Alberta Fire & Flood
Restoration Service

HEALTH, SAFETY & ENVIRONMENT MANUAL

FEBRUARY 2015

EMERGENCY PROCEDURES

1		**TAKE COMMAND** Assign the following duties to specific personnel.
2		**PROVIDE PROTECTION** Protect the accident scene from continuing or further hazards – for instance, traffic, operating machinery, fire or live wires.
3		**GIVE FIRST AID** Give first aid to the injured as soon as possible. Information on basic first aid is included in this manual.
4		**CALL AN AMBULANCE** Call an ambulance and any other emergency services required. In some locales, dialing 911 puts you in touch with all emergency services. Meet and direct the ambulance to the accident scene
5		**GET NAME OF HOSPITAL** For follow-up, find out where the injured is being taken.
6		**ADVISE MANAGEMENT** Inform senior management. They can then contact relatives, notify authorities, and start procedures for reporting and investigating the accident.
7		**ISOLATE THE ACCIDENT SCENE** Barricade, rope off or post a guard at the scene to make sure that nothing is moved or changed until authorities have completed their investigation.

Emergency Contact Numbers

FIRE/POLICE/EMS	911
Alberta One Call	1.800.242.3447
Atco Gas 24 Hour Emergency	403.245.7222
Dangerous Goods	1.800.272.9600
Enmax Emergency Calls	403.514.6100
Environmental Spills, etc.	1.800.222.6514
Poison Control	403.944.1414
Owner - Wayne Gamester	403.862.4143
Owner - Fletcher Armstrong	403.828.4143
Owner - Dave Smith	403.815.4143
General Manager: Pat Martens	403.808.2561

Calgary Hospitals

Foothills	Peter Lougheed	Rockyview General
1403 – 29 St. N.W.	3500 - 26Ave. N.E.	7007 – 14 St. S.W.
403.944.1312	403.943.4999	403.943.3449

HEALTH & SAFETY MANUAL

FOR EMPLOYEES AND CONTRACTORS

This book is issued to:

_____

Date of issue:

_____

Keep this copy in your work area as a resource to help you work safely.

Table of Contents

SECTION 1 - COMPANY SAFETY MANAGEMENT SYSTEM

CORPORATE HEALTH & SAFETY MANAGEMENT SYSTEM

Part A: Health and Safety Management System policy statement

Alberta Fire and Flood's health and safety policy is a statement of principles and general rules that serve as guides for action. Senior management is committed to ensuring that the policy is carried out with no exceptions. The health and safety policy has the same importance as the other policies of the organization.

The policy statement should include:

1. management's commitment to protect the safety and health of employees
2. the objectives of the program
3. the organization's basic health and safety philosophy
4. who is accountable for occupational health and safety programs
5. the general responsibilities of all employees
6. that health and safety shall not be sacrificed for expediency
7. that unacceptable performance of health and safety duties will not be tolerated

Part B: The Health and Safety Management System contains the following elements

1. Individual responsibility
2. Joint occupational health and safety committee
3. Health and safety rules
4. Correct work procedures
5. Employee orientation
6. Training and Development
7. Workplace inspections
8. Reporting and investigating accidents/incidents and near misses
9. Emergency Response Procedures (ERP)
10. Medical and first aid
11. Health and safety promotion
12. Workplace specific items

Part C: The Health and Safety Management System identifies responsibilities

1. Health and safety is the joint responsibility of management and workers. Management is accountable for non-compliance to health and safety

legislation. All health and safety activities are based on specific individual responsibilities, most of which can be found in the pertinent legislation. However, often these duties are not well known. This situation can be improved by including details of specific individual responsibilities in the safety program.

2. Responsibility may be defined as an individual's obligation to carry out assigned duties. Authority implies the right to make decisions and the power to direct others. Responsibility and authority can be delegated to subordinates, giving them the right to act for superiors. It is important to note that, while some responsibilities can be delegated, the superior remains accountable for seeing that they are carried out.
3. Individual responsibilities apply to every employee in the workplace, including Senior Management. When a safety coordinator has been appointed, it is best to spell out his/her responsibilities as well. All employees will then know exactly what is expected of each individual in health and safety terms.
4. To fulfill their individual responsibilities, the people must:
    a. know what these responsibilities are (communication required)
    b. have sufficient authority to carry them out (organizational issue)
    c. have the required ability and competence (training or certification required)
5. Once all these criteria have been met, safety performance can be assessed by each individual's supervisor on an equal basis with other key job elements. Health and safety is not just an extra part of an employee's job: it is an integral, full-time component of each individual's responsibilities.

Part D: Health and Safety Responsibilities for Front-Line Workers

1. Using personal protection and safety equipment as required by the employer.
2. Following safe work procedures and safe work practices.
3. Knowing and complying with all regulations.
4. Reporting any injury or illness immediately.
5. Reporting unsafe acts and unsafe conditions.
6. Participating in joint health and safety committees.
7. Participating in all tail gate safety meeting.
8. Participating in all monthly safety meeting.
9. Ensuring that they are competency in performing the tasks that have been assigned to them by their immediate supervisor.
10. Ensuring that their competencies have been validated by a Project Manager.

Part E: Health and Safety responsibilities for Front Line Supervisors

1. Instructing workers to follow safe work practices.
2. Enforcing health and safety regulations.
3. Correcting unsafe acts and unsafe conditions.
4. Ensuring that only authorized, adequately trained and competent workers operate equipment.
5. Reporting and investigating all accidents/incidents/near misses.
6. Inspecting own area and taking remedial action to minimize or eliminate hazards.
7. Ensuring equipment is properly maintained.
8. Promoting safety awareness in workers.
9. Assessing and validating front line workers in their area.

Part F: Health and Safety Responsibilities for Management

1. Providing a safe and healthy workplace
2. Establishing and maintaining a health and safety program
3. Ensuring workers are trained or certified, as required
4. Reporting accidents and cases of occupational disease to the appropriate authority
5. Providing medical and first aid facilities
6. Ensuring personal protective equipment is available
7. Providing workers with health and safety information
8. Supporting front line supervisors in their health and safety activities
9. Evaluating health and safety performance of supervisors

Part G: Health and Safety Responsibilities for Safety and Quality Manager

1. Advising all employees on health and safety matters
2. Coordinating health and safety activities
3. Collecting and analyzing health and safety statistics
4. Providing and coordinating health and safety training
5. Conducting research on special health and safety issues
6. Conducting workplace health and safety assessments
7. Ensuring that AFF meets and/or exceeds the rules and regulations of the regulatory bodies.
8. Coordinating the monthly Safety Meetings

Part H: The Joint Health and Safety committee shall include:

1. Representatives of all workers and are active participants in the development, implementation, and monitoring of all phases of the health and safety program
2. The Terms of Reference for the Joint Health and Safety Committee could include:
    a. senior management's commitment to act on the committee's recommendations
    b. how long a person will serve on the committee
    c. how a committee member will be chosen, etc.
    d. duties and responsibilities of the committee members
    e. meeting schedule for the committee/minutes, etc.
    f. identify the health and safety issues in the workplace and coordinate the corrective actions need to remedy the unsafe conditions
3. Safety and Quality Manager will serve as the chairperson for the committee and will report directly to Senior Management.

Part I: Establishing Safe Job Procedures

1. Governmental health and safety regulations represent minimum requirements. In almost all cases, organizations will have to augment these regulations with specific rules. These rules must be followed to achieve a healthful and safe workplace.
2. Guidelines for establishing workplace health and safety rules:
    a. rules should be specific to health safety concerns in the workplace
    b. the joint occupational health and safety committee should participate in their formulation
    c. rules should be stated in clearly understandable terms
    d. rules are best stated in positive terms ("employees shall" not "employees shall not")
    e. the reasons for the rule should be explained
    f. rules must be enforceable, since disregard for one rule will lead to disregard for others
    g. rules should be available to all employees in written form, in the languages of communication of employees
    h. rules should be periodically reviewed to evaluate effectiveness and to make changes for improved effectiveness
3. Compliance with health and safety rules are a condition of employment. Rules must be explained to new employees when they start work or if they are transferred or retrained. After a suitable interval, these employees

should be briefed to ensure they understand the rules applicable to their work.

4. The employer must establish procedures for dealing with repeat rule violators. Supervisors are responsible for correcting unsafe acts, such as a breach of rules, and they must be supported in this duty. Points that should be considered in establishing procedures on this issue are:
    a. ensure that employees are aware of the rule
    b. ensure that employees are not encouraged, coerced, or forced to disregard the rule by fellow employees
    c. all rules are to be observed
    d. no violation will be disregarded
    e. the role of discipline is that of education, not punishment
    f. action is taken promptly
    g. while having guidelines for penalties for the first offence or infractions may be desirable, some flexibility is required when applying the guidelines since each case will vary in its circumstances
    h. action is taken in private, and recorded.

Part J: How do you establish correct work procedures?

1. Correct work procedures are the safest way of doing a job, job instruction, monitoring performance, and accident investigation.
2. Job safety analysis (JSA), also known as "job hazard analysis", is the first step in developing the correct procedure. In this analysis, each task of a specific job is examined to identify hazards and to determine the safest way to do the job. Job safety analysis involves the following steps:
    a. select the job
    b. break down the job into a sequence of steps
    c. identify the hazards
    d. define preventive measures
3. The analysis should be conducted on all critical tasks or jobs as a first priority. Critical jobs include:
    a. those where frequent accidents and injuries occur
    b. those where severe accidents and injuries occur
    c. those with a potential for severe injuries
    d. new or modified jobs
    e. infrequently performed jobs, such as maintenance
4. Steps in conducting a Job Safety Analysis
    a. Job safety analysis is generally carried out by
        i. observing a worker doing the job

ii. identifying all the tasks that a worker performs in the workplace including technical and non-technical
iii. separating the critical to safety tasks from the non-critical tasks
iv. identify the knowledge, skills and abilities that is required by the worker to safely and successfully complete the assigned tasks
v. validate the Job Safety Analysis with other senior employees

5. Steps when Developing Effective and Safe Work Procedures
   a. A work procedure may consist of more than one specific task. In such cases, each separate task should be analyzed to complete a job safety analysis for that procedure.
   b. The final version of the correct work procedure should be presented in a narrative style format that outlines the correct way to do the job in a step-by-step outline.
   c. The steps are described in positive terms, pointing out the reasons why they are to be done in this way.
   d. Reference may be made to applicable rules and regulations and to the personal protective equipment required, if any.
   e. Employees who carry out the tasks should be consulted when developing the procedure

Corporate Health and Safety Policy

The management of Alberta Fire & Flood Ltd. (AFF) is committed to safety on and off the worksite. This includes the protection of personnel, equipment, material and the environment against accidental or deliberate loss caused by injuries or accidents.

In fulfilling this commitment, Alberta Fire and Flood Ltd. will comply with all municipal, provincial and federal legislation.

Alberta Fire and Flood Ltd. has developed a comprehensive Health and Safety Manual outlining company policies, safe job procedures, safe work practices and programs to ensure adequate hazard identification, control and worker training is adhered to.

The management is dedicated to the maintenance of a safe and healthy work environment and will co-operate with and support the efforts of employees to achieve this goal.

Employees at every level, including management, are responsible and accountable for the company's overall safety initiatives. Complete and active participation by everyone, every day, in every job, is necessary for the safety excellence this company expects. Management supports the co-ordination and co-operation of all workers concerning safety on the job site.

An accident and injury free workplace is our goal. Through continuous safety and loss control effort, we can accomplish this.

- **The safety information in this policy does not take precedence over applicable government legislation, with which all employees should be familiar.**

PROJECT MANAGERS

1. Contribute to policies and procedures relating to the Alberta Fire and Flood Ltd. Safety Program. Maintains a commitment and philosophy that sets levels of expectations for safety performance throughout the corporation.
2. Maintains overall control of the safety and loss prevention program direction.
3. Ensures all established safety policies are administered and enforced in all areas.
4. Ensures that all field operations personnel are aware of and effectively practice the policies and procedures set out in this safety program.

SAFETY MANAGER

1. Responsible for daily administration of safety program.
2. Post all safety bulletins, safety posters and safety rules and regulations.
3. Complete all accident investigations, analysis and preparation of accident reports and summaries.
4. Ensure that pertinent safety reports are submitted as required.
5. Ensure that hazard assessments are performed on a regular and timely basis and are submitted to the safety coordinator.
6. Prepare description of identified unsafe conditions and the steps taken to correct these conditions.
7. Conducts site inspections on a regular basis.
8. Maintain a list of safety equipment purchased.
9. Will ensure all new employees have been orientated confirm and record all training received.
10. Prepare a copy of inspection reports on equipment.

11. Prepare a copy of filed safety inspection check lists.
12. Ensure that corrective action has been taken whenever deficiencies are identified.
13. Conduct all safety seminars, training and keep records of the same.
14. Maintain current knowledge of safety literature, regulations and codes of practice.
15. Chair monthly safety meetings, take minutes and provide management with copy.
16. Review safety and accident reports with the manager and Supervisor at least once a month.
17. Provide health education material or instruction to all onsite employees as required.
18. Develop agendas for Safety Agendas for Safety Meetings with input from management and workers.
19. Accompany OH&S officials during inspections or investigations.

SUPERVISORS (Crew Chiefs)

1. Hold regular toolbox meetings with the employees to review safety conditions and discuss safety concerns.
2. Provide a good example for employees by always directing and performing work in a safe manner.
3. Ensure that all subcontractors attend Alberta Fire and Flood Ltd. safety meetings.
4. Make daily observations of safety activities on the projects.
5. Be aware of hazards that exist for the short term. Temporary and new hire workers who are new to our industry should work with a competent worker to learn Alberta Fire & Flood policies and procedures.
6. Correct physical conditions, which are liable to cause or have caused incidents or near misses.
7. Report all accidents, incidents or near misses to determine the underlying causes.
8. Conduct regular inspections for unsafe practices and conditions and ensure prompt corrective action to eliminate causes of accidents.
9. Assist the Safety Manager to determine if safe work practices and safe job procedures are adhered to.
10. Provide each employee with information about the hazards on the job and how to avoid them.

11. Maintain a good housekeeping standard and assign responsibilities to workers for housekeeping and emergency response plans.
12. Report safety violations to the Safety Manager.
13. Ensure all worksites are equipped with mandatory safety equipment and all informational "posts" are visible and understood

WORKERS

1. To read, understand, and comply with this company's safety policy, safe work practices, procedures and rules.
2. To wear the safety equipment, personal protective devices and clothing required by regulations and Alberta Fire and Flood Ltd.
3. To notify the Supervisor of any unsafe conditions or acts that may be of danger to other workers or himself / herself.
4. To report all accidents and injuries to the Supervisor as soon a possible.
5. To take every reasonable precaution to protect the safety of other workers and himself / herself.
6. To know the location and use of all emergency and safety equipment on the worksite.
7. To know his or her role in an emergency situation.
8. Not to perform work without proper training or experience.

FIRST AID PERSONNEL

1. For all jobs the Safety Manager will appoint adequate person(s) to provide such first aid services as may be required given the nature of our industry and government regulations. The person(s) appointed to this position shall possess an appropriate certificate in first aid in accordance with the relevant Occupational Health and Safety regulations and must be available at all times to administer first aid. Each worksite will have a certified first aid provider on site.
2. Administer first aid as required.
3. Maintain a first aid log.
4. Requisition first aid supplies and equipment to the Safety Manager/Supervisor.
5. Coordinate the transportation of injured employees to a physicians' office or hospital.

SUB CONTRACTORS

1. Must read, understand and comply with Alberta Fire & Flood Ltd. safety policy, safe work practices, procedures and rules.
2. Must provide documentation to Alberta Fire & Flood Ltd. confirming all employees are properly trained.
3. Must wear the safety equipment, personal protective devices and clothing required by Alberta Occupational Health & Safety Regulations and Act.
4. Must provide information, instructions and assistance to Alberta Fire & Flood Ltd. staff in order to protect the health and safety of all workers.
5. Must begin work on developing a health and safety program for their company if one is not available while working on an Alberta Fire & Flood Ltd. job site.
6. Must notify Alberta Fire & Flood Ltd. of any unsafe conditions or act's that may exist on the project.
7. Must report all accidents, in writing immediately to Alberta Fire & Flood Ltd. and to investigate all accidents fully, and to advise Alberta Fire & Flood Ltd. on how to prevent similar accidents in the future.
8. Must carry out safety inspections / hazard assessments of their work site area to ensure a safe and healthy environment for all workers. These safety inspections / hazard assessments must be performed at least weekly or sooner depending on the work site situation. A copy of the safety inspections / hazard assessments must be delivered to Alberta Fire & Flood Ltd. within 72 hours.
9. Must be in attendance at required safety meetings.
10. Must conduct regularly tool box / tailgate meetings with their employees.
11. Must take every reasonable precaution to protect the safety of all workers on site.
12. Must cooperate with Alberta Fire & Flood Ltd. on safety issues to the best of their ability.
13. Must work in a conscientious manner and with regards to the health and safety of other workers who may be affected by their actions.
14. Must only perform the tasks that they are qualified for.
15. Must know the location and use of all emergency and safety equipment on the work site.
16. Must provide Alberta Fire & Flood Ltd. with a list of all employees trained in first aid, as well as any additional emergency training.

Administration - Safety Program Schedules							
	Weekly	Bi-Weekly	Monthly	Bi-Monthly	Quarterly	Semi-Annually	Annual
Written Inspection Schedule							First Quarter
Main Facility Inspection							Annually
Review of Previous Inspection of a Main Facility by Safety Manager							Annually
Written Safety Meeting Schedule							1st Quarter
General Safety Meetings	√						
Agenda for Safety Meetings	√						
Operations Safety Report by Project			√				
Management Response to Monthly Safety Report			√				
Emergency Respirator Equipment Check			√				
Respirator Maintenance	As per Manufacturer's Specifications						
Ladder Inspection	Prior to Use						
Fall Arrest Equipment	Before Each Shift						
Personal Protective Equipment	Prior to Use						

Administration - Safety Program Schedules							
	Weekly	Bi-Weekly	Monthly	Bi-Monthly	Quarterly	Semi-Annually	Annual
Powered Mobile Equipment	As per Manufacturer's Specifications						
Scaffolds and Temporary Work Platforms	Before First Use and every 30 calendar days during use						
Tools, Equipment and Machinery	Prior to use and as per Manufacturer's Specifications						
MSDS updates	Within 90 days if new hazard information becomes available						
Emergency Showers and Eyewash Stations	√					√	√
Emergency Response Drills							√
Incident/Accident and Loss Statistics Analysis Compilation							√
Management - Participate in Safety Meetings							√
Management - Participate in Planned Inspections							√
Management - Participate in ERP drills							√
Management - Review ERPs							√

Administration - Safety Program Schedules							
	Weekly	Bi-Weekly	Monthly	Bi-Monthly	Quarterly	Semi-Annually	Annual
Supervisors - Assist in the Development of Health and Safety Plans	√						
Supervisors - Attend Safety Meetings	As per Schedule						
Supervisors - Identify and update individual training needs						√	
Workers - Inspect, repair and maintain all emergency/rescue equipment			√				
Workers - Participate in an Emergency Response Drill							√
Workers - Participate in all safety meetings	Must attend at least 80% of all safety meetings						
Contractors - Site Orientations	Every new job site						
Contractors - Inspect worksites, equipment, tools and vehicles	√						
WHMIS Certification	Every three years						
First Aid and CPR	Every three years						
TDG Certification	Every three years						
Fire Extinguisher Training	Within first year, and every three years thereafter						

SECTION 2 - JOB SITE HAZARD ASSESSMENTS

HAZARD ASSESSMENT IDENTIFICATION AND CONTROL POLICY

This section will discuss the policies and procedures of Alberta Fire & Flood Ltd. regarding Hazard Assessment Identification and Control. Alberta Fire & Flood uses hazard assessment as a means of determining and prioritizing hazards that may be present on the job. Hazard identification and control is critical in development of Safe Work Practices and Job Procedures and are an important step in the balance of safety within our organization and on our sites. It is through hazard identification, assessment, elimination and control that the frequency and severity of accidents (risk) is reduced or removed. Reducing risk to people, property or the environment, results in a reduction in both human and financial costs.

By reviewing projects, potential hazards can be predetermined and addressed prior to putting any staff on site. This also gives Alberta Fire & Flood the ability to inform workers of any existing or potential hazards. Hazard Assessments help us to identify areas that continue to cause concern and this allows Alberta Fire & Flood to establish administrative or engineered controls or Safe Work Practices or specific PPE to decrease or eliminate any potential for loss.

Hazard Assessments consist of three parts:

1. Identifying the task (drywall, mould removal, scaffolding).
2. Identifying exposure to people, property or environment (for instance when the sheets of drywall are being brought into the house).
3. Identifying the action(s) required to eliminate or reduce the risk (PPE, pre-job planning).

Hazard Classes

Hazards are separated into three classes:

Class A Hazard: Conditions or practices with the potential for permanent disability, loss of life or body art and/or extensive loss of structure, equipment or material. This type of hazard may require shutting down a portion of the work or a piece of equipment.

Class B Hazard: Conditions or practices with a potential for serious injury or property damage that is disruptive, but less severe than ‘Class A’.

Class C Hazard: Conditions or practices with the potential for minor injury of illness of non-disruptive property damage.

1. Hazard Assessments will be performed on all job sites. All workers will be trained to identify and implement the necessary control or inform the Crew Chief for further assessment and control. All workers will be informed of Alberta Fire & Flood Ltd. Policy and Procedure. Every worker is required to perform Hazard Assessments regularly. If a worker is untrained in proper procedures, he will perform the Hazard Assessment with a competent worker.
2. Every job will have at least one Hazard Assessment performed. No job is too minor to determine hazards.
3. Hazard Assessments will be done on a daily basis, prior to work commencing and/or whenever the scope of work changes.
4. Hazard Assessments will be dated and the job site number and location will be on it. Hazard Assessments will be signed by all workers who performed it. Corrective Actions should be on the Hazard Assessment.
5. Hazard Assessments will be discussed with ALL of the workers present and will be posted in a prominent place and readily available.
6. Alberta Fire & Flood Ltd. Hazard Assessment Policy will be posted at all jobsites.
7. All visitors to the jobsite will be immediately directed to the Hazard Assessment by their escort and existing and/or potential hazards discussed. The Jobsite Visitor Sign-In Sheet will acknowledge that visitors are aware of the hazards.

Responsibilities

Safety Manager

1. The Safety Manager has the prime responsibility for ensuring that controls are continually being developed and implemented and that compliance is achieved.
2. All Hazard Assessments will be reviewed by the Safety Manager to ensure appropriate content and quality and to confirm that appropriate measures have been taken to eliminate or control the risks.
3. The Safety Manager is also responsible to ensure that staff is trained to better assess the hazards and properly document the information obtained.

Crew Chiefs

1. Crew Chiefs are responsible to ensure that all workers are trained in performing Hazard Assessments and the reporting process.

2. Crew Chiefs are responsible to review and sign all Hazard Assessments prior to submission to the Safety Coordinator and to ensure that submission of Hazard Assessments is done on no less than a weekly basis.
3. When a hazard has been identified, the Crew Chief should be notified immediately and he will investigate the hazard and/or control implemented.
4. The Crew Chief will contact the Project Manager to discuss elimination or control of all Priority 1 Hazards identified if these hazards have not been pre-determined and addressed prior to the start of the job/task.

