency response program.

3.3.8 Hazards of Confined Spaces

As part of the training, all personnel will be instructed on the specific hazard assessments and safe work procedures for the particular areas and tasks which will be performed.

3.3.9 Permits required

Confined space entry permits must be completed before any worker enters a permit required confined space. The permit must be completed and signed by the Entry Supervisor before entry.

A permit must be posted at each designated point of entry.

Permits will expire before the completion of the shift or if any pre-entry conditions change.

3.3.10 EMERGENCY PROCEDURES

The emergency response procedures will be reviewed with all personnel involved in the confined space entry and/or part of the emergency rescue team. See the Emergency Response Program for the specific work areas for further details on emergency response procedures.

Prior to worker entry into a confined space, the First Aid Attendant is to be notified of the entry and required to perform a test of the emergency communications procedures to ensure the systems are functioning properly and are being monitored.

Our personnel are not trained and equipped in the use of Self Contained Breathing Apparatus [SCBA]. Therefore, our emergency response personnel are not permitted to enter a confined space that has an atmosphere that is or suspected to be Immediately Dangerous to Life or Health [IDLH]. In this circumstance, the appropriate emergency response agencies must notified that a rescue with SCBA is required.

Emergency rescue training exercises should be performed at a frequency which ensures that rescue personnel remain current and knowledgeable with the rescue procedures.

3.3.11 Emergency Rescue Procedures

For a high hazard atmosphere, rescue personnel must be stationed at or near the confined space entrance. For all other situations, the Standby Attendant will have the means to summon the emergency rescue personnel.

3.3.12 Standby Attendant

In the event that an emergency rescue is required, the Standby Attendant will:

Immediately contact the First Aid Attendant and request an emergency first aid rescue and confirm attendant and supervisor is calling 911 for Fire Rescue. Caller must advise that a confined space incident has occurred and:

1. That a confined space rescue is needed.
2. The exact location of the confined space.

3. The nature of the emergency [patient injured, overcome, trapped etc.].

Notify the Entry Supervisor with the 2-way site designated radio channel that an emergency rescue is required and advise the Entry Supervisor if the Dedicated Evacuation Platform and lifting equipment will be required to bring the patient down from the span.

Inform other entrants of the emergency and instruct entrants to stop work immediately and evacuate the confined space if an atmospheric problem exists.

The Standby Attendant shall extract the entrant from the confined space by use of the lifeline, calling on other workers outside the confined space as needed to assist in the removal of the incapacitated worker,

The Standby Attendant must not enter inside the confined space in an attempt to affect rescue. The Standby Attendant can assist when safe to do so.

Direct other workers and entrants to shut down any equipment and stop any process that could contribute to a degradation in air quality in the confined space, i.e.; gas generators, construction equipment operating below the span, removal of compressed gas bottles etc.,

The Standby Attendant will conduct a test the air to determine the quality of the air.

3.3.13 First Aid Attendant

On notification that an incident has occurred in a confined space, the First Aid Attendant will:

1. Determine, based on the information provided, the severity of the incident and decide whether to contact the Emergency Response Team and the local Fire Department to assist in the removal of the patient.
2. The First Aid Attendant proceeds to the incident scene and may enter the space PROVIDED THAT:
    a. The patient is conscious, speaking and there are obvious signs of no atmospheric deficiency.
    b. All equipment that may generate airborne contaminants is shut down.
    c. No other hazards are readily apparent that may adversely affect the First Aid Attendant, i.e.; collapse, fire etc.
    d. Air quality tests confirm that the atmosphere is safe to enter.

If the confined space cannot be confirmed as safe, all personnel must remain outside the space and await the arrival of emergency response agency personnel to affect rescue.

3.3.14 Entry Supervisor

The Entry Supervisor has the overall control of the scene and directs the actions to coordinate the resolution of the incident until the arrival of the Emergency Response Team. On notification of the incident, the Entry Supervisor proceeds to a point near the confined space and directs the following actions:

1. Inform the workers to immediately cease all work activities and shut down all equipment.
2. As advised by the Standby Attendant and/or the First Aid Attendant, arrange to have the Dedicated Evacuation Platform [DEP] brought to the closest extraction point from the confined space.
3. As required, coordinate the arrival of lifting equipment to raise the DEP to the extraction point.
4. Provide resources and direction as required to facilitate the removal of the patient from the confined space. For example:
    a. Dispatch worker to await arrival of emergency response agency personnel and direct them to the incident scene.
    b. Stop and/or control workplace and public traffic as necessary to provide space for emergency response equipment and emergency response agency personnel.
    c. Coordinate arrival of the Emergency Response team and set up of the DEP.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.4 CRANE OPERATION

3.4.1 GENERAL

1. The crane operator must conduct daily visual inspections of wedges, bolts, and each crane component, to confirm it is capable to carry out its original design function. If equipment shall not be used until the dangerous condition is remedied.
2. Check the operation of the crane with the use of the test weight before starting the day's work.
3. A maintenance logbook is to be kept on site showing all the main maintenance history and any structural modification of the equipment.
4. Maintain safe access to all parts of the crane requiring inspection and maintenance and to the operator's cab.
5. Lock out equipment to eliminate mechanical and electrical hazards to workers inspecting and maintaining the equipment.
6. Load block to be positioned directly over loads.
7. No load to be within a minimum of 10 feet of any energized power line.
8. Hoisting/Load line to be visually inspected on an ongoing basis.
9. Raising of load to be done over site property in an area free of workers where possible.
10. Horn to be used to warn workers of dangerous load.
11. Brakes to be left off when not in use.
12. Trolley to be close to tower when crane not in use.
13. Hand signals given to the operator are to be in compliance with appendix "D".
14. The Project Manager is to acquire all pertinent city permits and clearance.
15. All structural components of tower crane are to be permanently identified.
16. The crane erector is to complete the WorkSafeBC inspection checklist.
17. Multiple cranes and cranes meeting physical obstructions, plan and elevation drawings are to be on site showing minimum clearances of not less than 3 feet.
18. Keep all persons not involved in the erection/dismantle well clear of the area.

3.4.2 Tower Cranes

1. The crane support footing must be certified by a professional engineer and the certified drawings must be on site for inspection by an officer of the Board.
2. The tower crane components prior to use must have had an NDT test done to ensure the integrity of the crane. If a tower crane remains erected at a workplace for more than 12 months then it requires to have another NDT test done. Following such an inspection, the crane, including any necessary repairs, must be certified by a professional engineer.
3. The manufacturer's manual and current records pertaining to operation, inspection and repair of a tower crane must be kept at the workplace while the crane is erected and in use. It is imperative that all inspections and repairs be documented and kept up to date. This is the responsibility of the operator.
4. Counterweights used on tower cranes must be as specified by the manufacturer or professional engineer and each counterweight element must be accurately weighed and the weight clearly marked on each element.
5. Tower crane limit switches must be tested at the beginning of each work shift or more frequently if required by the manufacturer and any malfunctions of an automatic limit or safety device on a tower crane must be remedied before the crane is to continue use at the workplace.
6. Test blocks for the crane are to be lifted before use of the crane to ensure limit switches are working and the test blocks must be durably and legibly marked on each of the blocks. This is to be done before starting use. NO EXCEPTIONS!!
7. The jib of a tower crane must not be capable of passing over the operator's cab of another tower crane on site. Each tower crane operator must have effective 2-way voice communication with any other tower crane or equipment operator if contact between the tower crane and any other tower crane or equipment could occur.
8. Tower crane must have a minimum vertical clearance of 3 feet (1m) and lateral clearance of 1 foot (30cm) between any component of the tower crane, another crane, and any obstruction, under all load conditions.
9. The hoisting cable on a tower crane must be shortened by the removal of 10 feet (3m) at the dead end after every 3 months of use unless otherwise specified by the manufacturer.
10. The anemometer (wind measuring device) is to be mounted on the crown; apex or operators cab and the anemometer must be readable by the operator while at the crane controls. Tower crane operations are to stop when the wind speeds

exceed the manufacturers permitted limit, and if not available then 30 mph (50 km/h) is to be used as the scale. This limit may be lower if lifting cannot be handled safely because of the wind. The operator has the full authority to cease work if he/she determines it unsafe to continue.

11. A fire extinguisher having at least a 10 BC rating must be immediately available in the cab of each crane.
12. All workers engaged in activities over ten feet from the ground, must comply with fall arrest requirement. See the WorkSafeBC Regulation.

It is forbidden to exert horizontal pull at an angle to the jib, exert any vertical pull on any restrained object, swing a load in an attempt to set it down at a point beyond the cranes reach or use the crane for wrecking and demolition where impact will be imposed.

Due to the amount of physical work exerted by a crane operator to climb the mast to get to the operators cab, it is strongly encouraged that crane operators obtain physicals by their family doctors on an annual basis. If the crane operator has any medical conditions, which could affect his/her health, they should notify the site first aid attendant under complete privacy.

Absolutely no consumption of alcohol or drugs is to be tolerated. Operators are also discouraged to talk on cell phones while operating the crane, and are forbidden to dispose of garbage by throwing out of the cab.

Hands free radio communication must be supplied in the operator's cab.

