HEALTH & SAFETY POLICY & PROCEDURES MANUAL

CANADIAN STANDARDS ASSOCIATION

INTERPROVINCIAL INSULATION INC.

SECTION 1 - Health and Safety Program

Losses arising from occupational illness or injury impact the quality of life for each of us. The economic losses from an accident disrupt the effectiveness of our business operations. These disruptions have detrimental effects on our company and thus affect our well being. It is therefore important that an effective occupational health and safety program is developed and implemented; having complete support from management and full cooperation from employees. In doing so, the work environment will be a safe and healthful one, and a place where all employees at Interprovincial Insulation can work without the fear of harm or injury.

This health and safety policies and procedures manual fortifies that Interprovincial Insulation is committed to achieving excellence in health and safety both on and off the job. This manual shall be made readily available, for the viewing of by all employees, at all times. Furthermore, this manual will be reviewed and updated as required, in accordance with government legislation and company requirements with the assistance of the Joint Health and Safety Committee.

The purpose of this health and safety program is to promote awareness and proper behaviour within our organization. This can only be accomplished by developing work ethics and management systems that encourage safe handling practices with the highest values being placed on integrity and the health and safety of workers, visitors, the surrounding community and the natural environment.

This program includes policies, procedures and rules that encompass various areas of health, safety and emergencies. This program also includes various forms, inspections, audits and assessments as well as a process for review, continuous improvement implementation and enforcement of policies. In addition to the above mentioned, processes are also included for ongoing training and review for both the health and safety program as well as behaviour based performances. We believe that this is an important and vital part of the safety program.

Interprovincial Insulation is committed to providing all the necessary means and resources for a healthy and safe working environment. It shall be the responsibility of all workers to ensure that they work in a safe manner, in accordance with the Occupational Health and Safety Act and all applicable regulations, as well as the safety program of the employer.

The Joint Health and Safety Committee (JHSC) will meet on a regularly set schedule to review recommendations made by workers. The JHSC shall also make recommendations to management regarding concerns and issues and follow up these with concerns and issues to ensure completion. These will all be properly documented, displayed and filed as the meeting minutes.

Health and Safety Policy

It is the policy of Interprovincial Insulation to perform work in the safest manner possible and in accordance with the Occupational Health and Safety Act and the regulations made under the Act.

NO JOB IS SO IMPORTANT THAT IT CANNOT BE DONE SAFELY

Interprovincial Insulation will make every reasonable effort to ensure that the health and safety of our employees is protected at all times.
To enable us to keep our quality and production at the highest levels, we must ensure that the health and safety of our employees is maintained at all times. Protecting employees from workplace injury and disease is our major continuing objective.
To achieve this goal, we shall endeavor to develop, implement, and evaluate our health and safety program to be as effective as possible.
All employees must work in compliance with health and safety legislation and with the practices and procedures spelled out by Interprovincial Insulation. It is in the best interest of all parties to consider accident prevention in every activity. Compliance with health and safety procedures will be regularly reviewed. Violations will be recorded and addressed.
Interprovincial Insulation will ensure the safest, healthiest workplace possible by requiring that all employees receive ongoing training in health and safety, by maintaining communications between management and staff, and by leading through actions rather than words.
The responsibility to ensure a safe and healthy workplace is everyone's responsibility, from the president to the newly hired employee.
Your assistance and support are needed and expected to protect the health and safety of our workforce, our clients and our company.

Scott VanCamp
President

Violence and Harassment Policy

Interprovincial Insulation believes in the prevention of Violence and Harassment and promotes an abuse-free environment in which all people respect one another and work together to achieve common goals. Any act of violence or harassment committed by or against any worker or member of the public is unacceptable conduct and will not be tolerated.
The purpose of this policy is to ensure that individuals are aware of and understand that acts of Violence or Harassment are considered a serious offence for which necessary action will be imposed, those subjected to acts of Violence or Harassment are encouraged to access any assistance they may require in order to pursue a complaint, and individuals are advised of available recourse if they are subjected to, or become aware of, situations involving Violence or Harassment.

"Workplace Harassment" means engaging in a course of vexatious comment or conduct against a worker in a workplace that is known or ought reasonably to be known to be unwelcome.

"Workplace Violence" means,
(a) The exercise of physical force by a person against a worker, in a workplace, that causes or could cause physical injury to the worker,
(b) An attempt to exercise physical force against a worker, in a workplace, that could cause physical injury to a worker,
(c) A statement or behavior that is reasonable for a worker to interpret as a threat to exercise physical force against the worker, in a workplace, that could cause physical injury to the worker.

We at Interprovincial Insulation are committed to:

- investigating reported incidents of Violence and Harassment in an objective and timely manner;
- taking necessary action; and
- providing appropriate support for victims.

Acts of Violence and Harassment can take the form of physical contact or non-physical behaviours. Abuse in any form is an insidious practice that erodes mutual trust and confidence which are essential to Interprovincial Insulation`s operational effectiveness. Acts of Violence and Harassment destroy individual dignity, lower morale, engender fear, and break down work unit cohesiveness.
Supervisors at every level must be knowledgeable about and sensitive to the many forms that Violence and Harassment can take. These may involve unwarranted or inappropriate comments, gestures, physical contact or assault, or the display of offensive material. It may or may not be deliberate. It may in fact be unintended; the test is whether a reasonable person knows or ought to have known that the behaviour would be considered unwelcome or offensive by the recipient.
Acts of Violence and Harassment may occur as a single event or may involve a continuing series of incidents. They may involve the abuse of authority or position, relations among peers, visitors and external stakeholders. Abuse can victimize both men and women, and may be directed by or towards Interprovincial Insulation workers, visitors or members of the public (including domestic abuse).
No action shall be taken against an individual for making a complaint unless the complaint is made maliciously or without reasonable and probable grounds. No employee or any other individual affiliated with this organization shall subject any other person to violence or harassment.

SECTION 2 - Responsibilities

Employer

Interprovincial Insulation is committed to the following responsibilities as outlined in sections 25 and 26 of the Occupational Health and Safety Act. The duties of employers are as follows:

- To ensure that equipment, materials and protective devices are provided for as prescribed.
- To ensure that the equipment, materials and protective devices provided are maintained in good working condition.
- Ensure that the measures and procedures prescribed are carried out in the workplace.
- Ensure that equipment, materials and protective devices provided are used as prescribed.
- Ensure that a floor, roof, wall, pillar, support or other part of a workplace is capable of supporting all loads to which it may be subjected to without causing the materials therein to be stressed beyond the allowable unit stresses established under the Building Code Act.
- Provide information, instruction, and supervision to a worker to protect the health or safety of the worker.
- In a medical emergency for the purpose of diagnosis or treatment, provide, upon request, information in the possession of the employer, including confidential business information, to a legally qualified medical practitioner and to such other persons as may be prescribed.
- When appointing a supervisor, appoint a competent person.
- Afford assistance and co-operation to the Joint Health and Safety Committee in the carrying out of their functions.
- Only employ in or about a workplace a person over such age as may be prescribed (16 years).
- Not permit a person who is under such age as may be prescribed to be in or about a workplace.
- Take every precaution reasonable in the circumstances for the protection of a worker.
- Post in the workplace a copy of the Occupational Health and Safety Act
- Review, at least annually, the occupational health and safety policy and program.
- Post at a conspicuous location in the workplace a copy of the occupational health and safety policy & a copy of the violence and harassment in the workplace policy
- Provide to the Joint Health and Safety Committee the results of a report respecting occupational health and safety that is in the employer's possession and, if that report is in writing, a copy of the portions of the report that concern occupational health and safety.
- Advise workers of the results of a health and safety report and if the report is in writing, make available to them, on request, copies of the portions of the reports that concern occupational health and safety.

In addition to the responsibilities mentioned in the above pages as outlined in sections 25 and 26 of the Occupational Health and Safety Act, management will also ensure the following tasks are performed, completed and maintained as outlined in this safety program. They are as follows:

- Workplace inspections on a quarterly basis,
- Informal information training sessions such as toolbox talks on a weekly basis,
- Accident/Incident investigations and injury/illness reporting,
- Employee training as required,
- Corrective action requests for substandard conditions or performances,
- Safety observations.

During the workplace inspections, management and members of the JHSC will commit to speaking with employees regarding safety awareness; this will be documented as suggestions or concerns and will be brought forth at safety meetings.

Supervisor

While the Interprovincial Insulation management team is responsible for assigning responsibility and accountability for health and safety to the supervisory staff, the supervisory staff must be given the authority to fulfill their health and safety responsibilities.

As per Section 27 of the Occupational Health and Safety Act, all supervisors are responsible to complete the following:

- Ensure that workers work in a safe manner utilizing the protective devices, measure and procedures, as required by the Occupational Health and Safety Act,
- Advise worker of hazards in the workplace; educate them in the handling, storage, use, disposal and transport of any article, device, equipment or biological, chemical or physical agent,
- Ensure that all workers are supervised in the use, or wear of equipment, protective devices or clothing as required by the employer,
- Promptly investigate any incidents resulting in personal injury or property damage. Determine immediate and underlying causes, initiate corrective action, and report results of the investigation using the Interprovincial Insulation injury/incident Investigation Report,
- Enforce all company safety rules and regulations, and report hazardous conditions that require improvement,
- Review the health and safety manual with each new worker and instruct him or her in the safety requirements for their particular job. Ensure each new worker receive proper instructions on all assigned personal protective equipment,
- Ensure all workers use only the proper tools for the jobs performed,
- Investigate any work refusal situations immediately, following the refusing unsafe work guidelines in conjunction with a worker representative of the Joint Health and Safety Committee,
- Take every precaution reasonable in the circumstances for the protection of the worker.

In addition to the responsibilities outlined in sections 27 of the Occupational Health and Safety Act, supervisors at Interprovincial Insulation will ensure the performance of the following:

- Workplace inspections,
- Informal sessions such as tool box talks,
- Injury/incident investigations,
- Employee training as required,
- Correction of substandard acts or conditions,

Workers

Throughout this manual, Interprovincial Insulation makes reference to “workers”; this term includes both regularly employed persons and supplied labour. It shall be the responsibility of all workers to work safely and follow legislated and established safe work procedures and practices. It is also the responsibility of all workers to report unsafe or unhealthy conditions. According to section 28 of the Occupational Health and Safety Act, there are several roles responsibilities and duties that workers are required to fulfill.

- Work in compliance with the provisions of our health and safety program and the Occupational Health and Safety Act.
- Report all unsafe acts, conditions and hazards to their supervisor immediately.
- Identify and report all absent or defective tools, equipment, structures or protective devices.
- Operate all equipment in a safe and proper manner.
- Handle hazardous substance according to the Workplace Hazardous Materials Information System regulations.
- Do not operate any machinery or equipment that you are not qualified or licensed to operate, and do not engage in any job with which you are not familiar.
- Report all accidents, illness, or “near miss” incidents to your supervisor immediately.
- Use or wear the protective clothing, equipment or devices required for protecting health and safety and ensure they are properly maintained.
- Workers must wear protective headwear at all times while on a construction site including safety shoes or boots that meets legislation requirements.
- Never remove any safety guards or devices unless otherwise authorized.
- Refrain from jeopardizing the safety or well being of others in the workplace.
- Refrain from engaging in any pranks, contests or rough and boisterous behaviour.
- A worker is not required to participate in a prescribed medical surveillance program unless the worker consents to do so.

In addition to the responsibilities set out in section 28 of the Occupational Health and Safety Act, all workers who operate equipment or machinery are required to conduct a pre-shift inspection of the equipment they are using to ensure that the equipment is in safe operating condition.

All workers will be held accountable for their behaviour, actions and performance at all times, through the progressive disciplinary procedure.

Record Keeping

Management will maintain accurate records of each safety violation/infraction caused by the worker in their individual personnel file. Written documentation will include the following information:

- Date and time of safety violation/infraction.
- Description of safety violation/infraction.
- Type and number of previous warnings issued to the worker.
- The disciplinary action taken.
- General comments.

Interprovincial Insulation reserves the right to interpret and apply disciplinary procedures. If an offence is considered by the company to be severe, the company has the right to forego steps in the disciplinary procedure and administer an immediate suspension or termination.

A copy of the disciplinary procedure will be distributed and communicated to all workers so that they are aware and understand the policy and procedures regarding disciplinary action.

Following the written warning, continued non-compliance by the worker will result in suspension from work without pay. The supervisor will advise the worker that the company will no longer tolerate further non-compliance and any further non-compliance will result in termination. The notice of suspension with appropriate signatures will be retained in the workers' personnel file.

SECTION 3 - Communication

Management and the Joint Health and Safety Committee (JHSC), on a regular basis, will communicate all information concerning occupational health and safety. Health and safety information will be posted in a high traffic area on a bulletin board. Management and the JHSC will regularly monitor each health and safety board to ensure all health and safety information is posted and updated. All health and safety information will be accessible to all employees.

Workplace Postings

Postings on each health and safety bulletin board shall be updated as necessary.

Postings may include but not be limited to:

- Interprovincial Insulation Health and Safety Policy statement.
- Occupational Health and Safety Act.
- Ministry of Labour (MOL) health and safety explanatory material.

First Aid:

- Form 82- In All Cases of Injury at Work Poster (and at all first aid stations).
- Emergency services numbers (and at all primary telephones).
- First aider's names posted.

Reports:

- Management workplace health and safety inspections.
- Health and /or safety surveys/assessments.
- MOL orders.
- Workplace incident summaries.

Joint Health and Safety Committee:

- JHSC workplace health and safety inspections.
- JHSC meeting minutes.
- JHSC members' names and work locations.

Other information applicable to workplace activities

SECTION 4 - Workplace Hazards

At Interprovincial Insulation it is the responsibility of all employees to be knowledgeable of workplace hazards and to identify, report, correct and ideally eliminate any known hazards as well as to avoid the creation of new ones. If these problems are corrected immediately, we can prevent unnecessary injuries/incidents. We each have a responsibility for our own safety as well as the safety of co-workers.

Hazard Reporting

Hazard reporting is an integral element of an effective health and safety program that involves all workplace parties. Workers must report hazards immediately to their supervisor.
Hazards include unsafe acts or unsafe conditions and can include:

- Operating machinery/equipment without authority.
- Failure to warn or secure.
- Operating equipment at improper speeds.
- Making safety devices inoperable.
- Using defective equipment.
- Using equipment improperly.
- Failing to use personal protective equipment.
- Improper loading.
- Improper lifting.
- Servicing equipment in motion.
- Failing to keep work area clean and floors free from debris.
- Obstructing fire exits or fire extinguishers.
- Failing to report an injury/incident.
- Not complying with hygiene policies.
- Obstructing eyewash stations.
- Not reporting damages done to equipment/property.

Worker Responsibilities

Each worker will periodically inspect his or her workplace and equipment to observe for any unsafe conditions prior to starting work. Workers should look for the following hazards:

- Operating machinery/equipment without authority.
- Failure to warn or secure.
- Operating equipment at improper speeds.
- Making safety devices inoperable.
- Using defective equipment.
- Using equipment improperly.
- Failing to use personal protective equipment.
- Improper loading.
- Improper lifting.
- Servicing equipment in motion.
- Failing to keep work area clean and floors free from debris.
- Obstructing fire exits or fire extinguishers.
- Failing to report an injury/incident.
- Not complying with hygiene policies.
- Obstructing eyewash stations.
- Not reporting damages done to equipment/property.

Workers have an obligation to report unsafe acts and conditions immediately to their supervisor. This can be done by reporting it verbally to your supervisor or reporting it verbally to your JHSC member or safety representative.

Manager/Supervisors Responsibilities

Upon receiving notification of a hazard (either written or verbal), the supervisor must take corrective action as soon as possible to prevent an unnecessary accident or injury. This will be done by either contacting personnel or an outside contractor when necessary.

The supervisor must fill in the shaded area of the Worker's Hazard Report Form and include the classification of hazard, and identify any corrective action that was taken.

In the event that the hazard cannot be corrected immediately, a representative of the JHSC must be notified in order that the JHSC can propose possible solutions and make the necessary recommendations to eliminate the hazard.

Work Refusal

One of the major rights workers have under the Occupational Health and Safety Act is the right to refuse unsafe work.

Under Section 43 of the Act, a worker may refuse to work where he or she has reason to believe that:

A worker may refuse to worker or do particular work where he or she has reason to believe that;

- Any equipment, machine, device or thing the worker is to use or operate is likely to endanger himself, herself or another worker;
- The physical condition of the workplace or the part thereof in which he or she works or is to work is likely to endanger himself or herself;
- Workplace violence is likely to endanger himself or herself; or
- Any equipment, machine, device or thing he or she is to use or operate or the physical condition of the workplace or
- The part thereof in which he or she works or is to work is in contravention of this Act or the regulations and such Contraventions is likely to endanger himself, herself or another worker.

Reason to believe is a gut feeling or fear. It does not require any other evidence. Therefore, the worker does not have to prove that danger exists. No penalty can be applied if the worker is exercising this right in good faith and is proven wrong. The fact that someone, genuinely fears for his or her health or safety is reason enough to refuse unsafe work.

Our company is committed to maintaining a safe and healthy work environment for all employees. We will take all reasonable measures and precautions to pursue this goal.

If the employee has reason to believe that the work or activity being performed or the equipment being used is likely to endanger their health and safety or that of another employee, it is essential that the following procedure be followed.

Work Refusal Procedures

- The employee must stop performing the particular activity and report the situation immediately to his/her supervisor, stating that they are refusing to work and why.

- The supervisor must investigate immediately using Form #2. The investigation should take place in the presence of the refusing employee and a worker representative from the JHSC. If the supervisor agrees that the situation is hazardous, corrective action is taken and normal work activities can be resumed.

- If an agreement cannot be reached, and the employee has reasonable grounds to believe that the work is still unsafe, then the Ministry of Labour shall be notified. The supervisors will complete proper forms. The inspector shall investigate the work refusal in consultation with the employer, the employee and the worker representative of the JHSC and forward the written decision to the company.

- Until the investigation is complete, the employee who refused to perform that specific task, will do so without reprisal, although the employee will be expected to carry out other reasonable alternate job duties.

- Pending the inspector's investigation, no other worker can be assigned the refused work without being advised of the refusal and the reasons for the refusal. This must take place in the presence of a worker representative of the JHSC, if possible a certified member, a health and safety representative or a worker selected by the union or by the workers if there is no union.

- The inspector will decide whether the machine, device, thing or the workplace or part of the workplace, is likely to endanger the worker or another person. The inspector will give a decision in writing "as soon as is practicable" to each of the three parties who participated in the investigation. The decision is usually made at the time and site of the refusal. Sometimes the inspector may require more technical assistance in order to make a decision. If the decision is that no danger exists, the person refusing, returns to work. If the inspector decides a danger exists, he or she will issue orders to resolve it.