Workers

1. Workers are responsible to inform their Crew Chief or Safety Manager if they feel they are not adequately trained in the Hazard Assessment process.
2. Workers are responsible for identifying and reporting any and all existing or potential hazards that they may encounter during the workday.
3. If a worker is uncertain or uncomfortable with a hazard or the control of that hazard, they must inform the Crew Chief or Project Manager prior to starting or returning to the task.

Sub-Contractors

1. Sub-contractors are required to perform Hazard Assessments in accordance with Alberta Fire & Flood Hazard Identification and Control Policy.
2. Sub-contractors are required to discuss with the Alberta Fire & Flood Crew Chief any hazards identified and furthermore, are required to submit a copy of their Hazard Assessment to Alberta Fire & Flood on no less than a weekly basis.
3. Sub-contractors are responsible in ensuring that their workers are trained in Hazard Identification and Assessment/Control.

- **The safety information in this policy does not take precedence over applicable government legislation, with which all employees should be familiar.**

Conducting a Hazard Assessment

Proceed as follows:

1. Assemble all personnel to be involved.
2. Discuss possible hazards prior to starting.
3. Tour the entire operation.
4. Look for possible hazards originating with environment, material, equipment and people.
5. Keep asking yourself " WHAT IF "

6. Mark every area on the assessment form that pertains to your operation.
7. Review your findings.
8. Rank the items on a " WORST FIRST " basis.
9. Using the company safety manual, start setting up a plan to control the hazards that have been identified.

Hazard Control

An effective safety program will use three general approaches to hazard control.

A. Administrative Control
B. Engineering Control
C. Personal Protective Equipment

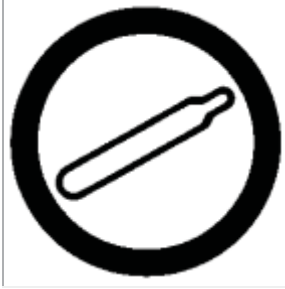
Equipment

The administrative control of this assessment generally deals with directing people and includes broad topics such as policies procedures and training generally brought forward and put into place by management.

Hazard Symbols

Memorize and Recognize, Your Health Depends On It.

There are six classes of hazards. They are compressed gas, flammable and combustible material which contains 6 separate divisions, oxidizing material, poisonous and infectious material, which contains 3 separate sub-classes, corrosive materials and dangerously reactive material. Each of the classes is represented by a hazard symbol.



CLASS A: COMPRESSED GAS
This class includes compressed gases, dissolved gases, and gases liquefied by compression or refrigeration.

Example: Acetylene and Oxygen are gases at room temperature.

CLASS B: FLAMMABLE AND COMBUSTIBLE MATERIAL

This class includes solids, liquids, and gases capable of catching fire in the presence of a spark or open flame under normal working conditions.

This class includes:

- Division 1: Flammable gas
- Division 2: Flammable liquid (Flash Point below 37.8 degrees C)
- Division 3: Combustible liquid (Flash Point greater than 73.8 degrees C)
- Division 4: Heat or Friction (Can Ignite flammable solid)
- Division 5: Flammable aerosol
- Division 6: Reactive flammable material (Flammable in air)

CLASS C: OXIDIZING MATERIAL

These materials increase the risk of fire if they come in contact with flammable or combustible materials.

This substance will cause another substance to burn.

Example: bleach, when poured onto a combustible material may cause combustible materials to burn more quickly.

CLASS D: POISONOUS AND INFECTIOUS MATERIAL
Division 1: Materials Causing Immediate and Serious Toxic Effects

These materials can cause death or immediate injury when a person is exposed to small amounts. Examples: sodium cyanide, hydrogen sulfide

Sub-Class 1

Materials causing immediate and serious toxic effects. These are materials, which cause harmful effects, including death, within a short period after exposure

CLASS D: POISONOUS AND INFECTIOUS MATERIAL
Division 2: Materials Causing Other Toxic EFFECTS

These materials can cause life-threatening and serious long-term health problems as well as less severe but immediate reactions in a person who is repeatedly exposed to small amounts.

Materials, which can cause cancer, are included here.

CLASS D: POISONOUS AND INFECTIOUS MATERIAL

Division 3: Bio-hazardous Infectious MATERIAL

These materials contain harmful micro-organisms that have been classified into Risk Groups 2, 3, and 4 as determined by the World Health Organization (WHO) or the Medical Research Council of Canada.

An organism or its toxins that may cause serious infectious disease.
Example: Anthrax (Meat handling and tanning) bacteria-laden cotton dust (cotton processing) or waste water treatment plants.

CLASS E: CORROSIVE MATERIAL

This class includes caustic and acid materials that can destroy the skin or eat through metals. Examples: sodium hydroxide, hydrochloric acid, nitric acid

EXAMPLE: Chromic acid.

CLASS F: DANGEROUSLY REACTIVE MATERIAL

These products may self-react dangerously (for example, they may explode) upon standing or when exposed to physical shock or to increased pressure or temperature, or they emit toxic gases when exposed to water.

Example: benzyl peroxide will decompose and explode if it is heated or dropped.

Workplace Hazardous Materials Information System (WHMIS)

RESPONSIBILITIES OF SUPPLIERS, EMPLOYERS AND WORKERS

LABELS

SUPPLIER

1. Must develop or obtain supplier labels for all controlled products.
2. Must apply labels to the container of a controlled product before it is sold.
3. Must revise the label and apply the revised label to all subsequent sales of the controlled product if new information becomes available.

EMPLOYER

1. Must ensure all containers of a controlled product entering the workplace are labeled.
2. Must apply supplier labels to the inner containers of multi-container shipments.
3. Must apply supplier label and apply to a controlled product when a container has arrived at workplace without a supplier label.
4. Must see that no person removes, alters or defaces a required label, and if so, to replace it as soon as possible with either a supplier label or workplace label.
5. Must advise workers as to the relevance of other meanings or labeling such as color coding, placards, etc.
6. Must ensure workers can understand the information on the label and are aware of the need to review the applicable MSDS.

WORKER

1. Must ensure they can understand the information on the label and are aware of the need to review the applicable MSDS.
2. Must report to the Supervisor where labels are unreadable or have been removed, altered or defaced.
3. Must follow employer’s direction to avoid removing, altering or defacing labels.

Material Safety Data Sheets - (MSDS)

SUPPLIER

1. Must develop or obtain a Material Safety Data Sheet for each controlled product imported or sold for use in the workplace.
2. Must ensure that the information is current and was prepared not more than 3 years previous to sale or importation.
3. Must provide a copy to the purchaser on or before date of sale.
4. Must make available MSDS in English and French.

EMPLOYER

1. Must ensure a copy of the MSDS is obtained on or before the date of receipt on the workplace.
2. Must ensure a copy of the MSDS is readily available on the workplace before use of the controlled product by workers.
3. Must update MSDS every 3 years of within 90 days of receipt of new information.
4. Must ensure workers are aware of the location of the MSDS and can understand the information and significance of the MSDS.

WORKERS

1. Must refer to or be familiar with the applicable MSDS before using a controlled product.

LOCATION OF MSDS INFORMATION

READ THE LABELS

SECTION 3 - SAFE WORK PRACTICES

Definition

Safe Work Practices identify how to carry out the specific task, inform the worker about hazards present and provide direction on how to safeguard against those hazards. They are guidelines to safely perform specific tasks.

1. Alberta Fire & Flood requires and encourages all employees and sub-contractors to use Safe Work Practices every day in every task performed on our jobsites. Some of these Safe Work Practices have been developed by our staff and incorporated into this manual while others are recognized as standard industry practices. We believe that with on-going employee training and staff involvement in the development of Safe Work Practices we will be prepared to control workplace hazards. The consistent use of Safe Work Practices within our company will help reduce the hazards faced by workers. Safe Work Practices are guidelines for correct performance and reflect pertinent legislation and regulations.
2. Safe Work Practices will be reviewed annually or whenever an incident occurs.
3. Safe Work Practices shall be in writing and maintained in the company Health & Safety Manual.
4. All workers are required to ensure they understand and comply with the Safe Work Practices that apply specifically to the task they are about to perform.
5. Crew Chiefs are to ensure employees are aware of task specific Safe Work Practices and are following appropriate procedures under the guidance of competent supervision.
6. All Safe Work Practices must meet or exceed all applicable legislation, industry and Alberta Fire & Flood standards. These standards and safety regulations are to be used as a guideline when preparing these practices.

❖ **The safety information in this policy does not take precedence over applicable government legislation, with which all employees should be familiar.**

Working Alone

Purpose: To protect workers when working alone.

Employers Obligations to Working Alone:

1. Must, ensure a hazard assessment is conducted for workers working alone;
2. Must provide an effective communication system consisting of radios, landline or cellular telephone or other effective means of electronic communications;

3. Must ensure the communication system includes regular contact by the employer or designate at intervals appropriate to the nature of hazard associated with the worksite;
4. Must ensure the employer or designate visits the worker or the worker contacts the employer or designate at intervals appropriate to the nature of the hazard associated with the work if effective electronic communication is not practicable.

Workers Obligations include:

1. Must contact the employer or designate at intervals appropriate to the nature of the hazard associated with the work if effective electronic communication is not practicable.

Workplace Violence

Purpose: To protect workers from workplace violence.

Employers Obligations to Worker Protection from Workplace Violence include:

1. Conduct a hazard assessment for workplace violence;
2. Must, develop a policy and procedures respecting potential workplace violence;
3. Must, for instructions to workers:
    a. Ensure they know how to recognize workplace violence;
    b. Ensure they are instructed in the policy, procedures, and workplace arrangements that effectively minimize or eliminate workplace violence;
    c. Ensure they are instructed in the procedures for reporting, investigating and documenting incidents of workplace violence.
4. Must, for response to incidents:
    a. Ensure the worker is advised to consult a health professional of the worker's choice of treatment/referral, if an injury or adverse symptom resulting from workplace violence is reported or exposed to workplace violence.

Workers Obligations include:

1. Must take the training provided by the employer in how to recognize workplace violence, the policy, procedures and workplace arrangements in place that minimize or eliminates workplace violence, and how to respond, obtain assistance as well as procedures for reporting, investigating and documenting workplace violence incidents.

Working on or around Moving Machinery

When working on or around moving equipment, operators and ground personnel to be sure of a safe working area must take care to:

1. Make sure a vehicle is in park or neutral and that the park brake is engaged before leaving the vehicle.
2. Shut off engine before any maintenance work is performed.
3. Do a walk around prior to moving the machine while looking for unseen hazards.
4. When working around moving equipment, always be alert and stay clear of this equipment.
5. Never run in front of or behind moving equipment.
6. Equipment operators should always be alert of personnel working around their equipment.
7. Never park on a hill without blocking wheels.
8. Authorized passengers only (in passenger vehicles).
9. Only authorized personnel allowed to operate equipment

Fire Extinguishers

Good housekeeping is essential in the prevention of fires. Fires can start anywhere and at any time. This is why it is so important to know which fire extinguisher to use and how to use it.

Always keep the fire extinguisher visible and easy to get at. Fire extinguishers have to be properly maintained to do the job. Where temperature is a factor, ensure that care is taken in selecting the right extinguisher.

Safety is always top priority. Use extreme caution. If you are unable or unsure as to whether or not you can extinguish the fire call for help or backup.

Rule of thumb: Life first, Property second

TYPES OF FIRES

CLASS A

Wood, paper, rags, rubbish and other ordinary combustible materials

Rule of thumb: anything that would leave an ash.

RECOMMENDED EXTINGUISHERS

Water from a hose or can, pressurized water extinguisher, foam and ABC dry chemical extinguishers.

FIGHTING THE FIRE

When extinguishing a fire with water, use extreme caution.

1. Approach upwind.
2. Apply water to the leading edge of the fire.
3. Soak the fire completely
4. Overhaul the smoking ember completely.

When extinguishing a fire with ABC dry chemical, use extreme caution.

1. Approach upwind
2. Apply dry chemical 3 meters in front of the leading edge in a sweeping motion.
    a. (pressurized extinguishers can spread the embers if applied to close)
3. Overhaul the smoking embers when safe to do so.

CLASS B

Flammable Liquids, oil, grease, paint etc.

Rule of thumb: anything that comes in a barrel.

RECOMMENDED EXTINGUISHERS

ABC dry powder extinguishers, BC dry powder extinguishers, foam extinguishers.

FIGHTING THE FIRE

When extinguishing a Class B fire with dry chemical extinguishers, use extreme caution.

1. Approach upwind.
2. Apply dry chemical 3 meters from leading edge in a rapid sweeping motion - pressurized extinguishers can spread the combustible materials if applied to close.
3. Always back away from the fire in case it flares up a second time.

When extinguishing a Class B fire with foam, use extreme caution.

1. Approach upwind.
2. Deflect foam into the fire to avoid splashing.
3. Cover the entire surface area with foam before moving upward.
4. Always back away from the fire in case it flares up a second time.

CLASS C

Electrical Fires

Rule of thumb: Anything that has a current.

RECOMMENDED EXTINGUISHERS

ABC and BC dry chemical, Carbon Dioxide extinguishers.

FIGHTING THE FIRE

When Extinguishing a Class C fire with dry chemical extinguishers, use extreme caution.

1. Approach up wind.
2. Apply Dry Chemical to leading edge of fire.
3. Always back away from the fire in case it flares up a second time.

When extinguishing a Class C fire with Carbon Dioxide extinguishers, use extreme caution.

1. Approach upwind.
2. Apply Carbon Dioxide in short bursts using a sweeping motion.
3. Always back away from the fire in case it flares up a second time.

Use of Carbon Dioxide as an extinguishing agent, displaces oxygen and may cause an oxygen deficiency.

Use extreme caution.

Use of Cleaning Solvents and Flammables

Cleaning solvents are used in the day-to-day operation to clean tools and equipment. Specialized care must be taken to protect the worker for hazards, which may be created from the use of these liquids. Wherever possible, solvents should be nonflammable and nontoxic.

The foreman must be aware of all solvents / flammables that are used on the job, and be sure that all workers who use these materials have been instructed in their proper use and the hazards they pose.

THE FOLLOWING INSTRUCTIONS OR RULES APPLY WHEN SOLVENTS AND FLAMMABLES ARE USED:

1. USE NONFLAMMABLE SOLVENTS FOR GENERAL CLEANING.
2. When flammable liquids are used, make sure that no hot work is permitted in the area.
3. Store flammables and solvents in special storage containers and special storage areas.
4. Check toxic hazards of all solvents before use (MSDS)
5. Provide adequate ventilation where all solvents and flammables are being used.
6. Use goggles or face shield to protect the face and eyes from splashes or sprays.
7. Use approved rubber gloves to protect hands.
8. When breathing hazards exist, use the appropriate respiratory protection.
9. Never leave solvents in open tubs or vats – return them to storage drums or tanks.
10. Ensure that proper containers are used for transportation, storage and field use of solvents and flammables.
11. Where solvents are controlled products, ensure all employees using or in the vicinity of storage are trained and certified in the Workplace Hazardous Materials Information System. Ensure that all WHMIS requirements are met.

Defective Tools

Defective tools can cause serious and painful injuries. If a tool is defective in some way,

“DO NOT USE IT”.

BE AWARE OF PROBLEMS LIKE:

1. Chisels and wedges with mushroomed heads.
2. Split or cracked handles.
3. Chipped or broken drill bits.
4. Wrenches with worn out jaws.
5. Tools, which are not complete, such as files without handles.

TO ENSURE THE SAFE USE OF HAND TOOLS, REMEMBER:

1. Never use a defective tool.
2. Double check all tools prior to use.
3. Ensure defective tools are repaired.

AIR, GASOLINE OR ELECTRIC POWER TOOLS, REQUIRE SKILL AND COMPLETE ATTENTION ON THE PART OF THE USER EVEN WHEN THEY ARE IN GOOD CONDITION.

DO NOT USE ANY POWER TOOL WHEN THEY ARE DEFECTIVE IN ANY WAY.

WATCH FOR PROBLEMS LIKE:

1. Broken or defective guards.
2. Insufficient or improper grounding due to damage on double insulated tools.
3. No ground wire (on plug) or cords of standard tools.
4. Tool blade is cracked.
5. The wrong grinder wheel is being used.
6. The guard has been wedged back on a power saw.

NEVER USE DEFECTIVE TOOLS!

Welding, Cutting and Burning

Work involving welding, cutting or burning can increase the fire and breathing hazard on any job, and the following should be considered prior to the start of work:

1. Always ensure that adequate ventilation is supplied since hazardous fumes can be created during welding, cutting or burning.
2. Where other workers may be exposed to hazards created by welding, cutting or burning, they must be alerted to these hazards or protected from them by the use of “screens” on hand before starting welding, cutting or burning.
3. Never start work without proper authorization.
4. Always have fire fighting or preventative equipment on hand before starting welding, cutting or burning.
5. Check the work area for combustible material and possible flammable vapors before starting work.
6. A welder should never work alone. A spark or fire-watch should be maintained.
7. Check cables and hoses to protect them from slag or sparks.
8. Never weld or cut lines, drums, tanks, etc. that have been in service without making sure that all precautions have been carried out and permits obtained.

9. Never enter, weld or cut in a confined space without proper gas tests and required safety lookout.
10. When working overhead, use fire resistant materials (blanket or tarps) to control or contain slag and sparks.
11. Cutting and welding **MUST NOT** be performed where sparks and cutting slag will fall on cylinders (move all cylinders and all flammables away to one side).
12. Open cylinder valves slowly. The wrench used for opening the cylinder valves should always be kept on the valve spindle when the cylinder is in use.

Contact with an Energized Power Line

When an energized power line is contacted:

1. *The operator shall always remain with the machine. Do not touch anything that could be in* contact with the ground.
2. Warn others to stay back. Tell them not to touch the load, lines, boom, bucket or anything else connected to the equipment.
3. Have someone call the utility company and fire department.
4. If possible break contact by backing the machine out of the power lines.
5. If fire erupts and you **Must** abandon the machine, jump clear, **never** step down to avoid becoming part of the lethal circuit.
6. Jump with both feet together and hop away from machine. DO NOT WALK, because the voltage differential in soil can vary. Stepping between these invisible high and low voltage areas can cause fatal injuries.
7. Stay a minimum of 10 meters away from overhead power lines

WARNING:

1. Most power lines have relays. After breakers are tripped, relays may be triggered to reactive the power and any item or person with it.
2. When a casualty is in contact with a power line, call the fire department immediately and have them perform the rescue.
3. Know your allowance levels of approach. Have the owner of the utility determine the approach distance.

Call the Utility Company

Mould Abatement and Remediation

Although few specific provincial and/or federal safety and health regulations related to mould and microbiological remediation exist, there are safety and health regulations that are applicable to businesses that perform such work. Each employer is responsible for complying with these safety and health regulatory requirements.

Remediation firms must comply with Construction Industry Standards as well as regulations established by the local authorities having jurisdiction, when working at their jobsites in the field.

Specific items addressed by these groups of regulations include, but are not limited to, the following:

1. Emergency Action and Fire Prevention Plans
2. Personal Protective Clothing
3. Respiratory Protection
4. Asbestos
5. Lead
6. Heat Disorders and Health Effects
7. Confined Spaces
8. Hazard Communication
9. Lockout/Tag out Procedures and Electrical Safety Disorders
10. Fall Protection
11. Noise Exposure
12. Scaffolds

Although the health effects of exposure to certain types of moulds in the outdoor environment have long been recognized and described in the medical literature, the specific effects of the exposure to those that arise in the indoor environment are only a relatively recent area of concern and investigation. The complexity of fungal contamination in indoor environments, including the variety of moulds, the changing conditions (moisture, temperature, building envelope and mechanical ventilation dynamics), concentrations and forms (hyphae, spores), presents unique challenges in assessing occupant health risks. Understanding the types and relative significance of actual health risks is critical as well as a public health perspective.

Note: Alberta Fire and Flood Ltd. policy requires all employees to use extreme precautions when working in and around mould abatement and remediation job sites.

Metal Scaffolds

There are various types of metal scaffolds and they all have a right way 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.

Ensure that:

1. The scaffold you intend to use is the correct one for the job.
2. The location in which the scaffold is to be constructed is level or is capable of presenting secure footing by use of mudsills or some other device.
3. Only competent workers will erect the scaffold.
4. Legislative and manufacturer's requirements have been complied with. Safe access and egress to both the scaffold and general area has been provided. Leveling adjustment screws have not been over extended.
5. Tower scaffolds have outriggers or are guyed and have all component parts secured in place (i.e. cross braces, pins, lateral braces).
6. Scaffold work platforms have perimeter guardrail.
    a. Horizontal Rail
        i. 0.92 meters to 1.07 meters above the platform
    b. Intermediate Rail
        i. Horizontal rail midway between scaffold platform and top rail
    c. Toe Board
        i. Horizontal platform level no less than 140 mm in height above platform level.
7. Scaffold planks are number one grade materials with maximum spans of 3.1 meters on light duty and 2.3 meters on heavy duty with a maximum projection beyond the ledger of no more than 300 mm.

FOR MORE INFORMATION SEE THE APPROPRIATE CURRENT OCCUPATIONAL HEALTH AND SAFETY REGULATIONS

Working at heights over 1.2 Meters

An employer shall ensure that where it is possible for a worker to fall a vertical distance greater than 3.5 meters from a temporary work area or 1.2 meters from a permanent work area, the worker is protected from falling by:

1. A guardrail around the work area.
2. A safety net.
3. A fall arrest device.
4. A safety belt or harness securely attached to an anchor point.

The following personal protective equipment is required before starting this procedure: hard hat, safety harness, lifeline or lanyard, C.S.A. steel toe work boots, safety glasses, gloves and hearing protection if working in a noisy area,

1. There is to be two workers located in the work area when working 1.2 meters or higher using a safety harness and lanyard in the event of an accident.
2. Under **no** circumstances is worker to perform or engage in any work, unless all personal protective equipment is available and worn by the workers.
3. This procedure also applies when changing rollers on conveyor belts.
4. This procedure further applies to subcontractors, suppliers and any other company or person engaging in work on company premises.

Working at heights and Fall Protection

An employer shall ensure that where it is possible for a worker to fall a vertical distance greater than 3 meters from a temporary work area or there is unusual possibility of injury if a worker falls less than 3 meters:

1. A guardrail around the work area.
2. A safety net
3. A fall arresting device.
4. A safety belt or harness attached to an anchor point.

The following personal protective equipment is required before starting this procedure: hard hat, safety harness, lifeline or lanyard, C.S.A. steel toe work boots, safety glasses, gloves and hearing protection if working in a noise area

1. There is to be two workers located in each work area when working 1.2 meters or higher using a safety harness and lanyard in the event of an accident.
2. Under **NO** circumstances is a worker to perform or engage in any work, unless all personal protective equipment is available and worn by workers.
3. This procedure also applies when changing rollers on conveyor belts.
4. This procedure further applies to sub-contractors, suppliers and any other company or person engaging in work on company premises.

5. Rescue personnel involved in training or in providing emergency rescue services may use equipment and practices other than those specified in this part.
6. An employer must ensure that workers use a fall protection system at a temporary or permanent work area if:
   a) A worker may fall 3 meters or more, or
   b) There is an unusual possibility of injury if a worker falls less than 3 meters
7. For the purposes of this section, there is an unusual possibility of injury if the injury may be worse than an injury from landing on a solid flat surface.
8. An employer must ensure that a worker at a permanent work area is protected from falling by a guardrail if the worker may fall a vertical distance of more than 1.2 meters and less than 3 meters.
9. Despite subsection (3), if the use of a guardrail is not reasonably practicable, an employer must ensure that a worker uses a travel restraint system.
10. Despite subsection (4), if the use of a travel restraint system is not reasonably practicable, an employer must ensure that the worker uses an equally effective means that protects the worker from falling.
11. A worker must use or wear the fall protection system the employer requires the worker to use or wear in compliance with this Code.