3.4.3 Crane Operations

1. The crane operator must conduct daily visual inspections of wedges, bolts, and each crane component to confirm it is capable to carry out its original design function. If inspection reveals any condition that might endanger anyone, the equipment shall not be used until the dangerous condition is remedied.
2. Check the limit switches of the crane with the use of the test weights before starting each shift.
3. Operator is responsible to complete the log book on a daily basis.
4. Maintain a safe access to all parts of the crane requiring inspection and maintenance and to the operators cab.
5. Lock out of equipment to be done to eliminate mechanical and electrical hazards to workers inspecting and maintaining the equipment.
6. Lifting in proximity to high - voltage lines is to be done in accordance to the Assurance in Writing as supplied to the project by BC Hydro.

7. The hoisting load line is to be visually inspected on an ongoing basis.
8. The movement of blind loads is not to be done until the rigger and crane operator have confirmed with each other that all is safe.
9. The operator is to use his audible alarm when large and/or awkward loads are going to be flown over the heads of workers on the ground.
10. All hand signals being used between the rigger and crane operator are to be understandable and follow the basic standards as set Part 15, Regulation 15.20.
11. The crane operator has the final decision as to whether or not a load is safe to fly or not. Absolutely no one is to overrule the crane operator, and this applies to everyone.
12. When a crane is being used remotely the crane operator must be dressed in such a manner so as to be easily seen on site. Signs must be posted near the crane indicating that the crane may move without the operator being visible.
13. If communications are lost between the crane operator and rigger or spotters all crane operations will stop until communications are re-established.
14. A STOP signal issued by any person on site must be obeyed by the crane operator.
15. Where multiple cranes are operating on site, each crane will be uniquely identified by a call sign, generally the crane number or letter.

3.4.4 Lifting and Lowering Loads

1. The crane operator will not commence lifting a load until he has been given either a verbal signal via the radio or a hand signal via visual.
2. The load will be lifted in such a manner that the rigger can do a visual safety check under the load to ensure there are no loose materials prior to sending the load to the designated area.
3. The load is to travel (if at all possible) in such a route that it will not be flown over the head of any worker. If this is not possible to attain, the crane operator must blow the horn in order to alert the workers.
4. If the crane operator must wait for a worker to move before he can safely "Land his Load", the operator must hold the load over an area where no work is being performed until he is directed back to the area where he can safely land the load.

5. Tower cranes will not be used to lift loads in tandem. If this type of lifting is required on site it must a PEng must attend the site to design the procedures required.
6. When a crane is being loaded or unloaded there must be no movement of the crane unless instructed by the rigger or signaler.
7. If the crane operator feels that a movement may be unsafe they will indicate this to the rigger of signaler who must remedy the situation to the satisfaction of the crane operator.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.5 DEMOLITION

3.5.1 HAZARD ASSESSMENT

3.5.1.1 Hazardous Areas

When a building(s) is to be demolished or deconstructed, a thorough hazard assessment of the inside and outside of the structure is required prior to work commencing. The purpose of this assessment is to identify any areas which are or may become hazardous as work progresses.

From the hazard assessment(s), SWP are developed to provide directives on how work will proceed in the hazardous areas. Contractors responsible for specific aspects of the demolition or deconstruction must review the results of their hazard assessment with project management before they begin work. This review will include any SWP developed for the work as well as equipment and material requirements.

Part of the hazard assessment must include the structural integrity of anything to be demolished, either in part or completely, as well as any adjoining structures if the integrity of those structures could be jeopardized. The following points should be addressed as a minimum:

1. Construction of the structure to be demolished/deconstructed.
2. Support mechanisms/tie-ins to adjoining floors or adjacent buildings.
3. Access/egress structures required for use by workers which may also form part of the building support structure.
4. Areas of the building which will not be demolished/deconstructed but will require support once the main support structures have been removed (i.e. façades).

3.5.1.2 Hazardous Substances

Prior to any demolition or deconstruction commencing, a hazard assessment specific to hazardous substances must be conducted of all areas that workers are expected to occupy. The hazard assessment must include inspection results for the following:

1. Asbestos.
2. Lead or Mercury.
3. Toxic substances such as:

- Human or animal waste.
- Medical waste.
- Hazardous waste.
- Used oil.
- Mould.

4. PCBs, CFCs or HCFCs.

Suspicion of any of the above substances is sufficient evidence to proceed with sampling and testing. The results of all testing must be reviewed by a competent person capable of assessing the risk to workers who will be conducting the demolition/deconstruction.

If testing reveals there are concentrations of substances capable of posing a hazard, these substances must be removed from affected work areas before work commences.

As part of the demolition plan there may be a requirement for routine air sampling to ensure that harmful levels of exposure are not reached in the work area.

If hazardous materials are found during demolition/deconstruction all work will cease until those materials can be either contained or removed.

3.5.1.3 Environmental Issues

Hazard assessments should take into account the possible release of substances into sewage or storm drains. All efforts must be made to ensure that sewage or storm drains are not contaminated by our work activities.

There may be a need to process water which accumulates on the project site before pumping it into storm sewers. Depending on the contamination levels in the water pumped from the site, there may be a requirement to ship the water off site to a disposal facility.

3.5.1.4 Recycling and Disposal

Demolition plans should take into account the potential to salvage building materials from the structure. An assessment of the structure should be conducted to inventory all salvageable materials or other materials which may require special attention such as the contents of old electrical vaults.

Prior to removing any recyclable materials from the structure recycling, facilities should be identified and arrangements made for either the pick-up or delivery of removed materials in order to ensure that the work area is free from excessive stock piling of these materials and remains safe for all workers.

Coordination of removal and pick-up of recyclable materials must be done by the project staff in an efficient manner to maintain security and safety on site. No workers are permitted on the site unless they have completed a site safety orientation.

3.5.2 PROTECTION

3.5.2.1 General

The following points will be observed with regards to demolition/deconstruction:

1. Materials will not be thrown or dropped from upper floors unless adequate barricades are erected to protect workers or members of the public from being struck by debris as well as to prevent those same people from entering the impact area.
2. Equipment or materials used for stabilizing the structure must be installed prior to work commencing and must be inspected routinely to ensure that they are intact.
3. Any area with a possibility of falling material must be guarded to prevent workers or members of the public from entering through the use of adequate canopies.

3.5.2.2 Workers

Any harmful substances must be either controlled or removed from the structure before work commences. Any aspects of the structure which are deemed unsafe or pose a particular hazard to workers must be addressed in an efficient manner and may include:

1. The removal of glass such as windows or doors must be done in an orderly manner from the top of the building to the bottom.
2. All services will be shut down and disconnected before work commences.
3. Areas inside and outside of the structure where materials could fall must be covered.
4. All required support/stabilizing structures must be in place before work commencing.
5. As the demolition/deconstruction progresses, housekeeping issues must be addressed as soon as they become apparent.

3.5.2.3 Members of the Public

Members of the public must not be endangered in any way by our work activities. It is imperative all work plans include specific information regarding public protection as required.

3.5.3 DEMOLITION PLAN

3.5.3.1 Notice of project

A notice of project is required:

1. The cost of labour and materials for the work will exceed $100,000.
2. The demolition, dismantle or repair of a structure in which asbestos containing material was used or where asbestos products were manufactured.
3. The structure is more than 20' high or is two stories or higher.

Contractors are expected to submit an NOP as part of their scope of work. The completed NOP is required on site and will be reviewed before work commences.

3.5.3.2 Engineering Plans

Engineering plans are required for all demolition/deconstruction projects unless the nature and method of demolition/deconstruction will not endanger workers and the integrity of adjacent grounds and structures will not be compromised.

3.5.3.3 Designated Superintendent/Assistant Superintendent

Contractors must provide the name and contact information of the designated Superintendent/Assistant Superintendent for the demolition/deconstruction project. This person must be deemed competent by virtue of their education and experience and must be present on site for all aspects of the demolition.

3.5.3.4 Housekeeping

Housekeeping is an ongoing task which must be addressed in an efficient and disciplined manner. All access and egress routes, particularly those designated for emergency evacuation or medical response, must be kept clear at all times.

Materials which have been designated as salvage must be removed from the work area as quickly as possible and stored in locations where they will not pose a hazard to workers. These materials must be removed from site as soon as is practical, but their removal must be done in a coordinated manner through site management.

Substances which are hazardous must be removed from site in containers designed to contain the hazard effectively. These containers must not be handled by workers other than those who have been trained to deal with the hazard and who have

adequate PPE and equipment designed to protect them from the hazard posed by the substance(s).

All hazardous material, such as broken glass, must be removed from the work area in a safe and efficient manner. The use of debris chutes is permissible but only after the chutes has been installed by a qualified worker.

Equipment must be located in areas where it does not pose a hazard to workers working in the vicinity. If equipment is being used to demolish portions of a structure, workers are not permitted to be within the work area of the machine or the impact area of any portion of the structure which is knocked down.

Equipment used to provide temporary power for tools or lighting must be positioned well away from mobile equipment. Fuel sources must also be kept clear of all sources of ignition.