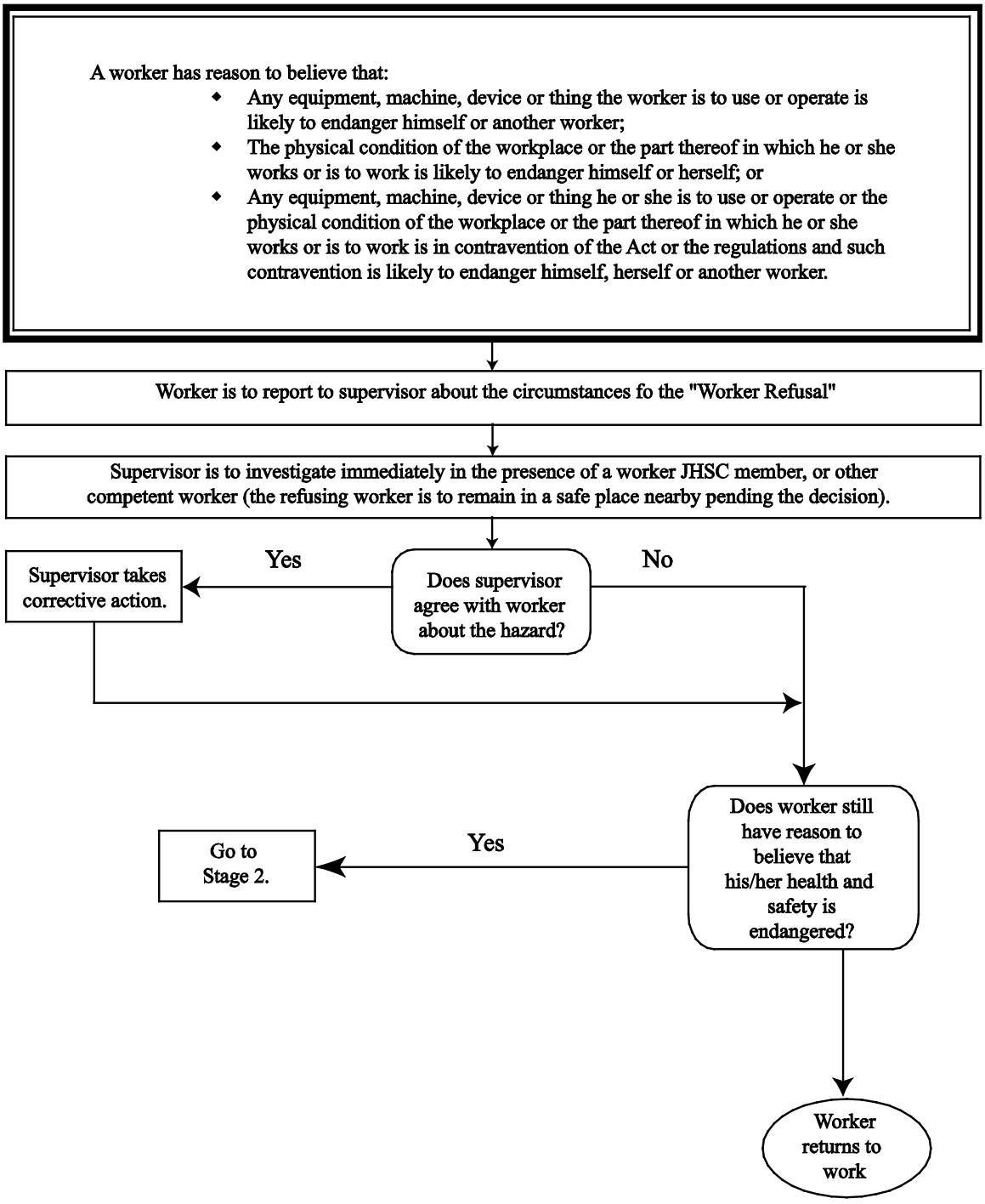
A worker may not continue to refuse the work if the Ministry of Labour Inspector has decided the situation is "not likely to endanger".

Any party can appeal an inspector's decision to an adjudicator or the Ministry of Labour within thirty (30) days. The decision of the adjudicator is final and binding.

Refer to the refusal to work flow diagram for a further breakdown of the steps involved with both a stage one and stage two work refusals.

REFUSAL TO WORK FLOW DIAGRAM

STAGE 1



Work Stoppage

Certified members of the JHSC have additional responsibilities under the Occupational Health and Safety Act. If a certified member has reason to believe that dangerous circumstances exist at the workplace, the certified member can ask the employer to issue a work stoppage. The Occupational Health and Safety Act defines a dangerous circumstances as a situation in which all three of the following must be present:

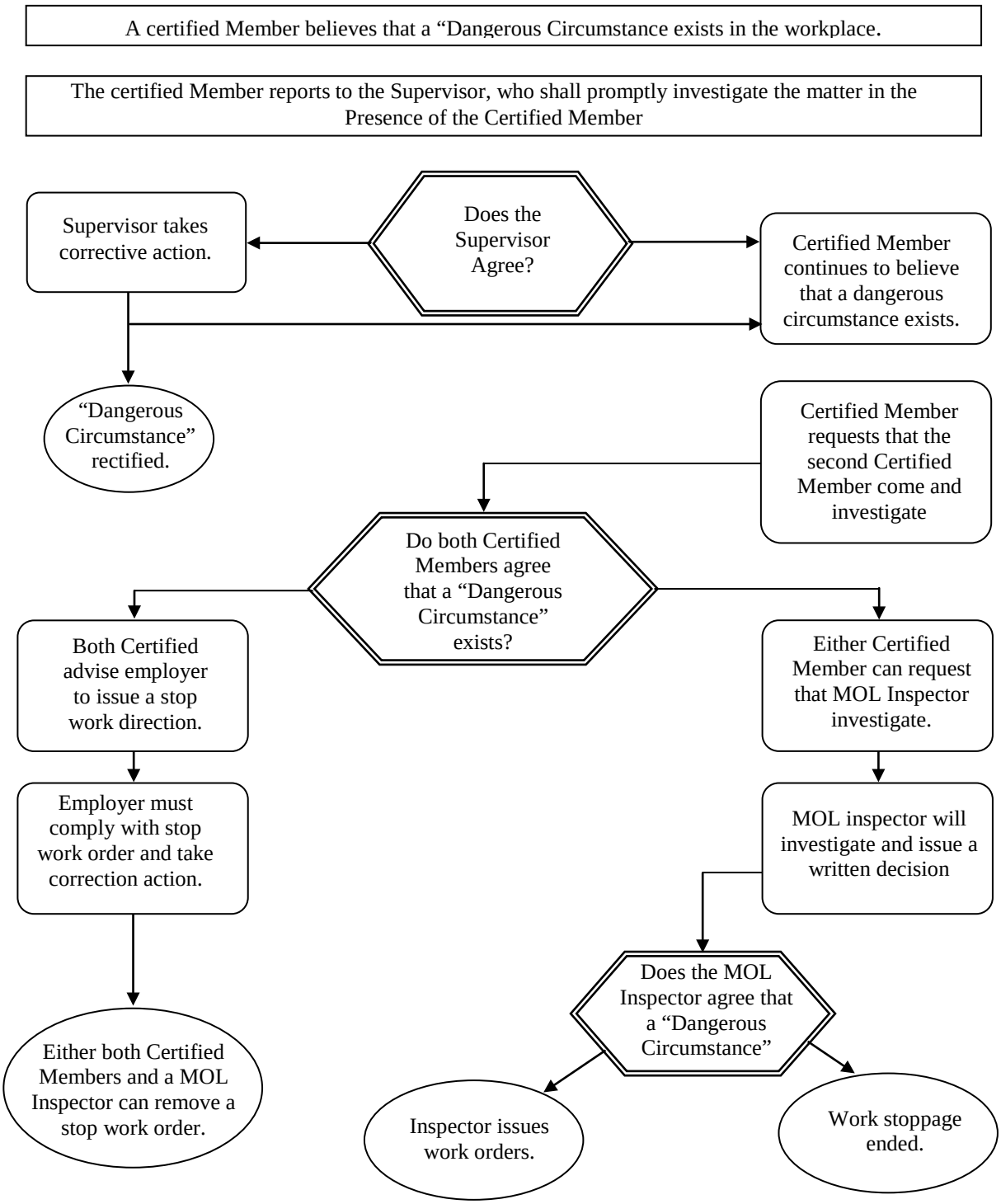
- A provision of the Act or the Regulations is being contravened;
- The contravention poses a danger or a hazard to the worker; and
- The danger or hazard is such that any delay in controlling it may seriously endanger a worker.

Bilateral Work Stoppage

- A certified member of the JHSC who has reason to believe that dangerous circumstances exist at the workplace may request that a supervisor investigate the matter and the supervisor shall promptly do so in the presence of the certified member.
- The certified member may request that a second certified member representing the other workplace party investigate the matter if the first certified member has reason to believe that dangerous circumstances still exist after the supervisor's investigation and remedial actions, if any.
- The second certified member shall promptly investigate the matter in the presence of the first certified member.
- If both certified members find that dangerous circumstances exist then both certified members together may direct the employer to stop work.
- The employer shall immediately comply with the direction and shall ensure that compliance is effected in a way that does not endanger a person.
- If the certified members do not agree that dangerous circumstances exist, either certified member may request that a Ministry of Labour inspector investigates the matter and the inspector shall do so and provide the certified members with a written decision.
- After taking steps to remedy the dangerous circumstances, the employer may request the certified members or the inspector to cancel the stop work order.
- The certified members who issued a direction may jointly cancel it or an inspector may cancel it.

Refer to the work stoppage flow diagram for a further breakdown of the steps involved with a bilateral work stoppage.

WORK STOPPAGE FLOW DIAGRAM



Reprisals

As per Section 50 of the Occupational Health and Safety Act, it is the policy of Interprovincial Insulation to not discipline a worker in any way if the worker has:

- Acted in according with the provisions of the Act or the regulations;
- Sought enforcement of the Act or the regulations; or
- Given evidence in a proceeding respecting the enforcement of the Act, or in a Coroner's Inquest.

Discipline means to dismiss, threaten to dismiss, suspended (or threatened to suspend); impose any penalty, intimidate or coerce a worker.

If disciplined, the worker may file a complaint with the Ontario Labour Relations Board (or the matter can be taken to arbitration under a collective agreement). In an inquiry by the Ontario Labour Relations Board, the burden of proof is on the employer to prove the reprisals were taken because of an improper refusal to work. For the reason, the proper procedure for refusing unsafe work must be followed.

Noise

Interprovincial Insulation shall take all reasonable measures to reduce or eliminate employee exposure to excessive workplace noise that may cause induced hearing loss.

Interprovincial Insulation will conduct a noise test to identify areas where noise levels exceed 85 dB(a). Where areas are identified to have noise levels in excess of 85 dB(a), Interprovincial Insulation will:

- Ensure high noise level areas are identified with appropriate signage.
- Take appropriate measures or reduce noise levels.
- Require the use of appropriate hearing protection.

Eating and Drinking

No food, drink or tobacco shall be taken into, left or consumed in any room, area or place where any substance that is poisonous by ingestion is exposed. If Interprovincial Insulation has any controlled products at the workplace then WHMIS Regulations apply. After handling any controlled products. It is essential to follow good hygiene practices and wash hands thoroughly before eating/drinking. Failure to comply with the eating and drinking policy will result in disciplinary action by management.

Smoking

Workplaces are now required by the Smoking in the Workplace Act to restrict smoking in the workplace. The purpose of this Act is to restrict workplace smoking by establishing minimum standards that limit exposure to tobacco smoke in the workplace. Smoking is not permitted around or near any flammable/combustible storage or inside buildings. Failure to comply with the smoking policy will result in disciplinary action by management.

Drugs and Alcohol

Alcoholic beverages are prohibited from being consumed by any employee or other personnel at any time while working for, or on company premises. Illegal drug use or abuse of prescribed drugs is prohibited at any time while working for, or on company premises. Failure to comply with the drugs and alcohol policy will result in disciplinary action by management.

Equipment and Property

If any employee is found guilty of willful destruction or damage to Interprovincial Insulation equipment or property, they will be held liable for all costs of repair or replacement. Failure to comply with the equipment and property policy will result in disciplinary action by management.

Project Housekeeping

Interprovincial Insulation will ensure that project housekeeping is maintained as required. Waste material and debris shall be removed to a disposal area and reusable material shall be removed to a storage area as often as is necessary to prevent a hazardous condition from arising and, at a minimum, at least once daily. Rubbish, debris and other materials shall not be permitted to fall freely from one level to another. Rubbish, debris and other materials from demolition on a project may be permitted to fall or may be dropped into an enclosed designated area to which people do not have access.

Materials Handling

Improper lifting and handling of materials is a significant factor in many occupational injuries, i.e. sprains, fractures and bruises. Injuries can be avoided by minimizing the need to lift materials by hand and by training employees to lift properly.

The management of Interprovincial Insulation demonstrates an ongoing commitment to a safe and healthy work environment through the continual assessment of work processes and the provision of lifting aids where feasible.

Manual Lifting

- Size up the load and check overall condition prior to lifting. Do not attempt to lift alone if load appears too heavy or awkward. Check for adequate space for movement and good footing.
- It is important to maintain good balance during a lift. Place feet shoulder width apart, one foot should be beside the article to be lifted and the other foot should be placed behind the load.
- Bend the knees and do not stoop. Keep the back straight by tucking in the chin and using your stomach muscles.
- Grip the load with the palms of the hands and the fingers. The palm grip is much more secure than a finger grip. With grip in place, tuck in the chin to make certain the back remains straight.
- Use a body weight to start the load moving and then lift by pushing up with the legs, making full use of the stronger set of leg muscles.
- Keep the arms and elbows close to the body when lifting. Make certain your vision is not obstructed and you can always see where you are going.
- Do not twist the body. To change direction, shift the foot position and then turn the whole body in the same direction.
- If the load is to be lowered, bend the knees and do not stoop. To place the load on a bench, shelf or table, place it on the edge and then push it into position to secure.

Machine Guarding

All machinery and equipment at Interprovincial Insulation will be equipped with the required guarding mechanisms in compliance with the Occupational Health and Safety Act, related Regulations and related Standards and Guidelines. An on-site preventive maintenance program will ensure that these protective safety devices are maintained in good working condition.

- Guards must be kept in place at all times when equipment is in use.
- Permission must be received from the supervisor prior to the removal of any guarding device.
- Guarding devices can only be removed for the repair, lubrication or cleaning of the machinery or equipment.
- Equipment shall be shut-off and proper lockout /tagout procedures followed before being serviced.
- Guards must be properly replaced and adjusted before starting machinery/equipment following servicing.
- Any machine guard that appears to be defective must be immediately reported to the supervisor.
- Complete a safety check prior to starting the machine. Ensure that all tools, etc. have been removed and that the machine is secure. Report any concerns immediately to the supervisor.
- When required to perform work where it is necessary to place any part of the body in a hazardous location within the confines of the machine, one must personally lockout/tagout the machine and all inter-connecting equipment.
- Do not wear gloves or loose clothing when operating moving machinery. A cap should also be worn to protect hair from becoming entangled in moving machinery. Long hair must be tied back when operating moving machinery.
- Any maintenance employee who is available to clean, repair or oil a piece of machinery or equipment must first notify the operator and the supervisor of their intent. Prior to commencing the work, the maintenance employee will shut off the power, stop the machine and adhere to the lockout/tagout procedure.

Tools

Tools shall only be used for the job that they are designed to be used for, and must be maintained in good condition.

- Defective tools must not be used.
- All guards must be properly fitted and in good condition at all times.
- All grinding disks must be checked for correct size and speed prior to fitting.
- Appropriate personal protective equipment must be worn at all times when using any tools.

All legislative requirements for the use of power tools and equipment shall be met.

Only competent workers as authorized by the contractor shall operate any power tools (whether hand held, table mounted etc.) Only CSA approved properly grounded electrical tools with three prong plugs or double insulated tools shall be used.

Switch lock-on devices are not allowed on any electrical equipment or power hand tools.

Electrical Hazards

Most people tend to take electricity for granted as a steady reliable source of power for a wide variety of tools, equipment, and operations. But familiarity can create a false sense of security. Remember that electricity is ***always*** a potential source of danger.

The basic rule is straightforward: Consider all electrical wires and equipment live until they are tested and proven otherwise.

Panels (120-240 volts)

- Temporary panel boards must be securely mounted, protected from weather and water, accessible to workers, and kept clear of obstructions.
- Use only fuses or breakers of the recommended amperage.

Cords and Plugs

- Never cut off, bend back or cheat the ground pin on three-prong plugs
- Make sure that plugs and cords are in good condition
- Make sure that extension cords are the right gauges for the job to prevent overheating, voltage drops, and tool burnout.
- Do not use extension or tool cords that are defective or have been improperly repaired.
- Do not wire plugs into outlets.
- Protect cords from traffic. Protect bulbs with cages.

Temporary Lighting

- Avoid contact with the wires strung for temporary lighting. Frequent relocation of circuits can loosen connections, break insulation, and create other hazards.
- Beware of tripping and shock hazards from stringers overhead and underfoot.
- Do not use temporary lighting circuits as extension cords. If a fuse blows, it can be dangerous to find your way to the panel in the dark.
- Take care that exposed wires do not contact steel doorframes in the final stages of work, when temporary lines often pass through doors that may be accidentally closed on them.
- Replace missing or burned-out bulbs to maintain required levels of illumination in stairwells, basements, halls and other areas.

Tools

- Use only tools that are grounded or double insulated.
- Make sure the casings of double insulated tools are not cracked or broken.
- Always use a ground fault circuit interrupter (GFCI) with any portable electric tool operated outdoors or in wet locations. GFCIs detect current leaking to ground from tool or cord and shut off power before injury or damage can occur.
- Use hand tools with insulated handles and grips. Whenever required, wear protective equipment – safety goggles, insulated gloves, shock resistant footwear.
- Do not hold water pipes or other grounded conductors when using electric tools. A defect in the tool or cord will make you part of the circuit, causing shock, a fall off your ladder, or, at worst, electrocution.
- Before drilling, hammering or cutting with hand or power tools, check for electrical wires or equipment behind walls, above ceilings, and under floors.
- Keep cords out of the path of electrical tools and equipment
- Before making adjustments or changing attachments, disconnect electric tools from the power source. Switching off the tool may not be enough to prevent accidental startup.
- Never bypass broken switches on tools or equipment by plugging and unplugging the cord. Shutting off power will take too long in an emergency.
- Any shock or tingle, no matter how slight, means that the tool or equipment should be checked and repaired if necessary.
- Never use metal or metal-reinforced ladders near live wires or equipment. Use wooden or fiberglass ladders.

Power lines – when using overhead crane, or lifting device at a field site

- Locate all underground and overhead services before starting work. Determine voltage or electrical utilities
- Have power lines moved, insulated or de-energized, where necessary
- Mark underground lines on all plans and drawings. Post warning signs along their route.
- Avoid storing material or equipment under power lines. If it must be stored there, hang warning flags and signs to prevent other workers from using hoisting equipment to move or lift it.
- With backhoes, cranes and similar equipment near power lines, use a signaler to warn the operator when any part of the equipment or load approaches the minimum allowable distances (listed in the table below)

Voltage Rating of Power line	Minimum Distance
750 to 150,000 volts	3 metres (10’)
150,001 to 250,000 volts	4.5 metres (15’)
Over 250,001 volts	6 metres (20’)

- Before moving ladders, rolling scaffolds, or elevating work platforms, always check for overhead wires. Death and injury have been caused by electrical contact with access equipment

Lockout/Tagout

- Interprovincial Insulation will take all reasonable measures to protect people from injury due to accidental exposure to power supplies in electrical installations, equipment or power lines, flammable or toxic gases, and accidental exposure to the starting or moving of machinery/equipment.

- Lockout means shutting off or disengaging all applicable energy sources, controls, or isolating devices and locking them in the off position with an approved safety lock and applying any additional securing devices required. This is done to bring equipment or machinery to a zero energy state. Tagout means physically attaching a tag indicating the nature of the lockout to the lock on the power source.

- Experience has shown that accidental exposure to power supplies in electrical installation, equipment, power lines, or accidental exposure to starting of machinery/equipment while workers are working on such equipment is a major cause of death and serious injury.

- Workers may be separated from or out of communication with those near the control devise. This emphasizes the need for a uniform policy and procedure, on safe lockout/tagout protection. There is no justification for the failure of any worker to properly lockout/tagout all applicable control devices on machinery/equipment. Lockout must be performed when cleaning, oiling or adjusting moving equipment.

- Every worker required to work on such machinery/equipment shall be issued with an individual safety lock. Where applicable, additional mechanical preventative measures such as safety blocks and chain must be used to prevent injury due to movement or dropping of equipment. Contractors and service personnel must have their own locks.

- Safety locks must be used when performing lockout/tagout on any type of machinery/equipment, which may endanger the safety of the worker or others, should the machinery/equipment be started.

Lockout/Tagout Procedures

- **ONLY QUALIFIED WORKERS ARE TO PERFORM LOCKOUT**. Each worker performing work that requires lockout/tagout shall have control of all applicable energy sources. If more than one worker is working on the machinery/equipment, each worker shall have control of all applicable energy sources.

- Every lock shall have a tag attached to it identifying the worker, their department, the date, the time and any other specific information necessary to properly inform people of work being done. In the case of stored energy such as hydraulic or pneumatic, the built up pressures must be bled before work is started and valves must be locked in the off position.

- Before turning off the power, check to be sure that no one is operating the machinery/equipment. The machine operator and the supervisor must be informed before power is turned off. Other energy control practices such as pulled fuses, push buttons, and selector switches must never be used to substitute for proper lockout/tagout.

Qualified Workers

It is important that only qualified workers lockout equipment. In order to be qualified, workers must prove that they are competent; this can be demonstrated by successfully completing a lockout/tagout training course. The supervisor of each department will maintain a list of workers who are competent to complete a lockout/tagout procedure and ensure that the appropriate lock and tag is issued to that person.

Multiple lock adapters, also known as scissors or hasps, are devices that permit the application of several padlocks, by more than one person, on one piece of equipment. Daisy chaining, which means attaching one lock to another, is not an acceptable substitute for a multiple lockout device.