Anchor Points

1. If a worker uses personal fall arrest system or travel restraint system, the worker must ensure that it is safely secured to an anchor point or plate that meets the requirements of this Part.

Special Protection

1. An employer must ensure that a worker on an elevating work platform or aerial device uses a travel restraint system.

2. Subsection (1) does not apply to a worker on a scissor lift, or an elevating work platform with similar characteristics, that is operating on a firm, substantially level surface with all the manufacturer's guardrails and chains in place.

3. If a fork-mounted work platform is elevated to a height of 3 meters or more above the ground or any portion of the guardrail system has been removed, an employer must ensure that the worker on the platform uses a travel restraint system.

4. Despite subsections (1) and (3) if a worker's movement cannot be adequately restricted in all directions, the employer must ensure that the worker uses a personal fall arrest system.
5. An employer must ensure that a worker who is being raised or lowered in a man basket uses a personal fall arrest system.
6. An employer must ensure that a worker who is working from a portable ladder referred to in section 137 uses a personal fall arrest system.

Procedure – Based Fall Protection System

The *OH&S Code* defines fall protection system as:

a. A personal fall arrest system,
b. A travel restraint system,
c. A safety net,
d. A control zone, or
e. Another system approved by a Director of Inspection

Alberta Human Resources and Employment recognizes that in a very limited number of circumstances, it is impracticable or impossible to provide or use one of the fall protection systems listed as (a) through (d). The use of one of these systems could also result in a greater hazard to workers than if an alternate system were used.

Option (e) allows the use of "another system approved by a "Director of Inspection". One such system involves the use of administrative procedures, in the limited number of situations described below, subject to specific conditions. A procedure – based fall protection system can be used in the following situations:

1. *Installation or removal of fall protection equipment (first person up / last person down)* – typical examples may involve installing a fall arrest anchor at the peak of a roof, installing a perimeter guard rail system on a flat roof, installing a portable fall arrest post at height, etc.;

2. *Roof inspecting or estimating* – applies to both flat and sloped roofs; and

3. *Emergency repairs* – this does not include normal maintenance and service tasks. Emergency repairs must involve light duty tasks of limited duration. Workers engaged in these three types of activities at height are exposed to fall hazards for very short periods of time, if at all, since they are most likely to accomplish their work without going near the danger zone i.e. within 2 meters of the edge in case of roofs. Workers in such case are not continually or

routinely exposed to fall hazards. As a result, they tend to be very focused on their footing, alert and aware of the falling hazards associated with falling i.e. more aware of their position than, for example, a roofer who is moving backwards while operating a felt laying machine, or plumber whose attention is on an overhead pipe and not on a floor edge.

If an employer wishes to use the procedure –based fall protection system, all of the following conditions must be met:

1. ***Written Hazard Assessment***

A written hazard assessment specific to the work site and work being performed must be completed.
This reinforces the requirements of Part 2 of the ***OH&S Code*** for the hazard assessment.

2. ***Written Procedures***

The procedures to be followed by workers while performing the work must be in writing and available to workers before the work begins. Workers must understand each activity they are about to undertake. The procedures must be part of the fall protection plan required by section 143 of the *OH&S Code.*

3. ***Fall Protection System Must be Used if Practicable***

If the use of a fall protection system is listed in a) through d) above is practicable, it must be used e.g. if anchor points are available or a fall protection system can be rigged without exposing the workers to a greater hazard, then a fall protection system must used. The option of using an administrative procedure is not intended to allow an employer or worker to avoid using a fall protection system or some type of elevated work platform just because doing so may be inconvenient or take more time than using an administrative procedure.

4. ***Limit Number of Workers Exposed to Fall Hazard***

The work must be carried out in such a way that minimizes the number of workers exposed to the fall hazard while work is being performed.

5. ***Limit Worker Exposure to Undue Harm***

Use of a procedure-based system must not expose a worker to undue harm. Working at heights has inherent risks. Undue harm involves exposing a worker to a greater potential harm and is not an acceptable practice e.g. having a worker free climb a severely sloped metal clad roof to install an anchor at the peak, having a worker inspect a difficult –to-access equipment location that could be inspected from another location using other means i.e. elevating work platform or nearby structure using optical equipment. The work must not

expose workers to an undue hazard resulting from poor environmental conditions e.g. high winds, ice footing, etc., roof slope or surface finish.

6. ***Light Duty Tasks of Limited Duration***

The work must be limited to light duty of limited duration. As with work performed from a portable ladder (see the explanation in section 137) certain conditions apply:

a. The work must be a "light duty tasks" such as inspection, estimating, or simple emergency repairs e.g. membrane repair on a flat roof (the repair of insulation below the waterproofing membrane is not a light duty task), installation of perimeter sheet metal roof flashing, etc. The work done must be less than approximately 15 minutes in duration, and
b. While doing the task, the worker should not turn his or her back to the edge and must keep the edge in site. If either of these conditions cannot be met, a procedure-based system cannot be used.

7. ***Worker Competency***

The worker performing the work must be competent to do so, which means that they have the knowledge, skill and experience to complete the task

8. ***Limitations on Inspection, Investigation and Assessment Activities***

If the procedure-based approach is used for inspection, investigation or assessment activities, the activities must take place prior to the actual start of work or after work has been completed. If the activities take place while work is going on e.g. during a construction of a roof or structure, the fall protection requirements of

Part 9 of the *OH&S Code* apply to **ALL** workers exposed to fall hazard. The use of a procedure-based approach in these circumstances recognizes that before work begins, or after all work has been completed and workers have left the area, there may be a need for building inspectors, owner, etc. to inspect the area and / or the work. All fall protection equipment such as perimeter guardrail systems or safety nets may have been removed following completion of the work. The system need not be reinstalled a second time for inspectors.

Portable Turbodryers

Turbo Dryers are high-performance air movers for speed drying of building structures and contents. They are designed for a balance of static pressure and airflow.

Keep Unit Grounded: Always operate the unit with a grounding plug and a grounded electrical outlet.

Protect Power Cord from Damage: Never operate a unit with a damaged power cord, as this may lead to electrical or fire hazards.

Run on Stable Surface: Always operate the unit on a stable, level surface, like the floor or a strong counter, so it cannot fall or cause injury.

Keep Air- Intakes Clear: Do not clog or block air intakes, as may happen if operated too close to draperies or similar materials. Do not allow dust, dirt or other particles to be drawn into the
air- intakes. Any blockage of air- intakes can cause the unit to overheat, resulting in a fire or electrical hazard.

Allow Repair Only by Qualified Person: Do not attempt to disassemble or repair the unit if you are not qualified to do so.

DRI-EAZ Turbo Blowers

Positioning Turbo Dryers:

1. When drying in a building, place at least one Turbo Dryer per room, or one for every 200 square feet. Place as many as needed for a maximum airflow across all wet areas of the floor.
2. Ensure that all wet surfaces receive good air flow. Open interior doors to maintain good air circulation. Doors may need to be braced to prevent them from blowing shut.

Control the Humidity:

1. Using Turbo Dryers to speed the rate of evaporation in a building usually causes the humidity to rise immediately. When this occurs, the air movement becomes less effective and the rate of drying slows. It is vital that Turbo Dryers be used with adequate dehumidification. Keep indoor humidity below 60% to help control mould growth.

2. Lower humidity (25-40% Rh) will speed the drying of dense materials such as lumber.

3. To improve drying, close off the area being dried from the rest of the structure. Regulate the heating at (20- 27degrees C).

4. When dehumidifiers are not available, run exhaust fans in the attic, kitchen and bathroom to remove some humidity.

Check if Materials are Dry:

1. Monitor the moisture conditions of wet materials with moisture meters. To check how completely materials have dried out, compare your readings to readings you take on similar materials you know are dry.

Cooling & Ventilation

1. Over-heated rooms can be cooled with high volume air flow from a Turbo Dryer. Place the air mover on the floor or other flat surface and direct the air from cooler areas or the outdoors.

Portable Air Scrubbers
REQUIREMENTS FOR SAFE OPERATION:

1. ONLY trained personnel shall be authorized to operate the unit at any time.
2. Anyone operating the Portable Air Scrubber shall wear the appropriate personal protective equipment and follow Alberta Fire and Flood Ltd. safe work practices in accordance with acts and regulations by the governing bodies having jurisdiction.
3. Check the condition of power cord (s) before using them.
4. Power cords should never be exposed to water, heat, sharp or abrasive objects; in addition, they should never be kinked or crushed.
5. Never pull the unit by the cord.
6. Avoid running over the power cords with utility equipment and vehicles.

Caution: As with any piece of electrical equipment, always make sure the unit is turned "OFF" prior to connecting the power cord to an electrical outlet or disconnecting from an electrical outlet. Failure to do so will cause "arcing" and could result in personal injury, fire hazards or damage to the machine.

Warning: The PRED1200 is equipped with an automatic restart motorized impeller that will start without warning after a temporary power outage or recovery from thermal overload (overheating) condition. Keep clear of the motorized impeller at all times to reduce the risk of injury.

Warning: These units are not "intrinsically safe" for use in hazardous environments.

Before operating the unit, note the following:

1. Inspect and tighten any HEPA filter retaining nuts that may have loosened during transportation. Inspect the filters for any material or structural damage prior to use and replace any damaged filters before operating the unit. Be sure to replace the filters with the airflow indicators pointed in the right direction.
2. A with any air filtration system, external air flow losses not attributable to the air filtration unit will reduce the airflow of the system. The following recommendations can minimize airflow losses created by external static resistance.
    a. Always use the right length of ducting possible with the fewest number of turns and bends.
    b. Rigid metal ducting creates less turbulence and consequently less airflow losses than flexible ducting.
    c. If flexible ducting is used, it must be kept as taut as possible to avoid flattening.
3. To start the unit, plug the power cord into 120 volt, 15 amp supply circuit. The power indicator will illuminate, indicating that the unit is connected to a power supply.
4. Select the desired speed setting and press the corresponding Speed Control button.

FILTER CHANGE INDICATORS

1. "Change Pre-filter" light "ON" indicates one or more of the following:
    a. Loaded Pre-filters (refer to filter change procedures)
    b. Restrictions on air intake. Refer to trouble shooting guide.
2. "Change HEPA" light "ON" indicates the following:
    a. Loaded HEPA filter. Refer to filter change procedures.
    b. Excessive restrictions on air exhaust. Refer to trouble shooting guide.

FILTER REPLACEMENT

Alberta Fire and Flood Ltd. safe work policy requires that personnel responsible for changing filters, servicing units or relocating units wear the proper personal protective equipment in accordance with the authorities having jurisdiction, governing the federal or provincial acts and regulations.

NOTE: Filters being replaced must be disposed of in accordance to local, provincial and federal regulations.
NOTE: Filters are not reusable, therefore, **DO NOT ATTEMPT TO CLEAN AND REUSE THEM.**

To change the **First Stage Filter:**

1. With the unit operating, turn the latch on pre-filter access door counterclockwise, and open the door
2. Remove first stage filter and replace with new one.
3. Close door and latch. Make sure the door is flush against the cabinet before closing latch.
4. If the “Change Pre-filter” light remains “ON” after changing the first stage filter, the second stage filter should be replaced.

To change the **Second Stage Filter:**

1. Open the pre-filter access door.
2. Remove the second stage filter and replace with new one.
3. Close the door and lock it in position.
4. If the “Change Pre-filter” light remains “ON” after changing the second stage filter, the optional third stage filter should be changed. The light would remain “ON” only if the third filter is in use and has become loaded.

To change the optional **Third Stage Filter:**

1. Open the pre-filter access door.
2. Remove the third stage filter and replace with a new one.
3. Close the door in the lock position.

NOTE: If an optional Vapor-Lock filter is being used, be sure to remove it from its poly bag before installing it in the unit. Vapor-Lock filters are packaged in poly bags to preserve the integrity of the carbon granules.

To change the **HEPA Filter:**

1. Press the large red button on the control panel to turn the unit “OFF”, and disconnect the unit’s power cord from the electrical outlet.
2. Remove the screws that hold the HEPA filter access panel in place and set panel aside.
3. Remove the wing nuts that secure the HEPA filter retaining bracket in place, slide the bracket off the long filter retaining bolts and remove the HEPA filter.
4. Carefully place a new HEPA filter into the cabinet, making sure that it rests on the curved section of the cabinet base, which is just behind the long, retainer bolt. The foam seal should be aligned with the exhaust outlet.
5. Replace all components in original location.

H.E.P.A. System

SET-UP

1. Only use a three prong plug to supply power to the Phoenix Guardian H.E.P.A. system.
2. Use a power circuit dedicated only for the H.E.P.A. unit.
3. If an extension cord is required, it must have a minimum of 12 gauge conductors if 25 feet long or less and 10 gauge conductors if greater than 25 feet long.
4. The unit must be operated with all three filters and the top in place.
5. The unit is designed to be used INDOORS ONLY.

AIR DUCTING

1. Inlet Ducting
   a. Occasionally the area to be filtered is difficult to access and/or the unit cannot be located in the area. In such cases, the air can be ducted to the unit's inlet.
   b. A round 18" diameter flex duct can be attached to the unit inlet on top. It connects by hooking the spiral wire of the flex duct under the four outside tabs inside the perimeter of the inlet opening.

2. Outlet Ducting
   a. Three rectangular wire-form collars are supplied that will allow round lay-flat plastics to be attached to the Phoenix Guardian outlet.
3. Negative Air Ducting
   a. The Phoenix Guardian can be used to filter and exhaust air from a space. By exhausting to outside the space, the space will be under a slight negative pressure.
   b. Exhausting too much air from a space with open combustion devices (e.g. furnace, fireplace or water heater) can cause those devices to back-draft.

PHOENIX GUARDIAN H.E.P.A. System

SET UP

1. The Phoenix Guardian is designed for INDOOR USE ONLY.

ELECTRICAL REQUIREMENTS

1. The Phoenix Guardian must be grounded with a three prong plug-in, plugged into a grounded 15 amp circuit.

2. Power extension cords of less than 25 feet in length must be of 12 gauge conductors. Power extension cords greater than 25 feet in length must be of 10 gauge conductors.

MAINTENANCE

AIR FILTERS

1. The filters must be checked regularly. Operating the unit with dirty filters will reduce the airflow and current draw, but will do no harm to the unit.
2. There are three types of filters:
   a. Polyester media pad pre-filter. The white side faces up
   b. 25 – 30% efficient (per ASHRAE 52.1-1991) pleated fabric filter.
   c. 99.97% DOP efficient HEPA filter.

Activated Carbon/Potassium Permanganate Filters

There are two optional gas phase filters, a disposable and a refillable. Each uses a blend of activated carbon and potassium permanganate. The carbon removes the heavier volatile organic compounds and the potassium permanganate removes the lower molecular weight contaminants.

The life of the media depends on the hours used and the contamination levels.

The advantage of blended media versus activated carbon only is that part of the blend changes colour as it loads up with contaminants. It starts out black, then turns pink, then brown and finally white.

When these filters are installed, the pad filter does not have to be installed above them. This allows the operator to check the media colour through the top of the grill without removing the top.

These filters are the same size as the pleated fabric filter. They are installed above the pleated fabric filter. The pleated fabric filter catches the carbon dust before it reaches the HEPA filter.

The disposable filter contains 7 ½ pounds of active media.

CHECKING AIRFLOW

An inclined tube manometer attached to the unit, measures the negative static pressure between the lower inlet and the HEPA filter outlet.

To check airflow:

1. Remove any inlet or outlet ducting, but leave all the top filters in place.
2. Turn the unit on to high speed for at least 15 minutes. Read the number values at the center of both tubes.
3. Subtract the lower tube number from the upper tube number. Match this difference to the chart on the manometer label to establish the percentage of clean air flow.

If the operator determines the filters should be changed due to airflow, it is most economical to change them in the following order:

1. Change the pad pre-filter (top) first. Recheck the airflow. If it is acceptable, no other filters need to be changed.
2. Change the pleated fabric filter (middle) second. Recheck the airflow. If acceptable, the HEPA filter does not need changing.
3. If the airflow is too low, the HEPA filter must be changed.

Hydroxyl Machine

Operating Instructions

1. **DO** read all instructions before using the appliance.
2. **DO** plug the appliance directly into a 120 V AC electrical outlet in order to avoid fire or a shock hazard.
3. **DO** remove the plastic covering before using the appliance.
4. **DO** keep the cord out of heavy traffic areas. To avoid fire hazard, never put the cord under rugs, near heat registers, radiators, stoves or heaters.
5. **DO NOT** immerse in water or other liquids.
6. **DO NOT** use near water.
7. **DO NOT** drop or insert any object into any openings.
8. **DO NOT** use an extension cord as doing so can create potential safety hazards.
9. **DO NOT** operate any appliance with a damaged cord or plug. If motor fan fails to rotate, after the appliance malfunctions or it has been dropped or damaged in any manner. Return appliance to manufacturer or authorized repair facility for examination, electrical or mechanical adjustment or repair.
10. **DO** use the appliance for the intended use as described in the owner's manual.
11. **DO** not use outdoors.
12. **DO NOT** block air openings, grills/outlets or place on a soft surface.

13. **DO** keep unit away from heated surfaces and open flames.
14. **DO NOT** attempt to repair or adjust any electrical or mechanical functions.
15. **DO NOT** place anything on top of unit.
16. **DO NOT** plug the cord in with wet hands: electric shock could result.
17. **DO** plug the unit's three prong plug into a grounded outlet.
18. **DO** Not under any circumstances cut or remove the third (ground) prong from power cord.

Dehumidifiers
GENERAL

The Dri-Eaz refrigerant humidifiers operate by pulling moist air in across a very cold evaporator core. The moisture condenses (freezes) on the coil. At intervals, the machine will go into defrost mode, warming the frost back to water. The water collects in a tray and leaves the unit through a drain hose or pump.

SET UP

Always use a grounded three prong plug to supply power to the unit. Do not use an adaptor.

Do not operate the dehumidifier if the temperature is above 32 degrees C. Over dried materials (especially wood products) may crack, shrivel or discolour.

Dehumidifiers that have been transported to a jobsite must be set upright for at least 30 minutes before you turn it on.

Uncoil and straighten the entire drain hose. Do not leave any portion of the hose coiled on the unit.

USE and OPERATION

1. Always use a grounded three prong plug-in. Do not use any adapters.
2. You should operate dehumidifiers in an enclosed area, as this creates a drying chamber. Close all doors, windows or areas that open to the outside to maximize the units' water removal efficiency. Keep traffic through the drying chamber to a minimum.
3. Place the dehumidifier in the middle of the room away from walls and contents.
4. Keep the dehumidifier away from anything that could prevent airflow into and out of the unit.

MANAGING TEMPERATURE RISE

1. Optimal drying temperatures range from 20- 29 degrees Celsius.
2. If the temperature rises to unsafe levels (over 32 degrees C) you can use the structures HVAC (air conditioning) system to bring the temperature down. Just set it to 27 degrees C and continue to operate the dehumidifier.

PURGING

1. During normal operation, the pump purges automatically every six minutes, or whenever the unit is full.
2. To purge the pump manually turn the power off using the OFF key, and let the unit sit for about 10 minutes. This allows water to drip from the coils.
3. Press PURGE to remove residual water.

MAINTENANCE

1. Inspect the electrical cord for damage, checking for fraying cuts, etc.
2. Inspect the filter. Look for accumulated dust and dirt that would restrict airflow through the filter into the unit. If any is visible, vacuum out the debris. Do not wash the filter, as this will reduce the effectiveness of the electrostatic material.

MONTHLY MAINTENANCE

1. Check coils, and clean when visibly dirty.
2. Check catch basin tray, and clean when dirt and debris are present.
3. Check the drain hose.
4. Inspect the filter cover.

Portable Pressure Washer

High pressure spray can cause serious injury. ONLY personnel that have been instructed in the safe use of this machine shall operate the machine. Observe all warnings when you operate, maintain or repair the pressure washer.

Use this equipment in well ventilated areas and free of combustible materials, combustible fumes or dust.

To prevent injury wear the following personal protective equipment:

1. Gloves (Leather or gauntlet)
2. Hard Hat
3. Mask

4. Work boots (CSA approved leather boots or rubber boots)
5. Ear Plugs
6. Safety Goggles (Vented and Chemical resistant)

INJECTION HAZARD

Fluids under high pressure from spray or leaks can penetrate the skin and cause extremely serious injury, including death or the need for amputation. You must observe these precautions:

1. **NEVER** point a spray gun at people, animals or plants.
2. **NEVER** put your hands or fingers over the spray tip.
3. **NEVER** try to stop or deflect leaks with your hands or body.
4. **NEVER** purchase or use chemicals that are toxic, flammable or high in acidic/alkaline base and always request a material safety data sheet (MSDS) for the product you are purchasing.
5. **NEVER** use a powder type detergent or chemical that is not manufactured for pressure washer use.

GENERAL WARNINGS

Get emergency medical help immediately if any fluid seems to penetrate your skin, even if the wound does not appear serious. Tell the attending physician exactly what fluid was injected and give him the (MSDS) for the detergent or chemical being used.

1. Be sure that all system components and accessory items are original equipment or equivalent.
2. Be sure the equipment is properly located for safe operation.
3. **NEVER** alter or modify the pressure washer and void any manufactures' warranty.
4. **NEVER** locate the equipment near combustible materials, combustible fumes or dust.
5. **NEVER** spray flammable liquids or toxic chemicals (such as insecticide or weed killer).
6. **NEVER** allow untrained personnel to operate the machine.
7. **NEVER** wear loose clothing and keep your body and clothing clear of moving parts when the machine is operating.
8. **NEVER** leave the pressure washer unattended, if you must leave follow the complete shut- down procedures to prevent unauthorized or untrained personnel from operating the machine.
9. **NEVER** move the machine by pulling the hose.
10. **NEVER** activate the gun without a nozzle in the wand.

11. **NEVER** put a type of trigger lock onto the gun.
12. **NEVER** place hands on motor or pump when the unit is running.
13. **NEVER** allow children or animals around your working area.
14. **ALWAYS** face the nozzle and wand to the ground when testing.
15. **NEVER** exceed pressure rating of the unit's recommended pressure.
16. **NEVER** change quick couple nozzles with the nozzle under pressure and without the gun safety in the "on" or "lock" position.
17. **NEVER** clean the machine by using its own spray wand.
18. **NEVER** run the machine without water

LOCATION WARNINGS

Alberta Fire and Flood Ltd. require all personnel using the pressure washer to be trained and competent in the use of this equipment.

The pressure washer should be located as close s possible to the water supply and be on a solid, stable, level surface.

Locate the machine:

1. In a well ventilated area and away from flammable materials or fumes.
2. So the operator has easy access to the controls.
3. So that the machine is protected from external damage.
4. So the hose does not cross traffic areas to prevent damage and extensive hose wear.