All equipment is to be secured at the end of each work shift to prevent unauthorized use or potential theft.

3.5.3.5 Use of Explosives

The use of explosives in demolition is restricted to those workers who possess a valid blasting ticket and who have demonstrated competency with this type of work.

All explosives and accessories must be secured at the end of each shift.

3.5.3.6 Service Disconnection

Before any work commences on site, written confirmation of all services coming into the structure having been disconnected must be received from the applicable authority. No work will be permitted until this confirmation has been received and reviewed by project management staff.

3.5.3.7 Material Chutes

Chutes must be inspected routinely to ensure that they are attached securely and have not sustained any damage from ongoing use.

Chutes should be closed off at the bottom to prevent unauthorized access to the demolition area by members of the public.

Material chutes must empty into a garbage container large enough to prevent or limit any material projecting from the container due to impact forces.

3.5.3.8 Access/Egress

All stairways and handrails will be left in place until access to the level they serve is no longer required.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.6 Designated Emergency Platform

3.6.1 GENERAL

The following points will be followed with regards to the use of the DEP box on site:

1. The FAA assesses injured worker and categorizes into rapid or non-rapid transport.
2. For rapid transport, the crane operator is immediately contacted and all lifts cease. Crane operator must follow rigger's instructions for DEP Box hook-up and location to scene.
3. The FAA calls 911, stating the project address, extent of injury, and location injured worker will be moved to (e.g.: Gate 2).
4. FAA assigns someone to retrieve the jump kit and basket stretcher from the first aid office.
5. Once stabilized, FAA monitors ABC's, covers worker, and documents findings awaiting the paramedic's arrival.
6. Rigger communicates to crane operator "DEP Box ready to be lifted" and remains in continuous communication until the crane operator has a visual of the DEP Box.
7. Supervisor clears designated safe landing location before arrival of DEP.
8. When injured worker is ready to be transported in the DEP Box, all personnel must ensure that everyone has their independent safety line attached to the block and that the rope grab is adjusted accordingly. NOTE: At no time will the load capacity of the box be exceeded.
9. The rigger will then communicate with the crane operator "All Clear – Ready to Go". The DEP Box will then be lowered to a safe landing location where emergency personnel will be able to assist the injured worker.
10. Once injured worker has been assisted and taken to the hospital, the FAA and team members shall gather all equipment and ensure that everything is in good working condition and ready for future use.
11. When not practicable to access the injured worker with the DEP box, the FAA, with assistance, transports the worker to the nearest DEP access point, which could be upper or lower floors. This must be evaluated regularly to eliminate any

unnecessary time loss. Adequate access/egress must be maintained at all times in order to eliminate any hazards.

3.6.2 HOOK-UP AND FLYING

The following procedure will be followed when hooking up the DEP to the crane load block:

1. The Rigger will immediately safely lower his load and unhook the load.
2. The Rigger goes to DEP Box immediately, removes rain cover, and prepares it for flying.
3. The DEP is landed as close as possible to the location of the injured worker.
4. While the FAA prepares the worker, the Rigger will:
    a. Lower the Block and hook up the lifelines. The life lines must not be attached to the hook of the load block. A separate anchor point must be available on the Block.
    b. The Rigger will also ensure that two (2) of the hooks of the four (4) Point bridal have been attached on one side of the basket stretcher. The other two (2) hooks will be attached after the injured worker has been placed in the Basket Stretcher.
5. The injured worker is placed in the Basket Stretcher and secured. Once secured inside the DEP the second set of hooks of the (4 Point Bridal) are attached to the Basket Stretcher.
6. The four (4) point bridal will be attached to the lifeline.
7. The FAA will have a full body Harness on and will hook up to the lifeline Rope Grab.
8. The DEP is flown to a designated area were the injured worker will be turned over to the Ambulance crew for further treatment and transportation to hospital.

3.6.3 DEP FOR RECOVERY

Under certain circumstances it is permissible to use the DEP for doing recovery of workers stranded due to unforeseen problems with equipment. An example would be workers stranded in a swing stage where the swing stage has stopped working due to mechanical reasons.

Recovery indicates no immediate danger to the life or health of stranded worker(s). The major consideration is the comfort and safety of stranded worker(s) performing

the recovery. The health and safety of the workers who may be dispatched to repair the equipment is also considered.

Before deciding on the use of the DEP for recovery, consider other potential. It may be more appropriate to contact the fire department or wait until a technician is available who may be able to gain access to the swing stage from above (i.e. rappel down into it).Before using the DEP for recovery the FAA must ensure they have the required training and that all equipment required to ensure 100% fall protection is available and positioned for all personal who will be in the DEP. The maximum load capacity of the DEP must not be exceeded during the recovery operation which may require multiple trips back and forth.

Before using the DEP for recovery operations all ancillary equipment must be removed and stored in a secure location, such as the first aid room.

The DEP is hooked-up and flown in the same manner as defined above. When the DEP with CSO is in position near the stranded workers the CSO will instruct them on how the transfer will take place. It is imperative that the stranded workers fully understand the directives before the transfer takes place. The following points must be transmitted to the workers:

1. Workers will remain in 100% fall arrest at all times during the transfer and while in the DEP.
2. No action taken until the FAA has instructed workers to do so.
3. Workers will move at their own speed when ready to; no one will pressure them.
4. If required the FAA can transfer to the location of the worker (i.e. swing stage) to coach/assist them during the transfer.
5. Workers must avoid sudden, jerky movements. Move deliberately and slowly to ensure work area (i.e. swing stage) and DEP remain as steady as possible.
6. When in the DEP workers will sit on the floor and await direction from the CSO.

The DEP will be positioned with the top of the DEP in line with the top rail of the work area (i.e. swing stage) to facilitate easier transfer. The doors of the DEP will not be opened under any circumstances while the DEP box is suspended.

3.6.4 DEP FOR RESCUE

There may be a requirement to rescue workers from isolated areas (i.e. swing stage) where there has occurred a medical emergency (e.g. heart attack). Due to the nature of this type of operation time is limited and could be life threatening.

It is imperative that the FAA and their team respond effectively and quickly to these types of medical emergencies. Delay could be costly in terms of life or health.

With the exception of removing emergency equipment from the DEP the procedure detailed in DEP for Recovery above is the procedure which will be followed for rescue. The FAA should have a second worker who they can call on to assist them at the location of the emergency.

The goal of rescue is to stabilize the injured worker as soon as possible and remove them from the work area. This may take some time. Once stabilized, they must be packaged and removed from the work area. They must be wearing a full body harness and be attached to a separate life line in the swing stage. At all times each worker will be in 100% fall arrest.

In the event of a catastrophic failure in a work area (i.e. a swing stage comes down either fully or partially) the procedure will be similar except that the swing stage should be brought in to the worker is such a way that the worker comes along one of the sides of the DEP thus reducing the possibility of being crushed between the building and the DEP.

Workers who are suspended and are able to move freely will be assisted into the DEP and will, using a second independent lanyard, transfer to one of the lifelines inside the DEP. Long lanyards previously attached above the load hook will suffice for this purpose. Once inside the DEP workers can disconnect from the external lifeline.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.7 ELECTRICAL – HIGH VOLTAGE

3.7.1 GENERAL

1. Only qualified persons will work on or repair electrical systems, equipment or tools.
2. All temporary lighting must be installed and maintained in accordance with the applicable codes.
3. Splices or repairs of electrical cords must retain the same mechanic and electrical strength as the original cable.
4. All electrical extension cords, tools and equipment must have a ground plug or be double insulated.
5. As a general rule, look up when approaching any area on the site to ensure that the work area is clear of power lines as well as any other overhead obstructions.
6. Temporary electrical cords shall be kept clear of stairways and other locations where they may be subject to damage or present a tripping hazard.
7. When overhead lines are encountered in proximity to the work area, the Superintendent shall contact the local power authority to ascertain the voltage of the power line and shall make arrangements to meet with the power authority to discuss safety procedures for the specific job.
8. All energized junction boxes, circuit breaker panels, etc., must have the proper cover in place to prevent accidental contact. Do not use cardboard or other makeshift covers.
9. Damaged or defective electrical tools must be tagged “Out of Service” and given to the supervisor for repair.
10. Supervisors must ensure that exposed and non-exposed cords are tested and tagged as required, not to exceed 3 month intervals.

3.7.2 Power lines, Transformers, Flagged Warning Lines

Under no circumstances shall any person work or instruct workers to erect scaffolds, operate cranes, tools and equipment or come in proximity to the allowable distances of power lines or transformers.

Voltage	Minimum Distance
751 V to 75 KV	10 feet (3 meters)
75 KV to 250 KV	15 feet (4.6 meters)
250 KV to 550 KV	20 feet (6.1 meters)

When the minimum distance cannot be maintained safely due to the circumstances of the work, the types of tools used or due to unplanned movement of a worker, the following steps must be taken:

1. Stop all associated work.
2. Call the local power authorization, arrange for a meeting at the work site to decide whether the energized conductors can be:
    - De-energized.
    - Effectively guarded and flagged.
    - Displaced or re-routed.
3. Get assurance in writing as to which of these actions will be taken and when. This assurance must be signed by the person controlling the electrical system (WorkSafeBC Form 30M33).
4. Ensure the written assurance is communicated to all persons in the area where people, tools or equipment when moved or stored, can come within the minimum allowable distance.