Non-routine Work

A non-routine task can create hazards that have not been assessed or controlled, therefore placing workers at unnecessary risk. Although there may have been an initial orientation regarding a non-routine task, the infrequent nature of the work can result in workplace parties neglecting critical elements.

Gaining knowledge of the tasks through careful planning can eliminate the uncertainty of non-routine work.

Prior to starting any non-routine work, the following steps must be followed:

- A pre-work meeting must be held with the workers and supervisors involved.
- Review the activities of work.
- Assess all potential hazards.
- Determine relevant legislation regarding the hazards identified.
- Implement necessary controls.
- Develop safe operating procedures.
- Ensure all workers and supervisors are orientated on the safe operating procedures.

This procedure must be followed every time a non-routine activity is to be conducted.

Confined Space

Interprovincial Insulation recognizes that confined spaces pose a serious threat to a worker's health and safety. An assessment must be conducted to determine if a confined space exists.

Any employee who enters a confined space must be familiar with this procedure and ensure that a competent person completes a confined space permit (Form 7) before entering the confined space.

A confined space "means a fully or partially enclosed space that is not primarily designed or intended for human occupancy and in which, because of its construction, location or contents or work activity therein, the accumulation of a hazardous gas, vapor, dust or fume or the creation of an oxygen-deficient atmosphere may occur".

Qualified Workers

Only qualified workers may enter a confined space and must never enter a confined space without following the proper procedure. In order to be qualified, workers must successfully complete a confined space entry training program and be able to use all required testing devices and personal protective equipment.

Required Personnel

It is imperative that a worker never enter a confined space without following the proper procedure. In order for the procedure to be carried out, a competent person must complete a confined space entry permit. A worker to enter the confined space must be selected and an attendant, who is certified in first aid, must be designated. No worker is to be in a confined space unless the attendant is present at the entry/exit point.

Testing Requirements

All confined spaces must be tested with calibrated equipment to determine atmospheric conditions and the presence of any hazardous substances. Testing must be completed by a competent person prior to entering the confined space and periodically thereafter to ensure that a hazardous environment does not exist or has not been created. Please refer to the regulations for the appropriate atmospheric conditions. The reading obtained from the atmospheric testing must be recorded on the confined space entry permit in the appropriate location.

Means of Communications

Signs will be posted at each confined space location to alert workers to the confined space and that unauthorized entry is not permitted. While workers are working in the confined space, the confined space entry permit must be posted at the entrance of the confined space.

The worker in the confined space must always be in contact with the attending worker. The worker should always be in clear view of the attendant or communicating verbally, the use of a radio is possible if it will not endanger the worker.

Personal Protective Equipment

All workers involved in confined space entry must wear the personal protective equipment that has been deemed necessary by the supervisor and qualified workers.

Rescue Equipment

Interprovincial Insulation will conduct an assessment of all confined spaces to determine the potential need for rescue equipment. All rescue equipment is to be inspected prior to use to ensure that it is in good working order.

Training Requirements

Only a competent worker can complete confined space entry permits prior to any entries into the identified confined space.

Entry Permit

All documents pertaining to confined spaces will be retained for a period of two (2) years.

Entry Procedures

- Obtain a confined entry permit from a competent person and ensure that it has been adequately completed.
- Workers planning on entering the confined space must notify the workers around the confined space of the work activities and post the entry permit near the entrance of the confined space.
- A lockout procedure must be performed to ensure that the machine is in a zero energy state and all energy sources have been controlled.
- If it is possible to mechanically ventilate the confined space, the fans must run often, at least once an hour, to remove any possible hazardous atmospheres.
- The emergency first aid responder must be available in case of emergency.
- Housekeeping in the area around the confined space must be good enough not to hamper any rescue efforts.
- The employee entering the confined space must have the proper breathing protection and be trained in its use.
- The lighting in the confined space must be adequate for the work being done.
- Testing for the confined space must be done and the results recorded on the confined space entry permit.
- The employee entering the confined space must be able to communicate with the outside observer by voice or other means.

Always refer to specific regulations regarding confined space entry.

Job Hazard Analysis

Job Safety Analysis (JSA) is a systematic review of job positions within a workplace to identify potential hazards. Once a hazard has been identified, control methods can be reviewed to eliminate or control the hazard. A job safety analysis is also commonly referred to as a job task analysis or a job hazard analysis.

Responsibilities

Supervisors are responsible to conduct a job safety analysis for non routine work. Supervisors may obtain assistance with this large project from workers, the JHSC, the Health and Safety Coordinator and management. In some cases it might be necessary to obtain the assistance from an outside organization to conduct complicated job safety analysis. Supervisors can enlist the help of workers to identify work tasks and hazards associated in those tasks. Representatives from the JHSC and the Health and Safety Coordinator can assist the supervisor with hazard identification, hazard rating, and development of control measures.

Job Hazard Analysis Procedure

The first step in completing a job safety analysis is to recognize non routine tasks in the workplace. This list is to include all temporary, part and full time employees. Common environmental hazards should also be recorded on this form and include environmental conditions that pose a risk and are applicable to more than one position in the workplace (i.e. heat from an oven can effect more than one job position).

The second step is to identify the specific job tasks that are involved in each position (i.e. move packages, operate a forklift, assemble a product etc.). Once each task has been identified, the next step is to analyze each task for potential or actual hazards and losses.

The fourth step to identify control measures for each of the hazards, implement the controls and follow up to ensure that the controls are effective. Control measures are only effective if they contain the hazard, do not create an additional hazard and are used by workers. All hazards that are classified as a significant hazard must have a safe work procedure developed for the tasks associated with the specific hazard. Steps two to four can be recorded on the Job Safety Analysis and Control Measures form.

Violence and Harassment

Violence in the workplace:

May include, but is not limited to the following list of prohibited behaviors directed at or by a co-worker, supervisor or member of the public:

- Direct threats or physical intimidation.
- Implications or suggestions of violence.
- Stalking.
- Possession of weapons of any kind on Interprovincial Insulation property, including parking lots, other exterior premises or while engaged in activities for Interprovincial Insulation in other locations, unless such possession or use is a requirement of the job.
  Assault of any form.
- Physical restraint, confinement.
- Dangerous or threatening horseplay.
- Loud, disruptive or angry behavior or language that is clearly not part of the typical work environment.
- Blatant or intentional disregard for the safety or well-being of others.

- Commission of a violent felony or misdemeanor on Interprovincial Insulation property.

Domestic Violence:

While often originating in the home, can significantly impact workplace safety and the productivity of victims as well as co-workers. For the purposes of this document, "domestic violence" is defined as abuse committed against an adult or fully emancipated minor. Abuse is the intentional reckless attempt to cause bodily injury, sexual assault, threatening behavior, harassment, or stalking, or making annoying phone calls to a person who is in any of the following relationships:
- Spouse or former spouse;
- Domestic partner or former domestic partner;
- Cohabitant or former cohabitant and or other household members;
- A person with whom the victim is having, or has had, a dating or engagement relationship;
-A person with whom the victim has a child.
Interprovincial Insulation recognizes that domestic violence may occur in relationships regardless of the marital status, age, race, or sexual orientation of the parties.

Future Violence:

Employees who have reason to believe they, or others, may be victimized by a violent act sometime in the future, at the workplace or as a direct result of their employment with Interprovincial Insulation, shall inform their supervisor by immediately completing a Workplace Violence Incident Report Form so appropriate action may be taken. Employees who have signed and filed a restraining order, temporary or permanent, against an individual due to a potential act of violence, who would be in violation of the order by coming near them at work, shall immediately supply a copy of the signed order to their supervisor. The supervisor shall provide copies to the JHSC and the Director of Human Resources.

Detecting Potential Violent Behavior:

Identification and awareness of the different levels or stages of violence can be used to prevent inappropriate behavior from escalating into life-threatening actions. For illustrative purposes, following are examples of significant behavior changes with increasing severity, leading to violence:

Stage I- Early Potential for Violence

- Dehumanizing other people i.e. name-calling, insults or other verbal abuse, or harassment;
- Challenging authority; insubordination;
- Regularly being argumentative and thereby alienating customers or co-workers.

Stage II – Escalated Potential for Violence

- Ignoring company policies and procedures;
- Stealing;
- Making threats of violence;
- Blaming others for problems.

Stage III – Potential for Violence is realized

- Displaying or brandishing a gun, knife, or other weapon;
- Punching, kicking, slapping or other aggressive physical conduct;

- Committing assault, arson, or threatening suicide.

In all situations, if violence appears to be imminent, employees should take the precautions necessary to assure their own safety and the safety of others.

Incident Investigation:

Acts of violence or threats will be investigated immediately in order to protect employees from danger, unnecessary anxiety concerning their welfare, and the loss of productivity. The employee's Supervisor will cause to be initiated an investigation into potential violation of work rules/policies.

Process for Reporting Incidents of Violence:

- Employees must report incidents of violence to their immediate supervisor.
- In all cases, the report should be made as soon as possible after the incident.
- In emergency situations, the reporting employee should first call 911 and then report the incident to his/her immediate supervisor.
- In non-emergency situations, workplace violence should be reported first to an
- immediate supervisor. If the immediate supervisor is the instigator of the
- workplace violence, the incident should be reported to the next level supervisor
- or Safety Coordinator.
- In situations where a person witnesses an instance of workplace violence and
- does not know how to contact the supervisor of those involved in the incident, the Safety Coordinator should be contacted.
- Supervisors responding to allegations of workplace violence shall report all such
- allegations and their resolution to the Safety Coordinator. The Safety
- Coordinator shall conduct a post-incident review, file a Critical Incident Report,
- and, where appropriate, make recommendations for preventing or responding to future incidents.

SECTION 5 - Joint Health and Safety Committee

The Joint Health and Safety Committee (JHSC) is an advisory body that oversees the overall occupational health and safety program at INTERPROVINCIAL INSULATION. The JHSC shall be comprised of worker and management representatives working together to identify and resolve health and safety issues within the workplace.

The JHSC will assist in creating a safe place of work, recommend actions that will improve the effectiveness of the health and safety program and will promote compliance with the Occupational Health and Safety Act, related regulations and related standards and guidelines. Interprovincial Insulation is committed to maintaining and supporting an effective and efficient JHSC. The Health and Safety Coordinator will be responsible to oversee the development and activities of the JHSC.

The Health and Safety Coordinator will also ensure that the policies related to the activities of the JHSC are fully implemented and will consult with the JHSC regarding any revisions to policies or procedures affecting the health and safety of workers.

The Joint Health and Safety Committee has at least four members.

The following people are the members of the Joint Health and Safety Committee at Interprovincial Insulation

WORKER REPRESENTATIVE(S)	MANAGEMENT REPRESENTATIVE(S)

SECTION 6 - Health and Safety Education/Training

Worker training is an important element in achieving company objectives in a safe and effective manner. It is the policy of Interprovincial Insulation that all workers must be thoroughly trained so that they have the knowledge and skill base to work in a healthy and safe manner.

New workers, including transfers, rehires, seasonal, temporary and part-time workers all have different training needs. These training needs are to be identified for each individual and/or group. The Health and Safety Coordinator will perform all training if he or she is qualified to do so. If the Health and Safety Coordinator is not qualified, the training will be outsourced to a qualified training agency.

Training Requirements Review

A training needs review will be conducted, at a minimum, annually to ensure the training requirements at Interprovincial Insulation are current. The review will be based on the following:

- Review of legislative updates
- Review of each occupation
- Review of new or modified equipment and/or processes
- Review of employee training records, including new hires, transferred or promoted employees
- Establish training objectives
- Determine training methods
- Time table for completion of training

The training needs review at Interprovincial Insulation is a fundamental element of the continuous improvement plan.

Employee Orientation

The Health and Safety Coordinator is responsible to organize the orientation prior to the employment of any new workers to their assigned job task. It is imperative that all employees understand their specific job responsibilities and whom they are to report to:

This applies to the following

- All newly hired employees
- Employees returning from extended absences
- Employees hired on a contract basis
- Student employees
- Part-time employees
- Supplied labour
- Orientation will include the following:
- Interprovincial Insulation Health and Safety Policies and Procedures
- Introduction to the Occupational Health and Safety Act and Applicable Regulations
- Employee responsibilities and rules
- Introduction to co-workers
- Introduction to the JHSC members
- Identification of the location of the first aid kits or first aid station, fire extinguishers, telephones and washrooms
- Reporting procedures for hazards and injury/illness
- The availability of any applicable personal protective equipment
- Explanation of emergency procedures
- Early and safe return to work program

Site specific WHMIS requirements pairing off the new worker with a more experienced worker where possible.

Applicable Legislations

Training will involve responsibilities under the Occupational Health and Safety Act as well as internal safety responsibilities. All employees including supervisors and management will receive the above training, which is defined in the next section. A formal record of training will be maintained to demonstrate that all training requirements have been met.

Managers and Supervisors

All managers/supervisors will receive training, which will include:

- Health and Safety policy statement
- The Occupational Health and Safety (OH&S) Act and Applicable Regulations
- Responsibilities under the OH&S Act, including the requirements for competent supervisor, OH&S Act, s. 25(2)(C)
- Health and Safety Program Manual
- JHSC roles and responsibilities
- Hazard Identification
- Job Safety Analysis
- Workplace inspections
- Due diligence
- Overview of accident investigation
- How to handle a work refusal situation/work stoppage
- Early and safe return to work

After the initial training, an annual review will be conducted by Interprovincial Insulation to ensure that all managers and supervisors are aware of the current legislation and company policies.

Workers

All workers will receive training, which will include:

- Health and Safety policy statement,
- Health and Safety Program Manual,
- About the OH&S Act and Applicable Regulations,
- Responsibilities (worker, supervisor, employer),
- Rights of workers,

- Reporting – hazards/non-conformance's injury/incidents,
- Enforcement of the Act and penalties,
- Joint Health and Safety Committee,
- Work refusals,
- What to do in case of work related injury/illness,
- Early and safe return to work.

An annual review will be conducted by Interprovincial Insulation to ensure that all workers are familiar with their responsibilities and the legal framework for health and safety in Ontario and/or any other regional requirements that may apply.

Accident and Incident Investigations

Safety Coordinator is to be informed IMMEDIATELY in the case of an investigation.

Investigations are done to fulfill legal obligations and company requirements as well as, to determine the overall cost effect of an accident of incident. This will also provide the opportunity to determine causes and take appropriate action to prevent a recurrence.

It is the policy of Interprovincial Insulation that all supervisors be thoroughly trained so that they have the knowledge and skill base to conduct effective injury/incident investigations.

Investigations also help to determine the validity, degree and level of disability of the victim(s).

This is essential to ensure the appropriate follow-up care of the victim within the early and safe return to work program.

.

Emergency Response

Interprovincial Insulation will provide training on the emergency response plan to all employees. This training will include, but not be limited to, who to notify in the event of an emergency, the emergency evacuation plan, designated meeting area, and how to prevent emergency situations. All newly hired employees will receive this training as part of their employee orientation. Any changes to the emergency response plan will be communicated as required through a toolbox talk.

Personal Protective Equipment

All employees will be informed of what personal protective equipment (PPE) requirements are associated with their jobs. A worker required to wear protective clothing or use personal protective equipment or devices shall be adequately instructed and trained in the care and use of the clothing, equipment or device before wearing or using it. This training will be provided by the supervisor for the worker and documentation pertaining to the training will be maintained. This information will be reviewed with employees upon their hire and annually thereafter.

Fall Protection

A worker shall be adequately protected by a fall protection system that meets the requirements of section 26 of the Regulations for Construction Projects where a worker is exposed to any of the following hazards:

- Fall more than 3 metres,
- Falling more than 1.2 metres, if the work area is used as a path for a wheelbarrow or similar equipment,
- Falling into operating machinery,
- Falling into water or another liquid,
- Falling into or onto a hazardous substance or object,
- Falling through an opening on a work surface.

In addition, workers will receive training and review the proper utilization of the following:

- Ladders,
- Scaffolding,
- Travel Restraint,
- Falling Restriction,
- Fall Arrest,
- Fall Protection Equipment.

Interprovincial Insulation shall ensure that a worker who may use a fall protection system is adequately trained in its use and given adequate oral and written instruction by a competent person. Interprovincial Insulation shall ensure that the person who provides the training and instruction, prepares a written training and instruction record for each worker and signs the record. The training and instruction record shall include the worker's name and the dates on which training and instruction took place. Interprovincial Insulation shall make the training and instruction record for each worker available to an inspector on request.

SECTION 7 - First Aid

In all cases of work related injury, Interprovincial Insulation will ensure that first aid treatment is given immediately in accordance with Regulation 1101 First Aid Requirements under the Workplace Safety and Insurance Act.

First Aid

First aid stations will be made available and located within quick and easy access for all employees. The first aid kits contain the components required by Regulation 1101. The first aid kits at Interprovincial Insulation are located as follows:

- In the safety room/general offices

Interprovincial Insulation will ensure a first aid trained employee is available at all times on all shifts. Interprovincial Insulation will also ensure that the first aid station is at all times in the charge of a worker who is the holder of a valid Standard First Aid Certificate, and who works in the vicinity of the station.

All first aid treatments administered will be recorded in the first aid logbook by the certified first aider and shall include all the details surrounding the incident as described by the injured employee.

The first aid treatment logbook will contain the following information:

- Date of the injury,
- Time of injury,
- Names and work locations of witnesses and injured person,
- The nature and location of the treatment given.

The certificates of the first aid trained employees will be posted at the first aid stations.

The First Aid kit inspections shall be conducted during the monthly JHSC workplace inspection.

Company Vehicles

Every employer using a vehicle to transport workers shall equip the vehicle with a first aid box. The employer of workers engaged in transporting goods outside an urban area in a vehicle shall equip the vehicle with a first aid kit. Where a worker is operating heavy construction and maintenance equipment in a place where a first aid station is not readily available to him or her in the event of an accident, the employer shall equip the machinery with a first aid kit.

It will be the responsibility of the operator to ensure that the vehicle first aid kit is inspected monthly. All inspection forms are to be forwarded to the supervisor as soon as possible after the inspection at the beginning of the month. All injuries requiring first aid will be recorded in a first aid log, maintained within the kit, and reported to the supervisor as soon as possible.

Transportation

In the event of a critical injury, the supervisor will ensure that emergency services are contacted. If emergency services are not required, immediate transportation to a hospital, doctor's office, or the worker's home shall be arranged by the supervisor for any worker who sustains a work related injury. This will be accomplished through a taxi or company vehicle. The supervisor will determine who will accompany the injured worker. The person accompanying the injured worker to the hospital, doctor's office, or the worker's home shall record all details of the trip.

For the purpose of seeking emergency medical attention Interprovincial Insulation will incur the costs of this transportation. If the worker refuses transportation to the hospital, Interprovincial Insulation will immediately call emergency services. The supervisor must send a Functional Abilities Form (FAF) with a worker who will be seeking medical attention.

Reporting

If the worker requires health care and/or is absent from work beyond the day of the injury as a result of the incident, a Form 7 (Employer's Report of Injury/Disease) shall be completed by Head Office. This form will be forwarded to the Workplace Safety and Insurance Board (WSIB) within three (3) days of the incident. If the legislated reporting period is not observed, the employer may be fined a late filing charge by the WSIB.

SECTION 8 - Inspections

Inspection, which involves detection and corrective action, is one of the best tools available for assessing potential problems before a loss occurs.

Physical inspections and program audits are carried out to meet such goals as:

- ☑ Listening to concerns of others (through worker contact during inspections).
- ☑ Gain further understanding of jobs and tasks.
- ☑ Identify potential problems.
- ☑ Determining underlying causes of hazards.
- ☑ Identifying equipment deficiencies.
- ☑ Identify effects of change.
- ☑ Identify inadequacies in remedial action.
- ☑ Recommending corrective action(s) both short term and long term.
- ☑ Demonstrate management commitment.

Role of Inspections

The role of the workplace inspection is not solely to meet a legislated requirement. An effective inspection process allows a company to integrate other health and safety program objectives including the following:

- ☑ Identify hazards,
- ☑ Set standards and related procedures,
- ☑ Measure performance against established standards,
- ☑ Evaluate health and safety performance,
- ☑ Correct deficiencies and commend success.

To be effective, inspections must be conducted on a regular basis and be part of a system aimed at accident prevention.

Conducting Inspections

In addition to identifying defective and non-conformance items, the inspections should be concerned with identifying and correcting the basic reasons or causes for the specified item, particularly when the same defective item(s) and non-conformance(s) occur repeatedly.