GAS ENGINE PRECAUTIONS

A fire or explosion can occur resulting in personal injury. Alberta Fire and Flood Ltd. requires the operator to follow these procedures:

1. **DO NOT** fill gasoline tank while engine is running.
2. **DO NOT** operate the engine when an odour of gasoline is present, or other explosive conditions exist.
3. **If gasoline is spilled,** move the machine away from the spill area and avoid creating an ignition source until the gasoline has evaporated.
4. **DO NOT** store, spill or use gasoline near an open flame or any devises which may create a spark.
5. **REFUEL OUTDOORS** preferably or in well ventilated areas with unleaded gas only
6. **DO NOT** operate engine without a muffler.

7. **DO NOT** operate engine without air cleaner or cover directly over the carburetor if the air intake is removed

8. **DO NOT** tamper with engine speed selected by the original equipment manufacturer.
9. **READ THE ENGINE OWNERS/OPERATORS MANUAL BEFORE USING OR ATTEMPTING TO SERVICE THE MACHINE.**

Pressure Washer Equipment

Alberta Fire and Flood Ltd. require all personnel operating the pressure washing equipment to follow these procedures:

START UP PROCEEDURE

1. Check engine oil levels.
2. Check fuel tank and fill if necessary with unleaded gas only.
3. Attach high pressure hose to outlet M22 Quick-Connect fitting on frame.
4. Attach garden hose to inlet connector and turn water on.
5. Pull trigger on gun to purge system of air until steady stream of water comes out of the nozzle.
6. Slide throttle control left to FAST position.
7. Push primer bulb 3 times.
8. While holding gun trigger open with one hand, pull starter cord on engine.

SHUT DOWN PROCEEDURE

1. Turn ON/OFF switch to “OFF”.
2. Turn off water source.
3. Pull trigger to release water pressure from system.
4. Disconnect garden hose from attachment on pump.
5. Disconnect high pressure hose from quick connection on pump outlet.

Electric Stapler

Notice: Never point the stapler at another person or towards anything you do not want to staple. Severe bodily injury can occur. Always have the stapler head securely seated on objects to be stapled before pulling the trigger. Unplug when not in use.

1. Use only 20 gauge 3/16” crown staples.
2. Check power source to be sure the power supply is of the same voltage as specified on the stapler tool.

3. Ensure the ground plug is in place to avoid electric shocks.
4. DO NOT use tool on hard surfaces; i.e. Concrete or rock.
5. Take special precautions when using tool on thin material.
6. During operation the tool head may become warm. However if the tool head begins to feel hot, slow down the tacking speed. If the unit continues to be hot, discontinue use until it cools.
7. DO NOT drive fasteners too close to the edge of the work materials.

Alberta Fire and Flood Ltd. safe work policy forbids any horseplay with the electric staple gun. Any disregard of this policy will be deemed as just cause for immediate dismissal.

LOADING STAPLES

1. Disconnect power supply
2. Depress the magazine latch. Pull back on the magazine cover.
3. Insert a strip of fasteners into the magazine. Make sure the staple's crown is resting on the magazine.
4. Push the magazine forward until the latch catches.

MAINTENANCE & INSPECTION

1. Clearing Fastener Jams inside the Magazine
   - **a.** Disconnect power supply.
   - **b.** Press down latch and pull back on the magazine.
   - **c.** Remove jammed fasteners using needle nose or standard pliers.
   - **d.** Reinsert staples in magazine.
   - **e.** Push the magazine cover forward until the latch catches
   - **f.** Reconnect power supply.

2. Clearing Fastener Jammed in the Discharge Area
   - **a.** Disconnect the power supply.
   - **b.** Remove jammed fasteners using needle nose or regular pliers.
   - **c.** If fastener cannot be reached from the discharge area, refer to "Clearing Fastener Jams inside the Magazine" above.
   - **d.** Reinsert staples in magazine.
   - **e.** Push the magazine cover forward until the latch catches.
   - **f.** Reconnect the power supply.

GENERAL MAINTENANCE

1. Keep all screws tight. Loose screws could result in unsafe operations and breakage of parts.
2. Occasionally wipe the inside of the magazine and the “nose” with light oil. Make sure dirt and debris is removed from the trigger area magazine and the staple “chute”.
3. Wipe tool clean daily and inspect for wear. Use non-flammable cleaning solutions only if necessary.
4. Keep fastener discharge area clean at all times. Any residues could cause jamming.

CTV Wet/Dry Vac

To reduce the risk of fire, electric shock, or injury:

1. Do not leave machine when plugged in. Unplug the unit when not in use and before servicing.
2. To reduce the risk of electric shock use indoors only.
3. Use only as described in the manual. Use only manufacture’s recommended attachments.
4. Do not use with damaged cord or plug. If machine is not working to full potential return it to a service center.
5. Do not unplug by pulling on cord, use the cord as a handle, close a door on the cord, or pull cord around sharp edges or corners.
6. Do not unplug by pulling on the cord. To unplug, grasp the plug, not the cord.
7. Do not handle plug or machine with wet hands.
8. Do not put any object into openings.
9. Keep hair, loose clothing, fingers and all parts of the body away from opening and moving parts.
10. The following materials must not be picked up with the machine:
    a. Hot materials (hot ashes, glowing cigarettes)
    b. Flammable, explosive or aggressive fluids(Gasoline, solvents, acids, alkalines)
    c. Inflammable, explosive dusts (magnesium or aluminum dust)
11. Do not use without dust bag and/or filters in place.
12. Turn off all controls before unplugging.
13. Connect to properly grounded outlet.

This machine has a float shut-off. When the water raises the float, the air stops moving through the machine and the machine shuts off.

There are no user serviceable parts. All repairs must be done by authorized personnel only.

Changing Bag Type Filter

1. Pull the bag-type filter off the inlet fitting.
2. Dispose of the used bag-type filter in accordance with local waste disposal regulations.
3. Place a new bag-type filter into the tank as described in the instructions printed on the filter.

Replacing Filter Element

1. Switch the machine off and remove plug from power circuit.
2. Remove the machine top section from the dirt tank and place to one side with the filter facing upwards.
3. Remove the outside strainer filter bag.
4. Unscrew the filter retaining nut and remove.
5. Pull off the filter element and replace with new filter element.
6. Fit the filter retaining washer and tighten retaining nut.
7. Dispose of used filter in accordance with the local waste disposal regulations.

OASIS – Plus Ozone Machine

Ozone is a powerful oxidizer and must be used with extreme care. Ozone attacks organic matter. Limited exposure can cause irritation to eyes, throat, and nose and may cause nausea. DO NOT re-inhabit a treated area until it has been well ventilated.

1. **USE IN UNINHABITED AREAS ONLY.**
2. To avoid electric shock, do not expose to rain or snow.
3. Only use the manufacture’s recommended attachments.
4. Do not use with damaged cord or plug. If machine is not working as it should, or damaged, return it to an authorized service center for repair.
5. Do not pull by the cord, use the cord as a handle, close the door on a cord, or pull the cord around sharp edges or corners. To unplug, grasp the plug, not the cord.
6. Do not handle the plug, the cord or the machine with wet hands.

7. Extension cords must be 12/3 and no longer than 50 feet. Replace the cord immediately if the ground prong becomes damaged.
8. Do not put any objects into openings. Do not use with any opening blocked; keep free of dust, lint, hair and anything that may reduce airflow.
9. Connect to properly grounded outlet only.

NOTE: OZONE IS A TOXIC GAS, FOLLOW ALL SAFETY PRECAUTIONS.

OPERATION:

1. Make sure all people, pets and plants are out of the area. Close all windows and doors.
2. Make sure the filter in front of the cooling fan is installed and is clean.
3. Place Oasis-plus unit on shelf or table top as high as possible in the area to be treated.
4. Plug the power cord into a grounded, 3 prong outlet.
5. Set the timer to the desired length of time. The maximum time setting is 29:59 hours. After reaching the maximum time, the timer will wrap back to 0:00.
6. Select the desired power level. 25%, 50%, 75%, 100%. The Oasis-Plus always defaults to 100% initially. When the output level is set to 100%, the machine makes ozone continuously until the timer runs out or the OFF button is pressed. At other power level settings, the machine will produce ozone for the fraction of a minute the level is set at.
7. Turn the unit on by pressing the ON button. LEAVE THE AREA.
8. When returning to area where the ozone machine has been running and the elapsed time has shut the machine off, ALWAYS use proper personal protective equipment before entering to retrieve the ozone machine.
9. When treatment is complete, unplug the ozone machine and ventilate the area completely until the smell of ozone is gone. DO NOT allow people, pets or plants back in the area until all smell of ozone is dissipated.

Ozone Rooms

Before entering ozone rooms to remove or place items in, ensure that the **GREEN** light above or beside the doors is on. If the **GREEN** light is on it is safe to enter and the ozone has been removed. If there are no lights on then the room is inactive. **DO NOT ENTER** if the **RED** light is on, this means that there are harmful amounts of ozone still left in the room.

If you need to access the room and the **RED** light is on you must turn the ozonaters off with the switch by the door and turn on the fan (switch by the door) to vent out

the ozone, the **GREEN** light will come on as soon as you start the fan, you must at least wait 20 or more minutes before entering, turn off the fan. Because of the suction created by the fan the door will not open. If you can still smell the ozone, then the room may need more venting, close the door and turn on the fan and wait a few more minutes.

OZONATORS

This equipment uses ultraviolet light to create ozone, and should never be looked at with the naked eye, severe eye damage will occur as a result. Employees **shall not** enter the ozone room while functioning; doing so can cause damage to the lungs, eyes, irritate the skin and worsen respiratory illness.

PPE Requirements

There are no special PPE for the ozone rooms at Alberta Fire and Flood Ltd. There is no need for more than a brief exposure to residual ozone.

First Aid Measures

If first aid is required, the steps are as follows:

1. **Minor**
   a. For minor eye irritation flush eye with water for 15 minutes, send to eye doctor for follow up. If skin irritation occurs then wash the skin with mild soap and run under water for 15 minutes and monitor.

2. **MAJOR (semi or unconscious)**
   a. Call 911
   b. Get person to fresh air, monitor for breathing
   c. If breathing, place in recovery position and monitor closely
   d. If not breathing, give artificial respiration (AR) or oxygen (if trained)
   e. If person starts to breathe on thier own, place in recovery position and monitor closely.

Compressed Air

Air powered tools range from stapling guns to jack hammers. If not treated with respect, these tools can become a powerful enemy rather than a servant.

1. Compressed air must not be used to blow debris or clear dirt from any workers clothes.
2. Ensure that the air pressure has been turned off and the line pressure relieved before disconnecting the hose or changing tools.

3. All hose connectors must be of a quick disconnect pressure release type with a "**SAFETY CHAIN / CABLE**".
4. Wear personal protective equipment such as eye protection and face shields, and insure other workers in the area are made aware of or have restricted access to the hazard area.
5. Hoses must be checked on a regular basis for cuts, bulges or other damage. Ensure that defective hoses are repaired or replaced before turning on air pressure.
6. A proper pressure regulator and relief device must be in the system to ensure the correct desired pressures are maintained.
7. The correct supply hoses must be used for the tool / equipment being used.
8. The equipment must be properly maintained according to the manufacturers' requirements.

Bench Grinder

Severe injury may occur if proper protective equipment is not used and properly maintained.

1. Check the tool rest for the correct distance from the abrasive wheel, maximum 1/8" or 3 mm.
2. Replace grindstone when adjustment of the rest cannot provide 1/8" or 3mm.
3. If the wheel has been abused and ground to an angle or grooved, reface the wheel with the appropriate surfacing tool.
4. Protect your eyes with goggles or a face shield at all times when grinding.
5. Each time a grinding wheel is mounted: the maximum approved speed stamped on the bladder should be checked against the shaft rotation speed of the machine to ensure the safe peripheral speed in not exceeded. A grinding wheel must not be operated at peripheral speed exceeding the manufacturer's recommendation.
6. The flanges supporting the grinding wheel should be a maximum of 1/3" the diameter of the wheel, and must fit the shaft rotating speed according to the manufacturer's recommendation.
7. Bench grinders are designed for peripheral grinding. Do not grind in the side of the wheel.
8. Do not stand directly in front of the grinding wheel when it is first started.

Grinding Machines

DISKS AND WHEELS

1. Use only the exposed flat side of an abrasive disk for grinding. It is mounted on the machine faceplate of a grinding machine.
2. Use only the periphery or circumference of an abrasive wheel for grinding. It is mounted either directly or with adapters, on the spindle or arbor of a grinding machine.
3. Do not operate machines unless a safety guard is in place. The safety guard's main function is to retain the pieces of the disk or wheel if it should break in operation.
4. To avoid breaking wheels ensure the work does not become wedged between the work rest and the wheel.
5. Use a work rest and locate it not more than 3 mm from the wheel.
6. Wear a face shield over safety glasses for protection against heavy particles.
7. Never adjust the work rest while the wheel is in motion as the rest may slip and strike the wheel and break it or a finger could get caught between the wheel and the rest.
8. Use the work rest to support and guide dressing tool. Use a hand stone to round off the wheel edges before and after dressing, to prevent the edges from chipping.

Portable Grinders

Abrasive wheels can cause severe injury. Proper storage of new wheels, proper use of wheels and proper maintenance of wheels must be observed.

1. Familiarize yourself with the grinder operation before commencing work.
2. Ensure proper guards are in place and that safety glasses, face shields, gloves and safety boots are worn when using portable grinders.
3. Never exceed the maximum wheel speed (every wheel is marked). Check the speed marked on the wheel and compare it to the speed on the grinder.
4. When mounting the wheels, check them for cracks and defects, ensure that the mounting flanges are clean and the mounting blotters are used. Do not over tighten the mounting nut.
5. Before grinding, run the newly mounted wheels at operating speed to check for vibrations.
6. Do not use grinders near flammable materials.
7. Never use the grinder for jobs for which it is not designed, such as cutting.

CAUTION: EYE PROTECTION REQUIRED

Portable Grinding Machines
DISKS AND WHEELS

1. Use only the exposed flat side of an abrasive disk for grinding. It is mounted on the machine faceplate of a grinding machine.
2. Use only the periphery or circumference of an abrasive wheel for grinding. It is mounted either directly or with adapters, on the spindle or arbor of a grinding machine.
3. Do not operate machines unless a safety guard is in place. The safety guard's main function is to retain the pieces of the disk or wheel if it should break in operation.
4. To avoid breaking wheels ensure the work does not become wedged between the work rest and the wheel.
5. Use a work rest and locate it not more than 3 mm from the wheel.
6. Wear a face shield over safety glasses for protection against heavy particles.
7. Never adjust the work rest while the wheel is in motion as the rest may slip and strike the wheel and break it or a finger could get caught between the wheel and the rest.
8. Use the work rest to support and guide dressing tool. Use a hand stone to round off the wheel edges before and after dressing, to prevent the edges from chipping.

PORTABLE GRINDERS

1. Do not grind on the flat side of straight wheels or force wheels against the work, this will damage a wheel even when properly mounted and guarded.
2. Check grinder for excessive vibration before using.
3. Never clamp grinders in a vise before using.
4. Never use a liquid coolant while operating a portable grinder.
5. Never use a grinder without guard.
6. Stand away from the wheel when first starting the grinding machine, especially if using portable equipment that has a high risk of damage from handling.
7. Perform the ring test (when installing new flat grinding wheel on portable grinder).

8. Suspend the new disk from your finger by the centre hole before installing on the grinder.
9. Tap the wheel gently with a non-metallic object about 45 degrees to either side of the vertical axis about two inches from the outside edge.
10. Listen for a metallic ring; if no ring but a dead sound the disk is cracked. If you get a ring perform the test about 45 degrees and repeat test.
11. Store grinding wheels in a dry room not subject to extreme temperature changes.

Step Ladders

As with all ladders, make sure the step ladder is in good condition, and is the right ladder for the job to get done.

1. Stepladders are to be used only on clean and even surfaces.
2. No work is done from the top two steps of a stepladder, counting the top step as a rung.
3. When in an open position ready for use, the incline of the front step section shall be one (1) horizontal to six (6) vertical.
4. The step ladder in only to be used in the opened position with the spreader bars locked.
5. Do not overreach while on the ladder. Climb down and move the ladder to a new position.
6. Only CSA standard ladders are to be used
7. If the ladder is damaged discard as soon as possible.

Extension Ladders

As with all ladders, make sure the extension ladder is in good condition, and is the right ladder for the job to get done.

1. Extension ladders are to be used only on clean and even surfaces.
2. No work is done from the top two rungs of the extension ladder.
3. When working on roof tops, the top of the extension ladder shall extend a minimum 3 rungs above the roof line.
4. Make sure the anti-slip control pads are good condition and in proper position before ascending up the extension ladder.
5. Anchoring can per performed by a fellow employee standing at the base, until the person ascending can tie off the ladder, to a stable anchor point.
6. To descend, have the first person descend, then anchor the ladder at the base, while the person on top removes the tie down and then descends downward.

7. Do not overreach while on the ladder. Climb down and move the ladder to a new position.
8. Only CSA standard ladders are to be used.
9. If the ladder is damaged discard as soon as possible.

Working on Roofs and Ladders
RESIDENTIAL ROOFING PROCEDURES

APPLICATION

1. This part applies to residential construction projects where roofing materials are applied or removed.

2. Despite subsection (1), this part does not apply if the fall height is less than 3 meters.

3. Section 139 does not apply to residential construction projects if the slope of the roof deck is 4 in 12 or less.

DAILY INSPECTION

1. An employer must ensure that roof surfaces are inspected daily by a competent worker for fall hazards and slipping hazards and the inspection repeated during the day as often as necessary.
2. An employer must ensure that a hazard found during inspection is eliminated or, if it cannot be eliminated, effective measures are taken to have workers avoid it.
3. An employer must ensure that workers are aware of a hazard found during an inspection that cannot be eliminated.

PLACEMENT OF MATERIALS

1. An employer must ensure that supplies and roofing materials stored on the roof are located not less than 2 meters from the roof edge.

2. An employer must ensure that the weight of supplies and roofing materials stored on the roof be uniformly distributed.

SECURING ROOF BRACKETS

An employer must ensure that roof brackets are securely attached to and bear a solid surface.

SLIDE GUARD HEIGHT

An employer must ensure that a slide guard extends at least 150 millimeters above the roof deck when measured perpendicularly to the roof deck.

ROOF SLOPES

1. If a roof deck has a slope greater than 4 in 12 up to and including 6 in 12, an employer must provide:
    a. Slide guards that are installed
        i. Continuously along the length of the eave, and
        ii. Below the work area intervals of not more than 2.4 meters as measured along the roof deck,
    b. Guardrails or
    c. A fall protection system
2. If a roof deck has a slope greater than 6 in 12, an employer must provide:
    a. Guardrails or
    b. A fall protection system
3. If a roof slope varies at different locations along a roof deck, subsections (1) and (2) apply to each location individually
4. A worker must use the slide guards, guardrails or fall protection system provided by the employer as required in subsection (1) and (2).

PORTABLE LADDER PROCEDURES

PROHIBITION

1. A worker must not perform work from either of the top 2 rungs, steps or cleats of a portable ladder unless the manufacturer's specifications allow the worker to do so.

2. Despite subsection (1), a worker may work from either the top 2 rungs, steps or treads of a step ladder if
    a. The step- ladder has a railed platform at the top, or
    b. The manufacturers' specifications for the ladder permit it.

CONSTRUCTED PORTABLE LADDER

1. An employer must ensure that a constructed portable ladder
    a. Is constructed of lumber that is free of loose knots and knot holes,
    b. With a length of 5 meters or less has side rails constructed of lumber measuring not less than 38 millimeters by 89 millimeters,
    c. More than 5 meters long has side rails constructed of lumber measuring not less than 38 millimeters by 140 millimeters,
    d. Has side rails that are not notched, dapped, tapered or spliced,
    e. Has side rails at least 500 millimeters apart at the bottom and
    f. Has rungs that are:
        i. Constructed of lumber measuring not less than 21 millimeters by 89 millimeters
        ii. Held by filler blocks or secured by a single continuous wire and

iii. Uniformly spaced at a center to center distance of 250 millimeters to 300 millimeters.

2. An employer must ensure that a 2-way constructed portable ladder that is wide enough to permit traffic in both directions at the same time,
   a. Has a center structural rail along the length of the ladder
   b. Is at least 1 meter wide, and
   c. Is constructed of materials that are substantial enough to accommodate the maximum intended load.

MANUFACTURED PORTABLE LADDER

Employer must ensure that a portable ladder complies with:

1. CSA standard CAN3-Z11- M81 (R201), *Portable Ladders*
2. ANSI Standard A14.1-2000, *American National standard for Ladders – Wood – Safety Requirements*
3. ANSI Standard A14.2-2000, *American National Standard for Ladders- Portable Ladders- Safety requirements or*
4. ANSI Standard A14.5-2000, *American National Standard for Ladders – Portable Reinforced Plastic – Safety Requirements*

SECURING AND POSITIONING

Workers must ensure that

1. A portable ladder is secured against movement and placed on a base that is stable,
2. The base of an inclined portable ladder is no further from the base of the wall or structure than of the height to where the ladder contacts the wall or structure and
3. The side rails of a portable ladder extend at least 1 meter above a platform, landing or parapet if the ladder is used as a means of access to the platform, landing or parapet.

FALL PROTECTION

1. An employer must ensure that the worker working from a portable ladder from which the worker may fall more 3 meters or more uses a personal fall arrest system.
2. Subsection (1) does not apply while the worker is moving up or down the portable ladder.

3. Despite subsection (1), if it is not reasonably practical to use a fall arrest system, a worker may work from a portable ladder with- out fall protection if
    a) The work is light duty task of short duration at each location
    b) The worker's center of balance is at the center of the ladder at all times even with an arm extended beyond the side rails of the ladder and
    c) The worker generally has one hand available to hold on to the ladder or other support.

Confined Space Entry

"Confined Space" is defined as any space having restricted egress.
Examples: Tanks, manholes, sewers. Roofs, excavations etc.

Secure the site by erecting signs, barricades and any other traffic control device required to protect workers from traffic.

1. Ensure that all equipment necessary is at the site and ready for use;
    a. Certified testing equipment
    b. Certified 5 point body harness
    c. Intrinsically safe communication device (if required)
    d. Lifeline
    e. Rescue equipment
2. Ensure that any atmospheric hazards present are identified and controlled. Use ventilation techniques to remove any harmful substances; where ventilation is not practical, a competent worker must carry out tests until the work is completed.
3. If harmful substances are present or the air is deficient of oxygen, ensure the worker is:
    a. Competent
    b. Protected by breathing apparatus (SCBA or SABA)
    c. Attended by and in communication with another worker
    d. Has properly donned protective rescue equipment
    e. Physically capable of effecting a rescue
4. Check for any physical hazards in the work area where the work will be carried out.
5. Ensure that all workers know what procedures to follow in case of an emergency.

CONFINED SPACE

Overview

The Health and Safety Hazards associated with confined space includes the following:

- Chemical hazards: gases, vapours, dust, solvents, fumes and mists;
- Physical hazards: noise, temperature, air quality and illumination;
- Biological hazards: fungus, moulds, and parasites;
- Ergonomic hazards: awkward postures;
- Machine hazards: moving machinery and equipment;
- Energy hazards: electricity, heat, gravity and kinetic;
- Confined space hazards: restricted entry/exit and hazardous atmosphere;
- Work practice hazards: following safe work practices and procedures.