When energized electrical conductors are guarded, special precautions must be taken:

1. Whenever guarding is used to allow approach to high voltage power lines, a qualified safety watcher must be posted to control the approach of loads and to immediately stop the movement when contact with the guards appears possible.
2. Workers who are required to work in close proximity to overhead power lines shall be provided with and must be familiar with the “working near power lines” publications of the WorkSafeBC.

When high voltage conductors cannot be de-energized, re-routed or effectively guarded, no work shall commence until approval is obtained from WorkSafeBC and the following precautions are taken:

1. The area in which equipment or materials are to be moved shall be barricaded and supervised to restrict entry to only those workers necessary to complete the work.

2. a qualified person shall be designated as a watcher whose sole task during the movement of any material or equipment shall be to:
   a. Observe the position of the material or equipment relative to the conductors.
   b. Order the movement stopped at any time that contact appears probable.
3. The watcher shall stop the movement of materials and equipment when conditions arise which prevents him/her from performing the task.
4. The watcher shall be provided with a positive means to give a clear signal to stop movement and shall only use that means to stop movement.
5. While equipment and materials are in motion in proximity to conductors, no person other than the operator shall be in contact with any part of the equipment.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.8 Emergency Procedures

3.8.1 GENERAL

1. A description of potential emergencies.
2. Methods of reporting the emergencies and alarm signal system.
3. A construction site safety plan of the workplace that shows evacuation routes and emergency must point, as well as the location of emergency equipment, first aid station, fire suppression equipment and warning alarms.
4. A list of personnel and their responsibilities in emergency situations and their contact information.
5. A list of procedures for shut down of the work site.
6. A description of the system of communications, both internal (e.g. alarms) and external.
7. A list of phone numbers for support services. This list should be posted at all telephones.
8. An evacuation, head count and rescue plan.
9. A plan for accident investigation and correction of hazards.
10. A formulated diplomatic procedure for notification of next of kin to be carried out by upper management, Police Department or other authorized agencies.
11. A radio must be made available to the First Aid Attendant for the purpose of communication in the event of any emergency.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.9 EXCAVATION

3.9.1 GENERAL

We recognize the severity of injury involved when not adequate shoring is not provided. Procedures for this process should be carried out in accordance with the specifications and requirements of a registered professional engineer and/or the appropriate regulatory bodies.

1. Prior to starting the excavation, the form of worker protection required will be determined. Excavations in excess of 4 feet (1.22m) in depth shall be shored,

sloped to a safe angle or shall have engineering certification in place which states that conditions are such that the excavation may be entered without shoring or sloping.

2. Prior to starting the excavation, the location of all utilities must be identified. Procedures for excavating adjacent to these utilities must be developed in conjunction with the responsible authority.
3. Prior to starting a bulk excavation, specifications and procedures must be developed, provided onsite and all workers involved in the bulk excavation shall be aware of the procedures involved.
4. All procedures and documentation regarding traffic control, street closure and public disruption must be developed and in place prior to the start of any excavation.
5. All workers who are required to work in excavations shall be familiar with the requirements for safe excavations.
6. No worker shall enter into an excavation in excess of 4 feet (1.22 m) in depth unless it is shored, sloped to an angle of at least ¾ to 1 or is protected by other effective means.
7. All spoils and excavated materials must be kept a minimum of 2 feet from the edge of the excavation.
8. Ladders for access and egress must be in place, in the excavation, in proximity to the workers in the excavation. Ladders must extend a minimum of 3 feet above the top of the excavation.
9. Excavations must be inspected daily by a competent person. The inspection shall include, but not be limited to:
    - Changes in soil consistency.
    - Installation and structure of the shoring.
    - Placement of ladders and safety devices.
    - Location of spoils, materials and equipment.
    - Public safety issues.
10. In addition, excavations must be inspected after each rainfall.
11. Persons working in trenches must not work in vicinity of excavating equipment or outside the area of the trench protected by shoring, sloping or other appropriate means.

12. Excavations, which present a hazard to workers, shall be covered or provided with guardrails around the exposed sides.
13. Walkways which cross excavations shall be a minimum of 20 inches (510 mm) wide and if the excavation is in excess of 4 feet in depth, have standard guardrails on both sides.
14. All workers must wear high visibility vests.
15. Covers on trenches must be fit in such a way to prevent the cover from falling into the trench. Cutting the cover to fit on the inside recess on either side of the trench will ensure the cover stays in position.
16. For trenches above 2 feet across, 2 x 4 bracing may be required to ensure the cover does not break when a load is placed on it. Test the cover on the trench before applying any load to verify that the strength of the cover is adequate.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.10 FALL PROTECTION REQUIREMENTS

3.10.1 PREPARATION

1. Employees working at elevations greater than 10 feet. (3m), where there is a risk of injury from falls, must use fall protection measures. Fall protection measures include, but are not limited to:
    - Installing wall, floors, railings and standard guardrail systems.
    - Using personal fall restraint or fall arrest equipment.
2. Fall restraint equipment prevents a worker from falling to a lower level by restricting the worker's movement. Fall arrest equipment limit's a worker's fall to a maximum of 4 feet. (1.2m), using a full body harness.
3. Prior to the start of any project, a review of the fall protection needs for the specific project shall be undertaken. A site specific fall protection plan shall be developed and implemented and ongoing training and review of the program shall take place as the project proceeds.
4. The review shall include the identification of fall hazards, decisions on types and methods of fall protection to be used, procedures for assembly, maintenance, inspection and disassembly of equipment as well as the training requirements necessary for the fall protection program.
5. Training in the fall protection plan shall include job orientation, instruction on fall restraint and fall arrest as well as fitting of personal protective equipment.
6. Ensure that there are adequate attachment points available at each location where fall protection systems are used.
7. This procedure should be used in conjunction with the following related procedures:
    - Floor openings.
    - Guardrails.
    - Ladders.
    - Overhead hazards.
    - Scaffolding.

3.10.2 Handling and Use/Construction Procedure

1. When working in fall hazard areas, jobsite specific fall protection procedures must be used. Contact your Supervisor for information and appropriate equipment for your work area.
2. Always wear appropriate personal protective equipment when passing through an active overhead work area.
3. Always use measures to control or restrict access when working below or around others working overhead.
4. Ensure that fall protection equipment is not used by workers until they have been adequately instructed in the safe use and handling of the equipment and have demonstrated that they understand the instruction.

3.10.3 Fall Restraint

1. Fall restraint is rigged to allow the movement of workers only as far as the sides and edge of the working area. As part of the rigging, anchorage points conforming to the intended load (800 lbs.) criteria must be provided for each fall restraint device in use.
2. The plan involving the use of fall restraint systems shall include:
    - Holding a pre job meeting to address and discuss the fall protection requirements including any training or review.
    - Working within the confines of a standard guard-rail system.
    - Wearing approved fall restraint equipment which is attached to securely rigged restraint lines. This would include checking restraint line length to ensure limits of approach.
    - Confirming that all fall restraint devices are compatible.
    - Inspecting all restraint components before each use to ensure no excessive wear, no damage or other deterioration. Always remove defective components from use and mark them as such to prevent others from using them.
    - Tying of restraint lines. These are to be tied independently of other lines and to an approved anchorage point only.

3.10.4 Fall Arrest

1. Workers exposed to a free fall distance of 10 feet (3 meters) or more (without restraint) are required to wear fall arresting equipment including a full body harness.
2. The plan involving the use of fall arrest systems shall include:
    - Holding a pre-job meeting to address and discuss the fall protection requirements including any training or review.
    - Inspecting all components before each use to ensure no excessive wear, no damage or other deterioration. Always remove defective components from use and mark them as such to prevent others from using them.
    - Securing of full body harness system to approved anchorage points. Engineered Anchorage points must be capable of supporting 5000 lbs. (244kg).
    - Ensuring that safety lines are rigged in such a manner as to limit the free fall distance to 4 feet (1.2m). Ensuring that safety lines are protected from cuts, wear and abrasion.
    - Ensuring that only one worker may be attached to any one vertical safety line. Ensuring that the attachment involves the use of locking snap hooks to "D" rings only.
    - Ensuring the removal from service, until checked and re-certified for use of body harness components which have been involved in a fall.

3.10.5 Control Zones

1. Another method of fall protection is the institution of a control zone in the work area. Control zones are used for leading edge or fixed edge work.
2. The plan involving a control zone system shall include:
    - A minimum distance from the edge of 6 feet (1.8 meters) shall be maintained to protect workers not wearing fall restraint or fall arrest equipment.
    - All workers working between the 6 feet distance and the edge must use fall restraint or fall arrest equipment attached to engineered attachment points.
    - Warning lines or barriers must be installed to separate the control zone from the edge of the building. These lines are generally made of wire, rope, or chain adequately supported on stanchions. Warning lines must be raised off

the work surface to maintain a height of 40 – 45 in. (102 – 114cm) above surface.