When conducting inspections, follow these basic principles:

- ☑ Use the appropriate checklist and add to each checklist as necessary.
- ☑ Familiarize yourself with the floor/site plan and the designated areas and departments for location descriptions of any specific hazards that are identified.
- ☑ Review any previous inspection reports and inspect any previous corrective measures for completeness and effectiveness.
- ☑ Draw attention to the presence of any immediate danger – other items can await the final report.
- ☑ Do not operate equipment/machinery. Ask the operator for a demonstration, if it is necessary. If the operator of any piece of equipment/machinery does not know what dangers may be present, then it is cause for concern. Never ignore any item because you do not have knowledge to make an accurate judgment of safety.
- ☑ Look-up and down, around and inside. Be methodical and thorough. Do not spoil the inspection with a glance or once-over approach.
- ☑ Clearly describe each hazard and its exact location in your notes. Ensure all observations are recorded before they are forgotten. Record what you have or have not examined in case the inspection is interrupted. Draw sketches and take pictures where necessary for clarification and proof of hazards.
- ☑ Ask questions, but do not unnecessarily disrupt work activities. This may interfere with efficient assessment of the job function and may create a potentially hazardous situation. Document any worker contact and concerns.
- ☑ Do not try to detect all hazards simply by relying on your senses or by looking at them during the inspection. You may have to monitor equipment to measure the levels of exposure to chemicals, noise, radiation or biological agents. Take photographs if you are unable to clearly describe a particular situation.

Operations Manager and Supervisor Inspections

The Operation Manager are responsible for conducting a quarterly inspection of the sites that they have authority over. The inspection is to be conducted separately from the JHSC scheduled inspection to ensure that workplace inspections are spaced out. Managers will use the same workplace inspection checklist that has been developed for the JHSC. Any deficiencies are to be recorded on the Manager Hazard Inspection Report form.

Supervisors are responsible for conducting planned inspections of the workplace on a weekly basis to help identify substandard conditions and practices, as well as provide feedback on positive conditions and practices. Supervisors will use the Supervisor Weekly Inspection Checklist to record their inspections. Any deficiencies are to be recorded on the Supervisor Hazard Inspection Report form.

SECTION 9 - Injury/Incident Investigation

Interprovincial Insulation is sincerely concerned with injury/incident prevention. Our goal is to take a pro-active approach in preventing injuries/incidents at our workplace.

It is our policy to care for any victim(s) first, by providing immediate first aid and emergency transportation, if necessary and to ensure that all other personnel are safe. In accordance with the Occupational Health and Safety Act, all workers are to be educated and instructed to report all injuries/incidents (which may or may not have resulted in any damage or loss). All such situations must be investigated to determine why the situation occurred and identify the hazards, which should be eliminated or minimized.

Injury/incident investigation is a vital part of the health and safety program. It provides the process in which to properly assess a situation and care for the people, property, processes and the physical environment. It also ensures that the appropriate remedial action has been taken and followed-up to ensure the possible prevention of a recurrence.

Definitions

Injury

An injury is defined as an event that results in physical harm to an employee. An injury is often directly referred to as an accident.

Incident (near-miss)

An incident is defined as an undesired event that has the potential to have a negative impact on the efficiency of the organization. An incident does not cause physical harm to a person or damage to property. However, under slightly different circumstances it could have.

First Aid

First Aid is defined as the emergency care given immediately to an injured employee that does not require medical attention. Knowing appropriate first aid procedures saves lives, reduces the number and severity of injuries and promotes recovery.

Health Care

From the perspective of Interprovincial Insulation an injury that results in medical attention received from a recognized health care provider (i.e. family doctor or hospital) but does not result in time away from scheduled work or does not result in a wage loss.

Lost Time

A work related injury that results in the injured employee missing scheduled time from work (i.e. time beyond the date of the injury) resulting in a wage loss.

Property Damage

An event where contact is made between two objects resulting in alteration to one or both objects. Property damage is often directly referred to as an accident.

Critical Injury

The Occupational Health and Safety Act define a critical injury as an injury of serious nature that:

- Places life in jeopardy;
- Produces unconsciousness;
- Results in substantial loss of blood;
- Involves the fracture of a leg or arm (but not a finger or toe);
- Involves the amputation of a leg, arm, hand, or foot (but not a finger or toe);
- Consists of burns to a major portion of the body; or
- Causes the loss of sight in an eye.

If there is any doubt, treat the injury as a critical injury until proven otherwise.

Investigation

The purpose of an injury/incident investigation is as follows:

- To prevent future injuries/incidents,
- To reduce needless pain and suffering,
- To identify actual and potential hazards,
- To evaluate objectively and critically, existing control mechanisms,
- To comply with the law,
- To improve the injuries/incident prevention program,
- To increase awareness of hazards,
- To protect staff and visitors,
- To conserve resources,
- To prevent delays in serving customers.

The intention is prevention, not to assign blame or discipline workers or supervisors. In all cases the goal is to identify what needs to take place to eliminate or reduce the possibility of similar injuries/incidents from occurring.

The following types of injuries/incidents require immediate investigation:

- Fatalities
- Critical Injuries
- Lost time injuries
- Occupational illness
- Property damage
- Fire/explosion
- Environmental release
- Violence and Harassment

The JHSC shall participate in the investigation of all critical injuries and be offered the opportunity to participate in all other injury/incident investigations, as appropriate.

Any health care reports, first aid reports or incident reports will be reviewed quarterly to determine any investigation needs. Discretion will be used by the supervisor to determine which first aid injuries will be investigated; most importantly, the supervisor should consider whether or not the first aid could lead to a lost time injury. If so, an investigation must be completed.

It is important to note that during an investigation, no one is looking for fault or blame but to understand the true underlying and basic causes of the injury/incident.

Investigations are done to fulfill legal obligations and company requirements as well as, to determine the overall cost and effect of an injury/incident. This will also provide the opportunity to determine causes and take appropriate action to prevent a recurrence. Investigations also help to determine the validity, degree and level of disability of the victim(s). This is essential to ensure the appropriate follow-up care of the victim within the early and safe return to work program.

Responsibilities

The internal responsibility system at Interprovincial Insulation is organized according to the provisions of the Occupational Health and Safety Act. The essence of the internal responsibility system recognizes that both workers and managers share a common goal of preventing work-related injury/illness. The following is their responsibilities relating to injury/incident investigation.

Managers/Supervisors

(Contact Safety Manager immediately for assistance)

- Ensure the required first aid is administered,
- If the worker requires medical attention, ensure the worker is transported to a medical facility or physician. You must send a Functional Abilities Form (FAF) with the worker seeking medical attention. This form can be found in the Supervisor Accident Investigation Package. This package contains:

- Interprovincial Insulation Injury/Incident Investigation Report.
- WSIB Form 7 (Employer's Report of Injury or Illness).
- Functional Abilities Form (FAF).

- Inform the worker that Interprovincial Insulation has a modified work program and that this must be communicated to the treating physician.
- Investigate the circumstances of the accident and the accident scene.
- Complete all required forms including the Interprovincial Insulation Injury/Incident Report and the WSIB Form 7 if any of the following circumstances exist:
  - The worker loses time from work;
  - The worker seeks medical attention;
- The supervisor must forward a copy of the accident report to the Human Resources.
- The Form 7 must be sent to the WSIB within 72 hours of learning of the above circumstances, by head office.

Workers

- Promptly obtain first aid. It is the responsibility of the person who administers first aid to record it in the injury logbook.
- Report any work related personal injury, illness or accident to a supervisor immediately either verbally or in writing.
- If medical attention is required (i.e. walk-in clinic, family doctor, hospital) a Functional Abilities Form (FAF) is to be given to the worker by his/her supervisor. The treating physician is responsible to complete the form.
- If medical attention is necessary after work hours because of a work-related injury or illness, the supervisor must be notified right away. If the worker returns to work the next day, the supervisor is to be notified immediate upon arrival at work. If it is necessary to stay home to recover, the supervisor is to be notified that medical attention was sought, when calling in to the office.
- Provide and review all details of the accident with the supervisor. Cooperate with the supervisor when conducting the accident investigation.

Safety Manager

- Is available to assist Line Management in all accident investigations.
- All accidents should be reported immediately to the Safety Manager.

Conducting the Investigation

The investigation can be broken down into several steps. These steps include: gathering information, interviewing witnesses, analyzing data and writing the report. When conducting an investigation there are many questions in which answers must be established. The basic questions that should be asked are described below:

- **WHO?**

Who was involved in the accident?
What is his/her job?

What was he/she doing at the time?
Was he/she sufficiently trained for this job?

Who else was present when the accident occurred?

Who are they?
What were they doing at the time the accident occurred?
Who witnessed the accident?
Who heard it?

Who reported it?

- **WHAT?**

What equipment was involved in the accident?
What was it being used for at the time the accident occurred?
Is this how the equipment operates?
What was the condition of the equipment? (Use/abuse, maintenance, records?)
Does the equipment have a guard? Was it being used?
What materials were involved?
What were they being used for?

Was this the proper used for this material?
What are the known hazards of this material? (Toxicity, radiation, sharp, etc.)
Were the materials being handled properly?

- **WHERE?**

Where did the accident occur?
What was the condition of the environment? (Temperature lighting, noise etc.)
What was the layout of the equipment/people involved?
What was the condition of the worksite at the time of the accident? (Housekeeping, traffic, distractions, etc.).
Where in the line of production did the accident occur?

- **WHEN?**

When was the accident reported?
When did it occur?

On what shift?

- **WHY?**

Once all of the above questions have been answered, the reason(s) for the accident should become clear. If not, review the questions again being sure all answers to the questions are thorough and clear.

- **HOW?**

How did the accident happen?
How you can be sure this is what happened?
Can you provide a detailed description of what happened?
Anything else?

Gathering Information

It is important that the accident investigation is performed as soon as possible after the accident to ensure that all possible information is obtained. All supervisors should be familiar with this section and their duties. This could include first aid or emergency help, any corrective or preventive action, reassuring workers, securing the accident scene, or identifying potential sources of information. After administering first aid and securing the scene, begin to gather information.

The process for gathering information may include any, or all of the following:

- Inspection of the site/equipment/material involved in the accident,
- Survey the accident scene,
- Secure the scene with rope, pylons, or hazard tape,
- Notify all relevant parties,
- Write down the facts immediately,
- Take photographs to clarify and highlight the facts, make sketches of the scene, if necessary,
- Draw a diagram indicating the angle and position from where the respective photographs were taken,
- Take measurements, where necessary,
- Make note of physical evidence including equipment damage, breaks, rips, burnt materials, skid marks and/or signs of impact,
- Make notes of the environment such as visibility, noise level or temperature,
- Make a list of people present at the accident scene for future reference,
- Gather information on such things as equipment maintenance schedules and safe work procedures,

Interviewing the Witnesses

A list of witnesses must be made at the injury/incident scene for future follow-up. In order to have a successful interview and obtain as much information as possible, a few guidelines should be followed.

Basic steps for interviewing witnesses:

- Determine who conducts the interviews, (supervisor, Health and Safety Coordinator).
- Interview all people involved (eye witnesses first) as soon as possible after the injury/incident.
- Remind the witness of the purpose of the interview and how the knowledge will help. Expect the most help if the purpose is to prevent accident recurrence and the least help if the purpose is to place blame.
- Initially ask for a complete version. Try not to interrupt, other than to gently probe, keeping them on track. Request the witness to repeat the scenario, this time taking notes. Read back what has been written and request clarification. Do not ask leading questions and don't supply answers to questions. Request a signature on the statement and be sure to date the statement as well.
- Help witnesses feel they are an integral part of the investigation. Ask them what they believe contributed to the accident and how to prevent a recurrence, ask them to name the causes; primary or secondary. Ask them if they can be contacted later, if necessary.
- The purpose of the interview is to find out as much as possible about what the witness knows. Ask questions who, what, where, why, when and how to obtain as much information as possible.
- Interview other workers who may have performed the same task who can offer information related to work procedures.
- Conduct interviews separately and privately to avoid influence from other persons.
- Ask questions that are simple and to the point but do not elicit a *"yes"* or *"no"* response.
- Avoid asking leading questions or questions that require a *"yes"* or *"no"* answer.
- Do not interrupt while the person is recounting the events surrounding the injury/incident. Ask for clarification later, if necessary.
- Ensure witness statements are recorded. Ask the person to verify by repeating. Review notes at the end of the interview to ensure accuracy and understanding.
- Repeat the information back to the person to confirm understanding of what was said.
- Stay in contact with the person and ask them to contact you, if they remember further details.

To make the interview process easier for the person being interviewed consider the following:

- Be courteous and try to put the person at ease. Do not put them on the defensive, as you are not trying to establish fault, only cause,
- Explain that the purpose of the interview is to gather information to prevent a recurrence,

- Do not rush their explanation,
- Thank the person being interviewed,
- Let them know their help was appreciated and important for the investigation.

Analyze Data

Once all information and evidence has been gathered, analyze the information/evidence to find out what the primary and secondary causes are. Analysis of all the information will help to determine all unsafe acts and unsafe conditions that contributed to the accident.

Primary Causes

Primary cause is the obvious cause; the circumstances that immediately precede the contact which causes harm or damage. For example, water on the floor, machine not guarded, faulty equipment, chemical splash, etc. Primary causes need to be analyzed to find out why they exist. This analysis will likely clarify the secondary cause.

Secondary Causes

Secondary cause is the underlying or basic cause; the cause that is not so obvious. The secondary cause can be found by asking "why". Why was there water on the floor? Why was the machine not guarded? Secondary causes could be connected with training, supervision, policies, procedures, manager commitment, etc.

The "why" is the secondary cause that must have existed for the accident to occur. Accidents generally do not occur because of a single cause, but rather because of a combination of primary and secondary causes.

Unsafe Action

Some injuries or property damage are caused by an unsafe act. This may be due to behaviour on the part of an employee (act of commission or omission) - which abandons accepted, normal or correct procedure or practice.

Unsafe Condition

In some cases, a physical state which deviates from acceptable, normal or correct operating practice can result in injury or property damage.

Review all contributing factors that may have alone or interacted with another, such as:

- People
- Equipment
- Process
- Material
- Environment

SECTION 10 - Early and Safety Return to Work

The purpose of an early and safe return-to-work program is to adhere to legislated requirements and to re-employ the worker as soon as possible to ensure minimum claim costs.

Modified work is of utmost importance in ensuring the timeliest return to regular duties for the injured worker. Workers who are provided with modified duties are more likely to return to their pre-injury jobs in a shorter period of time and with fewer continuing compensable problems.

Modified work is any job, task or function that may be performed safely by a worker who suffers from diminished capacity resulting from a work-related injury/illness. The modified duties must not present the possibility of re-injury/aggravation to the worker and must not allow the possibility of any risk to other workers in the workplace. The work must also be productive and have value.

A modified work program is a strategy, which provides structure and organization to the return of injured workers to the workplace. This program should be part of the company policy, thereby recognizing the employer's responsibility and participation in the effective rehabilitation of all injured workers.

Roles and Responsibilities

Both the employer and the injured worker have added responsibilities. While the employer is now expected to be self-reliant, the worker is expected to cooperate in all aspects concerning his/her return to work.

Employer

- The first responsibility of Interprovincial Insulation to ensure that the injured worker receives prompt medical attention in the event of an injury/illness occurring at the workplace. The employer is responsible for the cost of transporting an injured worker to a medical facility.

- An Employer's Report of Injury/Disease – Form 7, must be completed for all injuries where the injured worker receives health care, has earned less than a regular day's salary, has been performing modified work (at regular pay) for more than seven calendar days or loses time from work.

- An accident investigation must be conducted, if applicable, and any recommendations to prevent a reoccurrence must be documented.

- The injured worker shall be paid full wages for the entire shift that he/she was scheduled to work on the day of the accident.

- The supervisor should offer the injured worker modified work in writing as soon as possible.

Injured Worker

- Worker must report all work-related injuries/illnesses to their supervisor as soon as possible. If further medical attention is required, the worker must be taken to the first aid station or an appropriate health care facility, if required.

- If the injured worker requires medical attention outside of company premises, he/she must take the Functional Abilities Form to the medical practitioner. The worker must also advise the medical practitioner that modified duties are available.

- If a worker seeks medical help after leaving the workplace, as a result of a workplace injury/illness, he/she must inform the employer as soon as possible after seeing the physician.

- If a worker is advised by the doctor to remain off work, he/she must advise their supervisor as soon as possible. A Functional Abilities Form will be forwarded to the injured worker to be completed by the treating physician at the earliest opportunity (if not already completed).

Workers are expected to cooperate with Interprovincial Insulation in the completion of any company or WSIB forms regarding the workplace injury/illness.

Health Care Provider

When an injured worker visits his/her health care provider, the worker must be accompanied by a Functional Abilities Form. It is the role of the health care provider to complete this and any other WSIB form in order to help facilitate a return to work (either regular duties or modified/alternative duties). A copy of these forms will be returned to the WSIB, the worker and Interprovincial Insulation.

As a fee is paid to the health care provider to complete these forms, the form must be completed thoroughly and legibly. Interprovincial Insulation will use the information provided on these forms to bring the worker back to work safely and without further physical aggravation.

WSIB

It is important that once a worker is physically capable of returning to some form of work, that Interprovincial Insulation makes a modified work offer in writing.

If Interprovincial Insulation makes a suitable offer of modified work, the injured employee is expected to accept his offer. If the employee refuses the offer, it is then the responsibility of the adjudicator to make a ruling on the suitability of the work offered. If the adjudicator finds that the offer was legitimate, any time lost after the date of the offer will not be paid for by the WSIB.

As well, it is the responsibility of the adjudicator to ensure that the worker's health care provider is actually providing the documentation necessary to facilitate the worker's return. Interprovincial Insulation cannot communicate with a health care provider directly without the written permission of the worker. However, the adjudicator can speak with the health care provider and clarify whatever information necessary.

Procedures

It is extremely important that when a work related injury occurs that the worker obtains and be given immediate first aid and care. The health and safety of the worker and all others is the foremost concern at this time. In the event of a workplace injury/illness, the following procedure must be followed:

- If able, the injured worker shall obtain all the necessary documents and forms, including a Functional Abilities Form, from their supervisor as per the Injury/Incident Reporting Policy.

- The injured worker and any witnesses must complete a written statement. It is advised that if possible, the worker complete the form personally. The balance of the documentation is to be turned over to the attending physician.

- All forms must be completed in their entirety and returned to the company in a timely manner. This will ensure prompt reporting to the WSIB. Any extra costs will be borne by the company.

Further medical assessments by specialists may be required by Interprovincial Insulation or the WSIB from time to time.

Each time a physician is seen or the injured worker's condition changes, the Claim Consent Form and Functional Abilities Form, or the equivalent must be completed and immediately forwarded to management.

The worker's full cooperation, participation and commitment at these times and throughout the program are essential and required by the Workplace Safety and Insurance Act (WSIA).

Early and safe return-to-work programs are individualized to meet the injured worker's needs. The Health and Safety Coordinator will assist, when required, in establishing the necessary programs and plans. After changes to the work and/or workplace, a thorough analysis is done to assure worker/task compatibility and the health and safety of the worker and their co-workers. Placement in programs must not pose a health or safety hazard to the injured worker or co-workers.

A supervisor or an appropriate designate, is assigned to provide the worker with job instructions, training and evaluation. The worker and the Health and Safety Coordinator must agree to the performance standards by which the worker is to be evaluated.

The early and safe return-to-work program terms are negotiated and all involved parties including the physician reach a consensus. The plan sets out the objectives, programs, activities and time frames necessary to bring the worker back to work, or as close as possible, to the pre-injury earnings profile. Such a plan may be periodically changed depending on the worker's progress and available work.

Modified work, which is a part of the early and safe return-to-work program, is specifically designed to help workers re-adjust to employment so they can gradually improve their physical capabilities and increase their tolerance. Such programs will also give all parties involved an opportunity to observe how the worker prepares and copes with the assigned tasks.

Contact with Injured Worker

Interprovincial Insulation must contact an injured worker as soon as possible after learning of a workplace injury/illness. It is the Interprovincial Insulation Supervisor responsibility to maintain contact throughout the worker's recovery period.

By maintaining contact with an injured employee, Interprovincial Insulation will have an easier time getting the information needed from the worker in order to safely bring him/her back to the workplace.

It is suggested that a worker off with a serious injury should be contacted once a week. A log should be kept by a Interprovincial Insulation Supervisor to track the following:

- Date of contact.
- General comments regarding worker's present physical status.
- Date of next doctor's appointment.

By staying in contact with the worker, Interprovincial Insulation will always know when to follow up regarding the most recent doctor's appointment. As a Functional Abilities Form should be given when the worker is scheduled to see his/her doctor, the Health and Safety Coordinator will easily be able to offer modified work based on restrictions given, therefore cutting down the amount of lost time.