Safe Work Practices

- Only workers who have completed a confined space entry program are permitted to work in a confine space.
- A confined space should be considered hazardous unless determined otherwise by a comprehensive hazard assessment.
- Workers who have to work in confined spaces must be advised of the existence of and dangers posed by confined spaces.
- Workers are not permitted to enter or remain in a confined space that contains or is likely to contain an explosive or flammable gas or vapour.
- Do not enter a confined space if a new hazard is present that was not identified by the initial hazard assessment.
- Do not create an obstruction by storing materials near or adjacent to a confined space/egress.

Common Sewer Hazards

HYYDROGEN SULPHIDE H2S

This gas is commonly found in sewers, cisterns, oil tanks etc., which can be created by decomposition of organic matter. The putrid rotten egg smell is associated with concentrations as low as 1 ppm. At higher concentrations the odour may not be detected since the gas affects the sense of smell. Unconsciousness will result in a few seconds if the concentration level exceeds 700 ppm. If the victim is not immediately removed to fresh air, death will follow quickly.

Use extreme caution when working in these environments.

CARBON MONOXIDE

This gas is colourless, odourless and deadly. Overexposure may result in a worker experiencing ringing in the ears, nausea, headaches and sleepiness.

ENTERING TANKS OR MANHOLES

Entering a confined space can be extremely hazardous. The following hazards are commonly encountered and must be considered for confined space entry:

1. Toxic vapours
2. Fumes
3. Flammable liquids and gases
4. Explosions
5. Lack of or excess oxygen
6. Electricity including static corrosive or hazardous chemicals.
7. Physical hazards
8. Noise, Dust, excessive heat and cold

PERSONAL PROTECTIVE EQUIPMENT

Where the atmosphere in a confined space cannot be guaranteed to be suitable for workers, breathing apparatus must be used as directed.

Workers required to don breathing apparatus must be trained and competent.

Workers must also wear industry standard work wear and personal protective equipment. It must not however be a substitute for proper cleaning and job preparation. Safety harnesses and lifelines must be of the type approved by the O.H. & S. Regulations.

TRAINING

A supervisor who is thoroughly familiar with the hazards that may be encountered including accident prevention requirements, must direct the work. First aid and rescue measures must be implemented.

Before entry the supervisor must inform all workers connected with or working in the confined space of the following hazards they may encounter, precautionary measures required and rescue methods needed in an emergency. All workers involved with confined space work must be thoroughly trained in the use of respiratory equipment and other safety equipment pertaining to the job.

SAFE PROCEDURE FOR ENTERING CONFINED SPACES:

1. Supervisor's approval and presence is to be obtained prior to entry.
2. Equipment to be assembled and checked by supervisor and individual operator.
3. Supervisor to brief personnel on the operation procedure and each person's responsibility.
4. Safety line to be tended by experienced and trained person.
5. Training to include emergency rescue procedure.
6. Put on harness and check the buckles, lanyards and safety lines. Tether the safety line by making two wraps around **FIXED** object outside confined space area.
7. Safety line to be tended and kept snug at all times while person is in the confined space.
8. All tools will be lowered and removed using a basket and hand line.
9. Personal Protective Equipment will be worn at all times.

Lockout / Tag out

Whether oiling, greasing, doing confined space entry or doing maintenance on company equipment the following procedure **must** be followed by the operator and / or the worker.

1. Shut off equipment
2. Turn off electrical supply to the equipment being worked on.
3. Attach personal **"LOCK OUT"** lock to the electrical panel switch.
4. Return to the equipment locked out and attempt to start the equipment, if it does not start, proceed to service equipment.
5. If more than one person is working on the same piece of equipment, all persons **must "LOCK OUT".**
6. In the event two locks will not fit on the electrical panel shut off switch, then one person **must** use an "**OUT OF SERVICE"** tag.
7. All keys **must** be turned into your supervisor before going home after your work shift.

DO NOT REMOVE ANOTHER PERSONS' LOCK OUT TAG

After all locks or tags have been removed, the operator may start equipment.

NOTE: Should an employee go home and leave their lock or tag attached after completion of service, they could be called back to work to remove it.

In extreme cases, vacation, sickness, etc., the supervisor may remove the lock or tag after he /she has made a careful inspection of the equipment.

Manual Lifting

The most common injury sustained by workers is back injury. This is caused by improper lifting practices. Whenever possible use equipment to lift and move objects.

OPERATION

1. Size up the load, if you think you need help, ask for it.
2. Get good footing.
3. Bend your knees; get a good grip on the object to be lifted.
4. Keep your back straight, lift with your legs, and keep the object being lifted close to your body.
5. Keep your balance and do not twist or turn as you lift.
6. To put object back down again, do not bend at the waist. Keep your back straight and bend your knees, keep the object close to your body until it is placed in a secure position.

EVALUATING THE LOAD

Determine the weight of the object or load before a lift to make sure that lifting equipment can operate within its capabilities.

BALANCE LOADS

Estimate the center of gravity or point of balance. The lifting device should be positioned immediately above the estimated center of gravity.

LANDING THE LOAD

1. Prepare a place to land the load, lower the load gently and make sure it is stable before slackening the sling or chain.
2. Select only alloy chain slings and **NEVER** exceed the working limits.
3. Make sure the hoist or crane is positioned directly over the load.
4. Use slings of proper reach. Never shorten a line by twisting or knotting. Never use bolts or nuts with chain slings.
5. Never permit anyone to ride the lifting hook or the load.
6. Make sure all personnel stand clear from the load being lifted.
7. Never work under a suspended load, unless the load is properly supported.
8. Never leave a load suspended when the hoist or crane is unattended.
9. Inspect all slings thoroughly at specific intervals and maintain them in good condition.

10. Inspect each chain or slings for cuts, nicks, bent links, bent hooks, etc., before each use. If in doubt, do not use it.
11. Ensure the safety latches on hooks are in good working condition.
12. Make sure a tagline is used to control the load.

Batteries

1. Battery charging room must be clear of all flammable liquids and all sources of ignition.
2. Splash proof goggles; rubber apron and rubber gloves must be worn when handling batteries and battery acid.
3. An eye wash station and fire extinguisher must be available within or just outside the door of the charging room.

USE OF JUMPER CABLES

1. When using jumper cables on a disabled battery there is always danger of a hydrogen gas explosion.
2. Connect one cable to the positive post of each battery.
3. Connect one end of the other cable to the negative post of the booster battery.
4. Connect the other end to a clean unpainted area of the disabled vehicle, preferably on the side opposite the battery.
5. Make sure vehicles are not touching.
6. Turn off all battery operated accessories.
7. Make sure cables are properly attached to the battery posts, so they cannot fall off and touch other parts of the engines.
8. Start the booster vehicle.
9. Start the disabled vehicle.

Boosting Equipment

OPERATION

1. 1. Before boosting check to see whether the boosting vehicle has the same ground as the vehicle to be boosted and they are the same voltage.
2. If both negative ground connect the ends of one cable to the positive terminal of each battery.
3. Connect one of the other cables to the negative terminal of the strong battery and to the engine block of the other vehicle being started. **"DO NOT"** connect the cable to the negative terminal of the weak battery. You risk an explosion.

4. If both vehicles are positively grounded connect the ends of one cable to the negative terminals of each battery.
    a. **When boosting a positive vehicle with a negative grounded vehicle the following procedures are to be followed**
    b. **Never allow any part of one vehicle to touch the other.**
5. Attach one end of the cable to the positive terminal of the negative grounded vehicle; attach the other end to the engine block of the positively grounded vehicle.
6. Attach one end of the other cable to the negative terminal of the vehicle.
7. Disconnect by reversing the above procedure.

Battery Chargers

When connecting to a battery, if the battery charger does not have an on / off switch, unplug the charger prior to connecting. Current flowing in the circuit can cause sparks and arching, resulting in undesirable pitting of the contact surfaces.

DISCONNECTING and INSTALLING BATTERY

1. When removing a cable from a battery, always remove the cable from the grounded post first.
2. When installing a battery always connect the cable to the ungrounded post before the grounded post.
3. When installing or removing a battery ensure there is no current dray in the battery circuit. In other words turn off all accessories such as lights, radios, fan, door lights etc.

Fork Lift

1. Operator shall have an orientation prior to operation of lift and shall be trained by an experienced employee.
2. Employee's being trained in the operation shall show competency in the use of the lift prior to actual use by an experienced employee, assigned in the training of the lift.
3. There is absolutely NO riding on a lift at any time for any reason.
4. There is absolutely NO using the lift as a ladder; no person is to be on the lift ever.
5. The lift should be fully charged before use to avoid any malfunctions while lifting is in progress.
6. There is an emergency stop located in the center of the operating stick, the red button will cease forward or backward motion of the lift if a person

becomes pinned or presses it and a horn will sound. There is also a horn located under the red button to sound to warn others.

7. When lifting, ensure that there are no people directly under the lift and a safe distance from the load itself.
8. All materials being lifted must be secured in place via rope, harness, box or shrink wrap.
9. Loads must be centered and weight evenly distributed. Ratchet straps are supplied and located in the red tool box attached to the lift.
10. A quick visual inspection should be conducted of the lift as well as a check of the controls.
11. No maintenance is to be conducted on the lift while in operation; the unit must be tagged out before any maintenance or short repairs.

Motor Vehicle Operation

Always drive defensively and do not make assumptions regarding the other driver's behavior. Be prepared for the unpredictable action of other drivers. Our company signs on the vehicles are our advertising and we want to leave a good impression to the general public.

Obey all traffic laws and govern speed by traffic, weather and road conditions.

Company vehicles should be maintained regularly by:

1) Checking the brakes.
2) Maintaining correct levels of brake fluid, oil and coolant.
3) Check the battery periodically for fluid levels.
4) Replace tires when wear becomes excessive, maintain correct air pressure and ensure the spare is always serviceable.
5) Change oil and filters on a regular basis.
6) Ensure all lights are working (carry spare bulbs).
7) Ensure windshield wipers work and maintain an ample supply of washer fluid.

Use the seat belt. ***It's the Law.***

A survival kit consisting of the following equipment is recommended for all vehicles:

1. Axe Shovel,
2. Gas Line Anti-freeze,
3. Booster Cables,
4. Candles and Matches,

5. Towrope,
6. Blanket,
7. Canned or dehydrated food should be carried in the event you are stranded for a few days.

Drive with headlights on at all times to reduce accidents.
Compliance with the drug & alcohol policy is required at all times.

General Housekeeping

1. As work is proceeding, be sure area is cleaned up behind you. Other contractors may have activities in the same area.
2. Do not leave tools where they may be forgotten, stolen or may present a tripping or falling hazard.
3. Store all material in an area away from where they could cause tripping or cluttering.
4. Make sure all materials are sealed, weather proof and safe before leaving the work area for the day.

Housekeeping is Everyone's Responsibility

Obligation of Workers to Refuse Unsafe Work

Overview: Bill C 45 states that workers do not have to perform tasks for which they feel that they are not competent to safely and successfully complete.

Part A: Worker Can I refuse to do work I think is unsafe?

When you've talked to your supervisor (and maybe others), and you still have reason to believe that the work you have been asked to do may endanger your safety or the safety of those around you, you have the right under the Occupational Health and Safety Act to refuse to perform the work.

There are times when the supervisor might not agree with you, doesn't take what you're saying seriously or politely ignores you. If the problem isn't properly addressed and you still feel you could be injured say "NO" to the work. You have the legal right to refuse unsafe work.

How can I refuse to work?

Tell your supervisor that you believe that the situation is not safe, and that you will not continue the work until the situation is made right. If necessary, let them know that you are exercising your right under the Occupational Health and Safety Act to refuse work.

Make sure there's no doubt that it's not a discussion or a complaint investigation, but that you're refusing to perform the work until they do something about your concerns. At this point your boss or supervisor may not agree with you, but once you have "refused to work" under the Act, you can't be ordered or forced to do the work and you can't be disciplined for refusing the unsafe work.
This is a serious thing to do and should not be done lightly or be a routine method of solving problems. However, you should not be afraid to exercise your rights when you really think you or your co-workers could be in danger.

Above all, you have the right to go home from work in the same condition you condition you were in when you arrived for the start of your shift.

Are there rules to follow?

There is a set procedure that the worker member of the health and safety committee or a health and safety representative and your supervisor will be required to follow.

1. The rules say they must investigate the problem.
2. You will wait in a safe place while they do this.
3. You will be an important part of the investigation, as you will be the one to decide if the problem that caused you to refuse to work has been fixed.
4. If the problem is resolved, and most are, you return to work.

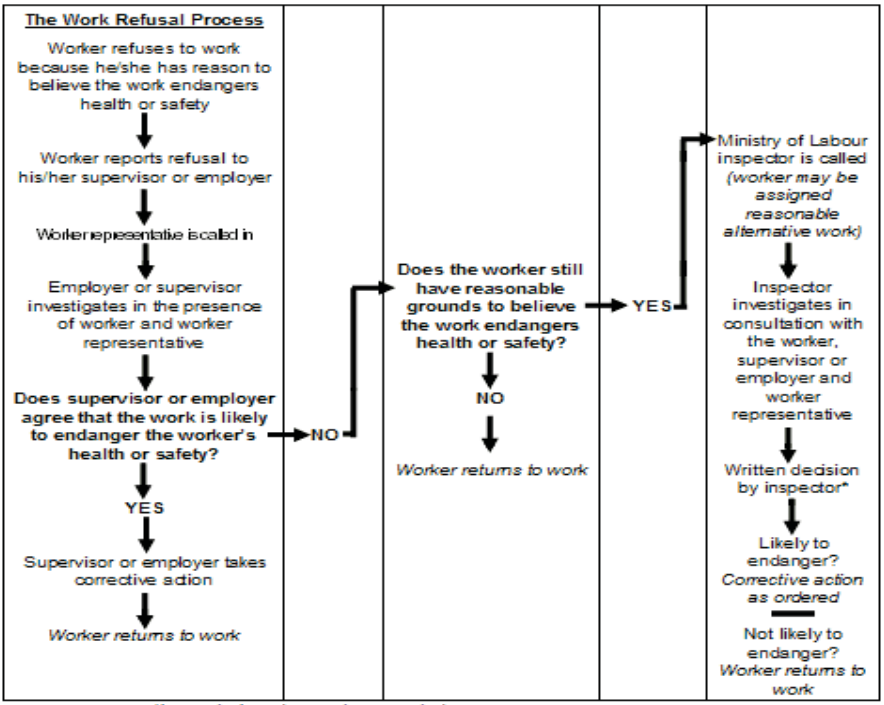
If they finish the investigation and let you know that they feel the work is safe and you have reasonable grounds to believe the work is *still* unsafe and if it can't be resolved through the internal investigation, a Ministry of Labour inspector is called to investigate.

While the Ministry of Labour investigation is underway, you may be assigned to another job. The inspector will decide if the original job is safe. That decision will determine if you return to your job or if changes must be made before you resume the work.

Do all workers have the right to refuse unsafe work, even young workers who are just starting out?

Yes, but for some occupations, the right is restricted. For example, the Act prohibits police officers, firefighters, corrections officers and some health care workers (this is specified in section 43 of the Act) from refusing work when the danger is a normal part of their job or if the refusal would directly endanger the life, health or safety of another person.

Here's a flow chart that shows the work refusal process:



Section 43 of the Occupational Health and Safety Act describes the procedures.

Can I be disciplined or fired for refusing to work or raising concerns?

It is against the law for an employer to punish or fire a worker for refusing work that the worker thinks is unsafe.

There are provisions under the Act to protect you from "reprisals".

If you feel you have been disciplined (e.g. sent home without pay, had your hours drastically cut or were fired), you can report it to the Ministry of Labour, who will guide you either to your union (if there is one) or to the Ontario Labour Relations Board (OLRB) who will rule on the situation. The Ministry doesn't make any rulings

or decisions in these situations. The union or the OLRB will handle the process. Be aware that it may take some time to resolve.
Even if you only feel that after a refusal you were treated differently, remember that the loss of a job is nothing compared to losing a finger, getting burned or perhaps losing your life. Give yourself a pat on the back for exercising your rights and protecting yourself and your co-workers. It probably isn't a great place to work if your employer reacts by punishing you.

Protecting Employees, Co-workers and the Public

The code of practice has been developed to protect employees, co-workers and the public.

Part A; Exterior Protection Requirement

Employers shall:
Keep sidewalks, entrances to buildings, lobbies, corridors, aisles, doors and exists free and clear of all obstructions to permit safe entrance and exit at all times.
Clearly, post appropriate warning and instructional safety signs.

1. Use a signal person to control the movement of motorized equipment in areas where traffic might create a danger to persons.
2. Provide adequate sidewalks, sheds, canopies, catch platforms and appropriate fences when it is necessary to maintain public pedestrian traffic adjacent to the erection, demolition, or alteration of outside walls.
3. Provide temporary ridged fencing, at least 2.4 m high, around the perimeter of work adjacent to public areas. All guardrails must meet current legislative requirements.
4. Provide guardrails on both sides of vehicular and pedestrian bridges, ramps, runways and platforms.
5. Provide adequate barricades to separate work area from employees and the public.
6. Provide adequate barricades and secure barriers around all excavations.
7. Secure barricades to prevent accidental displacement and maintain them except where temporary removal is necessary to perform work. During the period a barricade is temporarily removed for work, a worker must be positioned at each opening.
8. Always barricade an area where work is being done overhead.
9. Provide temporary sidewalks when a permanent sidewalk is obstructed by work.

Interior Protection Requirement

Employer shall:

1. Before starting work in an occupied building, contractor must include steps in the work plans to provide protection for people and property in areas that might be affected by the work.
2. Risks that might be considered in the plan include: electricity or gas outages, excessive noise generation, dust, chemical fumes, asbestos fibre release, mould, and fire exit blockages.

Chemical / Biological Hazards and Harmful Substances

This Safe Work Practice is to protect workers exposed to chemical/biological and harmful substances

Employer obligations to Worker Exposure to Harmful Substances:

1. Must ensure worker exposure is kept as low as reasonably achievable;
2. Must ensure worker exposure does not exceed occupational exposure limits, including coal dust;
3. Must ensure that is no occupational exposure limit for a harmful substance is established, worker exposure to that substance is kept as low as reasonably achievable;
4. Must ensure worker exposure to a substance does not exceed that substance's ceiling limit;
5. Must ensure for exposure to multiple substances with similar toxicological effects;
   a. During a single work shift, utilize the formula in Alberta OH&S code 2009 Part 4, Clause 17 for calculations of occupational exposure limit values.
   b. During shifts longer than 8 hours, utilize the formula in Part 4, Clause 18(1) to ensure equivalent protection from adverse health effects is achieved by adjusting the 8 hour limit.
   c. Ensure that airborne concentrations measurements are conducted in accordance with standard test methods.
6. Must, for potential worker exposure:
   a. Identify health hazards, assess exposure and inform the worker;
   b. Inform the worker of any measurements made of airborne concentrations;
   c. Train the worker in procedures to minimize exposure;
   d. Ensure the worker understands procedures developed by the employer to minimize exposure.
7. Must, for worker overexposure:

   a. Immediately conduct measurements of the substance concentrations at the site;
   b. Identify the cause;
   c. Protect the worker from any further exposure;
   d. Eliminate any other worker exposure;
   e. Explain to the exposed worker the nature and extent;
   f. Ensure that measurements taken are kept for a period of 3 years.
8. Must, for worker decontamination:
   a. Provide facilities including showers to remove the contamination before the worker leaves the worksite;
   b. Ensure that those articles and clothing taken by the worker have been properly decontaminated or cleaned;
   c. Ensure that workers have access to emergency baths, showers, eye wash equipment or other equipment at a work site where chemicals harmful to the eyes or skin are used;
   d. Ensure that workers do not eat, drink or smoke in a part of a work site contaminated by a harmful substance;
9. Must for storage, handling, use and disposal of a substance listed in Schedule 1, Table 1:
   a. Have a code of practice for a pure substance exceeding 10 kg and a concentration of 0.1% by weight or more;
   b. Include measures to prevent the uncontrolled release of the substance;
   c. Include procedures to be followed if there is an uncontrolled release (See ERP);
10. Must ensure that harmful substances used or stored at a work site are clearly identified, used and stored such that the use or storage is not a hazard to workers;
   a. For asbestos, silica, coal dust and lead refer to OH&S Part 4, Clauses 28 to 48 (6);
   b. Ensure that a worker's exposure to mould is controlled.

Workers:

1. Must be trained in, understand, and appropriately utilize procedures developed by the employer to minimize exposure;
2. Cannot exceed occupational exposure limits of substance or concentrations exceeding their ceiling limit;
3. Must not eat, drink or smoke in part of a work site contaminated by a harmful substance;
4. Must not use materials containing crocidolite asbestos in an existing or new building;

5. Must not apply materials containing asbestos by spraying them;
6. Must not use asbestos in an air distribution system or equipment in a form in which, or in a location where, asbestos fibres could enter the air supply or return air systems;
7. Must, if having received a health assessment from a previous employer within the immediate preceding two years, inform the present employer of the date or approximate date of that health assessment at the earliest possible time;
8. May refuse to undergo part of all of a health assessment by giving the employer a written statement refusing it;
9. Must follow the company's lead exposure control plan and practice the personal and work site hygiene practices established by the employer to minimize lead exposure at the work site;
10. May refuse to undergo lead blood level testing, by giving the employer a written statement refusing it.

Transportation of Dangerous Goods

Overview of Safe Work Practice

The Federal Government of Canada passed the Transportation of Dangerous Goods Act on July 17, 1980 and a revised Act was passed in 1992. The Transportation of Dangerous Goods Regulations was enacted on July 1, 1985 to allow for greater public safety. The Regulations (TDGR) is a corresponding document that translates the Act into its operative form by describing the various safety requirements relative to handling, offering for transport and the transportation of dangerous goods. These Acts and Regulations were introduced to promote public safety when transported by road, rail, sea or air. In case of an accidental release, the documentation, safety marks and labels provide the necessary information for emergency personnel to identify those dangerous goods and to clean up the spill in the safest manner possible.

Employer's Responsibilities

1. Employers: are responsible for training and certifying employees to transport dangerous goods.
2. They are also responsible for developing procedures that ensure compliance with the regulations in their particular workplace.
3. An employer must not direct or allow an employee to handle or offer for transport dangerous goods, unless the employee has been adequately trained and holds a training certificate or performs those activities in the

presence or under the direct supervision of a person, who is adequately trained and holds a training certificate.

4. Employers must provide an Emergency Response Plan if a dangerous occurrence takes place.

Consignors (shippers)

Must be trained and certified to handle or offer for transport dangerous goods. Consignors are responsible for:

1. Identifies: makes a decision as to whether or not the article or substances being shipped are identified as dangerous goods (i.e. determines if a specimen or culture is a dangerous good or a diagnostic specimen).
2. Classifies: determines the class of the dangerous good (infectious substance Class 6.2), and Risk Group.
3. *"In the case of infectious substances this activity is normally done by, a doctor, scientist, veterinarian, epidemiologist, genetic engineer, microbiologist, pathologist, nurse, coroner or laboratory technologist or technician."*
4. Means of containment: selects packaging and ensures that it is in compliance with regulations.
5. Marks: ensures all appropriate labels are on the package, such as addresses of the consignor and the consignee, as well as the proper shipping names.
6. Labels: ensures all appropriate labels are on the package, such as i infectious label.
7. Documents: ensures all proper documentation accompanies the package. A copy of the shipping document must be able to be produced, for two years after the date the shipping document was prepared.

The Consignor's responsibility is complete when the package arrives intact at its final destination and the consignee accepts it.