- All warning lines must be clearly marked with high-visibility materials at least every 6 feet (1.8m) along their length.
- Warning lines must be capable of resisting, without tipping over, a force of at least 16 lb. (7.2kg) applied horizontally.
- Swing factors must not exceed 22 degrees.
- Control zones shall be inspected at the beginning of each work shift to ensure the integrity of the control zone and that no damage or disruption of the warning line system has taken place.

3.10.6 Cleanup and Storage

1. All fall protection equipment should be stored in a dry area to prevent deterioration of the equipment.
2. Always inspect fall protection equipment thoroughly prior to placing in storage. Remove any damaged equipment from service and have it repaired and re certified prior to future use.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.11 Harmful substances (Disposal of)

1. Harmful substances must be disposed of using the method described in the Material Safety Data Sheet / Safety Data Sheet (MSDS / SDS) for substance.
2. All workers shall have knowledge of the location of Material Safety Data Sheet / Safety Data Sheet (MSDS / SDS) for any products which they may use or may come in contact with on the job site.
3. All workers shall have a demonstrated knowledge of the Workplace Hazardous Materials Information System / Globally Harmonized System (WHMIS / GHS) program and regulations.
4. All products shall be handled in accordance with the manufacturer's instructions and the requirements of the WHMIS / GHS program.

3.12 HAZARDOUS SPILLS

1. All workers shall have knowledge of the location of Material Safety Data Sheets / Safety Data Sheets (MSDS / SDS) for any products which they may use or may come in contact with on the job site.
2. All workers shall have a demonstrated knowledge of the Workplace Hazardous Materials Information System / Globally Harmonized System (WHMIS / GHS) program and regulations.
3. All products shall be handled in accordance with the manufacturer's instructions and the requirements of the WHMIS/GHS program.
4. Supervisor is to be notified immediately of the occurrence of a hazardous spill.
5. All workers in the immediate area shall be evacuated from the spill area in an upwind direction and to a safe distance.
6. If safe to do so, and if appropriately trained personnel are on site, the spill shall be contained and cleaned up according to recommendations of the MSDS / SDS.
7. Appropriate authorities and emergency organizations (i.e. Fire, EHS, and Police), as required, shall be notified of the spill.
8. Materials cleaned up from a spill shall be disposed of in the manner described on the MSDS / SDS. Materials shall only be disposed of in the approved manner and at approved disposal sites for the specific material.
9. If using a spray gun, always store it in a clean, dry area with the nose facing towards a safe surface and away from personnel.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.13 Leading Edge Work – Greater than 10 feet

3.13.1 GENERAL

Supervisors should ensure that only designated tradesmen are allowed to perform this dangerous and critical work due to the absence of any practical means of using mechanical fall arrest, and fall restraint systems.

It is mandatory for tradesmen to work in pairs while performing leading edge work.

When required, a control zone must be set up to prevent other workers from entering the area.

Once the above planning is achieved by the General Contractor, then:

3.13.2 Fall Protection

1. Adequate anchor points must be identified prior to work commencing. These points must be capable of withstanding 5,000 lbs. and must be positioned to provide a straight run from the work area back to the anchor point.
2. If adequate anchor points cannot be established then a horizontal life line must be installed.
3. In conjunction with point 2 a risk assessment must be completed with specific attention directed towards anchoring the temporary horizontal life line. The line must be installed in the manner described by the manufacturer.
4. Workers must be attached to the anchor point at all times while installing the deck when working above 10 feet.

3.13.3 Assembling Scaffold Frames – Preliminary Activities

1. When assembling multiple scaffold frames for deck form work it must be done in a consistent manner, particularly when working above 10 feet.
2. A control zone should be established to limit access to the work area to authorized personnel only.
3. Set one level of scaffold frames up before commencing work on the second level. When the height of the work is approaching 10 feet we must ensure that adequate anchor points are provided. By constructing width first instead of

height we minimize the scaffolding system being tipped over in the event a worker falls.

4. It is important that all components of the scaffolding system be braced together. Scaffold towers should be connected together using cross braces if practicable.
5. Any non-standard components used in the scaffold system must be engineered and the applicable drawings must be available on site and reviewed with the workers responsible for installing those components.
6. Anchor to the frame of the scaffolding and not the cross braces. Lanyards used for anchoring must have a ladder type self-locking hook on them as seen to the right. Wrapping lanyard around scaffolding and attaching back onto themselves is not allowed.

7. Lanyards must be kept as short as possible.
8. Workers are not permitted to stand or step onto cross bracing for any reason. Cross bracing is not to be used as an anchor point.

3.13.4 Assembling Formwork

When assembling scaffolding for the support of formwork the following procedures will be followed:

1. Place the first set of frames on the deck where the formwork will start. Install two (2) angle braces, one on each side of the frame. Frames should be supported on flat feet, either screw jack or fixed. 'U' heads should not be used as supports for scaffolding frames under any circumstances. Do not use scaffold frames without adequate supports installed.
2. Continue erecting the first level of scaffolding frames until the entire area to be decked is covered. Connect frame sets together using angle braces to ensure stability in the entire scaffold system.
3. Position a 20" work platform on the first level of frames and add the second level of scaffolding. The work platform must be constructed out of 2"x10" planks or manufactured components. The platform must be capable of supporting the number of workers who will be on the platform. It is recommended that not more than two (2) workers are on a scaffold set at once. Add cross braces as each set of frames is installed.
4. Work platforms are required on each level of scaffolding when working at 10 feet or higher and fall arrest must be used by all workers.

5. Continue erecting the second level of scaffolding frames adding cross bracing between frame sets as required.
6. Continue erecting scaffold frames for additional levels until the required height is achieved.
7. Place aluminum beams and secure at the top of frames. Use 'U' heads or flat heads which have a mechanism for holding the aluminum beams securely. If using 'U' heads wedges secured with nails are required to hold the aluminum beams securely.

3.13.5 Leading Edge Work

Once the system is in place and ready for use the following steps will be performed;

Prior to workers going above the top of the scaffold frames and work platform must be built. This platform should be approximately 4' x 8'. Once constructed, the worker will be able to stand on this platform to continue decking.

1. Land enough 4x6 safely onto scaffold aluminum beam to create a work platform 4x8.
2. Experienced workers working in pairs will spread enough 4x6 on flat for approximately 8'-10'. This will be done from beneath the 'deck' and not on top.
3. Once 4x6 are in position a 4x8 sheet of decking (paper faced plywood) can be positioned and secured. Once the decking is secured workers can go on top to nail it down fully. The work platform is not in place and workers can begin decking as follows:
    a. Land a load of 4x6 in the required location.
    b. Workers can spread out 4x6 on edge for 8' of run.
    c. The required amount of decking plywood is landed, positioned and secured.
    d. Repeat steps a to c for the remainder of the deck.
    e. Guardrails are to be installed as the deck progresses. Under no circumstance will the open edge of the deck be left unguarded. If guardrails cannot be installed immediately than a control zone must be established.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.14 Leading Edge Work

3.14.1 GENERAL

Supervisors should ensure that only designated tradesmen are allowed to perform this dangerous and critical work due to the absence of any practical means of using mechanical fall arrest, and fall restraint systems.

It is mandatory for tradesmen to work in pairs while performing leading edge work.

When required, a control zone must be set up to prevent other workers from entering the area.

Once the above planning is achieved by the General Contractor, then:

1. A risk assessment must be done by the supervisor prior to work activities being performed and any hazards identified should be addressed. Fall protection cannot be used as workers are exposed to greater risk due to the domino effect.

NOTE: When a worker experiences a fall their life line will take up the tension of the fall but due to the fact that the 4x6 are not secured the worker will continue to fall until they hit the deck or ground below. The 4x6, however, are still in motion due to the movement of the life line of the falling worker. It is this material falling that creates a secondary hazard to the fallen worker as well as other workers in the area. This is the domino effect.

2. Land bundle of 4x6 safely onto scaffold aluminum beam.
3. Experienced workers work in pairs – workers to spread 4x6 on flat until bundle is completed. While moving back to the start point, rotate the 4x6 onto their short edge with approximately 8 inches between each 4x6.
4. Once 4x6 are placed at designated location, land bundle of plywood on 4x6.
5. Plywood to follow sequence of 4x6 layout and fall restraint to be used. No more than 24 feet of plywood will be laid out without repositioning fall restraint anchor (i.e. if a worker has more than 24 feet of length between them and the anchor line they must reposition the anchor line).
6. No worker will be closer than 8 feet to the forward edge of the decking without fall restraint equipment being worn and used.
7. Control zone to be utilized when required eliminating access to unauthorized personnel. Competent person to monitor the activities on a regular basis.
8. Handrails must be installed when practicable and follow the sequence of plywood sheeting.
9. Fall restraint to be used by all workers when installing plywood and guardrails.

10. Means of fall restraint system could be the installation of a cable or horizontal lines, which must be installed to a zone and checked by a supervisor or competent person prior to utilizing.
11. Workers performing leading edge work such as joisting cannot always use fall arrest device system, therefore, only experienced workers are allowed to perform this task.
12. In addition, open edge shall not be left unguarded without any exceptions. Means of warning could be control zone, 10 feet away from the edge or guardrails. Also, a control zone must be set up underneath to control the access and to prevent exposures to other workers that are not working in the area.