Medical Monitoring and Treatment

Interprovincial Insulation cannot directly contact a worker's health care provider without the worker's permission. In order to ensure that the worker's injury is progressing, Interprovincial Insulation can provide the worker with a new Functional Abilities Form for every doctor's visit. Once this form is received, the health care provider is obligated to complete the form and give copies to the WSIB, the worker and Interprovincial Insulation.

On the Functional Abilities Form, there is a space for the treating physician to recommend the amount of hours that the worker is capable of performing job duties, and the estimate duration for restrictions given. Using the information from these two places, Interprovincial Insulation may determine when a follow up Functional Abilities Form is needed.

Provision for Modified Work

Modified work is any job, task or function that may be performed safely by a worker who suffers from diminished capacity resulting from a work-related injury/illness. The modified duties must not present the possibility of re-injury/aggravation to the worker and must not allow the possibility of any risk to other workers in the workplace. The work must also be productive and have value.

Interprovincial Insulation can illustrate their commitment to the Early and Safe Return to Work Program by agreeing to have the worker participate in a work hardening or transitional work program. Work hardening refers to when an injured employee is partially performing some of their pre-injury activities until being able to completely perform their pre-injury activities. Transitional work refers to when an injured employee is temporarily performing activities other than their pre-injury activities during the recovery period of their work-related injury. The Health and Safety Coordinator in consultation with the injured worker shall determine what form of modified work is most appropriate to the circumstances at hand.

When a worker is physically capable of returning to some form of employment, it does not necessarily have to be modified work. If the worker's pre-injury job does not conflict with any medical restrictions given, there is no reason to find alternative work. As well, a worker can return to the workplace in any capacity (any department within the business) as long as the worker is not at risk of further injury either to themselves or anyone else.

It is important to record what modified job the worker returned to and for what length of time. After two weeks of modified work, it is suggested that the worker return to his/her health care provider for completion of a follow up Functional Abilities Form. As the worker progresses, Interprovincial Insulation should be able to see fewer and fewer restrictions.

SECTION 11 - WHMIS

The Workplace Hazardous Materials Information System (WHMIS) is a major response to Canadian workers right to know more about safety and health hazards of materials used in the workplace.

WHMIS legislation provides workers, employers and suppliers nationwide with specific vital information about hazardous materials (called controlled products in the legislation).

The key requirements of WHMIS are:

- Labels – alerts workers to identify the dangers of products and to basic safety precautions.
- Material Safety Data Sheets (MSDS) – technical bulletins which provide detailed hazards and precautionary information.
- Worker education and training programs.

WHMIS was designed to inform anyone who is exposed to hazardous materials in their workplace as well as the health effects (long and short term) and the appropriate precautions to be used when handling, storing and disposing of such hazardous materials.

WHMIS is comprised of both federal and provincial legislation that is implemented in each province and territory.

The main purpose of the federal legislation is to ensure that all suppliers have available at all times health and safety information regarding the hazardous materials they produce and sell to employers.

The main purpose of the provincial legislation is to ensure that all employers obtain information about the hazardous materials they have purchased for use in their workplace and that this information is passed onto the worker. The development of this legislation evolved with the joint co-operation of labour, industry and government.

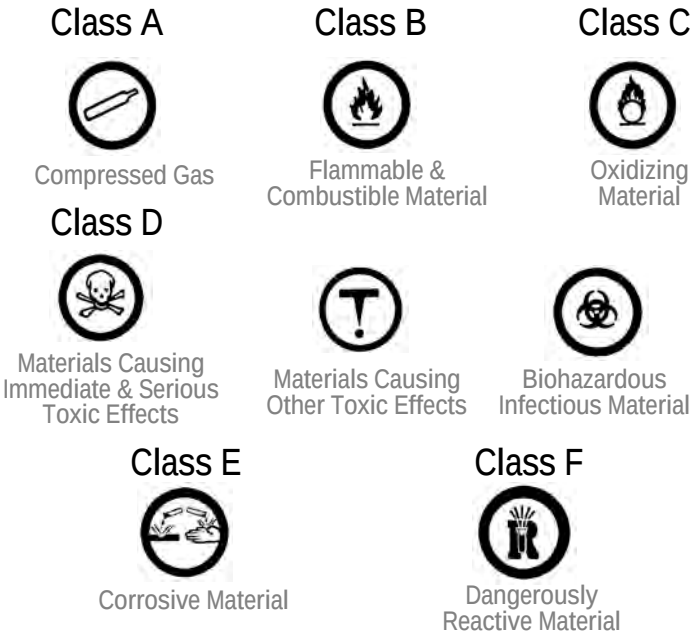
Labels

A label can be any sign, device, stamp, seal, sticker, ticket, tag or wrapper that appears on a hazardous material to provide the user with basic information on how to safely handle the product. The two different types of labels that can be found in the workplace are described below.

Supplier Label

A supplier label has a distinctive cross hatched border. This label is placed on the product prior to it leaving the manufacturer.

SYMBOLS



Workplace Label

This type of label is used when a controlled product has been received without a proper supplier label or when the product is being decanted to a smaller container (i.e. a 4 gallon container of window cleaner is received and then decanted to smaller bottles for easier handling).

Workplace labels are required for WHMIS controlled products where original supplier labels have been damaged or are missing.

Material Safety Data Sheets (MSDS)

The Material Safety Data Sheet (MSDS) provides detailed information on a hazardous material or chemical product. The MSDS is required in addition to the label. The label first alerts the worker that the product they are about to use is hazardous, while the MSDS provides the worker with additional specific information.

Nine categories of information are required on a MSDS whether developed by the supplier, or the employer for the workplace produced products. No category of the MSDS can be omitted.

The categories are as follows and may not necessarily appear in this order:

- Product Information
- Hazardous Ingredients
- Physical Data
- Fire or Explosion Hazard
- Reactivity Data
- Toxicological Properties
- Preventive Measures
- First Aid Measures
- Preparation Information

Material Safety Data Sheets must be posted in a conspicuous place where all workers have access and must be no more than three years old. A hazardous material inventory will be maintained by Interprovincial Insulation. The hazardous material inventory will be reviewed on an annual basis.

Worker Education

Interprovincial Insulation will provide WHMIS training for all workers where required by legislation. Trained workers recognize what hazardous products are in the workplace and know proper precautions to take when handling, using and storing these products.

Interprovincial Insulation has a general duty to educate workers who are exposed or likely to be exposed to a controlled product. In addition, Interprovincial Insulation is obligated to consult the JHSC about the content and delivery of the education program.

The worker education program must include the following topics:

- Labels – the information requires the purpose of the information and the significance of the information,
- Modes of identification when used at the workplace instead of labels,
- MSDS – the information requires the purpose of the information and the significance of the information,
- Procedures for the safe use, storage, handling and disposal of a controlled product, including a controlled product in a piping system or vessel,
- Procedures to be followed, in case of an emergency involving a controlled product.

SECTION 12 - Emergency Preparedness

An emergency can include any of the following circumstances that may require a halt to business or an evacuation of the premises:

- Fire or explosion
- Chemical spills
- Medical emergency
- Power failure
- Gas leak
- Bomb threat
- Natural disaster
- Workplace violence

The purpose of this section is to ensure the preparedness of Interprovincial Insulation in the event of an emergency. This section outlines an effective response plan that minimizes the potential risk to employees, visitors, the community, the building, equipment, property and the environment.

Responsibilities

Managers

Managers are responsible for ensuring that the building is equipped with all emergency protection equipment required under the relevant legislation. Interprovincial Insulation managers must:

- Purchase and make available in the workplace fire detection and/or suppression equipment (i.e. fire extinguishers/hoses, pull stations, etc.),
- Develop and implement an emergency evacuation plan,
- Ensure inspections of fire detection/suppression equipment are carried out as required,
- Review this procedure following each emergency situation to determine if changes are required,
- Delegate the responsibility and authority for this procedure appropriately during their absence,
- Complete the Emergency Contact List (Form 25) or delegating the responsibility to complete the list.

Supervisors

Supervisors are the initial representatives of the company in the event of an emergency. All supervisors must:

- Take appropriate preventative actions to minimize the risk of fire or emergency,
- Direct all communication (media inquiries) regarding an emergency situation to the management representative on the JHSC,
- Ensure that this procedure is implemented and maintained and employees receive initial and on-going training,
- Ensure that emergency services have been contacted in the event of an emergency,
- Take a head count at the designated meeting area and report this to management,
- Ensure that there is a person assigned to meet emergency services and direct them to the building,
- Authorize workplace re-entry in consultation with management and emergency services.

Workers

- All workers must:
- Follow the emergency procedures and avoid taking any unnecessary personal risks in the event of an emergency,
- Advise the supervisor of any special needs that they may have such as needing assistance with evacuation and medical conditions,
- Direct all communication (media inquires) regarding the situation to management,
- Report directly to the designated meeting area for head count in the event of an emergency.

Preventative Measures

Interprovincial Insulation shall take reasonable fire safety and emergency prevention measures, including but not limited to:

- Compliance with federal and provincial fire prevention laws, insurance requirements and other requirements regarding the storage of flammable and combustible materials, electrical installations, building materials, and ventilation,
- Enforcement of Interprovincial Insulation No Smoking Policy,
- Monthly workplace inspections,
- Meeting health and safety training standards,
- Communication with local Fire, Police and Ambulance services,
- Installing and maintaining the appropriate number, type and size of portable fire extinguishers,
- Maintaining emergency lighting, where required,
- Maintaining clear corridors, employee assembly points and emergency exits free from obstruction,
- Providing on-going training to all employees,
- Having an up-to-date floor plan of facility available.

Portable fire extinguishers and other equipment are checked, inspected and tested according to the maintenance requirements of the Fire Code. This is done as part of the monthly workplace inspection procedure.

The objective of this procedure is to provide emergency preparedness information sufficient to ensure that any emergencies are responded to in a manner that is accurate, timely, consistent, dependable, and adequate in situations that have the potential to affect life, and the health and safety of any person. The process of hazard assessment will be ongoing to accommodate any changes in operation and personnel.

Any revisions to this procedure will be communicated to all employees through their supervisors and by postings on each health and safety bulletin board.

Fire Extinguisher Use

If the fire is small (and you are confident it can be easily controlled), use a fire extinguisher of suitable type. Always point the extinguisher at the base of the fire. Remember PASS:

P ___*Pull* the safety pin at the top of the extinguisher.

A ___ *Aim* the nozzle, horn or hose at the base of the flame while holding extinguisher vertically.

S____*Squeeze* or press the handle to release the extinguisher agent.

S ___*Sweep* from side to side at the base of the fire and at least six inches past the edges of the flames until completely extinguished.

Remember, fire spreads quickly! If you can't find an extinguisher, or if you are unable to put out the fire for any reason, evacuate immediately. Your reaction in the first few seconds is critically important. If the fire is out of control, leave the area immediately and initiate a fire emergency response.

Chemical Spill

When a chemical spill occurs, action must be taken as quickly as possible to protect individuals in the area and to contain the spill. Small spills shall be dealt with immediately by the supervisor in charge according to the Material Safety Data Sheet (MSDS) for the product.

A chemical spill is defined as the following:

- Any hazardous substances that can safely, cause adverse health effects, cause property damage or cause environmental damage.

In the event of a chemical spill:

- Isolate the surroundings to prevent anyone from entering the area and remove anyone who may be in the vicinity.

- If toxic fumes are present, the supervisor will evacuate the building immediately.

The supervisor will then do the following:

- Contact 24 Hour – Canada Wide Emergency Response at 1800 32 SPILL,

- Place signs and caution tape to secure the area, if necessary,

- If it is safe to do so, place absorbent material near the area where the spill is moving.

- Clean up the spill as per the requirements of the MSDS.

Medical Emergency

- In event of a medical emergency the following will be adhered to:
- Evaluate the accident area to ensure that it is safe to render first aid,
- Do not move the victim unless greater danger exists,
- The first aid responder must provide first aid to the victim(s),
- Identify and evaluate the injury,
- Contact 911 by sending someone to the nearest phone, or provide immediate transportation to the doctor's office, hospital or home as required.

At the time of the call, provide the following information:

- Location of the injury scene,
- Nature of the injury and the number of victims,
- Stay on the phone until advised to hang up,
- Send someone to notify management of the emergency.

After the emergency situation has subsided:

- Complete the Interprovincial Insulation Accident /Incident Investigation Report and conduct a thorough investigation including all details surrounding the accident. Included in the report will be recommendations to prevent a recurrence.
- The supervisor must initiate a Interprovincial Insulation Accident report. The Head Office will make sure that the Form 7 is completed.

The Head Office will return the completed copy of the Form 7 to the WSIB within three days of learning of the work-related injury or occupational disease. If the worker is unable or unwilling to sign, the form will be sent without the signature.

Building Evacuation Procedures

In the case of an emergency that requires the evacuation of the building (i.e. fire, gas leak, etc.) If it is not safe then they must make the call from the nearest safe location. Employees also have a duty to inform workers in their immediate area of the danger and the necessity to evacuate. If this situation occurs, employees are to do the following:

- Shut off any equipment/machinery they are using.
- Leave the building through the closest emergency exit. All employees once outside are to assemble and remain at the front parking lot.
- If it is not safe for the employees to remain at the front parking lot, or if injured workers need shelter from the weather, then all employees will proceed to the nearest building.
- Once assembled, a member of Interprovincial Insulation office staff is to perform a roll call to ensure that all personnel have successfully evacuated the building.
- If an employee is missing from the roll call, emergency response personnel are to be informed immediately.
- Trained first aid personnel will attend to all injured employees while waiting for emergency services.

The circumstance of each emergency situation must be recorded using the Interprovincial Insulation Incident or Accident Investigation Form.

If an injury or illness is involved, please refer to First Aid Treatment for Work Related injuries.

Forward a copy of all completed reports to the Health and Safety Coordinator.

Fall Rescue Procedure

If a worker falls, and their fall is arrested by fall protection equipment, the following procedure will be used to rescue the worker:

- Before workers attempt a rescue, they must ensure that they have all the required personal protective equipment for themselves and for the casualty (fall protection equipment for themselves, and at least a new lanyard for the victim),
- Depending on the lifting capabilities of the elevating work platform being used (if it can lift safely two people plus the casualty) two workers will maneuver the elevating work platform beneath the fallen worker,
- The workers will bring the lift up directly underneath the fallen worker until the injured worker touches the floor of the elevating work platform,
- Once the casualty is safely on the floor of the elevating work platform, only then can the rescue workers disconnect his/her protection device,
- The rescue workers must then connect the victim's harness to the elevating work platform for the trip down,
- If the elevating work platform cannot reach high enough for the victim to touch the floor, the workers will abort the rescue and wait for the fire department to arrive,
- When the victim reaches the ground, the first aid responder will attend to them, and they will be taken to the closest medical facility to be attended to by a doctor,
- If the victim is unconscious or there is reason to suspect a back or a neck injury, emergency services must be called before any rescue attempt is made.

MOL & Safety Coordinator must be notified

SECTION 13 - Personal Protection Equipment

The use of personal protective equipment (PPE) is necessary to help prevent serious injury or illness by eliminating or minimizing exposure to hazardous physical/chemical material.

Personal protective equipment must be worn where required. The maximum degree of protection offered by personal protective equipment will be achieved only if the equipment is right for the job, fitted properly, used properly and maintained properly.

The following list has been developed to ensure that all personnel at Interprovincial Insulation fully understand the personal protective equipment requirements.

- All personal protective equipment to be used at Interprovincial Insulation will be evaluated and analyzed by the supervisor prior to purchase. This will ensure that the equipment is the correct type and is appropriate for the circumstances,
- It is the responsibility of all employees to wear the appropriate personal protective equipment whenever there is potential risk of bodily injury and/or exposure to a hazardous agent (physical/chemical),
- It is the responsibility of the supervisor to ensure that all employees who are required to wear or use personal protective equipment, receive the proper equipment and are trained in the proper use, care, limitations and maintenance of this equipment. The supervisor must also ensure that the worker is properly fitted with protective equipment,
- Training will be documented by the supervisor, signed by the employee, and kept on file for acknowledgment and verification of training,
- Employees will inspect their personal protective equipment regularly to ensure that it is maintained in proper working condition. Check for cleanliness, missing or broken parts, etc. prior to wear or use,
- All personal protective equipment will be cleaned as required and stored according to manufacturer's recommendations,
- Any violation of the personal protective equipment requirements will result in disciplinary action being taken.

When a hazard exists, a strategy to remove or control the hazardous condition must be developed.

Several of these strategies, including the following may be used:

- Engineering controls
- Material substitution
- Process change
- Revised work practices
- Equipment change
- Administrative controls

Use of Personal Protective Equipment

A comprehensive health and safety program considers the hazards, evaluates all possible control methods, integrates various approaches and re-examines them frequently to ensure a safe working operation. The evaluation of the program should include monitoring and/or auditing for a change in operations or for a breakdown of existing control methods.

Pre-contact control is the primary strategy. This prevents the hazard from ever reaching the worker. This can include, substituting materials or processes that are less hazardous, isolating hazardous processes, retrofitting existing equipment or acquiring safer equipment.

The company shall take all reasonable measures to institute engineering techniques, systems, work practices or administrative controls that eliminate or reduce to a practical minimum those hazards for which personal protective equipment is or would otherwise be required.

If the measures do not eliminate or reduce a hazard to a point where there is no danger to the safety or health of the workers, then the following must apply:

- Interprovincial Insulation shall ensure that workers use the appropriate personal protective equipment, as required, within the specific job/task procedures,
- Workers shall and must use such equipment as so directed and with due care and caution.

Personal protective equipment should only be used:

- As an interim measure before controls are implemented,
- Where pre-contact controls are inadequate,
- During activities such as maintenance, clean-up and repair where pre-contact controls are neither feasible nor an effective means of protection,
- During emergency situations,

Personal protective equipment is categorized by the area of the body it protects. The following subsections outline the different types of personal protective equipment and the requirements for use.

Foot Protection

Employees must wear safety footwear while on site. Safety footwear must be CSA approved, Grade 1 Green Patch in good condition (i.e. no steel showing, laced up and down broken stitching). For wet or muddy condition, CSA rubber boots are permitted. There are absolutely no exceptions to this rule.

Eye and Face Protection

Employees and visitors must wear CSA standard eye protection with full side shields or approved wrap around style safety glasses, when prescribed. Prescription glasses must have rigid, replaceable clips on side shields. Soft “flexi” style slips on side shields are not permitted. Specialized eye/face protection are required for cutting, grinding, handling chemicals, operating power machinery, etc. There are absolutely no exceptions to this rule.

Head Protection

A worker exposed to the hazard of head injury shall wear head protection appropriate in the circumstances. The hard hat must meet CSAz04. 1-1992 E&G requirements and be in good repair, not be painted and must be worn according to manufacturers recommendation. Every worker shall wear protective headwear at all times when at a project. There are absolutely no exceptions to this rule.

Hearing Protection

Earplugs or muffs must be worn at all times when sound levels exceed 90 decibels or more. The "rule of thumb" is if you cannot speak in a normal speaking voice at a handshake distance from the person you are talking to, then you should be wearing hearing protection. The protection must be sufficient to bring the noise level to an acceptable level. There are absolutely no exceptions to this rule.

Fall Protection

A worker shall be adequately protected by a fall protection system that meets the requirements of section 26 of the Regulations for Construction Projects where a worker is exposed to any of the following hazards:

- Falling more than 3 metres,
- Falling more than 1.2 metres, if the work area is used as a path for a wheelbarrow or similar equipment,
- Falling into operating machinery,
- Falling into water or another liquid,
- Falling into or onto a hazardous substance or object,
- Falling through an opening on a work surface.

Interprovincial Insulation shall ensure that a worker who may use a fall protection system is adequately trained in its use and given adequate oral and written instructions by a competent person. Interprovincial Insulation shall ensure that the person who provides the training and instruction prepares a written training and instruction record for each worker and signs the record. The training and instruction record shall include the worker's name and the dates on which training and instruction took place. Interprovincial Insulation shall make the training and instruction record for each worker available to an inspector on request.

Travel Restraint System

A travel restraint system means an assembly of components intended to prevent a worker from reaching the edge of an opening and consists of the following:

- Full body harness
- Lanyard, lifeline or cable;
- Rope grab or triple sliding hitch
- Anchor point.

Fall Arrest

A fall arrest system means an assembly of components intended to arrest the fall of a worker and consists of the following:

- Lanyard (check date on harness, must be within the last five years);
- Shock absorber
- Rope grab or triple sliding hitch
- Lifeline (check date on harness, must be within the last five years);
- Lifeline/lanyard's anchor point capable of supporting 5000lbs.