Carrier

Must be trained and certified to handle and transport dangerous goods. They must ensure that the TDG shipping document is complete and that all information, including safety marks agrees with the consignment. They must also replace any safety labels that become damaged during transport. A copy of the shipping document must be within reach of the driver at all times. If a package is being transferred from one driver to the next, a copy of the document must also be transferred along with the package.

The carrier delivers the package and document to the consignee. The carrier must report any dangerous occurrence, lost or stolen packages to the local police. The drivers must retain a copy of the shipping document for 2 years.

Consignee (Receiver)

Must be trained and certified to handle dangerous goods. They must ensure that the TDG shipping document is complete and that all information, including safety marks agrees with the consignment. They must inspect the package for leakage or damage. The consignee must report any dangerous occurrence and lost or stolen packages to the local police or to the provincial regulatory agency. They must also retain their copy of the shipping document for 2 years.

Employee Training and Competency Validation

A person, who handles, offers for transport or transports dangerous goods must be trained and certified. They need to be adequately trained or work under the direct supervision of a person who is adequately trained and holds a training certificate. Direct supervision may mean within audible and visual distance. After the date of issuance, training certificates are valid for 36 months for road transport and 24 months for air transport. An employer must keep a record or copy of the certificate from the date of issuance until two years after expiry.
The training must be directly related to the person’s duties. If the employee only handles or offers for transport Class 6.2 or Class 9, then adequate training would consist of these areas.

Employee Training Requirements:

A person is adequately trained and competent when they have a sound knowledge of:

1. Classification criteria;
2. Shipping names;
3. Shipping documentation;
4. Dangerous goods safety marks;
5. Means of containment and certification marks;
6. Emergency response assistance plan requirements;
7. Accidental release report requirements;
8. The proper use of any equipment used to handle or transport dangerous goods;
9. The safe handling and transportation practices; and
10. The reasonable emergency measures a person must take to reduce or eliminate any danger to the public

A person is considered trained and competent when his employer is satisfied that adequate training has been received and has been validated by an industry expert and issues him a training certificate. The training certificate must include:

1. The name and address of the place of business of the employer;
2. The employees name and signature;
3. The training requirements must be listed;
4. The date the training certificate expires; and
5. The signature of the employer acknowledging the individuals competency in the training requirements for the Transportation of Dangerous Goods.

A person must produce their certificate to an inspector immediately upon request.

CLASSIFICATION

There are nine classes of Dangerous Goods. The numbers do not signify the degree of hazard. Some classes are further divided into divisions.

Classes and Divisions are stated as follows:

CLASS	DESCRIPTION	EXAMPLES
Class 1 **EXPLOSIVES**	Mass explosion hazard Projection hazard, but not a mass explosion hazard Fire hazard along with a minor blast hazard and/or a minor projection hazard, but does not have a mass explosion hazard A minor explosion hazard-explosion effects are localized to immediate surroundings Very insensitive substances with a mass explosion hazard An extremely insensitive substance with no mass explosion hazard	TNT Hand grenade Smokeless powder, serial flares Fireworks Blasting agents
Class 2 **GASES**	A flammable gas which is easily ignited and burns A non-flammable, non-poisonous, non-corrosive gas A corrosive or toxic gas harmful to living beings	Propane Nitrogen, refrigerated liquid, anhydrous ammonia Ammonia solution >50%

CLASS	DESCRIPTION	EXAMPLES
Class 3 **FLAMMABLE LIQUIDS**	Have a flash point <or= 60.5	Gasoline Heating oil
Class 4 **FLAMMABLE SOLIDS; SUBSTRANCES LIABLE TO SPONTANEOUS COMBUSTION; SUBSTANCES THAT ON CONTACT WITH WATER EMIT FLAMABLE GASES**	A flammable solid under normal conditions of transport, liable to cause a fire through friction; solid desensitized explosives Substances liable to spontaneous combustion which consists of pyrophoric substances that ignite within 5 minutes of coming into contact with air; self-heating substances that when in large amounts, spontaneously ignite on contact with air after long period of time Water-reactive substances	Molten sulphur, safety matches Activated charcoal Calcium carbide
Class 5 **OXIDIZERS; ORGANIC PEROXIDES**	Substances that yield oxygen that contributes to the combustion of other material An organic peroxide, a strong oxidizing agent which releases oxygen very readily and may be liable to explosive decomposition, burn rapidly, sensitive to impact or friction, react dangerously with other substances, causes damage to eyes	Ammonium nitrate Benzyl peroxide

CLASS	DESCRIPTION	EXAMPLES
Class 6 **POISONOUS; INFECTIOUS SUBSTANCES**	A poisonous substance An infectious substance	Strychnine Bacteria; viruses
Class 7 **RADIOACTIVE MATERIAL**	A radioactive material	Uranium
Class 8 **CORROSIVE SUBSTANCE**	A corrosive material, either acid or alkaline	Sulphuric acid
Class 9 **MISC. DANGEROUS GOODS**	A miscellaneous substance or product presenting dangers sufficient to warrant regulation in transport but which cannot be ascribed to any other class An environmentally hazardous substance that cannot be ascribed to any other class A dangerous specified waste	Dry Ice, asbestos DDT Acid sludge

Shipping Names

The proper shipping name must be used on all shipping documents and packaging. The United Nations Committee of Experts on the Transportation of Dangerous Goods has assigned all dangerous goods a number to aid in identification. UN or ID must always precede the number given by the United Nations. This number is also known as the Product Identification Number (PIN). The PIN numbers are always

used in conjunction with shipping names. The PIN numbers and shipping names for infectious substances and dry ice are stated as follows:

UN2814 INFECTIOUS SUBSTANCE, AFFECTING HUMANS
UN1845 DRY ICE (CARBON DIOXIDE)(SOLID)

Risk Groups

To aid in classifying and identifying infectious substances, Canada has adopted the World Health Organization (WHO) system of assigning pathogenic micro-organisms to various Risk Groups. Micro-organisms are categorized according to Risk Groups depending on the severity of the disease caused, routes of infection, virulence and infectivity. Risk Group 4 is the greatest danger and Risk Group 1 is the least dangerous.
Risk Groups are used along with the shipping names. The shipping name in this case is:

"INFECTIOUS SUBSTANCE, AFFECTING HUMANS"

Risk Group 1 - Micro-organisms are innocuous (harmless) and are not subject to the TDG regulations as an infectious substance
Risk Group 2 - Moderate individual risk, low community risk
Risk Group 3 - High individual risk, low community risk (i.e. HIV)
Risk Group 4 - High individual risk, high community risk

Packing Groups

Once the shipper has identified the dangerous good by Class, shipping name, technical name, and risk group, they now must, where relevant, assign each item of dangerous goods to one of the three packing groups within the assigned class or division. Dangerous Goods are assigned to relevant packing groups according to the degree of hazard they present. Degree of hazard refers to how long after exposure "visible death of skin" occurs.

Packing Group I - great danger (0 – 3 Minutes)
Packing Group II - medium danger (3 – 60 Minutes)
Packing Group III - minor danger (1 – 4 Hours)

Infectious substances have not been put into packing groups, instead they have been placed into Risk Groups.

PACKING

Shippers of biological products and diagnostic specimens, where a relatively low probability exists that infectious substances are present, must ensure that their shipments will arrive at their destination in good condition and will present no hazard to humans or animals during transport.
Three types of packaging are described above. The packaging type necessary will depend on whether the shipment is a culture, specimen or waste product. Whether the specimen(s) contains an infectious organism and if so, what risk group the organism falls into and mode of transportation.

PACKAGING (PACKING INSTRUCTION

1. Packaging required for infectious substances:
    a. Watertight primary container (vacutainer tube)
    b. Watertight secondary container (sealed biohazard bag)
    c. Enough absorbent material to absorb the entire content of the primary container. If multiple primary receptacles are placed in a single secondary container, the primaries will be individually wrapped or separated to prevent contact between the receptacles.
    d. Strong outer packaging of adequate strength for its capacity, mass and intended use of which the smallest external dimension is 100mm.

Before a package can be said to meet the requirements of 1A packaging, it must undergo a series of tests. A Package Design Report must be filed and Transport Canada must issue a “Certificate of Registration”. The outer surface of the package that meets the requirements is marked with the United Nations packaging symbol, code design, ‘CLASS 6.2’, manufactured year last 2 digits, state authorization ‘CAN’, manufacturer’s symbol and the Transport Canada Registration Number. 1A packaging must be purchased from a vendor who has already gone through the steps of having their packages tested and certified.

MARKING, LABELING AND SHIPPING

It is the consignors and the carrier’s responsibility to ensure that all required marks and labels are on the outside package.

Safety Marks

The marking and labeling of an infectious substance package are as follows:

1. Hazard label(s)
    a. Shipping name (upper case)
    b. Risk group
    c. UN number

EMERGENCY RESPONSE PLAN (ERP) REQUIREMENTS:

An Emergency Response Plan is required for any amount of Dangerous Goods classified as, Class 6.2 Risk Group 4 infectious substances, when transported in Canada. The consignee must be contacted and informed of the consignment's contents and expected arrival details.

The ERP is a plan that outlines what is to be done if there is an accident involving a dangerous good. Health Canada issues a reference number once the ERP is approved. This reference number for Class 6.2 Risk Group 4 infectious substances is #ERAP2-0746 and must be on the shipping document.

In the event of an accidental release, spill, leak or imminent emission of Class 6.2 Risk Group 4 infectious substances from a means of containment, the person who has possession of the dangerous goods, must report the discovery to Health Canada Duty Officer at ERAP 1-800-545-7661, then the response plan # ERP2-0746 will be implemented. There is a provincially trained ERAP team in place to respond to spills and they will be notified by Health Canada's Duty Officer.

IMMEDIATE RESPONSE

In the event of an accidental or imminent release of dangerous goods excluding Class 6.2 Risk Group 4, a person who has possession of the dangerous goods must immediately report the incident by contacting:

1. The appropriate provincial authority
2. The person's employer.
3. The consignor of the dangerous goods.
4. For a road vehicle, the owner, lessee or charterer of the road vehicle.
5. For Class 6.2, Infectious Substances, CANUTEC at (613) 996-6666.

The immediate report must include:

1. The shipping name or UN number of the dangerous good.
2. The quantity of the dangerous good that was originally contained in the means of containment and the amount known or suspected to have been released.
3. A description of the condition of the means of containment, including details as to whether the conditions of transport were normal when the means of containment failed.
4. The location of the accidental release.
5. The number of deaths and injuries resulting from the accidental release.
6. The number of people evacuated from the area.

30-DAY FOLLOW-UP REPORT

A follow-up report must be made by the employer of the person who had possession of the dangerous goods at the time of the accidental release. The follow-up report must be made in writing to the Director General within 30 days after the occurrence of the accidental release, and must include the following information:

1. The name and address of the business, and the name and telephone number of the person providing the information.
2. The date and time and location of the accidental release.
3. The name and address of the business of the consignor.
4. The classification of the dangerous good.
5. The estimated quantity of the dangerous goods released and the total quantity of the means of containment.
6. A description of the means of containment involved based on the identification markings and a description of the failure or damage to the means of containment, including how the failure or damage occurred.
7. The number of deaths and injuries resulting from the accidental release.
8. An estimate of the number of people evacuated from the area.
9. If an emergency response assistance plan was activated, the name of the person who responded to the emergency in accordance with the emergency response assistance plan.

Managing the Control of Hazardous Energy

The purpose of the job procedure is to protect workers from hazardous energy in the workplace.

Part A: An employer's obligation to worker protection from Hazardous Energy includes:

1. For Isolation:
    a. Ensure no worker performs servicing, repairs, tests, adjustments or inspection on machinery, equipment or powered mobile equipment until it has come to a complete stop and:
        i. All hazardous energy at the location at which the work is to be carried out is isolated by activation of an energy-isolating device, which is secured with a personal lock, or;
        ii. Machinery, equipment or powered mobile equipment is otherwise rendered inoperative in a manner that prevents accidental activation and provides equal or greater protection;

   b. Develop and implement safe work procedures and controls that ensure machinery, equipment or powered mobile equipment is services, repaired, tested, adjusted or inspected safely if manufacturer's specifications require them to remain in operation while being serviced, repaired, tested, adjusted or inspected, or it is reasonably practicable to stop or render them inoperative.
   c. Ensure no worker services, repairs, tests, adjusts or inspects piping/pipeline/process systems containing a harmful substance under pressure until flow has been stopped, or regulated to a safe level and the location at which work is to be carried out is isolated and secured.
2. For securing remotely controlled systems ensure that control system isolating devices and procedures for applying and securing them provide equal or greater protection.
3. For returning to operation:
   a. Ensure a worker does not remove a personal lock or other security device unless it is the worker who installed it.
   b. In an emergency, implement procedures that include verifying that no worker will be in danger due to removal of a lock or other securing device before a worker removes a lock or other securing device.
   c. Ensure securing devices are not removed until:
      i. Each involved worker is accounted for;
      ii. Any personal locks placed by workers are removed;
      iii. Procedures are implemented to verify no worker is in danger before retuning machinery, equipment, powered mobile equipment, piping, pipeline, or process to operations.

Part B Workers expectations include the following:

1. Must not perform work on machinery, equipment or powered mobile equipment to be serviced, repaired, adjusted or inspected until it has come to a complete stop, is isolated and secured with a personal lock;
2. Must attach a personal lock to each energy-saving device and verify the hazardous energy source has been effectively isolated.

Fit for Work

Fit for work means than an individual is in a state (physically and psychologically) to perform tasks assigned to them competently and in a manner which does not compromise the safety or health of themselves or others.

An individual's fitness for work may be impaired by a variety of factors including the adverse effects of medical conditions, level of physical fitness, fatigue, stress or the use of alcohol or other drugs.
Where it is believed that an individual may not be fit for work then intervention is required to ensure that the risk to health or safety is tolerable.

Five Requirements to Manage Fit for Work

Part 1: Fit for Work Management

The existence of a system for managing fit for work that clearly identifies the resources, training and competencies, responsibilities and procedure required.

Organization, Resources and Documentation

1. A management structure for fit for work shall be in place that:
    a. Clearly identifies those people who have an active responsibility in the management of the fit for work and state what those responsibilities are;
    b. Ensures that contractors and sub-contractors have a management system in place consistent with this standard;
    c. Maintains procedures to ensure that the employees, contractors, partners, and others are aware of the requirements to manage fit for work;
    d. Ensures that communication is designed to bridge cultural and language difficulties;
    e. Ensures an intervention and rehabilitation process is in place; and
    f. Ensures all person and medical information remains secure and confidential.

Competence

2. The management system shall define the standards required for critical roles and the process for assuring the competency of those involved in the management of the fit for work.

Records

3. All personnel records which relate to this standard shall be retained in a secure location for a minimum of one year from termination of service.
4. All medical records shall be retained at the point of examination and in accordance with provincial regulations on storage of medical data.
5. All personnel medical information shall remain confidential in accordance with local regulations (FOIP), company standards and procedures.
6. Contractors shall retain additional records as required in the terms of their specific contract.

Part 2: Medical and Physical Assessment

A risk based approach applied to define medical and physical assessments to ensure all personnel are medically and physically fit to perform their job functions.

Pre-employment – Employees and Contractors

1. Pre-employment assessments, against risk based determined criteria, shall be conducted to measure a prospective employee's or contractor's fit for work prior to any offer of contract or employments.
2. Where there are not specific fit for work medical or physical assessment requirements, the prospective employee shall be required to sign a medical declaration, to state that they are fit undertake the requirements of their position.

Return to Work

3. Personnel returning to work from illness or injury that necessitated a prolonged absence (greater than 10 working days) or surgical intervention shall be required to provide a medical clearance.

Part 3: Fatigue Management

The potential for fatigue shall be identified and the associated risk is managed for work.

Fatigue Management for all Personnel

1. All personnel shall be educated on fatigue hazards and prevention during the need to avoid driving after prolonged work or travel.
2. Work and travel patterns shall take into account the potential for fatigue on personnel's fit for work.
3. Personnel traveling for work purposes shall ensure they have adequate recuperative rest before returning to work.
4. Personnel working over and above 12 hours shall be required to have:
    a. A fatigue risk assessment and management plan in place; and
    b. Authorization for even event from a senior manager who is above that of the direct supervisor;
    c. Transportation home to a normal place of residence shall be provided when requested to work greater than 12 hours.

Part 4: Occupational Stress

The potential for stress shall be identified and the associated risk is managed in the workplace.

Management of Occupational Stress

1. Managers and supervisors shall assess the hazards of stress-related ill health arising from work activities, and take measures to manage the risk in relation to health and safety to personnel.
2. Where stress occurs the supervisor shall ensure that a rehabilitation program is developed through a medical advisor.

Part 5: Alcohol and other drugs

Personnel shall ensure that they are fit for work by managing their alcohol and other drug use.

Alcohol and Other Drugs

1. Alcohol shall not be permitted on any operational or construction site or AFF vehicles.
2. All personnel working on or visiting an Alberta Fire and Flood site (operational or construction site and including AFF vehicles) shall:
    a. Have a blood alcohol concentration of 0.00%.
    b. Not possess or use any illegal drug, controlled substance on mood/mind-altering substance, and
    c. Not exceed the maximum allowable concentrations of other drugs detected by immunoassay of urine.
    d. Individuals shall ensure that any prescription or non-prescription medication is taken safely without risk of impairment. This requires that individuals:
        i. Discuss with their medical practitioner the nature of their duties to identify any possible side effects from the prescribed medication which may impact on their fitness for work: and
        ii. Notify their supervisor of the likelihood of their prescribed medication impacting on their fitness for work.

Quality Assurance

Quality assurance of this standard shall be undertaken with the requirements of the Alberta Fire and Flood Health and Safety Management System.

Excavations and Trenching

THIS CODE OF PRACTICE HAS BEEN DEVELOPED TO PROTECT WORKERS AND THE PUBLIC WHILE THEY ARE EXCAVATING AND TRENCHING AT THE WORK SITE.

PART A: Employer obligations to Worker Protection when excavating or trenching:

1. Refer to Part 32 of the OH&S Code for disturbing the ground and soil type classification.
2. For **soil stabilization** of an excavation, tunnel or underground shaft:
    a. Stabilize the soil by shoring or cutting back or open pit mine by shorting.
    b. Must not use natural freezing of the soil as an alternative/partial alternative to be a temporary protective structure or to stabilize the soil.
3. May stabilize the soil using an artificial soil stabilization technique, including freezing soil by artificial means if the process designed by professional engineer to control soil conditions and is performed according to the professional engineer's specifications.
4. Must, for **marking an excavation**, ensure workers are made aware of the excavation through flagging, marking, safeguards or other appropriate/effective means.
5. Must, for **water hazard**, ensure an excavation is kept free of water that may pose a hazard to workers.
6. Must, for **worker access** to an excavation, tunnel or underground shaft:
    a. Provide workers with a safe means of entering or leaving.
    b. Ensure a worker does not enter an excavation, tunnel or underground shaft if it does not comply with Part 32 of the Code.
7. Must, before the ground is disturbed, for **locating buried or concrete-embedded facilities**:
    a. Contact the owner or owner's designate of a pipeline that is within 30 m of the work site and any other facility that may be affected by the ground disturbance.
    b. Advise the owner or owner's designate of the proposed activities.
    c. Ask the owner or owner's designate to identify and mark the location of facilities.
    d. Ensure workers are aware of local marks.
    e. Ensure steps are taken to re-establish locate marks if moved or destroyed.
    f. Ensure as-built record drawings are certified by the owner of the facility as the most current drawings of record that indicate constructed location of the facility before using them.
8. Must, for **exposing buried facility**:
    a. Ensure work with mechanical equipment is not permitted within the hand expose zone until it has been exposed to sight by hand digging, by a non-destructive technique acceptable to the owner or by an equivalent method.

b. Ensure that, if using mechanical excavation, it does not present a hazard; if the facility is not an electrical cable or conduit, ensure it is no longer in use and the owner has given written permission to excavate or remove the facility.
c. Ensure a high pressure pipeline is not governed by the Pipeline Act and written approval from the owner is obtained prior to reducing the width of hand expose zone to within 1 m on each side of the pipeline locate marks.
d. Contact the operator or licensee of the pipeline and obtain their consent before disturbing the ground that lies within a pipeline right-of-way.
e. Not allow the use of mechanical equipment within 600 mm of a buried pipeline unless the use of mechanical equipment is under the direct supervision of a representative of the owner of the pipeline.
f. Ensure any exposed buried facilities are protected and supported to prevent injury to workers.
g. Notify the pipeline owner or licensee before backfilling the excavation.

9. The employer is exempt from the above requirements is he, on behalf of an electric utility, undertakes emergency work that involves ground disturbance to a depth of not more than 500 mm, is on the horizontal alignment/right of way of an electric utility structure and is determined to be in a location where no buried facilities are present in the area affected by the work.
10. Must, for **methods of protection** in an excavation that is more than 1.5 m deep:
    a. Ensure workers are protected from cave-ins or sliding or rolling materials by:
    b. Cutting back the walls to reduce the height of the remaining vertical walls to no more than 1.5 m for “hard and compact soil” and “likely to crack or crumble soil”.
    c. Installing temporary protective structures.
    d. Using a combination of the above methods.
11. Methods for **cutting back walls**:
    a. Ensure they are sloped to within 1.5 m. of the bottom of the bottom at a minimum 30 degree angle from the vertical if the soil is classified as “hard and compact”.
    b. Ensure they are sloped to within 1.5 m of the bottom at a minimum 45 degree angle from the vertical if the soil is classified as “likely to crack or crumble”.
    c. Ensure they are sloped from the bottom at a minimum 45 degree angle from the vertical is the soil is classified as “soft, sandy or loose”.
12. Must, for **loose materials**, ensure they are scaled and trimmed from the sides of an excavation.

13. Must, for **spoil piles**:
    a. Ensure they are piled so that the leading edge is at least 1 m away from the edge of the excavation, the slope is at an angle of not more than 45 degrees from horizontal and loose materials are scaled and trimmed from the pile.
14. Must, for **power pole support**:
    a. Ensure that work that disturbs the ground in the vicinity of an overhead power line is performed in a manner that does not reduce the original support provide for power line poles.
15. Must, for **safe entry and exit**:
    a. Ensure a safe point for entering/leaving is no more than 8 m from a worker is the trench is more than 1.5 m deep.
    b. Ensure if the trench is more than 1.5 m deep, it is supported or sloped so the worker can reach the safe point in order to enter or leave.
16. Must, for **temporary protective structures** in an excavation:
    a. Ensure they are of sufficient strength to prevent cave-in or collapse if the excavation is 3 m deep or less.
    b. Ensure they are designed, constructed and installed according to professional engineer specifications (size, specifications of structure including type/grade of materials used and loads for which it is designed) if more than 3 m deep.
    c. Ensure that before beginning an excavation, a foundation that may be affected is supported by a structure designed, constructed and installed according to the professional engineering specifications.
17. For **alternatives to temporary protective structure** refer to the Code, Part 32, and Page 32-8.
18. Must, for **installation/removal of shoring, stringers or bracing** in a trench:
    a. Ensure workers use a ladder and work down from the top, installing each brace in descending order.
    b. Ensure workers use a ladder and work upwards from the bottom, removing each brace in ascending order.
    c. Ensure that if the quality of the ground in which the trench has been dug deteriorates to the extent that it becomes unsafe to use the methods above: they are removed using a method that does not require workers to be in the trench.
19. Must, for **access for powered mobile equipment**:
    a. Ensure that the open side of the excavation or a route used by the equipment to gain access to an excavation has a barrier high enough to stop the equipment from sliding or rolling into the excavation.
20. Must, for a **dumping block**:

a. Ensure that if powered mobile equipment may go over a bank or enter a dump opening while it is discharging its load, the equipment is effectively stopped or controlled by an anchored block, ridge of material acting as a backstop or a designated signaler with a stop signal.