NOTE: Only trained workers are allowed to perform the above procedure. No exceptions. However, due to the work activities in some areas, guardrails, fall arrest and fall restraint, cannot be practicable, therefore, leading edge work can only be performed by experienced workers which understand the hazards and are trained to perform their task in a safe manner.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.15 RESHORING

1. During the installation of re-reshores near and along the slab edge, another worker is required to hold brace the shore during the installation. This will prevent the shores from accidently falling over the edge in the event the installer loose his grip.
2. All reshores must be tied back when being used near a slab edge to prevent them from falling. The rope used to tie reshores back should be a minimum of ¼ inch in diameter and anchored to the nearest column or anchor sling capable of 5000 lbs. capacity of fall arrest and 800 lbs. of fall restraint.
3. Reshores must be installed as detailed in the reshore plan issued by a professional engineer competent in this type of work.
4. Reshores must be checked daily to ensure they are firmly in place.
5. Clips used to secure reshores should be checked periodically to ensure they provide sufficient expansion to prevent reshores from falling out.
6. Reshores used on crane landing platforms must be placed as detailed in the applicable drawing, must be tightened to refusal and must be checked daily.
7. Reshores should not be tied together unless the size of rope used is of sufficient strength. Use ½ inch or greater diameter if more than two (2) reshores are being tied together.
8. Do not tie tarps, tools or equipment to reshores under any circumstances.
9. When wedging shores is required (for fixed length) wedge height should not exceed 12 inches.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.16 RESPIRATORS

1. The employer must provide appropriate respiratory protective equipment if a worker is or may be exposed to concentrations of an air contaminant in excess of applicable exposure limit, or to an oxygen deficient atmosphere.
2. The employer/supervisor must select the appropriate respiratory protective equipment for their workers as suggested by the MSDS provided by the supplier of the controlled products being used. Only respiratory protective equipment which meets the requirements of a standard acceptable to WorkSafeBC may be used for protection against airborne contaminants in the work place.
3. A respirator which requires an effective seal with the face for proper functioning must not be issued to a worker unless a fit test demonstrates that the face piece forms an effective seal with the wearer's face.
4. Other personal protective equipment that is to be worn at the same time as a respirator and which could interfere with the respirator fit must be worn during a fit test. The employer must maintain an up-to-date journal of all workers who have been fit tested in accordance to health regulations.
5. Before each use of a respirator which requires an effective seal with the face for proper functioning, a worker must perform a positive or negative pressure fit check.
6. The employer must maintain a record of fit test results and worker instructions, and maintenance for air supplying respirators, powered air purifying respirators and for sorbent cartridges and canisters.

There is no treatment for silicosis!!

Only trained workers are allowed to complete the above procedure. No exceptions!

3.17 SCAFFOLDING

3.17.1 GENERAL

1. Scaffolding shall be erected plumb and level and all connections shall be fastened.
2. Workers shall be aware of the regulations on specific types of scaffolds (refer to WorkSafeBC Regulations):
    - Wood scaffolds .
    - Bracket scaffolds.
    - Needle beam scaffolds.
    - Thrust out scaffolds.
    - Swing stages.
    - Trestle scaffolds.
    - Suspended powered platform.
    - Suspended work platform.
    - Boatswains chairs.
    - Tower and rolling scaffolds.
    - Ladder-jack scaffolds.
    - Outrigger scaffolds.
3. The upright supports of scaffolds shall stand on firm foundations or sills. Pallets, boxes, building blocks, bricks and other unstable materials shall not be used for this purpose.
4. The stability of a scaffold, having a height exceeding three times its minimum base dimension, shall be ensured by securing the scaffold to the structure, or by other appropriate means.
5. Scaffolds, 10 feet (3 m) or more above grade, shall have guardrails around their open sides.
6. Toe-boards shall be installed around the open sides of scaffolds to prevent tools and equipment from falling from the scaffold.
7. Scaffold planks shall:

- Be not less than 2 by 10 inches (5 cm x 25 cm), nominal dimension.
- Extend not less than 6 inches (15 cm), and not more than 12 inches (30 cm) beyond the supports at each end.
- Be supported at intervals not exceeding 7 feet (2.1 m) for heavy work, such as bricklaying and masonry, 10 feet (3 m) for light work.
- Be of the same thickness as adjoining planks.

8. Work platforms on scaffolds shall have two or more scaffold planks side by side, or manufactured platforms. Whichever method is used must give a work surface of at least a nominal width of 20 inches (50.8 cm).
9. When the distance between the front and rear upright scaffold support is greater than 30 inches (76 cm), additional planks shall be used so that there is no opening greater than the width of one scaffold plank.
10. Scaffold planks shall not be sloped more than 2 feet (61 cm) vertically and 10 feet (3 m) horizontally. Sloped planks shall be secured against slipping. They shall be fitted with cleats on their topside at not more than 16 inch (41 cm) intervals. Other non-skid surfaces may be used instead of cleats.
11. Scaffolds shall only be put up or taken down by, or under the supervision of, qualified workers.
12. No damaged or weakened scaffold shall be used until it has been repaired.
13. Only material, which is being used at the time, shall be kept on any scaffold. Scaffolding shall not be overloaded.
14. Access to scaffolds up to 30 feet (9.1 m) in height may be gained by:
    - Use of the end-frames, where the design provides a ladder-like structure of uniformly spaced horizontal members.
    - Use of fixed vertical ladders, portable ladders, or stairways.
15. Access to scaffolds over 30 feet (9.1 m) high shall be by fixed ladders, stairways, or temporary passenger hoists.
16. Never jump onto or off of scaffold planks.

3.17.2 Tower and Rolling Scaffolds

3.17.2.1 Construction and Erection

1. Scaffolds shall be constructed and erected in accordance with the manufacturer's specifications and recommendations.

2. All applicable members shall be utilized, including the diagonals in both the vertical and horizontal planes. All necessary fasteners specified and recommended by the manufacturer shall be property installed and secured.
3. If not using manufactured aluminum planks, a horizontal brace must be affixed to the bottom frame section to prevent the rolling scaffolding from scissoring when moving, or using the scaffold.

3.17.2.2 Guardrails

Scaffolds with work platforms 10 feet (3 m) or more above floor level shall be equipped with guardrails and intermediate rails.

3.17.2.3 Safe Access

Access to the platform shall be gained by means of fixed vertical ladders, stairways or hoists in accordance with the requirements of WorkSafeBC Regulations.

3.17.2.4 Casters

1. At least two of the four wheels shall be of the caster type.
2. The caster height adjusting pines or screws shall be installed so they cannot fall out, or be inadvertently screwed out, from their housings when a scaffold leg is raised clear off the floor.
3. Such pins or screws shall not extend more than 2/3 of their total length or in excess of 12 inches (30 cm) from their housings.

3.17.2.5 Wheel Locks

Except as provided by the WorkSafeBC regulation wheels shall be provided with effective locking devices and kept locked when workers are required to work on scaffolds at heights in excess of 10 feet (3 m) above floor level.

3.17.2.6 Wheels

Wheels shall be not less than 5 inches (12.7 cm) in diameter. When the scaffold is used in proximity to energized electrical equipment, the wheels shall be fitted with non-conductive resilient tires and the provisions of WorkSafeBC Regulations shall be complied with.

Wheels on at least one end of a rolling scaffold must be of the swivel type.

Where metal scaffolds are used in any situation where the high electrical potentials involved would result in capacitive or induced current in the scaffold structure, the structure shall be grounded.

3.17.2.7 Decking

Scaffold planks shall extend not less than 6 inches (15 cm), and not more than 12 inches (30 cm), beyond the end supports or bearers of the structure. They shall be fitted with means to retain planks on the bearers (cleats).

The entire area within the scaffold structure shall be decked at those levels where workers work or ride except where guardrails are installed immediately about the perimeters of partially decked areas.

3.17.2.8 Height Limitation

The height of any free-standing tower or rolling scaffold shall not exceed three times the minimum dimension of the base, unless the scaffold is securely tied or guyed to prevent overturning.

3.17.2.9 Outriggers

If outriggers are used to increase the minimum base dimension of a tower or rolling scaffold, they must be installed on both sides of the scaffold structure unless the scaffold is adjacent to a building or structure, the scaffold must be braced against the structure, and outriggers used on the opposite side.

3.17.3 Rolling Scaffolds: Riding by Workers

1. No worker shall remain on a rolling scaffold while it is being moved by other workers if the platform height exceeds twice the minimum base dimension.
2. No worker shall remain on a rolling scaffold while it is being moved by his own efforts if the platform height exceeds 1.5 times the minimum base dimension.
3. If the platform height exceeds 1.5 times the minimum base dimension of the scaffold, a worker on the work platform is not permitted to move the scaffold.

3.17.4 Floor Requirements

The floor or surface on which the scaffold is moved shall be within three degrees of level and shall be free from pits, holes, depressions, or obstructions.

The floor or surface over which an occupied rolling scaffold is moved must be sufficiently firm, within 3 degrees of level, and free from pits, holes, depressions, waste material, or obstructions so as to ensure stability of the scaffold.