Note: A safety belt cannot be used in a fall arrest system

Guardrails

Guardrails will be constructed in accordance with the applicable regulations. When guardrails are necessary, they must be installed immediately.

All damaged or defective guardrails are to be fixed or replaced immediately.

If a guardrail must be removed for the purpose of a construction activity, then the worker and his/her supervisor are responsible for that area, to ensure that no other worker or piece of equipment is exposed to a falling hazard. This can be achieved by wearing a fall arrest or travel restraint system and directing the movement of equipment. Once the job task has been completed, then the guardrail must be re-installed.

Ladders

All ladders shall be constructed and maintained in accordance with the Construction Regulations, sections 78 to 84 and the Industrial Regulations, sections 18 and 19. Some highlights from the regulations are as follows:

- All portable ladders must be equipped with non-slip bases;
- Straight ladders will be tied off or otherwise secured to prevent movement. If this is not possible, one worker will hold the base of the ladder while it is being used;
- When climbing up or down, workers must always face the ladder and maintain a three-point contact (two feet and one hand or one hand or one foot and two hands);
- Ladders must not be erected on boxes, carts, tables, scaffold platforms, elevating work platforms or on vehicles;
- Straight ladders must be set up and angled such that the horizontal distance between the top support and the base is not less than one-quarter than one third the vertical distance between these

points;

- Metal ladders or ladders with wire reinforcing must not be used in the proximity of energized electrical conductors;
- Wooden ladders must be unpainted;
- All ladders erected between levels must be securely fastened, extend 900 mm (3 ft.) above the top landing and afford clear access at top and bottom;
- Defective ladders must not be used and must be repaired or destroyed;
- Ladders must not be used for any other service for which they have not been designed;
- Workers on a ladder must not straddle the space between the ladder and another object; and
- Workers must not stand on the top or the pail shelf of a stepladder.

Power Elevating Work Platforms

Power Elevating Work Platforms (PEWP) shall be certified in writing by a Professional Engineer that it complies with The National Standards of Canada in subsection 6.

A worker who operates a PEWP must, before using it for the first time, be given oral and written instruction on the operation of the elevating device. Therefore, a PEWP shall only be operated on by a worker who has been instructed in:

- Operating the machine;
- The daily inspections and maintenance required by the manufacturer;
- The types of working surface on which the machine is designed to be used;
- The maximum rated working load;
- Special conditions or limitations of the machine;
- The significance of alarms;
- The location of emergency controls.

A PEWP shall be inspected daily in accordance with the manufacturer's instructions.

A PEWP must have permanent records kept of all inspections, tests, repairs, modifications and maintenance performed. The records shall be kept up-to-date and include the signature and name of the person who performed the inspection, test, repair modification or maintenance.

A PEWP shall have attached to the platform a maintenance and inspection record with the dates of last inspection and maintenance, and signed by the person who performed the inspection and maintenance.

A PEWP must have an operator's manual attached to the platform at all times.

If the PEWP is a rental and the operator's manual is missing, the supervisor is to contact the rental company and have them send one.

If the PEWP device is not working properly or has sustained damage to critical components, it must not be used until repaired by a qualified mechanic.

In the raised position, a PEWP shall only be used on surfaces specified by the manufacturer.

A PEWP must not be driven in a raised position, close to holes, depressions, trenches or similar hazards.

A PEWP must not bear more than its rated working load and where possible that load shall be distributed over the platform.

When PEWPs are used to lift materials, care must be taken to ensure that the materials are firmly secured to the platform.

Do not place makeshift platforms such as boxes or access equipment such as ladders and scaffolds on a PEWP to gain access to areas above.

A PEWP must not be used for pulling, pushing or dragging materials.

The platform of a PEWP must not be extended by using cantilevered planks or similar platform materials. Only manufacturers' platform extension devices shall be used.

Planks or similar platform materials must not be used to bridge a gap between a PEWP and other work areas.

Workers must always maintain 3-point contact (one hand and two feet or two hands and one foot) when getting on or off the platform of a PEWP.

For all types of off-slab devices, the terrain on which the device is placed or over which it will travel must be firm enough to support the device and its rated working load.

A PEWP platform of any other part of a PEWP device must not be moved closer than 3 m (10 ft.) to over head power lines, unless the device is equipped for live electrical line work and the workers on the platform are qualified for such work.

A PEWP must not be used under high wind conditions. This is especially important for smaller scissor lifts and boom-type devices.

When the PEWP is not being used, turn off the power system to prevent exhaust fumes forming in an enclosed work area. Use only electric or propane powered systems.

PEWPs used on ramps or on sloping or uneven surfaces must be designed for such use and properly secured against horizontal and vertical movement.

Scaffolding

There are various types of metal scaffolds and they all have a right and wrong way to be erected.

The misuse of scaffolding is the cause of numerous serious injuries. Every worker who designs or constructs a scaffold should be competent and know what the manufacturer's specifications are for that type of scaffold.

The scaffold type which will be best suited for the job and capable of withstanding the loads to be imposed on it must be determined before the job begins.

All scaffolding shall be designed, constructed and maintained in accordance with the applicable regulation.

Some highlights from the Construction Regulations are as follows:

- The erection and dismantling of scaffolds must be carried out under the supervision of a competent worker knowledgeable and experienced in such operations;
- Scaffolds must be erected with all braces, pins, screw jacks, base plates, and other fittings installed, as required by the manufacturer;

- Most tubular scaffolds should have braces on both sides of every section in the vertical plane
- Horizontal bracing is provided to some extent by the scaffold platform and the base plates on scaffold legs. However, where scaffolds are several sections high or where they are on casters, most manufacturers recommend that horizontal bracing be used;
- Scaffolds must be equipped with guardrails consisting of a top rail, mid rail and toe board
- Scaffold platforms must be at least 46 cm (18") wide and if they are over 2.4 m (8 ft.) high they must be planked across their full width;
- Scaffolds must be tied into a building at vertical intervals not exceeding three times the least lateral dimension, including the dimension of any outrigger stabilizing devices;
- Scaffold planks must be securely fastened to prevent them from sliding
- Scaffold planks must be of good quality, free of defects such as loose knots, splits or rot, rough sawn, measuring 68 mm x 248 mm (1 7/8" x 9 ¾") in cross section, and No. 1 spruce or better when new;
- Scaffolds must be erected, used and maintained in a reasonable plumb condition
- Scaffold planks must be installed so that they overhang by at least 15 cm (6") but no more than 30 cm (12").
- Scaffolds must be equipped with a proper ladder for access. Vertical ladders must be equipped with 15 cm (6") stand-off brackets and a ladder climbing fall protection device or safety cage when they are more than 3 m (10 ft.) high;
- Frame scaffolds over 15 m (50 ft.) high and tube and clamp scaffolds over 10 m (33 ft.) high must be designed by a professional engineer and constructed in accordance with the design;
- Remove ice, snow, oil, grease and other slippery material from the platform and sand the surface
- Wheels or casters on rolling scaffolds must be equipped with braking devices and securely pinned to the scaffold frame;
- Wheels and casters must be locked when personnel are working on the scaffold; and
- If the scaffold is more than 2.5 m (8 ft.) high, it must not be moved with personnel on it unless:

    - They wear safety harnesses with the shock absorbing lanyards tied off to a fixed support.
    - The floor is firm and level.

Hand and Skin Protection

A worker exposed to the hazard of injury from contact of the worker's skin with:

- A noxious gas;
- Sharp or jagged objects which may puncture cut or abrade the worker's skin;
- A hot object, hot liquid or molten metal;
- A toxic chemical;
- Radiant heat;

shall be protected by wearing apparel sufficient to protect the worker from injury or a shield, screen or similar barrier.

Body Protection

Workers exposed to potential injury through contact with a hazardous material shall be issued the necessary protective clothing suitable to the specific hazard(s).

This category covers chemical-protective clothing, heat-protective clothing, gloves, aprons and leggings as well as clothing designed to minimize exposure to injury or illness (i.e. arm guards, belly guards, shin and leg guards, chemical protection suit, etc.).

Respitory Protection

In the course of their work, construction personnel are often exposed to respiratory hazards in the form of dangerous dusts, gases, fumes, mists, and vapours. In some cases careful selection of materials and work practices can virtually eliminate respiratory hazards. Where that is not possible, the next best choice is engineering controls such as fume exhaust systems that deal with the hazard at the source.

- Respirators are the least preferred method of protection from respiratory hazards because they:
- Do not deal with the hazard at the source
- Can be unreliable if not properly fitted and maintained
- May be uncomfortable to wear.

In spite of these drawbacks, in many construction operations respiratory protective equipment is the only practical control.

The Respiratory System

The respiratory system consists of mouth, nose, windpipe, and lungs. During inhalation, air is drawn in through the nose or mouth and down the windpipe to the lungs. Here, the air follows branched airways which divide and subdivide until they end in small air sacs (Figure 26).

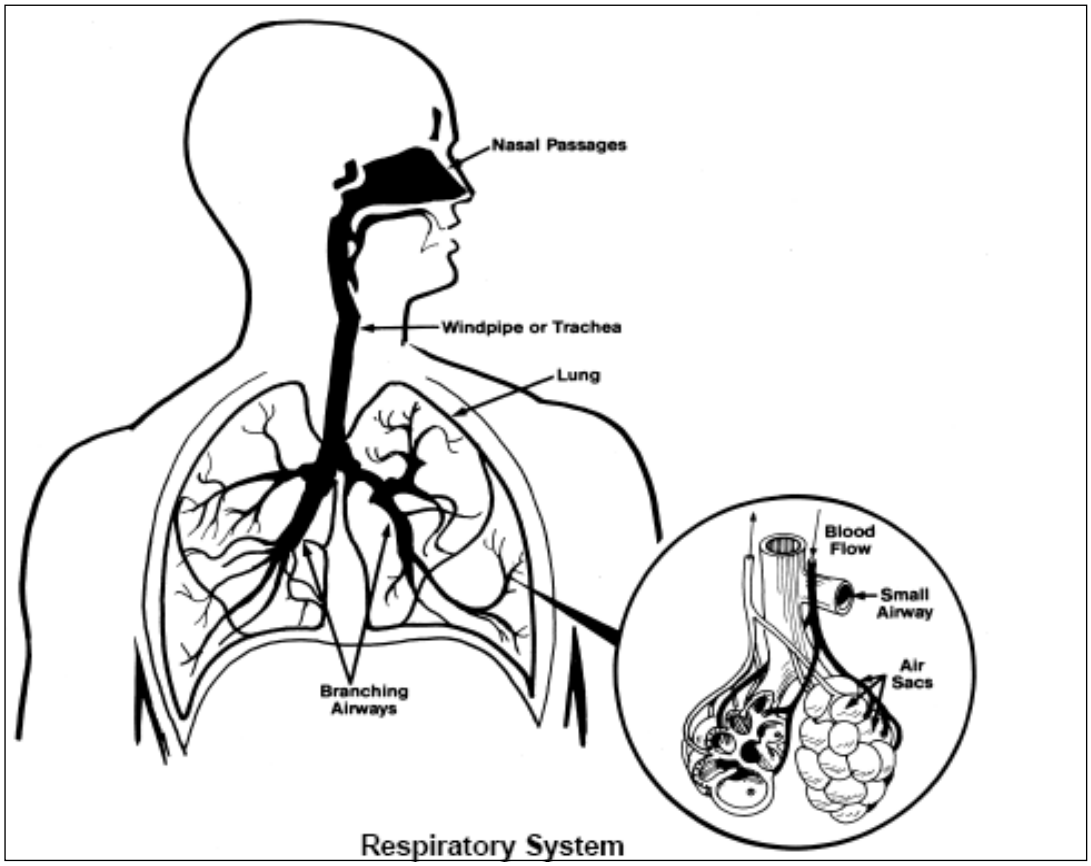
There are approximately 300 million of these tiny delicate air sacs in the lungs. This is where oxygen from inhaled air enters the bloodstream. Because the air sacs are only one or two cells thick, oxygen can pass through their walls and be absorbed by the surrounding small blood vessels.

The defenses of the respiratory system start in the nose where hairs trap large dust particles that may be inhaled. As inhaled air continues down the system, smaller particles are caught in the lining of the windpipe. The lining secretes very sticky mucous which is constantly being brushed upwards by tiny hairs along the windpipe. Mucous containing dust can then be coughed up and expelled.

As air is drawn further into the respiratory system, it must pass through a maze of airways to reach the air sacs. At each bend or branch, more particles are caught by striking and sticking to the walls of the airways. A good comparison here is the way in which debris is removed from the flow of a river at bends and turns. Usually only small objects make it all the way downstream without striking the banks.

In the respiratory system, gases, vapours, and very small dust particles can avoid these defenses and reach the delicate air sacs in the lungs. In the case of dust particles, a last line of defense consists of body cells that try to attack and remove foreign particles. Some dusts and fumes, however, and all gases and vapours can bypass this defense and may be absorbed into the bloodstream.

Their harmful effects may be countered by defenses elsewhere in the body such as the liver and kidneys. But if these measures cannot deal with the contaminant, or if the concentration inhaled overwhelms every defense, several consequences can result, ranging from temporary illness or discomfort to permanent disability or death.



Respiratory System

Respiratory Hazards

Respiratory hazards may be present as;

- gases
- vapours
- fumes
- mist
- dusts

Gases — consist of individual molecules of substances, and at room temperature and pressure, they are always in the gaseous state. Common toxic gases found in construction are carbon monoxide from engine exhaust and hydrogen sulphide produced by decaying matter found in sewers and other places.

Vapours — are similar to gases except that they are formed by the evaporation of liquids (e.g., water vapour). Common vapours found in construction are produced by solvents such as xylene, toluene, and mineral spirits used in paints, coatings, and degreasers.

Fumes — are quite different from gases or vapours, although the terms are often used interchangeably. Technically, fumes consist of small particles formed by the condensation of materials which have been subjected to high temperatures. Welding fume is the most common type of fume in construction. Other examples include pitch fume from coal tar used in built-up roofing and fume from diesel engines.

Mists — are small droplets of liquid suspended in air. The spraying of paint, form oils, and other materials generates mists of varying composition.

Dusts — are particles which are usually many times larger than fume particles. Dusts are generated by crushing, grinding, sanding, or cutting and by work such as demolition. Two kinds of hazardous dust common in construction are fibrous dust from insulation materials (such as asbestos, mineral wool, and glass fibre) and non-fibrous silica dust from sandblasting, concrete cutting, or rock drilling.
In construction settings, respiratory hazards may be compounded, depending on the number and variety of jobs under way. For example, both mist and vapours may be present from paint spraying or both gases and fumes from welding.

Health Effects

Respiratory hazards can be divided into the following classes based on the type of effects they cause.

Irritants are materials that irritate the eyes, nose, throat, or lungs. This group includes fibreglass dust, hydrogen chloride gas, ozone, and many solvent vapours. With some
materials (e.g., cadmium fume produced by welding or oxyacetylene cutting of metals coated with cadmium) the irritation leads to a pneumonia-like condition called pulmonary edema. *This effect may not be apparent until several hours after exposure has stopped***.**

Asphyxiants are substances which result in inadequate oxygen in the body. They can be classified as either *simple asphyxiants or chemical asphyxiants***.**

Simple asphyxiants are other gases or vapours which cause oxygen to be displaced, creating an *oxygen deficient atmosphere***.** Oxygen content of 18% may leadto some fatigue during exertion. Oxygen concentrations lower than 15% can cause loss of consciousness and may be fatal. For example, nitrogen used to purge tanks can displace oxygen, resulting in unconsciousness and even death for those who enter. Oxygen may also be consumed by chemical or biological activity such as rusting or bacteria digesting sewage.

Chemical asphyxiants interfere with the body's ability to transport or use oxygen. Two examples are carbon monoxide and hydrogen sulphide**.**

Central nervous system depressants interfere with nerve function and cause symptoms such as headache, drowsiness, nausea, and fatigue. Most solvents are central nervous system depressants.

Fibrotic materials cause "fibrosis" or scarring of lung tissue in the air sacs. Common fibrotic materials found in construction include asbestos and silica.

Carcinogens cause or promote cancer in specific body organs. Asbestos is the most common carcinogen in construction.

Nuisance dusts do not cause significant effects unless exposure is of high concentration and/or long duration. Excessive exposure to these substances can be adverse in itself or can aggravate existing conditions such as emphysema, asthma, or bronchitis. Examples include plaster dust, cellulose from some insulation, and limestone dust.

Respiratory Protective Equipment

A wide variety of equipment can be used to protect workers from respiratory hazards. Devices range from simple, inexpensive dust masks to sophisticated self-contained breathing apparatus. Generally, the equipment can be divided into two distinct classes — air-purifying respirators and supplied-air respirators.

Air-Purifying Respirators

As their name indicates, these devices purify the air drawn through them. Air-purifying respirators have limitations and should not be used where;

- There is insufficient oxygen
- Very high concentrations of contaminant are present
- The contaminant cannot be detected by odour or taste at safe levels.

Warning: Air-purifying respirators simply remove certain airborne hazards. They do not increase or replenish the oxygen content of the air and should never be worn in atmospheres containing less than 19.5% oxygen.

Although many different filters have been designed for specific hazards, there are three basic types used with air-purifying respirators (See Figure 27)

Particulate Filter

This type removes solid particles such as dusts, fumes, or mists and operates like the air filter in a car engine. The devices may be filtering facepiece respirators or respirators with replaceable filters. Different grades of filters are available, depending on the size of particles to be removed.
When particulate filters fill up with dust or fume, they become harder to breathe through but are more efficient, since air is being filtered through the layer of trapped particles as well as the filter itself.
While particulate filters can provide good protection against particles such as dusts, mists, or fumes, they cannot filter out gases or vapours because of the very small size of gas and vapour molecules.

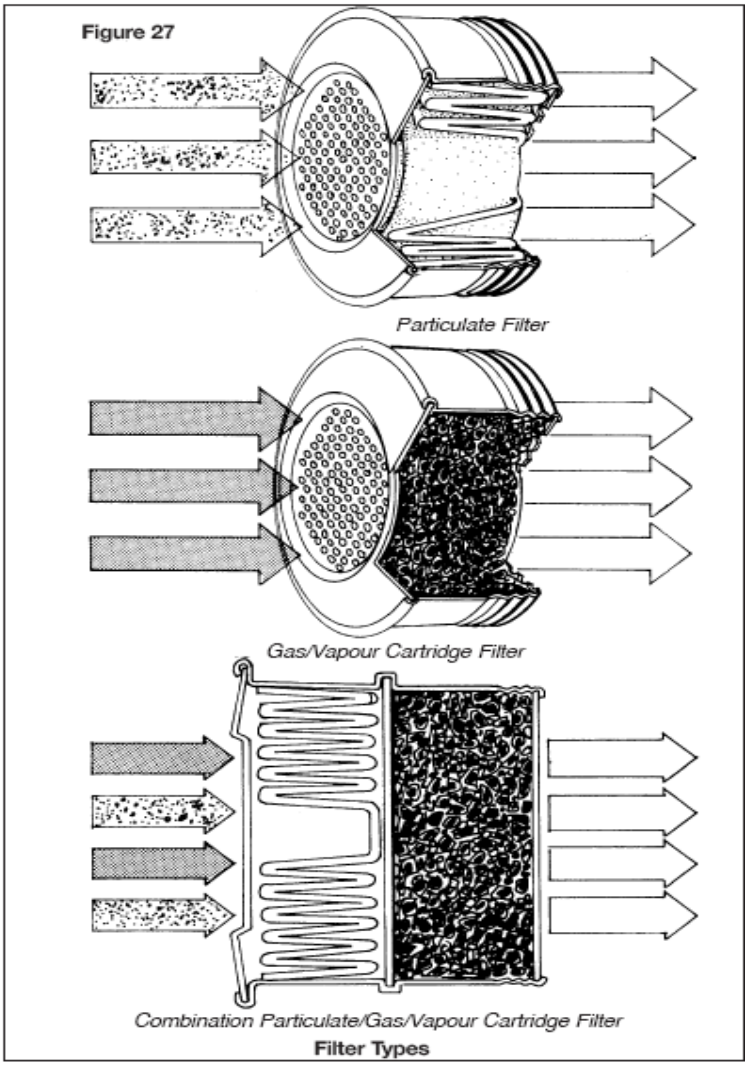
Gas/Vapour Cartridge Filter

This type uses substances which absorb or neutralize gases and vapours. Unlike particulate filters, gas/vapour cartridge filters become less efficient the longer they are used. They act like sponges and, when full, allow gas or vapour to pass through without being absorbed. This is called “breakthrough.”
Common gas/vapour cartridge filters include the following:

- Organic Vapour Cartridges usually contain activated charcoal to remove vapours such as toluene, xylene, and mineral spirits found in paints, adhesives, and cleaners.
- Acid Gas Cartridges contain materials which absorb acids and may be used for protection against limited concentrations of hydrogen chloride, sulphur dioxide, and chlorine.
- Ammonia Cartridges contain an absorbent designed specifically to remove only ammonia gases.