21. For **underground shafts, drilled or bored underground shafts and tunnels** refer to the Code, Part 32, and Pages 32-9, 32-10, and 32-11.
22. The requirement above are exempt is a professional engineer certifies that the ground information is and will remain stable, free from cave-ins, sliding or rolling materials and other hazards associated with working that may compromise worker safety.

Part B: Workers

1. Must not enter an excavation, tunnel or underground shaft that does not comply with Part 32 of the Code.
2. Must install/remove shoring, stringers, or bracing by using a ladder and work from the top/bottom of the trench when installing/removing each brace in descending/ascending order.

Respiratory Protection

POLICY STATEMENT

Alberta Fire and Flood strives to protect the health and safety of our co-workers and all of those related to our operations by offering a safe and healthy workplace. Whenever possible, suitable engineering or administrative controls will be used to prevent an exposure to harmful chemicals, dust or reduced oxygen in the air. When these methods are not possible, Alberta Fire and Flood will provide, maintain and store the appropriate equipment and ensure that it is properly fitted for each individual employee.

Note: This Code of Practice is applicable to all employees and contractors working for Alberta Fire and Flood.

PROCEDURES

1. **Hazard Identification**

Every manager/supervisor is responsible for identifying the specific hazards on their job sites, which would require respiratory protection. These include: an airborne contaminant, a biological contaminant, a process that gives off a dust, fume, gas, mist, aerosol, smoke, or vapour of

any kind or quantity that can be hazardous to workers, or an atmosphere containing less than 19.5% or more than 23 % by volume of oxygen.

2. **Methods of Control**

   Engineering methods such as local exhaust ventilation, addition of clean air to oxygen-deficient spaces, enclosure of a process producing the airborne contaminant and/or substitution of a less hazardous material should be considered.

   Administrative procedures such as safe work procedures may be used when air contaminants are present

3. **Selecting the Respiratory Protective Equipment**

   The manager/supervisor needs to consider the following in order to purchase the most appropriate respiratory protective equipment. Most safety supply companies have qualified Occupational Hygienists to guide employers in selecting the correct equipment.

   There are two main categories of respiratory protection. One type is for conditions that may be Immediately Dangerous to Life or Health (IDLH). The other category is for non-IDLH.

   a. IDLH

      The following need to be identified and reassessed whenever changes in the products or the process are made:

      i. Identification of airborne contaminant(s). The chemical name needs to be known - so the most appropriate filter is selected.
      ii. Concentration of airborne contaminant(s). The average workday concentration and the highest short-term concentrations should be determined.
      iii. Concentration of oxygen. Workers working in an oxygen-deficient atmosphere require atmosphere-supplying respiratory protective equipment.

   b. Non IDLH

      The following factors determine the choice of respiratory protective equipment for non-IDLH situations. These factors need to be reassessed every time products or processes change.

      i. Oxygen deficiency. This situation is where the air has reduced oxygen content and is not IDLH - but is hazardous to health. An atmosphere supplying respirator must be used.
      ii. Physical form. Identify all the physical forms that may be present; dust, mist, fume, fibre, gas, vapour, etc.

iii. Occupational Exposure Limits (OELs). These determine how great a protection factor is required.
iv. Length of time during which the respirator will be needed. Certain types are effective for longer periods of time than others.
v. Toxic properties. By recognizing the full hazard, a full facepiece rather than a half mask respirator should be chosen for protection against eye irritants.
vi. Warning properties. If workers are aware of a substance because they detect a smell or their nose, eyes or throat become irritated, they will be aware that there is a poor fit of the mask or that the cartridges are exhausted.
vii. Need for emergency escape.

4. In Alberta, respiratory protective equipment must be approved by the National Institute for Occupational Safety and Health (NIOSH) or by another standards setting and equipment testing organization or combination of organizations acceptable to Alberta Human Resources and Employment, Workplace Health and Safety. The Canadian Standards Association Standard (CSA) Z94.4 is the standard for comprehensive qualitative and quantitative fit testing.
5. There is more than one size of face piece in most models. If a satisfactory fit cannot be achieved, a different type of respirator must be used.

   However, it must have a protection factor equal to or greater than the original respiratory protective equipment
   a. Worker comfort should be accommodated wherever possible to ensure compliance with the Code. Hot, cold or confined working conditions are uncomfortable and the use of respirators will intensify the discomfort
   b. Respiratory protection is provided only if the face piece provides a proper seal. The worker must be clean- where the face piece contacts the face skin. Unusual facial contours, scars, skin conditions, eyeglasses and missing dentures will interfere with the seal. The seal should be tested and a “user seal check” should be obtained prior to each use. Manufactures should provide instructions on how to complete the “user seal test”.
6. **Medical Aspects**
   a. Respiratory protective equipment should only be used by workers physically capable of working while wearing it
   b. Employees should complete a medical history form prior to using respiratory protective equipment. The Safety Manager will review the history. If there are areas of concern, the Safety Manager will request a medical consultation. Written approval by for wearing respiratory equipment must be obtained prior to wearing the equipment.

7. **Maintenance of Respiratory Protective Equipment**
    a. Respiratory Protective Equipment must be inspected for damage or deterioration, and cleaned according to manufacturer's instructions after each use
    b. If more than one person might be using a respirator, it must be sanitized between uses.
    c. Cartridges and canisters that are near the end of their service life require replacement
    d. Worn or damaged valves, straps and other parts should be replaced exactly as specified by the manufacturer. Repairs on self-contained breathing apparatus must only be done by persons trained and certified by the manufacturer
    e. Equipment should be stored in ready-to- use condition in a clean and dry location
    f. Disposable respiratory equipment should be disposed of after use according to manufacturer's instructions
8. **Training of those wearing Respiratory Protective Equipment**
    Training will be arranged by the Safety Manager/supervisor and must include:
    a. Information about the airborne contaminants, including potential health effects, warning properties, etc.
    b. Why the particular respiratory protective equipment was chosen, its capabilities and its limitations
    c. How to properly put on and take off the respirator
    d. How to test for a satisfactory fit; and
    e. Familiarization with the Code of Practice
    f. Training should be reviewed at least every two years and/or whenever there are changes in the products used or the processes involved

If there any concerns, consultation with the Safety Manager and/or the supplier of the product is available for employees.

Bloodborne Pathogens

Overview

Bloodborne pathogens are infectious microorganisms present in blood than can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV), the virus that causes AIDS. Workers exposed to Bloodborne pathogens are at risk for serious or life-threatening illnesses.

The standard protects workers and others who can reasonably be anticipated to come into contact with blood or other potentially infectious materials (OPIM) as a result of doing their jobs.

In general, the standard requires employers to:

- Establish an exposure plan. This is a written plan to eliminate or minimize occupational exposures. The employer must prepare an exposure determination that a list of job classifications in which all workers have occupational exposure and a list of job classifications in which some workers have occupations exposures, along with a list of the tasks and procedures performed by those works that result in their exposure.

- Employers must update the plan annually to reflect changes in tasks, procedures, and positions that affect occupational exposure. In addition, employers must annually document in the plan that they have considered and begun using appropriate, commercially-available effective medical devices designed to eliminate or minimize occupational exposure. Employers must also document that they have solicited input from front line workers in identifying, evaluating, and selecting effective engineering and work practice controls.

- Implement the use of universal precautions (treating all human blood and OPIM as if known to be infectious for Bloodborne pathogens.)

- Identify and use engineering controls. These are devices that isolate or remove the Bloodborne pathogen hazard from the workplace. They include sharps disposal containers, self-sheathing needles, and safer medical devices, such as sharps with engineered sharps-injury protection and needleless systems.

- Identify and ensure the use of work practice controls. These are practice that reduce the possibility of exposure by changing the way a task is performed, such as appropriate practices for handling and disposing of contaminated sharps, handling specimens, handling laundry, and cleaning contaminated surfaces and items.

- Provide personal protective equipment (PPE), such as gloves, gowns, eye protection and masks. Employers must clean, repair, and replace this equipment as needed. Provision, maintenance, repair, and replacement are no cost to worker.

- Make available Hepatitis B vaccinations to all workers with occupational exposure. This vaccination must be offered after the worker has received the required Bloodborne pathogens training and within 10 days of initial assignment to a job with occupational exposure.

- Make available post-exposure evaluation and follow-up to any occupational exposed worker who experiences an exposure incident. An exposure incident is a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or OPIM. This evaluation and follow-up must be at no cost t the worker and includes documenting the route(s) of exposure and the circumstances under which the exposure incident occurred; identifying and testing the source individual for HBV and HCV infectivity, if the source individual consents or the law does not require consent; collecting and testing the exposed worker's blood, if the worker consents; offering post-exposure prophylaxis; offering counselling; and evaluating reported illnesses. The healthcare professional will provide a limited written opinion to the employer and all diagnoses must remain confidential.

- Use labels and signs to communicate hazards. Warning labels must be affixed to containers of regulated wastes; containers of contaminated reusable sharps; refrigerators and freezers containing blood or OPIM; other containers used to store, transport, or shop blood or OPIM; contaminated equipment that is being shipped or serviced; and bags or containers of contaminated laundry, except as provided in the standard. Facilities may use red bags or red containers instead of labels.

- Provide information and training to workers. Employers must ensure that their workers receive regular training that covers all elements of the standard including, but not limited to: information on Bloodborne pathogens and diseases, methods used to control occupational exposure, hepatitis B vaccine, and medical evaluation and post-exposure follow-up procedures. Employers must offer this training on initial assignment, at least annually thereafter, and when new or modified tasks or procedures affect a worker's occupational exposure. Also, training must be presented at an educational level that workers understand.

- Maintain worker medical and training records. The employer also must maintain a sharps injury log.

For additional information regarding the SOP's and SJP's regarding the Bloodborne Pathogens go the company's web page and check the online Health and Safety Manual.

Health Care and Biological Hazards

Applicable Legislation: Alberta OH&S Code 2009 Part 35

Purpose: The purpose of this procedure is to protect workers from exposure to blood borne pathogens or other biohazardous material.

Employer obligations to Worker Protection from Exposure to Blood Borne Pathogens or other biohazardous materials, i.e. feces, urine, etc.

- Must, for medical sharps:
- Provide and ensure that any medical sharp is a safety-engineered medical sharp.
- Develop and implement safe work procedures for the use and disposal of medical sharps if a worker is required to use or dispose of a medical sharp.
- Ensure a worker who is required to use and dispose of a medical sharp is trained in the safe work procedures, and such training must include:
    - Hazards associated with the use and disposal of medical sharps;
    - Proper use and limitations of safety-engineered medical sharps;
    - Procedures to eliminate accidental contact with medical sharps;
    - Any other relevant information.
- Must, for Sharp Containers:
    - Provide sharps containers and ensure that they are located as close as is reasonably practicable to where the sharps are used;
    - Ensure that sharps containers have a clearly defined fill line and are sturdy enough to resist puncture under normal circumstances of use and handling.
- Must, for Recapping Needles:
    - Ensure workers do not recap needles.
- Must, for Policies and Procedures:
    - Establish policies and procedures dealing with storing, handling, using and disposing of biohazardous materials;
    - Ensure that workers are informed of the health hazards associated with exposure to the biohazardous material.
- Must, for Limited Exposure:

    - Ensure that worker exposure to biohazardous materials is kept as low as reasonably practicable.
- Must, for Post-Exposure Management:
    - Establish policies and procedures for the post-exposure management of workers exposed to biohazardous material.

Workers obligations from Exposure to Blood Borne Pathogens or other biohazardous materials, i.e. feces, urine, etc.:

- Must use and dispose of medical sharps in accordance with the training provided by the employer;
- Must use the sharps containers as provided;
- Must not recap needles.

SECTION 4 - SAFE WORK PROCEDURES

Definition

A Safe WORK Procedure is a step-by-step description of how to proceed from start to finish in performing a job or task properly. It is the practice of Alberta Fire & Flood Ltd. to use Safe Job Procedures as a means of controlling hazards and performing tasks with minimal risk to people and property. Written work procedures are used to train new workers or workers that are moved to new jobs and as a reference by workers particularly for complex, hazardous jobs or jobs that are not performed routinely.

1. Safe Work Procedures will be reviewed annually or whenever an incident occurs.
2. Safe Work Procedures shall be in writing and maintained in the company Health & Safety Manual.
3. All workers are required to ensure they understand and comply with the Safe Work Procedures that apply specifically to the job they are about to perform.
4. Crew Chiefs are to ensure employees are aware of task specific Safe Job Procedures and are following appropriate procedures under the guidance of competent supervision.
5. All Safe Job Procedures must meet or exceed all applicable legislation, industry and Alberta Fire & Flood standards. These standards and safety regulations are to be used as a guideline when preparing these practices.

- **The safety information in this policy does not take precedence over applicable government legislation, with which all employees should be familiar.**

Confined Space

Overview

A confined space is any enclosure such as a sewer, silo, and bag house, hopper which has very limited access, poor natural ventilation, is oxygen deficient, and is not meant for human occupancy. They may contain potentially life threatening hazards which cannot be seen or smelled such as toxic gases or explosive mixtures.

Safe Job Procedures

Determine if the space is defined as a “confined space” as per the O H & S legislation.
Ensure the confined space is clearly identified with appropriate signage.
A worker is not permitted to enter a confined space until a person with adequate knowledge, training and experience has completed a formal assessment and the Confined Space Assessment Form.

1. Confined Space Entry is a two person procedure. One person participates as an Attendant and the Entrant is the person entering the confined space.
2. A worker is not permitted to enter a confined space without a valid entry permit.
3. The completed and signed entry permit must be posted at the entry portal to the confined space.
4. Do not smoke or permit open flames or sparks in the work area. If lights are required inside the confined space, explosion proof lights must be used.
5. Test for oxygen, explosive or poisonous gases using an electronic tester.
6. Ventilate the confined space for 15 minutes using an air mover of suitable capacity if any hazardous gases or lack of oxygen is anticipated or indicated. Be careful not to set the intake near any exhaust or running vehicle/equipment.
7. If tested indicates all gases have been dispersed and oxygen levels are satisfactory, continue to ventilate the space and take the tester in every time the space is re-entered. If the tester alarms, get out immediately.
8. Re-test the confined space after work breaks or before re-entering on subsequent work.
9. If the tester alarm indicates the presence of explosive gases, do not enter. Call the fire department and provide the exact locations of the worksite. Until the source of the explosive gas is determined, and the problem is remedied, no further work can take place.
10. If the atmosphere cannot be cleared with the ventilator, enter wearing a positive pressure breathing apparatus connected to a source of breathable air.
11. Wear the appropriate Personal Protective Equipment when entering a confined space. This can include a full body harness connected to a life line.
12. The Attendant and the Entrant must be in constant communications with each other.

13. The Attendant must be provided with a communications device for summoning adequate rescue response.
14. After complete confined space work is completed, remove soiled clothing, wash hands and face and/or shower after work to minimize the micro-organism health hazards.

Mould Abatement and Remediation

GENERAL

Protection of safety and health of mould remediation workers and building occupants is of paramount importance in mould remediation projects. It is the employer's responsibility to ensure that his or her employees entering or working in remediation work areas, or in designated areas where contaminated contents are cleaned or handled, have received the appropriate training, instruction and personal protective equipment.

Preliminary Steps

In order to implement or verify the remediation protocol, it is highly recommended that the abatement contractor conduct a pre-remediation inspection to ascertain work site conditions and establish project scheduling. Clearly determine who is responsible for identifying and eliminating water/moisture sources.

Containment Set-up

Determine where isolation barriers or contained work areas are to be established (primary and secondary containment). Regulated materials, such as lead or asbestos, require specific mitigation and/or remediation protocols. Establish an appropriate entry and exit to the decontamination area (primary) and a transitional space between work areas and unaffected areas of the building (secondary containment).

Where possible establish negative air pressure differentials and maintain with a sufficient amount of air scrubbers set up in negative-air mode.

Track mats may be placed immediately outside the entrance of the decontamination chamber to limit contaminants from being tracked into unaffected areas.

Suit Up and Entry

Contractors and workers must be aware that entry into a confined space may require additional measures to meet regulations and safety requirements. Depending on the extent of mould contamination and associated hazards, appropriate PPE must be

worn for worker safety. Suit up with appropriate disposable protective clothing with attached hoods, gloves, respirator and eye protection.

Demolition and Surface Cleaning

Preference should be given to removal of contaminated materials in as large a section as possible, for possible bagging or wrapping, preferably in heavy-gauge poly, such as 6-mil disposal bags; or they may be securely wrapped in 6-mil poly sheeting. When mould remediation occurs concurrently with asbestos abatement or other types where misting water is required, the mould remediation work must be performed with adequate engineering controls in place to limit the release or spread of moulds spores within the work environment, or in other parts of the building, to prevent the development of new mould.

It is highly recommended that the work area be maintained as free from dust as possible by using a HEPA vacuum cleaner and by bagging the debris immediately. This significantly reduces the amount of time and effort necessary for the final cleanup of the containment, and it helps prevent failing post remediation verification.

Bagged materials are to be sealed inside a second bag before removing them outside the containment area.

Clean Up

To achieve a Condition 1 status in the work area after the demolition has been completed, it is important to clean it adequately by thoroughly removing dust and debris. Cleaning procedures inside a containment area start from the clean area and work towards the dirty areas in the following manner:

1. Clean from top to bottom.
2. Clean from the source of makeup air to the air scrubber.

Thorough cleaning consists of combining HEPA vacuuming with damp wiping so that minimum moisture remains on the surface. Provide the necessary time for dust and spore settling between cleaning rounds.

Using encapsulation and sealants are not permissible. Use of encapsulation may impede, mask or invalidate an inspection for dust and debris. These compounds may contain nitrogen that helps support future mould growth.

Containment Exit Protocol

After bagging demolition debris, move it to the exit chamber. HEPA vacuum or damp wipe the outside of the bags and place in secondary bag and seal before they are removed from the exit chamber. Disposable coveralls and disposable gloves are to be disposed in the same manner.

Post-Remediation Evaluation

Post remediation evaluation should be conducted by the contractor to confirm the remediation process has been completed, prior to post-remediation verification.

Breakdown of Containment

Before breaking down the containment, thoroughly inspect the cleaned containment area. Post remediation verification often is required and it is highly recommended that the containment pass the verification process before it is dismantled. HEPA vacuum and damp wipe the containment before dismantling.

Hydroxyl Machine

Operating Instructions

1. Read the Safe Work Practices and Safe Job Procedures before beginning operations.
2. Do not exhaust into indoor occupied spaces because it may be injurious to your health.
3. Note: This step is for the larger SOL-AIR unit and does not refer to the smaller ODOROX Boss 3 unit as it can be operating in occupied spaces.
4. The SOL-AIR unit is for Commercial use ONLY and not for Residential use. The smaller OXOROX Boss 3 can be use for both Commercial and Residential use.
5. Switch off power and DISCONNECT the system from the electrical power source before performing any maintenance on the system.
6. **AVOID** direct eye exposure to a lit UV lamp. Repeated or prolonged eye exposure can cause serious eye damage.
7. **AVOID** direct skin exposure to a lit UV lamp. Repeated or prolonged skin exposure can cause serious burns and skin tissue injuries.
8. **AVOID** handling the UV lamps immediately following operation of the system. UV lamps are hot during operation of the system and should be allowed to cool sufficiently before handling.

9. For odor abatement where the contaminant such as mold, mildew, and smoke is present, position the machine so the exhaust is blowing directly on the contaminant.
10. For odor abatement where it is important the contaminant and its fumes, such as chemical or sewage spillovers are not spread around, position the unit so the contaminant is sucked in the air intake.
11. For more efficient and effective operation, position fans in such a way as to create a vortex of air movement so that all contaminants in the facility are exposed to the Hydroxyl ions.
12. Evacuate the air in the room after the machine has finished to remove the byproducts of the hydroxyl process.
13. Do not move the machine immediately following operation of the system, as the hot bulbs could be damaged with any sudden jarring, etc.

Step Ladder Set Up

Objective(s):

1. To inspect 6 foot ladder for safety verification.
2. To demonstrate proper set up of 6 foot ladder.
3. To demonstrate proper use of ladder.

Procedure:

Inspection

1. Remove ladder from storage area.
2. Visually inspect ladder for any damaged or broken rungs.
3. Check to insure locking mechanisms are in proper working order.
4. Check the toe of the ladder for possible damaged grippers.
5. Report inspection on job hazard assessment from and submit form to Safety Officer.

Set Up

6. Check area where setting up the ladder for level and footing stability.
7. Check area for possible hazards such as overhead power lines etc.
8. Open ladder fully.
9. Set locking mechanism in place.

Proper Use

10. To ascend up the ladder use three point contact.
11. **Do Not** use the top two rungs as a working platform. If unable to reach get a bigger ladder.
12. **Do Not** work from or stand on top rung.
13. To descend the ladder use three point contact.

Demobilization and Storage

14. Clean the ladder at the end of each use. Remove possible debris etc.
15. Carefully release locking mechanisms, watch for pinch hazard.
16. Close up ladder.
17. Return to the appropriate storage area.

Angle Grinders

1. Ensure that the working area is free of debris and obstructions.
2. Place yourself in stable position.
3. Check the grinder wheel for chips and cracks.
4. Ensure that the disc is rated for the maximum rpm of the grinder.
5. Ensure that all PPE is worn.
6. Ensure that all guards and handles are in place.
7. Check electrical cord for damages such as cuts or cracks.
8. Set grinder against the area that is to be ground at the angle specified by the manufacturer of the disc.
9. Start the grinder and begin work.

To change the grinding disc the following procedure should be followed:

1. Unplug the grinder.
2. Using the wrenches supplied by the manufacturer, remove the retaining nut from the spindle.
3. Remove disc.
4. Select the proper grinding disc for the job required, checking for cracks or chips.
5. Slide new disc over spindle and thread retainer nut.
6. Tighten the retainer nut as recommended by the manufacturer's specs.
7. Discard the used disc in the garbage.

Manual Lifting

Manual lifting is a concern to all work environments and workers need to develop proper lifting skills. To improve lifting skills ensure that any lifting is done by following the same precautionary steps each time you lift.

1. Size up the load. If you think you need help, ask for it.
2. Ensure the entire walkway is clear.
3. Get good footing and keep one foot slightly ahead of the other.
4. Bend you knees and get a good grip on the object.
5. Keep your back straight and as close to upright as possible.
6. Lift with your legs at this point.
7. Keep the object close to your body.

8. Maintain your balance.
9. Bend your knees to set object down.
10. Keep your back as straight as possible.

Hazardous Communication Plan

Overview

The management of Alberta Fire and Flood is committed to preventing accidents and ensuring the safety and health of our employees and others at our worksites. We will comply with all applicable Federal, Provincial and Municipal health and safety rules and provide a safe, healthful environment for all our employees. This written hazard communication plan is available at the following location for review by all employees: main office at 4801 32nd St. S.E.

Note: Asbestos has been identified by Alberta's Occupational Health and Safety and the MSDS for the three types of asbestos are part of the regulatory compliance for sites where asbestos has been found and have to be abated. For this reason, all the sections below refer to asbestos as well. Mould has been identified as a workplace hazards and for this reason mould is also a part of the Hazardous Communications Plan.