3.17.5 Assembling multiple scaffolding frames

1. When assembling multiple scaffold frames for deck form work it must be done in a consistent manner, particularly when workers will be working above 10 feet.
2. A control zone should be established to limit access to the work area to authorized personnel only.
3. Set one level of scaffold frames up before commencing work on the second level. When the height of the work is approaching 10 feet we must ensure that adequate anchor points are provided. By constructing width first instead of height we minimize the scaffolding system being tipped over in the event a worker falls.
4. It is important that all components of the scaffolding system be braced together. Scaffold towers should be connected together using cross braces if practicable.
5. Any non-standard components used in the scaffold system must be engineered and the applicable drawings must be available on site and reviewed with the workers responsible for installing those components.
6. When assembling scaffolding for the support of formwork the following procedures will be followed:
    a. Place the first set of frames on the deck where the formwork will start. Install two (2) angle braces, one on each side of the frame. Frames should be supported on flat feet, either screw jack or fixed. U heads should not be used as supports for scaffolding frames under any circumstances. Do not use scaffold frames without adequate supports installed.
    b. Continue erecting the first level of scaffolding frames until the entire area to be decked is covered. Connect frame sets together using angle braces to ensure stability in the entire scaffold system.
    c. Position a 20 inches work platform on the first level of frames and add the second level of scaffolding. The work platform must be constructed out of 2 inch x 10 inch planks or manufactured components. The platform must be capable of supporting the number of workers who will be on the platform. It is recommended that not more than two (2) workers are on a scaffold set at once. Add cross braces as each set of frames is installed.
    d. Work platforms are required on each level of scaffolding when working at 10 feet or higher and fall arrest must be used by all workers.
    e. Continue erecting the second level of scaffolding frames adding cross bracing between frame sets as required.

f. Continue erecting scaffold frames for additional levels until the required height is achieved.

g. Depending on the height of the frames being used workers may be working above 10 feet. If workers will be assembling scaffolding above 10 feet they must use fall arrest equipment consistent with the way they were instructed.

h. Anchor to the frame of the scaffolding and not the cross braces. Lanyards used for anchoring must have a ladder type self-locking hook on them.

i. Lanyards must be kept as short as possible.

7. Workers are not permitted to stand or step onto cross bracing for any reason.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.18 Silica dust (Disposal of)

3.18.1 GENERAL

Clean-up and disposal of silica dust must be done in a controlled manner ensuring there is no accidental release of the dust. Silica dust must be disposed of as follows:

1. Evaluate the area for hazards and the impact on other workers in the clean-up and disposal area. Where a worker, other than the concrete finisher, is exposed to concrete dust, the area should be restricted by the use of caution tape and signage.
2. Dust must only be removed from tools or vacuums in a sealed area which is only accessible by authorized personnel.
3. Signage must be posted when conducting clean-up operations such as emptying vacuums or cleaning tools. Signage must indicate that clean-up and disposal is in progress and respiratory protection is required.
4. Ensure there is adequate lighting.
5. Proper eye protection and personal protection equipment must be used.
6. Each worker performing clean-up and disposal is to be assigned a respirator for the worker's sole use.
7. Cleanup and disposal of silica dust must be done in a controlled manner ensuring there is no accidental release of the dust. The following points must be adhered to:
    - Emptying of vacuums or cleaning of tools should be done in an area which is away from common areas such as lunch rooms or access/egress routes.
    - Workers will set up the silica dust cleaning and disposal station by laying a poly mat at the defined cleaning area and having bucket for cleaning filters.
    - All dust from vacuums is to be double bagged with heavy duty garbage bags or placed in a container resistant to puncture or accidental opening (i.e. pipe capped with duct tape).
    - Vacuums are to be emptied by first removing the cover to the vacuum carefully and then placing a doubled up heavy duty plastic garbage bag over the opening.
    - Contents are then dumped into the garbage bags.

- The top of the bags should be grabbed in such a way so as to minimize fugitive emissions of silica dust.
- Water is added to the bag so as to create a paste which will minimize the dust hazard. Do not fill the bag completely with water as this will make it too heavy to lift safely and will create a potentially bigger hazard if the bag should accidentally be punctured.
- Bags should not be filled more than half full to ensure they can be carried safely by a worker.
- Do not dry sweep silica dust on floors unless dust suppressant is used or silica dust is suppressed with water.
- Blowing of silica dust is NOT permitted (i.e. compressed air).
- Use of low velocity air is permitted for removing silica dust from clothing and/or tools, but this must be done in an enclosed area to prevent the spread of silica dust.
- All silica dust will be collected in the prescribed plastic garbage bags and/or containers and clearly marked “SILICA”.
- Bags should be removed as soon as possible and should be disposed of in a separate garbage container to prevent bags from getting punctured and dust spreading into areas where other workers or the public are present.
- Transport the garbage bags to ground level on their own (i.e. not with other garbage types such as scrap wood which may cause bags to be penetrated).
- All plastic bags containing silica disposal will then be disposed of in prescribed areas (concrete bin, garbage bin).

8. Before leaving work, remove work clothes, place into a plastic bag and sealed tightly. This will help avoid contamination during transportation before the clothes are washed.
9. It must be stressed to all workers that lunch and rest areas are off limits to anyone who is working either directly or indirectly in concrete finishing operations.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.19 TOWER CRANE AND HOIST

3.19.1 GENERAL

Recognizing the importance of crane operation and proper procedures management, and Superintendent/Assistant Superintendents will ensure those who work around, in, or with cranes are experienced, certified and physically fit according to the specific guidelines outlined in the WorkSafeBC Regulations.

Procedures critical to crane operations include:

1. Tower cranes shall be erected, jacked/de-jacked and dismantled under the immediate supervision of a competent person, designated by the employer.
2. Tower cranes shall be erected, maintained and used in accordance with the manufacturer's specifications, recommendations and procedures. All modifications shall be approved by the manufacturer and engineered by a professional engineer. The safety factors shall not be reduced by any modifications. The crane plates and charts shall be changed to reflect any modifications made.
3. A professional engineer shall certify that the crane foundations and underlying soils are adequate support for the tower crane with its maximum overturning movement.
4. Proper inspections prior to, during, and after use. The results of these inspections must be carefully recorded in the Crane Log Book.
5. Pre-erection requirements including proper design, drawings and specifications by manufacturer and/or engineer must be adhered to.
6. Superintendent/Assistant Superintendents are responsible for proper training.
7. Wire rope and other crane apparatus must be inspected and documentation kept on site.
8. Ensure communication devices are in good working condition.
9. Plans on set up and dismantling tower cranes must be reviewed with parties involved.
10. A control zone must be set up when maintenance or repair work is being done on the crane that may pose a danger to those working below.

11. When two cranes are working on either the same work site or on separate work sites, overlapping procedures are required if there is the potential for a portion of one crane making contact with the other crane.
12. All personnel involved in crane erection or dismantlement must comply with their Superintendent/Assistant Superintendent's instructions.
13. When required, Fall Arrest Equipment must be worn.
14. Crane operators must comply at all times with company policy. Safe work habits are a condition of employment for all crane operators and their riggers.
15. An eye exam and physical fitness evaluation may be required on occasion.
16. Radio communication should be concise and professional at all times.
17. Crane operators are responsible for reporting any unsafe conditions to their Superintendent/Assistant Superintendent as soon as possible.
18. Power Line Regulations must be adhered to at all times and SJP for working around power lines must be established on site.
19. All loads should be carried in a safe manner and proper warning shall be given when required by utilizing the crane horn system.
20. When work is being performed on the road, personnel must comply with Municipal Requirements and the WorkSafeBC Regulations.
21. When a truck is being loaded or unloaded it must be kept simple and safe at all times.
22. If lifting in the blind the crane operator must maintain constant communications with the rigger and any other workers assisting with the lift.

3.19.2 Application

These guidelines are applicable to the following types of cranes:

1. Tower cranes, either fixed or on tracks.
2. Truck mounted cranes.
3. Mobile cranes.
4. Roof mounted cranes which are either fixed or temporary.

3.19.3 Documentation Requirements

Prior to the operation of a tower crane on site the following documentation must be submitted to the Superintendent/Assistant Superintendent for review:

1. Engineered drawing which must be site and crane specific. The drawing must show the following:
    - Site plan showing all cranes (if more than one crane is on site).
    - Tie-back.
    - Foundation detail.
    - Elevation drawing.
    - Engineer Stamp.
2. Soil report for the area where the crane base will be installed. This report must be stamped and be specific to the site.
3. Concrete break test for the crane base. The crane cannot be erected until the foundation has reached a strength of 20 Mpa.
4. INDT report and crane certification. This inspection is valid for one year after the date shown on the report not from the date the crane is erected. The crane certification must reference the INDT report in question and must be stamped by the certifying engineer.
5. Erector's report which shows the specifics of the erection. The report must indicate what the load limits are for the crane and what test blocks are available on site. The crane operator must sign this report indicating they have reviewed it.
6. Fall protection plans for maintenance and erection.
7. Overlapping crane procedures for sites where multiple cranes are operating or where crane overlapping occurs between different sites.
8. Chain and pig-tail certification.
9. Procedures for operation near power lines. The prime contractor is responsible for obtaining a 30M33 for any power lines which are within the operating radius of any crane on site.
10. High angle rescue agreement with the applicable fire department. This generally happens after the crane is erected but before it is in operation.