Combination Particulate/Gas/Vapour Cartridge with Filter

- This type removes particulate matter, vapours, and gases from the air. It is used where more than one type of hazard is present or may develop.

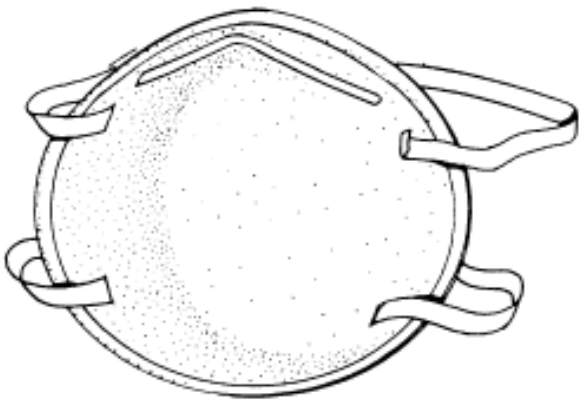


Colour Codings For Respirator Cartridges & Filters

- Dust, Mist, Fumes (Grey)
- Dust, Mist, Fumes, Radionuclides (Purple)
- Organic Vapour (Black)
- Acid Gases (White)
- Ammonia (Green)
- Acid Gases, Organic Vapour (Yellow)

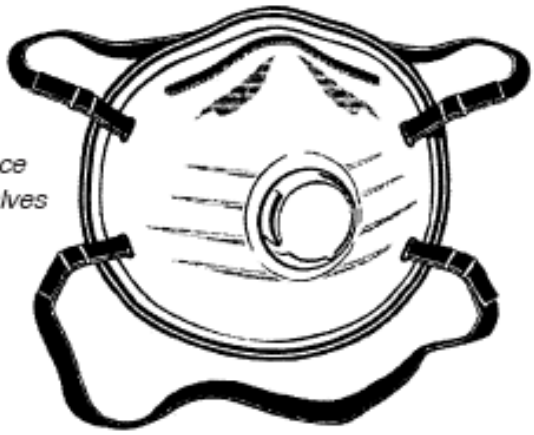
Styles of Facepieces

In addition to the type of respirator and mode of operation, the style of facepiece is used to classify respirators. Different styles are available. (See Below)

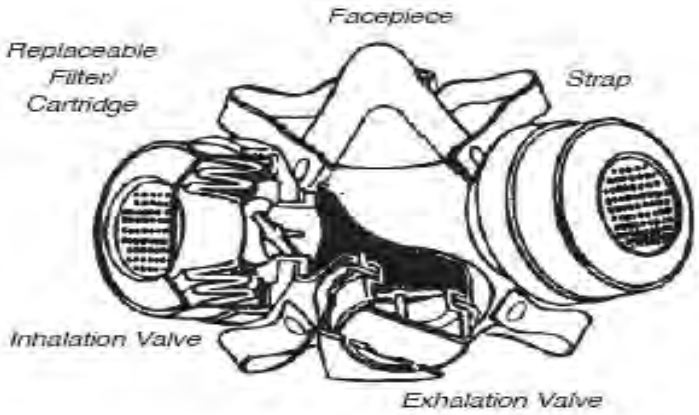


Filtering Half-Facepieces
Most of these devices are designed to be worn only once. They fit over the mouth and nose, rest on the chin, and are held in place by two straps. Some of the more sophisticated versions with adjustable straps and exhalation valves can be worn more than once, provided they are not damaged.

Filtering Facepiece for Particulates



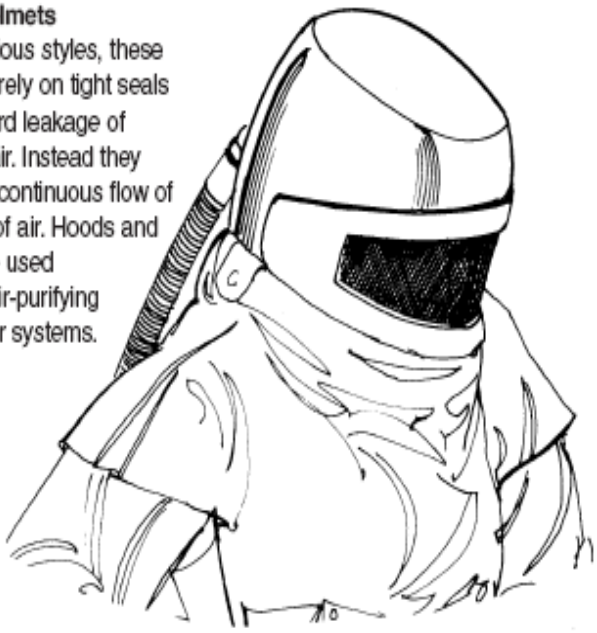
Filtering Facepiece with Exhalation Valves



Half-Face Mask
This style is widely used as an air-purifying respirator with one or more filters or cartridges attached to the facepiece. The silicone, thermoplastic, or rubber facepiece covers the mouth and nose, cups under the chin, and is usually held in place by two straps. It generally provides better protection than quarter-face masks because the chin cup affords a more secure fit.

Full-Face Mask
This style covers the entire face and consists of a moulded rubber or plastic frame and a clear visor. Since it fits against the relatively smooth rim of the face, it provides more protection than other face masks. Full-face masks can be used with air-purifying, powered air-purifying, and supplied-air respirators.

Hoods and Helmets
Unlike the previous styles, these devices do not rely on tight seals to prevent inward leakage of contaminated air. Instead they depend on the continuous flow of large volumes of air. Hoods and helmets can be used with powered air-purifying and supplied-air systems.



Protection Factors

The degree of protection depends on the type of respirator, style of facepiece, and principle of operation. Generally, supplied-air respirators provide better protection than air-purifying respirators; full-face masks provide better protection than half-face masks; and positive-pressure devices provide more protection than negative-pressure types.

Table 7 lists protection factors for the respirators described so far. The information can be used to select the most appropriate device for any given situation. The protection factors listed in Table 7 were determined by testing a wide variety of devices worn by a large number of people and represent the average degree of protection achieved. Protection factors for individual wearers may differ significantly from the values listed.

Protection Factors (according to NIOSH)
Table 2

Type of Respirator	Facepiece Style	Facepiece Pressure	Cartridge Type	Hazard Form	Protection Factor
Air-purifying	Filtering half-facepiece	N	N/A	Particle	10 ‡
	Half-face mask	N	1	Particle, gas, vapour	10 ‡
	Full-face mask	N	1	Particle	10
	Full-face mask	N	2	Particle	50
	Full-face mask	N	3	Gas, vapour	50 ‡
Powered air-purifying	Loose hood helmet	C	1	Particle, gas, vapour	25 ‡
	Tight-fitting facepiece	C	3	Gas, vapour	50 ‡
	Tight-fitting facepiece	C	2	Particle	50
Airline	Half-face mask	N	N/A	Particle, gas, vapour	10
	Half-face mask	P	N/A	Particle, gas, vapour	1,000
	Full-face mask	N	N/A	Particle, gas, vapour	50
	Full-face mask	P	N/A	Particle, gas, vapour	2,000
	Hood or helmet	C	N/A	Particle, gas, vapour	25
SCBA *	Half-face mask	P	N/A	Particle, gas, vapour	1,000
SCBA *	Full-face mask	N	N/A	Particle, gas, vapour	50
SCBA *	Full-face mask	P	N/A	Particle, gas, vapour	10,000

* SCBA or airline with emergency air bottle adequate for escape from the hazardous environment

‡ Protection factor may be limited by the cartridge. Check with manufacturer.

N Negative
C Constant flow
P Positive
N/A Not applicable

1 Any appropriate NIOSH-approved
2 High efficiency particulate aerosol (HEPA)
3 Appropriate NIOSH-approved gas or vapour

Respirator Selection Guide

	Air purifying											Supplied air	
	Half facepiece							Full facepiece			Powered Air-Purifying Respirator (PAPR), tight-fitting	Hood or Helmet NIOSH type CE pressure demand Half-facepiece pressure demand	SCBA or SCBA + airline, full facepiece and positive pressure
	Filtering facepiece		Elastomeric facepiece										
Filter efficiency and type	95	100	95	100	Organic vapour	95+ organic vapour	100+ organic vapour	95	100	100+ organic vapour	HEPA		
Assigned Protection Factor* (NIOSH 1987)	10	10	10	10	10	10	10	10	50	50	50	1000	10,000

Synthetic Vitreous Fibres (Man-made mineral fibres)													
Installation, removal, or blowing cellulose, fiberglass, mineral wool, or calcium silicate	✔ N, R, or P	✔ N, R, or P	✔ N, R, or P	✔ N, R, or P									
Installation of refractory ceramic fibres (silica may be present)				✔ N, R, or P									
Removal of refractory ceramic fibres (silica may be present)									✔ N, R, or P		✔		

Other dust and fibre exposure													
Removal of roofing material (built-up roofing, no asbestos)	✔ R or P		✔ R or P					✔ R or P					
Dry method dust clean-up from abrasive blasting operations	For short-term applications or applications involving tools or equipment with adequate controls (local exhaust ventilation or water) a half-facepiece respirator may be appropriate.								✔ N, R, or P		✔		
Wood dust, including pressure-treated wood dust	✔ N, R, or P		✔ N, R, or P										
Vinyl or laminate floor sanding	✔ N, R, or P		✔ N, R, or P										

In order to select the proper respirator for a particular job, it is necessary to know and understand:

- The characteristics of the contaminant(s)
- The anticipated exposure conditions
- The performance limitations of the equipment
- Any legislation that applies.

It is also important to realize that facial hair and deep facial scars can interfere with the seal between respirator and face. Respirators should only be selected by someone who understands all of these factors.

Before using or handling a controlled product, consult the material safety data sheet (MSDS). The MSDS will identify any respiratory protection required. Under the Workplace Hazardous Materials Information System (WHMIS), MSDSs must be available to users of control -led products. The MSDS should specify the type of respirator to be worn. The chart at the end of this section is a guide to respirator selection. It is intended as a guide only and may not be applicable to every case.

For activities not listed, information regarding type of work, nature of material(s) involved, and working conditions is required and expert advice should be obtained.

If there is any doubt about the correct type of protection for a specific material and operation, consult the manufacturer of the product, a supplier or manufacturer of respirators, or IHSA. When seeking information on the type of respirator for use in specific situations, provide as much of the following information as possible:

Name and form of the material.

- Type of work to be done (e.g., painting, welding)
- Description of worksite conditions (e.g., inside a tank, outdoors)
- Exposure concentration, if known (e.g., 150 ppm of toluene)
- Whether the material will be heated, sprayed, etc
- Other materials being used in the vicinity

Fit Testing and Seal Checks

Once a respirator has been selected, the next critical step is ensuring that it fits properly. One size does not fit all. With every respirator except hoods or helmets, a tight seal is required between facepiece and face. With negative-pressure respirators (e.g., non-powered air purifying respirators and demand supplied-air respirators) gaps in the seal will permit contaminated air to enter the breathing zone.
With positive-pressure respirators (e.g., powered air purifying respirators and pressure-demand supplied-air respirators) a lot of air will be wasted through outward leakage and the degree of protection provided to the wearer could be reduced. Also, "venturi effects" may allow air to escape in one area and draw contaminated air into the facepiece around the escaping air. For these and other reasons, the fit of respirators must be carefully tested. Generally there are two types of fit testing — qualitative and quantitative.

Qualitative Fit Tests

- **Irritant Smoke Test** — The wearer puts on the respirator with "high efficiency or fume filters" in place. A cloud of irritant smoke is created around the wearer. If leakage is detected the respirator should be adjusted.
  Caution: Most of the smoke clouds used in this test are very irritating to the eyes, nose, and throat. Workers are advised to keep their eyes closed during the test and to back out of the smoke as soon as they notice any leakage or irritation.

- **Iso Amyl Acetate (Banana Oil) Test** — The wearer puts on the respirator with "organic vapour" cartridge filters in place. A cotton swab dipped in iso amyl acetate solution is passed along the outline of the facepiece (iso amyl acetate smells like very ripe bananas). If the wearer smells the solution, the respirator should be adjusted.
- ***Note:*** Some people cannot smell iso amyl acetate. Before starting the test, check to ensure that the person can detect the odour. Use two small jars, one containing water, the other containing the test solution. Ask the person whether one smells different and what it smells like.

- **Saccharin Test** — This test is similar to the iso amyl acetate test except that it uses saccharin as the test material and a dust/mist or high efficiency respirator. If the sweet taste or smell of saccharin is detected, the fit must be adjusted.

- **Bitrex Solution Aerosol Test** — In this test the wearer puts on the respirator with any particulate filter. A hood or test enclosure is put over the wearer's head and shoulders. Bitrex is then sprayed into the hood or enclosure. Bitrex is a very bitter solution and can easily be detected if it leaks through the face seal. If the wearer cannot taste the Bitrex, then the respirator fits properly.

Quantitative Fit Tests

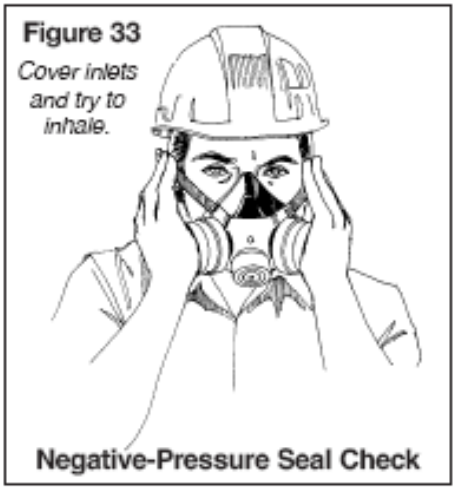
In these tests the wearer puts on a special respirator which has a probe mounted inside the facepiece. The wearer then goes into a test chamber or booth which contains a known concentration of a specific gas, vapour, or aerosol. The amount of leakage is determined by sampling the air inside the facepiece through the probe. This method is not well suited for use on most construction projects.

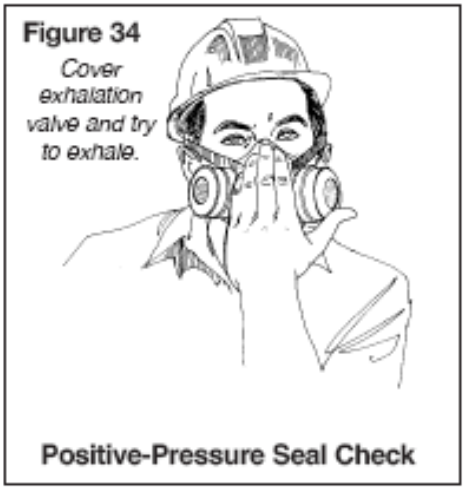
User Seal Checks

Every time you put a respirator on, check the seal using the negative-pressure and positive-pressure method.

1) **Negative Pressure Test**— The wearer puts on the respirator and adjusts it so that it feels relatively comfortable. Then the air inlets are blocked off with the hands or a plastic cover, and the wearer inhales gently (Figure 33). If the respirator is properly fitted, it should collapse slightly and not permit any air into the facepiece. If leakage is detected, the mask should be readjusted and the test repeated until the fit is satisfactory.

2) **Positive Pressure Test** — The wearer puts on the respirator and adjusts it so that it feels relatively comfortable. Then the exhaust port of the respirator is covered and the wearer tries to exhale gently (Figure 34). The facepiece should puff away from the wearer, but no leakage should occur.





Respirator Maintenance

Like any equipment, respirators require maintenance. The following instructions cover the major points.

1) Filters should be changed as follows:

Dust/mist/fume filters should be changed when there is noticeable resistance to normal breathing.
Chemical cartridge respirators should be changed when the gas or vapour can be tasted or smelled.
Any filter should be changed at the interval specified by the manufacturer or when damaged in any way.

2) Inhalation and exhalation valves should be checked before the respirator is used.

3) Damaged facepiece, straps, filters, valves, or other parts should be replaced with “original equipment” parts.

4) Facepieces should be washed with mild soapy water as often as necessary to keep them clean and wearable.

5) Respirators should be assigned to the exclusive use of individual workers.

6) Where a respirator must be assigned to more than one worker, it should be disinfected after each use (check with the manufacturer regarding acceptable sanitizers/disinfectants).

7) Check all supply hoses, valves, and regulators on supplied-air respirators as specified by the manufacturer.

8) SCBA units and high-pressure cylinders of compressed breathing air should be used and maintained in accordance with current Canadian Standards Association Z180.1 *Compressed Breathing Air and Systems, and Z94.4 Selection, Care and Use of Respirators.*

9) Compressors and filtration systems used with supplied-air respirators must be maintained in accordance with the manufacturers' recommendations.

SECTION 14 - Asbestos

"Asbestos" refers to a group of naturally occurring minerals once used widely in the construction industry. Its strength, insulation properties, ability to withstand high temperatures, and resistance to many chemicals made asbestos useful in hundreds of applications in the construction industry.

Types Of Asbestos

There are two general categories of asbestos:
serpentine (long and flexible fibres) and *amphibole* (brittle and sharp fibres). There are six types of asbestos generally recognized:

- Chrysotile (*Serpentine*)

- crocidolite
- amosite
- actinolite
- tremolite
- anthophyllite

} **Amphibole**

Chrysotile is by far the most common type of asbestos found in Ontario. Within the amphibole family, only amosite and crocidolite have had significant commercial use.
Some studies show that fibres such as amosite and crocidolite (amphiboles) stay in the lungs longer than chrysotile fibres (serpentine). This tendency may account for the greater toxicity (harmfulness) of amphibole fibres.

History

Major use of asbestos products in construction began in the 1930s and escalated during the post-war building boom. During the 1950s and up to 1970 approximately 40 to 50 thousand tons were used annually in Ontario.
In the early 1970s, the use of such products declined sharply because of increasing concern over the health effects of asbestos.
In the mid-1970s specific prohibition and the availability of safer substitutes put an end to the use of many asbestos products. But the early widespread use of asbestos has left a potentially dangerous legacy. The thousands of tons of asbestos installed over the past eighty years can pose serious risk to workers in the renovation, maintenance, repair, and demolition sectors of the construction industry.

Health Effects

Asbestos fibres usually need to be less than 3 micrometres in diameter before they can be inhaled deep into the lungs. (A micrometre is one millionth of a metre, which is one thousandth of a millimetre, and its abbreviation is μm.) The fibres can remain in the lungs for many years—even decades.
The average diameter of an airborne asbestos fibre ranges from 0.11 to 0.24 μm, depending on the type of asbestos and are invisible to the eye. You can see fibres that are greater than 100 μm in diameter. Human hair is approximately 100 μm in diameter—more than 300 times thicker than asbestos fibre.
Inhalation of the airborne asbestos fibres that you cannot see is what causes asbestos-related diseases.
Inhaling asbestos fibres has been shown to cause the following diseases:

- Mesothelioma
- Lung cancer
- Asbestosis
- Other illnesses

A person exposed to asbestos may feel no ill effects at the time of exposure. The time period between exposure to asbestos fibres and the development of disease can range from 15 to 55 years. This is known as the **latency period**. The asbestos-related diseases workers get today are the result of exposures during the 1960s, 1970s, and 1980s.
Mesothelioma is a rare and fatal cancer of the lining of the chest and/or abdomen. While this disease is seldom observed in the general population, it appears frequently in workers exposed to asbestos.

Because of past exposures, mesothelioma is the #1 cause of occupation-related death in construction.

Lung cancer appears quite frequently in people exposed to asbestos dust. While science and medicine have not yet been able to explain precisely why or how asbestos causes lung cancer, it is clear that exposure to asbestos dust can increase the risk of this disease. Studies have shown that the risk to asbestos workers is roughly five times greater than for people who are not exposed to asbestos.
Cigarette smoking, another cause of lung cancer, multiplies the risk. Cigarette smoking and asbestos combine to produce a synergistic effect. Research has shown that the risk of developing lung cancer was fifty times higher for asbestos workers who smoked than for workers who neither smoked nor worked with asbestos.