Other types of cranes such as mobile or truck mounted are also required to have annual certification as are the booms on cement pumps and concrete placing booms.

log books

The crane operator log book and rigger log book should be reviewed prior to crane operation to ensure they are consistent with WorkSafeBC expectations.

These documents should be reviewed periodically to ensure that they are being completed in a consistent manner.

3.19.4 Rigging

Any person working as a rigger on our work sites must be qualified to do so by demonstrating a good understanding of safe rigging practices and general safety when working with cranes.

The following points apply to all riggers on our sites:

1. Understand different rigging methods and apply them correctly to the loads being lifted.
2. No load will be lifted on site unless the weight of it is known.
3. All loads, unless otherwise stated by the delivery agent, will be choked using either chain or synthetic slings.
4. All slings will be inspected each day or before they are used if they are used infrequently.
5. The optimum lifting angle of 60° or greater will be maintained at all times while lifting loads on site. This angle is measured from the top of the load (where the sling is attached to) to the sling leg.
6. When choking a load, do not beat down the sling. If slippage is expected use a double wrap on the choker.
7. Wire rope slings are the preferred method for lifting reinforcing bars.
8. The use of tag lines is required if rotation of the load is anticipated. Workers retrieving tag lines must not expose themselves to a fall hazard unless they are using a fall protection system such as fall restraint.
9. Riggers are not permitted to climb wall forms when unhooking slings from lifting points.
10. Forms are not to be stood on end unless they are braced to prevent tip-over. Slings are not to be unhooked from formwork until the formwork is secured.
11. Forms are to be stored leaning against an A Frame or a wall, or are to be laid on the ground or deck to prevent tip-over.

12. Ensure that the load is balanced during lifting.
13. Do not lift any load unless it is the correct method. The use of forks is only permitted by qualified workers under the direction of a Superintendent/Assistant Superintendent who has used the equipment before.
14. No loads are to be flown over workers. If this is not possible the affected workers must be notified prior to the load flying over them.
15. All concrete is to be removed from forms prior to them being flown.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.20 TRAFFIC CONTROL

3.20.1 GENERAL

1. Effective January 1, 2007 all workers who are required to direct traffic which could pose a hazard to them must be qualified to do so by an agency recognized by WorkSafeBC.
2. Superintendents and supervisors must ensure that effective traffic control is provided and used whenever the uncontrolled movement of vehicle traffic could be hazardous to workers. These traffic control procedures must meet the requirements of the latest edition of the Traffic Control Manual for Work on Roadways (the "Traffic Control Manual") issued by the Ministry of Transportation of Highways (MOTH).
3. During traffic control operations a supervisor must be designated to be responsible for ensuring that:
    - The required traffic control devices are in place,
    - Each member of the traffic control crew wears the required personal protective clothing and equipment,
    - Traffic control persons are positioned in a safe location clear of potential environmental hazards such as a slide or avalanche,
    - Traffic control persons perform traffic control duties competently and safely,
    - If two or more traffic control persons are required to work as a team at the worksite, responsibility for coordination of changes in traffic flow is assigned and radio communications are available when required.
4. Traffic control devices must be put in place before commencing operations and must be removed when they are no longer required.
5. Traffic control persons are required when any of the following conditions prevail:
    - Traffic is required to pass a worker, equipment or other obstruction which may block all or part of the traveled roadway.
    - Workers or equipment are employed on the traveled way over the brow of a hill, around a sharp curve, or at any other location where sight distance is not adequate for oncoming traffic to have adequate warning of their presence,

- It is necessary to institute a one-way traffic system through a construction zone where traffic volumes are heavy, approach speeds are high, and a traffic signal system is not used.
- Construction vehicle traffic is not coordinated with an existing traffic control system, or an existing traffic signal light system is not adequate to regulate traffic, or the work encroaches into an intersection so as to interfere with regular traffic movement.
- Traffic speed or volume is a hazard to workers while setting up or removing other traffic control devices.
- Other traffic control devices are not available for emergency protection.
- Workers are not adequately protected by other traffic control devices.

6. A traffic control person must be a responsible worker who has been instructed in, and has demonstrated an adequate knowledge of this regulation and relevant procedures from the Traffic Control Manual. Employers of traffic control persons must train and instruct those workers in a course acceptable to the Board.
7. During traffic control operations a traffic control person must remain on duty at the assigned station until relieved and must be paying attention at all times.
8. A traffic control person must stand in a safe position, preferably on the driver's side of the lane under the flag persons control, be clearly visible and have an unobstructed view of approaching traffic, and be positioned at least 80 feet (25 m) away from the work area unless circumstances or space requirements such as working at or near an intersection dictate otherwise.
9. Signs advising of a traffic control person ahead must be placed in advance of each traffic control persons station and removed promptly when traffic control persons are no longer on duty at that station.
10. Appropriate traffic control paddles and reflective clothing must be worn by all traffic control persons. Safety headgear of a high visibility color with a strip of retro-reflective tape about the crown.
11. A traffic control person must make all traffic control motions and signals precisely and deliberately so that the meaning of signals can be clearly understood.
12. Where traffic is diverted onto dusty surfaces, the principal contractor must maintain good visibility by the periodic application of water or other acceptable material to grade surface to suppress dust.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.21 WHMIS / GHS

3.21.1 GENERAL

1. All workers who enter onto a workplace must have been instructed in, and show demonstrated knowledge of the requirements of WHMIS / GHS.
2. An inventory and applicable MSDS / SDS for products used on the jobsite must be in place and maintained at each job site.
3. Workers who are exposed to or likely to be exposed to hazardous products on the jobsite, must be trained in the safe use and handling of the products.
4. A current set of MSDS /SDS sheets must be maintained at the jobsite and be readily available to all workers on all shifts at the job site.
5. A method of workplace labeling for product transferred to containers other than the original, must be developed and implemented prior to the start of the project. All workers on the project are to be instructed in and made familiar with the workplace labeling system.
6. Prior to using any hazardous product, workers shall review the product label and, as required, the MSDS / SDS for the product to ensure knowledge of the safe use of the product.
7. Workers should only use a product for its original purpose and shall use products only according to the Manufacturer's directions provided on the label and the MSDS / SDS.
8. Workers shall wear and use Personal Protective Equipment (PPE) as determined by a review of the label and product MSDS / SDS.
9. If a product is removed from its original container and placed in another container, workers shall be responsible for obtaining and placing the appropriate workplace label on the new container.
10. Should there be a spill or leak involving a hazardous product, workers involved shall immediately notify the Foreman or Superintendent. Cleanup shall be done by knowledgeable people and shall be in according to the product label and MSDS.
11. Empty hazardous material containers shall be disposed of according to the product label or MSDS / SDS.

12. All products must be stored according to the requirements of the product label or MSDS / SDS. Special care should be taken not to store incompatible products in proximity to each other.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.

3.22 Powder Actuated

1. Ensure that you use appropriate personal protective equipment when operating a router. Hearing and eye protection must be worn. Respiratory protection may be required.
2. Only authorized personnel possessing a current Qualified Operations Permit for the specific toll to be used.
3. Inspect the tool prior to each use.
4. Ensure all parts of the tool operates positively.
5. Ensure the Manufacturer's name and Trademark as well as the model and serial numbers are legible on the tool.
6. Check the chamber prior to each use to ensure that the barrel is clean and free from obstruction.
7. Do not allow bystanders in the immediate vicinity of your work. It may be necessary to shield a work area to protect against possible ricochet.
8. Use only projectiles (nails, studs, etc.) and cartridges recommended by the manufacturer.
9. Check to ensure the color of the cartridge is appropriate for the work being done. Only use the weakest or lowest strength, which will serve the purpose.
10. Always be sure you are on firm footing when operating tools. Brace yourself at all times when working on ladders and scaffolds to maintain balance.
11. Always keep tools pointed in a safe direction. Never carry a loaded tool from area to area. Never place your hand over the front (muzzle) end of a loaded tool.
12. Always use the tool at right angles to the work.
13. Never use the tool where flammable or explosive vapors are present.
14. Do not load the tool until immediately before use. Never leave loaded tool attended.

15. Always ensure the base material is of sufficient consistency so that the projectile will not pass right through it. Always ensure no one is standing in the area immediately behind the work area.
16. Hold the tool in the fixing position for no less than 15 seconds, should it misfire.
17. Keep the tool pointed in a direction, which will not cause injury. Unload the cartridge with the utmost of caution.
18. Always keep tool and cartridges in a locked container when not in use.
19. Clean and maintain the tool in accordance with the manufacturer's instructions.
20. Keep the cartridges locked up when not in use. Do not discard unfired cartridges carelessly. Never carry loose cartridges in your pocket. Carry them in the manufacturer's package.

Note: Only trained workers are allowed to complete the above procedure. No exceptions.