Asbestosis is a disease of the lungs caused by scar tissue forming around very small asbestos fibres deposited deep in the lungs. As the amount of scar tissue increases, the ability of lungs to expand and contract decreases, causing shortness of breath and a heavier workload on the heart. Ultimately, asbestosis can be fatal.

Other illnesses – There is some evidence of an increased risk of cancers of the gastrointestinal tract and larynx. However, the link between asbestos exposure and the development of these illnesses is not as clear as with lung cancer or mesothelioma.
The diseases described above do not respond well to current medical treatment and, as a result, are often fatal.
Asbestos may cause skin irritation and a wartlike condition which can be prevented by wearing normal clothing. Asbestos does not cause skin cancer.

Significant exposure to asbestos puts you at risk for developing pleural plaques (scarring of the pleura—the lining of the lung). Pleural plaques are an indicator of previous exposure to asbestos and can make breathing difficult. Some researchers believe that there is evidence that workers with pleural plaques are at risk of developing other asbestos-related diseases such as lung cancer or mesothelioma. If you develop pleural plaques you should inform your physician about your exposure to asbestos.

Pre-Employment Medical Examination

Before starting as an asbestos worker, it is recommended that the prospective worker go through a pre-employment medical examination. The examination is to see if the worker has a pre-existing respiratory disease (such as asthma or evidence of impaired lung function) that may prevent the worker from using respiratory protection.

Typical Locations

TABLE 1 — ASBESTOS PRODUCTS IN CONSTRUCTION			
Product	Residential	Commercial/ Institutional	Industrial
Sprayed-On Fireproofing		XX*	
Pipe and Boiler Insulation	X	X	XX
Loose Fill Insulation	X		X
Vermiculite Insulation	X		
Asbestos Cement Products	X	X	X
Acoustical Plaster	X	X	
Acoustical Tiles	X	XX	
Vinyl Asbestos Tiles	X	X	
Gaskets		X	XX
Roofing Felts	X	X	X
Asphalt/Asbestos Limpet Spray			X
Drywall Joint-Filling Compound	X	X	
Coatings and Mastics	X	X	X

*Extensive use

Identifying Asbestos Containing Material

Although the only true method of identifying asbestos is by microscopic analysis of samples, several rules of thumb indicate whether it's likely that asbestos is present.

The Age Of The Building Or Equipment

Asbestos pipe and boiler insulation was used extensively in all sectors of the industry until the 1970s, when substitutes such as fibreglass, mineral wool, rock wool, and refractory ceramic fibre became more economical and less hazardous. Buildings and installations dating from before that period may contain asbestos in different forms.

Since the late 1970s, many owners of processes have upgraded their insulation. The original asbestos insulation may have been covered by some other material (e.g., fiberglass or refractory ceramic fibre) and a surface inspection may not reveal any underlying asbestos. In the case of fireproofing, 1974 marks the last major use of asbestos for this application.

The Type Of Construction

Structural steel frame buildings require fireproofing to protect the integrity of the structure until occupants can be evacuated. This resulted in widespread use of sprayed-on or trowelled-on fireproof coatings, most of which contained chrysotile asbestos. Reinforced concrete structures do not normally require additional fireproofing since the concrete protects the reinforcing steel which provides the critical structural support. However, composite steel pan/concrete floor construction was often fireproofed with asbestos. In low-rise residential construction, the use of friable asbestos material is usually limited to pipe and boiler insulation as described above.

The Nature Of The Equipment

Asbestos insulation materials were used on equipment exposed to extreme conditions such as high temperatures and corrosive environments. As a result, asbestos can be anticipated on high pressure steam lines, "hot" process piping, and refractory linings in furnaces and kilns.

Asbestos cement sheeting was often used in industrial settings for roofing, siding, and splash protection from corrosive material.

The Appearance Of The Material

While mineral wool, calcium silicate, and asbestos are quite similar in appearance, other materials such as fibreglass are noticeably different. This fact can be used to eliminate certain materials from consideration and analysis.

In the case of pipe insulation, the corrugated type of material commonly called "air-cell" insulation was almost exclusively made with a significant amount of asbestos. The factors in section 4.1 and 4.4 (above), along with a review of original plans and specifications, can be used by the client or the client's representative in conducting an inspection and preparing the required report.

Any suspect materials which cannot be determined to be asbestos or are not treated as asbestos-containing material (ACM) must be sampled and microscopically analyzed (U.S. EPA Test method EPA/600/R-93/116) to determine:

- Whether the material is ACM
- The type of asbestos
- The percentage of asbestos present

Overview Of The Asbestos Legislation That Applies To Asbestos Work In Ontario

Ontario Regulation 278/05 (Designated Substance—Asbestos on Construction Projects and in Buildings and Repair Operations) under the Occupational Health and Safety Act (OHSA) outlines safe work measures and procedures and respiratory protection for workers who may encounter asbestos-containing material (ACM) in the course of their work.

Restriction Of Sprayed Material And Thermal Insulation

Spraying material containing more than 0.1% asbestos or the use of thermal insulation containing more than 0.1% asbestos is prohibited.

Classification Of Type 1, Type 2, And Type 3 Operations

The Ministry of Labour uses the following five factors to categorize the asbestos-related activity into one of three types: Type 1, Type 2, or Type 3. Think of Types 1, 2, and 3 as describing low-, medium-, and high-risk work.

1) Nature Of Material

Friable products such as fireproofing and thermal insulation can release fibres very easily, whereas non-friable products will generally release fibres only when they are:

- Cut
- Shaped
- Otherwise worked with power tools

- Deliberately crumbled or pulverized

Compared to chrysotile, amphiboles such as amosite are not as easily controlled by water and thus tend to generate more dust during removal

Some studies show that amphibole fibres (crocidolite, amosite, tremolite) stay in the lungs longer than serpentine (chrysotile) fibres. This tendency may account for the greater toxicity (harmfulness) of amphibole fibres.

2) Nature of activity
This can greatly affect the degree of hazard. For example, cutting asbestos cement products with a power tool creates much more dust than scribing and breaking.

3) Application of water
Using water to prevent the creation and spread of dust is a practical control in many cases. It is not practical, however, in areas where wetting would create a hazard or cause damage. In such circumstances, dry removal is allowed.

4) Size of the project or duration of exposure
Asbestos diseases are dose-related: the greater the exposure in duration and/or intensity, the greater the risk. Short exposures to any given amount of asbestos will usually be less significant than longer exposures.

5) Risk to bystander
The hazards of exposure must be considered for both workers and other people not directly involved in the asbestos project. For instance, handling asbestos outdoors or pre-demolition does not pose the same risk to bystanders as handling it in an occupied building where the dust may recirculate.
The classification and control procedures for carrying out Type 1, 2, and 3 operations are outlined in sections 9, 10, and 11 of this manual.

Training And Certification Requirements

General Asbestos Awareness Training Requirement

Anybody who works in a Type 1, Type 2, or Type 3 asbestos operation must be trained by a competent person on the following:

- The hazards of asbestos exposure
- The purpose, inspection, maintenance, use, fitting, cleaning, disinfecting, and limitations of respirators
- Personal hygiene and correct procedures for work with asbestos
- How to use, clean, and dispose of protective clothing

Certification Requirements For Type 3 Operations

As of November 1, 2007, **workers** and **supervisors** must be certified before they can do Type-3 asbestos work or supervise Type-3 work. Certification is not required for

Workers in Type 1 or Type 2 operations

Workers entering Type 1, 2, or 3 work areas to perform work not related to theasbestos removal operation.

The workers that do not require certification are, however, required to have asbestos awareness training.

Workers and supervisors must have their original certification cards available at the work site when they are working. Ministry of Labour Inspectors may ask a worker to produce their original card plus appropriate identification.

Notifying the Ministry of Labour (MOL)

Informing The Ministry Of Labour Of Type 3 Operations And Type 2 Glove-Bag Operations

You must notify the Ministry of Labour (MOL), orally and in writing, before beginning a Type 3 operation, or before beginning a Type 2 operation in which one square metre or more of insulation is to be removed using a glove bag. The written notice must include

- The name and address of the person giving the notice
- The name and address of the owner of the place where the work will be done
- The exact address and location where the work will be done
- A description of the work that will be done
- The starting date and expected duration of the work

Type 1 Asbestos Operations

Type 1 operations include the following:

- Installing or removing less than 7.5 square metres of ceiling tile containing asbestos (81 square feet, or ten 4-foot x 2-foot ceiling tiles) without it being broken, cut, drilled, abraded, ground, sanded, or vibrated.
- Installing or removing non-friable asbestoscontaining material, other than ceiling tiles, without it being broken, cut, drilled, abraded, ground, sanded, or vibrated.
- Breaking, cutting, drilling, abrading, grinding, sanding, or vibrating non-friable asbestos-containing material if a) you wet the material, **and** b) you use only nonpowered hand-held tools.
- Removing less than one square metre of drywall where asbestos joint-filling compound was used.

If these operations are done properly, it is unlikely that exposure will exceed acceptable limits. This is why the use of respirators is optional for Type 1 work.

Controls For Type 1 Operations

- Eating, drinking, smoking, and chewing gum are prohibited.
- If a worker requests a respirator and protective clothing for Type 1 operations, the employer must provide them. The respirators must be the proper type (see respirator chart, Appendix A) with filters suitable for asbestos. Once workers request respirators, they must wear them. Protective clothing must be impervious to asbestos fibres. Once workers request protective clothing, they

must wear it. Refer to section 11.3 of this manual for more information on the use, care, and disposal of respirators and protective equipment.

Protective clothing is used for two reasons:

- To guard unprotected workers, their families, and the public from secondary exposures to asbestos.
- To prevent transfer of dust and waste into clean areas.

- Members of asbestos workers' families have developed illnesses from the dust brought home in work clothes.

- Before beginning work, visible dust must be removed by wiping with a damp cloth or by vacuuming with a special HEPA*-filtered vacuum.

- Never use compressed air to clean asbestos dust off surfaces. This just blows the fibres into the air.

- When you wish to cut, shape, or drill the non-friable materials as mentioned in Section 9.1 #3 (above), you must wet the work (water plus wetting agent—see box below) and use only hand tools such as nibblers, rasps, files, shears, knives, hand drills, or hand saws. Using hand tools may create some dust, but wetting the material will prevent the dust particles from becoming airborne.

- You must use a dropsheet (typically 6-mil polyethylene) below the work area to help control dust.

- All asbestos dust and waste must be cleaned up regularly and frequently (before it dries out) using a HEPA vacuum or by damp-mopping or wet-sweeping.

- Before leaving the work area, workers must damp-wipe or HEPA-vacuum their protective clothing to remove any surface contamination. Workers must damp-wipe their respirators before taking them off.

- Asbestos waste and disposable coveralls must be placed in dust-tight containers and labeled with warning signs (see sections 11.7, 11.12, and 12 for more information on clean-up and disposal).

- You must never reuse dropsheets. After the work is done, dropsheets must be wetted or damp-wiped and then folded so that any residual dust or scrap is contained inside the folds. Dispose of dropsheets as asbestos waste.

- Barriers and portable enclosures that are rigid and will be reused must be cleaned by damp-wiping or HEPA-vacuuming. Barriers and enclosures that are not rigid or cannot be cleaned must not be reused.

- Containers must be cleaned by damp wiping or HEPA-vacuuming before being removed from the work area. You must dispose of waste at a landfill site that will accept asbestos (see sections 11.12 and 12).

- A washbasin, soap, water, and towels—or a similarly-equipped clean-up facility—must be provided for workers so that they can wash their hands and faces upon leaving the work area. Workers must also wash before eating, drinking, smoking, or any such activities. This will help reduce secondary exposure to asbestos.

Type 2 Asbestos Operations

- Exposure to asbestos is likely in Type 2 operations. You need controls to protect workers and others nearby. Type 2 operations include the following:

- Removing all or part of a false ceiling in buildings containing sprayed asbestos fireproofing if it is likely that asbestos fibres are resting on top of the ceiling. This is likely when fireproofing is deteriorating or damaged.

- Removing or disturbing less than 1 square metre of friable asbestos materials—for example, repairing an insulated pipe joint or removing some fireproofing to fasten a new pipe hanger.

- Enclosing friable asbestos insulation to prevent further damage or deterioration. 4. Applying tape, sealant, or other covering (by means other than spraying) to pipe or boiler insulation.

- Installing or removing more than 7.5 square metres of ceiling tile containing asbestos, without it being broken, cut, drilled, abraded, ground, sanded, or vibrated.

- Breaking, cutting, drilling, abrading, grinding, sanding, or vibrating non-friable asbestos-containing material if the material is not wetted and the work is done only with non-powered hand-held tools.

- Removing one square metre or more of drywall where the joint-filling compound contains asbestos.

- Working on non-friable asbestos with power tools that are attached to dust collecting devices equipped with HEPA filters.

- Using a glove bag to remove asbestoscontaining insulation.

- Cleaning or removing filters used in airhandling equipment in a building with sprayed asbestos fireproofing.

- Any other operation that is not Type 1 or Type 3, but one that may cause exposure to asbestos.

Controls For Type 2 Operations

- Workers involved in Type 2 operations must wear a NIOSH-approved respirator as identified in the respirator chart, Appendix A. The employer must provide workers with training on the individual respirators they will be using. The training must cover

    - Selection of respirator
    - Fitting
    - Inspection
    - Use
    - Care and maintenance
    - Limitations of the respirator.
    - Cleaning and disinfecting

The equipment must be maintained according to the employer's written procedures and must be consistent with the manufacturer's instructions. The manufacturer can provide cleaning and disinfecting products

which will not damage the respirators. Any damaged or worn parts must be replaced before a worker uses the equipment.
Wherever possible, the respirators should be assigned to individual workers for their exclusive use. Otherwise, the respirators must be properly cleaned and disinfected before being used by someone else.

- Workers must wear protective clothing impervious to asbestos with tight-fitting cuffs at the wrists, ankles, and neck, as well as a hood or head cover. This usually means one-piece disposable coveralls—ones which are easy to clean of surface contamination before you throw them away. Torn or damaged clothing must be repaired or replaced. We recommend you use laceless, pull-on rubber boots. They can be washed off later or disposed of as contaminated waste.

  Protective clothing is required for two reasons:

  - To prevent transfer of dust and waste into clean areas.

  - To guard unprotected workers, their families, and the public from secondary exposures to asbestos. Members of asbestos workers' families have developed illnesses from the dust brought home in work clothes.

- Only those workers wearing the required respirators and protective clothing are permitted in the work area.

- You must never eat, drink, smoke, or chew gum in the work area.

- Never use compressed air to remove asbestos dust from a surface.

- You must wet asbestos-containing material before you remove it to lessen the chance of creating dust—unless wetting would cause a hazard or damage.

- You must add a wetting agent to the water.

- Any dust on exposed surfaces must be cleaned by damp-wiping or HEPA vacuuming before starting work which may disturb the dust.

- Warning signs are required for all Type 2 activities.

- For ceiling removal (to gain access to a work area) and for removal of less than 1 square metre of friable asbestoscontaining material indoors, enclosure
- must be erected around the area to prevent the spread of asbestos dust. If
- your enclosure is opaque, it must have a transparent window to allow observation of the work. The ventilation system must be disabled and sealed off if the inlets or exhausts are within the enclosed area. For other Type operations, 6-mil polyethylene dropsheets should be adequate.

- You must put waste asbestos, disposable clothing, the enclosure and barrier materials (such as polyethylene sheeting), and any other contaminated items into dust-tight containers labeled with warning signs. The containers must be dampwiped or HEPA-vacuumed to remove any surface contamination before you take the containers out of the work area. Refer to Sections 11.7, 11.12, and 12 in this manual for information on clean-up and waste disposal.

- Any dust or waste must be cleaned up by damp-wiping or HEPA-vacuuming before it can dry out and pose a hazard. You must never reuse dropsheets. Dropsheets and enclosures must be decontaminated and wetted before disposal.

- After the work is completed, barriers and portable enclosures that are rigid and that will be reused must be cleaned by damp wiping or HEPA-vacuuming. Barriers and portable enclosures must not be reused unless they are rigid and can be cleaned.

- Before leaving the work area, workers must damp-wipe or HEPA-vacuum their protective clothing to remove any surface contamination. Workers must damp-wipe their respirators before taking them off.

- A washbasin, water, soap, and towels must be provided for workers to wash their hands and faces before leaving the work area. Workers must also wash before eating, drinking, smoking, or any such activities.

Glove Bag Operations

All the procedures that apply to Type 2 operations also apply to glove bag operations. In addition, you must do the following.

- Separate the work area from the rest of the workplace by walls, barricades, fencing, or other suitable means.

- Disable the mechanical ventilation system serving the work area and seal all openings or voids, including ventilation ducts and windows to and from the work area.

- Place polyethylene dropsheets below the work area.

- The glove bag must be strong and large enough to hold the material you're removing.

- You must not use a glove bag if you can't make a proper seal because of the condition of the insulation, the temperature of the surface, or the type of jacketing.

- Check the glove bag for damage or defects.

- Be careful not to puncture the glove bag.

When you've finished removing the asbestos;

Damp-wipe and HEPA-vacuum the tools

Wet down the inside walls of the glove bag

Thoroughly wet the material inside the glove bag

Wipe down the pipe (or whatever the asbestos was removed from) and seal it with a suitable encapsulant

Evacuate air from the bag using a HEPAvacuum and place the glove bag, with the waste inside, in a suitable dust-tight container

Clean up the work area by damp-wiping or HEPA-vacuuming.

Type 3 Operations

Type 3 operations include the following:

- Removing or disturbing more than 1 square metre of friable asbestos-containing material.
- Spraying a sealant onto friable asbestos material.
- Cleaning or removing air-handling equipment in buildings with sprayed asbestos fireproofing.
- Repair, alteration, or demolition of kilns, metallurgical furnaces, and other installations with asbestos refractory materials.
- 5Disturbing non-friable asbestos material in any way with power tools not attached to dust collectors equipped with HEPA vacuums.
- Repair, alteration, or demolition of buildings which are or were used to manufacture asbestos products unless the asbestos was cleaned up and removed before March 16, 1986.

Controls For Type 3 Operations

Type 3 operations require the most precautions because they can release substantial amounts of asbestos dust. Controls for Type 3 operations include requirements for

- Worker protection including protective clothing, respiratory protection, and decontamination facilities
- Site preparation including enclosure and isolation of the work area and negative air units
- Removal, clean-up, and disposal of waste including dust-suppression techniques

SECTION 15 - Safe Operating Procedures

Interprovincial Insulation will identify work environment health and safety hazards by identifying and listing all jobs, occupations and common hazards in the work environment. The main activities involved in each occupation, job or where common hazards exist will be identified.
The hazards identified will be rated for loss potential and controls will be developed and implemented to prevent the hazards from leading to injury/illness. A safe operating procedure for each main activity will be developed, and all workers who perform these activities will be informed and instructed on the safe operating procedures. Furthermore, these safe operating procedures should be reviewed, at a minimum, on an annual basis
Interprovincial Insulation will ensure that copies of the safe operating procedures are available at each workplace.
At Interprovincial Insulation it is the responsibility of all employees to work in a safe manner and use all equipment, machinery and other devices safely. The following procedure has been developed to help ensure that safe operation of the (name of equipment).

- The pre-shift inspection checklist must be completed before using the machine for the first time during each shift. Any defects found must be reported immediately to the supervisor and corrected before operating the machine.

- No employee is to operate the machine unless they have received adequate training and have read and understood the manufacturer's operating manual.

- The machine must be used solely for the intended purpose. Never allow unauthorized personnel to operate the machine.

- Never operate or work near the machine while under the influence of drugs or alcohol. Medication may decrease awareness and delay reactions.

- The operator must not be wearing any jewelry, gloves or loose fitting clothing while operating the machine. Long hair must be suitably confined to prevent entanglement.

- Ensure the area surrounding the machine is unobstructed. Always be aware of any human movement around the machine. Maintain a clear view of the work area during operation.

- Ensure all emergency stop buttons/devices are accessible and functioning properly.

- The operation of a machine without all safety guards/devices fully intact is unacceptable. Always keep hands and other objects clear of moving parts.

- Specific notation(s) required.

- Never operate the machine with broken or damaged hydraulic lines, pneumatic lines or electrical conductors. Keep all electrical enclosures secured to prevent unauthorized entry.

- Before starting the machine, make sure no objects have been forgotten on or inside the machine. Follow proper start-up procedures for the machine.

- Never leave the machine running unattended. Ensure the machine is properly shut off when not in use.

- Follow proper Lockout/Tagout procedures for the machine if there is any maintenance that must be performed or if there is a jam that must be cleared.