Identifying hazardous materials and chemicals

A list is included in the Job Site Hazard Identification, Risk Assessment and Control sheets that identifies all the hazards with a potential for employee exposure at this workplace. Detailed information about the physical, health, and other risks for each of the hazards is included in a Material Safety Data Sheet (MSDS); the product identifier for each chemical on the list matches and can be easily cross-referenced with the product identifier on its label and on its Material Safety Data Sheet.
Identifying containers of hazardous chemicals
All hazardous chemical containers used at this workplace will have either the original manufacturer's label --that includes a product identifier, an appropriate signal word, hazard statement(s), pictogram(s), precautionary statement(s) and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party -- OR a label with the appropriate label elements just described; OR workplace labeling that includes the product identifier and words, pictures, symbols, or combination that provide at least general information regarding the hazards of the chemicals.

The Alberta Fire and Flood's Site Supervisor will ensure that all containers are appropriately labeled. No container will be released for use until this information is verified. Workplace labels must be legible and in English.

Keeping Material Safety Data Sheets

Material Safety Data Sheets are readily available to all employees and others at the worksite during their work shifts. Employees and others can review the Material Safety Data Sheets for all hazardous materials and controlled products used and/or found at this workplace. The MSDS sheets can be found at the **Emergency Communication Centre** located at the entrance to the worksite.

The Materials Safety Data Sheets are updated and managed by Alberta Fire and Flood's Health and Safety Manager. If a Material Safety Data Sheet is not immediately available for a hazardous material or chemical, employees can obtain the required information by calling Patrick Martens, Health and Safety Manager @ 403.204.2259.

Training employees about Hazardous Materials and Chemicals

Before they start their jobs or are exposed to new hazardous materials and chemicals, employees must attend a hazard communication training that covers the following topics:

- An overview of the requirements in the hazard communication rules.
- Hazardous materials and chemicals present in their workplace.
- Any operations in their work area where hazardous chemicals are used.
- The location of the written hazard communication plan and where it may be reviewed.
- How to understand and use the information on labels and in Material Safety Data Sheets.
- Physical and health hazards of the materials and chemicals in their work areas.
- Methods used to detect the presence or release of hazardous chemicals in the work area.
- Steps we have taken to prevent or reduce exposure to these chemicals.
- How employees can protect themselves from exposure to these hazardous materials and chemicals through use of engineering controls/work practices and personal protective equipment.
- An explanation of any special labeling present in the workplace.
- Emergency procedures to follow if an employee is exposed to these chemicals.

Patrick Martens, Alberta Fire and Flood's Health and Safety Manager is responsible to ensure that employees receive this training. After attending the training, employees will sign a form verifying that they understand the above topics and how the topics are related to our **Hazard Communication Plan.**

Work Site Daily Toolbox Meetings

At the start of each shift, toolbox meetings are held at the entrance to the job site and all parties at the site must attend. The topics usually include the following:

- Job tasks that are to be completed that day and by whom;
- All potential hazards are identified
- Risk Assessments are completed for each hazard;
- Controls are identified for each hazards with the goal to either eliminate or reduce the probability and/or severity of an occurrence.
- The Toolbox minutes are recorded and everyone present must sign the completed form.
- The Toolbox minutes are posted at the entrance of the worksite.

Informing employees who do special tasks
Before employees perform special (non-routine) tasks that may expose them to hazardous materials and chemicals, their supervisors will inform them about the potential hazards. Their supervisors also will inform them about how to control exposure and what to do in an emergency. The employer will evaluate the hazards of these tasks and provide appropriate controls including Personal Protective Equipment additional training as required.
Informing employees about hazardous materials and chemicals in or around pipes
Before working in areas where hazardous chemicals are transferred through unlabeled pipes or where pipes are insulated with asbestos-containing material, employees will contact Patrick Martens @ 403.204.2259 for the following information:

- The chemicals in the pipes.
- The physical or health hazards of the chemicals present.
- The safe work practices necessary to prevent exposure.

Informing Calgary Housing Company (CHC) and others in the workplace about the hazardous materials and chemicals
If CHC officials or others at the worksite may be exposed to hazardous materials or chemicals at the worksite it is the responsibility of the Project Manager and/or Site Supervisor to provide CHC and others at the worksite the following information:

- The identity of the hazardous materials and chemicals,
- How to review our Material Safety Data Sheets;
- An explanation of the location(s) of the hazardous materials and/or chemicals, etc.;
- Safe Work Practices to prevent exposure;
- The accompanying Safe Job Procedures;

- Organize an on-site health and safety meeting with all stakeholders to discuss the extent of the hazardous situation and whether or not an Emergency Response Plan should be implemented with the possible temporary evacuation of the worksite. The meeting would also include the development of a work plan to quickly mitigate the situation and not jeopardize the health and safety of the tenants, CHC officials and the workers.

Hand and Portable Power Tools

Alberta Fire and Flood shall ensure that all hand tools are used properly, safely and in accordance with all manufacturer's guidelines.

Authority and Responsibility

Health and Safety is responsible for:

1. Assisting supervisors in identifying hazardous conditions in regards to hand/power tools;
2. Inspecting areas to ensure that this policy is being adhered to; and
3. Providing safety awareness training, as needed.

Supervisors are responsible for:

1. Anticipating all work hazards;
2. Ensuring that all safeguards are utilized;
3. Working with Environmental Health and Safety to initiate any necessary administrative action required to enforce safe work practices;
4. Replacing all damaged tools;
5. Ensuring that tools are being properly maintained by instituting an inspection program;
6. Ensuring employees are trained to use tools properly and in accordance with the manufacturer's instructions; and
7. Taking the appropriate corrective action in accordance with the Alberta Fire and Flood Personnel Policy on for employees not complying with this policy.

Employees are responsible for:

1. Anticipating all work hazards;
2. Ensuring that all safeguards are utilized;
3. Conducting routine inspections to ensure that tools are properly maintained;
4. Reporting to their supervisor any tool that needs to be replaced;
5. Following all safety guidelines for the use of hand/power tools and according to manufacturer's instructions; and
6. Participating in training provided by the department and/or University.

General Safety Precautions

Employees who use hand and power tools and who are exposed to the hazards of falling, flying, abrasive and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases must be provided with the appropriate equipment needed, including Personal Protective Equipment, to protect them from the hazard. Refer to **Personal Protective Equipment** policy.

All hazards involved in the use of power tools can be prevented by following some basic safety rules:

- Keep all tools in good condition with regular maintenance;
- Use the right tool for the job;
- Examine each tool for damage before use;
- Operate according to the manufacturer's instructions;
- Utilize the proper protective equipment. Refer to **Personal Protective Equipment Policy**; and
- Participating in safety training.

Employees and employers have a responsibility to work together to establish safe working procedures. If a hazardous situation is encountered, it shall be brought to the attention of the Site Supervisor and/or Health and Safety Manager for evaluation and corrective action.

Hand Tools

Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance. Some examples of misuse include the following:

- Using a screwdriver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees;
- Using a tool with a wooden handle (e.g., hammer) if the handle is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker;
- Using a wrench if its jaws are sprung, because it might slip; and
- Using impact tools (e.g., chisels, wedges) if they have mushroomed heads, the heads might shatter on impact, sending sharp fragments flying.

Hand tool precautions including the following:

- Employers shall caution employees that saw blades, knives or other tools be directed away from aisle areas and other employees working in close proximity. Knives and scissors shall be sharp. Dull tools can be more hazardous than sharp ones;
- Floors shall be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools; and
- Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum or wood shall be used.

Power Tools

Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use: electric, pneumatic, liquid fuel, hydraulic and powder-actuated.

The following general precautions shall be observed by power tool users:

- Never carry a tool by the cord or hose;
- Never remove prongs from any cords;
- Never stand in or near water when using tools;
- Always use a Ground Fault Circuit Interrupter (GFCI) with electrical tools if working in a wet environment;
- Never "yank" the cord or the hose to disconnect it from the receptacle;
- Keep cords and hoses away from heat, oil and sharp edges;
- Replace all frayed and/or damaged extension cords. Do not try to tape cords;
- Disconnect tools when not in use, before servicing and when changing accessories such as blades, bits and cutters;
- All observers shall be kept at a safe distance away from the work area;
- Secure work with clamps or a vise, freeing both hands to operate the tool;
- Avoid accidental starting. The worker shall not hold a finger on the switch button while carrying a plugged-in tool;
- Tools shall be maintained with care. They shall be kept sharp and clean for the best performance. Follow instructions in the user's manual for maintenance, lubricating and changing accessories;
- Maintain good footing and balance;
- Avoid loose fitting clothes, ties or jewelry such as bracelets, watches or rings, which can become caught in moving parts;
- Use tools that are either double-insulated or grounded (three-pronged);
- Keep work area well lighted when operating electric tools;
- Ensure that cords and hoses do not pose as a tripping hazard; and
- All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use". This shall be done by supervisors and/or employees.

Guards

Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment shall be guarded if such parts are exposed to contact by employees.

Guards, as necessary, shall be provided to protect the operator and others from the following:

- Point of operation;
- Nip points;
- Rotating parts;

- Flying chips; and
- Sparks.

Safety guards shall never be removed when a tool is being used. For example, portable circular saws shall be equipped with guards. An upper guard shall cover the entire blade of the saw. A retractable lower guard shall cover the teeth of the saw, except when it makes contact with the work material. The lower guard shall automatically return to the covering position when the tool is withdrawn from the work.

Safety Switches

The following hand-held power tools shall be equipped with a momentary contact "on-off" control switch: drills, tappers, fastener drivers, horizontal, vertical and angle grinders with wheels larger than two inches in diameter, disc and belt sanders, reciprocating saws, saber saws and other similar tools. These tools also may be equipped with a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

The following hand-held powered tools may be equipped with only a positive "on-off" control switch: platen sanders, disc sanders with discs two inches or less in diameter; grinders with wheels two inches or less in diameter; routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks quarter inch wide or less.

Other hand-held powered tools such as circular saws having a blade diameter greater than two inches, chain saws and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

Electric Tools

Employees using electric tools shall be aware of several dangers with the most serious being the possibility of electrocution.

Among the chief hazards of electric-powered tools are burns and slight shocks which can lead to injuries or even heart failure.

To protect the user from shock, tools shall either have a three-wire cord with ground and be grounded, be double insulated or be powered by a low-voltage isolation transformer. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire shall be attached to a known ground. The third prong shall never be removed from the plug.

Tools shall be shut down before cleaning, repairing or oiling. Disconnect or use Lockout/Tagout Procedures. Refer to

Lockout/Tagout Program

These general practices shall be followed when using electric tools:

- Electric tools shall be operated within their design limitations;
- Gloves, eye protection, and safety footwear are recommended during use of electric tools;
- When not in use, tools shall be stored in a dry place;

- Electric tools shall not be used in damp or wet locations; and
- Work areas shall be well lit, even if this means the operators has to augment the work surface illumination by other appropriate means.

Powered Abrasive Wheel Tools

Powered abrasive grinding, cutting, polishing and wire buffing wheels create special safety problems because they may throw off flying fragments or excessive dust. Before an abrasive wheel is mounted, it shall be inspected closely and sound- or ring-tested to ensure that it is free from cracks or defects. To test, wheels shall be tapped gently with a light non-metallic instrument. If the wheel sounds cracked or dead, they could fly apart in operation and shall not be used. A sound and undamaged wheel will give a clear metallic tone or "ring." To prevent the wheel from cracking, the user shall be sure it fits freely on the spindle. The spindle nut shall be tightened enough to hold the wheel in place, without distorting the flange. Follow the manufacturer's recommendations. Care shall be taken to ensure that the spindle wheel does not exceed the abrasive wheel specifications.

Due to the possibility of a wheel disintegrating (exploding) during start-up, the employee shall never stand directly in front of the wheel as it accelerates to full operating speed.

Portable grinding tools need to be equipped with safety guards to protect workers not only from the moving wheel surface, but also from flying fragments in case of breakage.

In addition, when using a power grinder:

- Always use eye protection and a dust mask;
- Turn off the power when not in use; and
- Never clamp a hand-held grinder in a vise.

Pneumatic Tools

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders.

There are several dangers encountered in the use of pneumatic tools. The main one is the danger of getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool.

Eye protection is required and face protection is recommended for employees working with pneumatic tools. When sanders are used, dust masks shall also be worn.

Noise is another hazard. Working with noisy tools (e.g. jackhammers) requires proper, effective use of hearing protection.

When using pneumatic tools, employees shall ensure they are fastened securely to the hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard. A safety clip or retainer shall be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.

Screens shall be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers or air drills.

Compressed air guns shall never be pointed toward anyone. Users shall never "dead-end" it against themselves or anyone else. It is recommended to use air guns equipped with safety tips that have relief ports to reduce pressure if blockage or dead-ending occurs.

Powder-Actuated Tools

Powder-actuated tools operate like a loaded gun and shall be treated with the same respect and precautions. The use of powder-actuated tools is prohibited until approved by Environmental Health and Safety.
Safety precautions to remember include the following:

- These tools shall not be used in an explosive or flammable atmosphere;
- Before using the tool, the worker shall inspect it to determine that it is clean, all moving parts operate freely, and the barrel is free from obstructions;
- Employees shall not modify tools;
- The tool shall never be pointed at anybody;
- The tool shall not be loaded unless it is to be used immediately. A loaded tool shall not be left unattended, especially where it could be available to unauthorized persons;
- Hands shall be kept clear of the barrel end;
- To prevent the tool from firing accidentally, two separate motions are required for firing: one to bring the tool into position and another to pull the trigger;
- The tools shall not be able to operate until they are pressed against the work surface with a force of at least five pounds greater than the total weight of the tool;
- If a powder-actuated tool misfires, the employee shall wait at least 30 seconds, then try firing it again;
- If it still will not fire, the user shall wait another 30 seconds so that the faulty cartridge is less likely to explode then carefully remove the load. The bad cartridge shall be put in water;
- Suitable eye and face protection are essential when using a powder-actuated tool;
- The muzzle end of the tool shall have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles that might otherwise create a hazard when the tool is fired. The tool shall be designed so that it will not fire unless it has this kind of safety device;
- All powder-actuated tools shall be designed for varying powder charges so that the user can select a powder level necessary to do the work without excessive force; and
- If the tool develops a defect during use, it shall be tagged and taken out of service immediately until it is properly repaired.

Hydraulic Power Tools

The fluid used in hydraulic power tools shall be an approved fire-resistant fluid and shall retain its operating characteristics at the most extreme temperatures to which it will be exposed.

The manufacturer's recommended safe operating pressure for hoses, valves, pipes, filters and other fittings shall not be exceeded.

Ergonomics

The use of hand and portable power tools may be the source of certain ergonomic stressors, which may lead to the development of musculoskeletal disorders.

Environmental hazards- bloodborne pathogens

What are bloodborne pathogens?

Bloodborne pathogens are infectious microorganisms in human blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV). Needle sticks and other sharps-related injuries may expose workers to bloodborne pathogens. Workers in many occupations, including first aid team members, housekeeping personnel in some industries, nurses and other healthcare personnel may be at risk of exposure to bloodborne pathogens.

What can be done to control exposure to bloodborne pathogens?

In order to reduce or eliminate the hazards of occupational exposure to bloodborne pathogens, an employer must implement an exposure control plan for the worksite with details on employee protection measures. The plan must also describe how an employer will use a combination of engineering and work practice controls, ensure the use of personal protective clothing and equipment, provide training , medical surveillance, hepatitis B vaccinations, and signs and labels, among other provisions. Engineering controls are the primary means of eliminating or minimizing employee exposure and include the use of safer medical devices, such as needleless devices, shielded needle devices, and plastic capillary tubes.

CAUTION!
If you are stuck by a needle or other sharp or get blood or other potentially infectious materials in your eyes, nose, mouth, or on broken skin, immediately flood the exposed area with water and clean any wound with soap and water or a skin disinfectant if available. Report this immediately to your employer and seek immediate medical attention.

Biohazards and Toxin Decontamination & Spill Clean-up

Background:

Decontamination is any process that reduces biohazardous material (infectious agents, rDNA material, human material, biological toxins, etc) to an acceptable level, one that is below the level necessary to cause disease. Acceptable levels will depend on the biohazardous material in question and the type of work being done.

In order to select the proper decontamination procedure one must consider many factors including; the biohazard's concentration and resistance to disinfectants, chemical compatibility with other materials present, surface being decontaminated, and hazards to humans and the environment associated with the disinfectant. Ineffective decontamination can provide a false sense of security and spread disease.

Acceptable levels of decontamination, along with methods used to decontaminate, should be determined **before** work is begun.

Note: All rDNA containing waste must be decontaminated prior to disposal or disposed of as biohazard waste before being released from the worksite.

Definitions:

- **Sanitizing -** reduces the number of microbes to a safe level.
- **Antiseptics -** destroy microorganisms on living tissue.
- **Disinfectants -** destroy microorganisms on inanimate objects.
- **Sterilization -** kills all microbes.

Operating Procedures

Cleaning up blood, bodily fluids & fecal material from hard, carpeted or upholstered surfaces.

1. Secure the area to be cleaned and set up “Wet Floor or Out of Order” signs. Ensure adequate ventilation is present. If using a fan ensure that it is facing out of the room not blowing into the contaminated area.

2. Don all personal protective equipment including two pairs of disposable nitrile gloves or a single pair of heavier reusable neoprene / butyl rubber / etc., and safety glasses. Disposable N95 respirator and Tyvek / booties are optional, however, are highly recommended depending on the circumstances.

3. Prepare the sanitizing solution - Turn on the cold water and use the dispensing unit to distribute the appropriate concentration into a bucket and or spray bottle.

4. Bring equipment to the area (dust pan and brush, paper towels, garbage bags, mop and pail, spray bottle, diluted disinfectant, additional mop and pail for rinsing and final clean up, an additional pail of disinfectant for clean-up of equipment). If sharps are present you will need additional items such as tongs or forceps and a sharps container.

5. Cover and protect any carpeted areas next to the contaminated area. Protect any uncontaminated surfaces (especially carpets) using disposable garbage bags. If you need to bring in a mop and pail into a heavily contaminated area, place a garbage bag around the base of the pail to protect the wheels from becoming contaminated.

6. The spill area must be cleaned of visible organic material (blood, vomit, feces) before applying any disinfectant. Care must be taken to avoid splashing or generating aerosols during the clean-up. Change gloves as often as needed.

a) For Fluids (vomit, blood, urine, etc.) - In large or excessive quantities, use an absorbent such as a mess kit, super sorb, spill king etc. to absorb the bulk of the liquid. Do not walk into the contaminated area. Start at the door and work your way into the room, sprinkling the absorbent as you go. Let it sit until the majority of the liquid has been absorbed. For smaller quantities, use paper towels to absorb the liquid and dispose into a garbage bag.

b) For feces - Where feces have been spread onto the floor, protective Tyvek booties may be required to prevent cross contamination of other work areas. Work your way into the room starting at the doorway, removing feces using paper towels. Multiple wipes with paper towels may be required to remove the majority of the feces. Place the paper towel over the feces and scoop to contain as much as possible. If on the walls, work your way from top to bottom scooping from below. Remove the bulk of

the solids with paper towels and place the soiled towels into disposable garbage bags.

7. Any glass, needles, other sharp objects, condoms, or any other items that may be contaminated must be picked by using tongs or other mechanical means and placed into a sharps container.

Chemical/Biological Hazards and Harmful Substances

Applicable Legislation: Alberta OH&S Code 2009 Part 4 and Schedule 1, Table 2 – Chemical Substances

Purpose: To protect workers and others on site exposed to chemical/biological hazards and harmful substances.

Employer obligations to Worker Exposure to Harmful Substances:

- Must, ensure worker exposure is kept as low as reasonably achievable.
- Must, ensure worker exposure does not exceed occupational exposure limits.
- Must ensure that is no occupational exposure limit for a harmful substance is established, worker exposure to that substance does not exceed the substance's ceiling limit.
- Must, for exposure to multiple substances with similar toxicological effects:
    - During a single work shift, utilize the formula in Part 4, Clause 17 for calculations of occupational exposure limit values.
    - During shifts longer than 8 hours, utilize the formula in Part 4, Clause 18(1) to ensure equivalent protection from adverse health effects is achieved by adjusting the 8 hour exposure limit.
    - Ensure that airborne concentration measurements are conducted in accordance with one of the standard test methods referenced in Part 4, Clause 20 and 21.
- Must, for potential worker exposure:
    - Identify health hazards, assess exposure and inform the worker.
    - Inform the worker of any measurements made of airborne concentrations.
    - Training the worker in procedures to minimize exposure.
    - Ensure the worker understands procedures developed by the employer to minimize exposure.

- Must, for worker overexposure:
    - Immediately conduct measurements of the substance concentrations at the site.
    - Identify the cause.
    - Must protect the worker from any further exposure.
    - Eliminate any other worker exposure.
    - Explain to the exposed worker the nature and extent.
    - Ensure that measurements taken are kept for a period of 3 years.
- Must, for worker decontamination:
    - Provide facilities including showers to remove contamination before the worker leaves the site.
    - Ensure that those articles of clothing taken by the worker have been properly decontaminated or cleaned.
- Must ensure that workers have immediate access to emergency baths, showers, eye wash equipment or other equipment at a work site where chemicals harmful to the eyes or skin are used.
- Must ensure that workers do not eat or drink in a part of the work site contaminated by a harmful substance.
- Must, for storage, handling, use and disposal of a harmful substance listed in Schedule 1, Table 1;
    - Have a code of practice for a pure substance over 10 kg.
    - In a mixture in which the amount of the substance exceeds 10 kg and at a concentration of 0.1% by weight or more.
    - Include measures to prevent the uncontrolled release of the substance.
    - Include procedures to be followed if there is an uncontrolled release.
    - Must ensure that harmful substances used or stored at a work site are clearly identified, used and stored such that the use or storage is not a hazard to workers.
- Must ensure that a worker's exposure to mould is controlled.

Worker's obligations to Worker Exposure to Harmful Substances:

- Must be trained in, understand, and appropriately utilize procedures developed by the employer to minimize exposure.
- Cannot exceed occupational exposure limits of substances or concentrations exceeding their ceiling limit.
- Must not eat or drink in a part of the work site contaminated by a harmful substance.

Emergency vehicle response guidelines

Overview

In today's disaster restoration organizations, there is a growing need for the development and use of standard operating guidelines and issue specific training. One of the areas that requires a great deal of attention is the operation of emergency vehicles.

Drivers, need to recognize the fact that the emergency vehicle response is the basis for the success or failure of all other emergency responses. Without the safe conveyance of these vehicles to the emergency scene, the disaster restoration company cannot achieve its' mission of protecting property.

Having sound emergency vehicle response guidelines in place will assist the disaster restoration companies in providing sound direction to its drivers.

Purpose

Responding to any emergency call, places a great deal of responsibility on the drivers of our emergency vehicles. Not only must emergency vehicle drivers provide prompt conveyance of the equipment, and personnel to provide service to those in need, but as importantly, must accomplish this task in the safest and most prudent manner possible.

Emergency vehicle drivers have in their care, custody and control most of the major assets possessed by this organization (the vehicle, equipment, and personnel).

Emergency vehicle drivers also have a higher standard of care to provide to the general motoring public and must make every attempt possible to provide due regard for the safety of others. Drivers must constantly monitor and reduce the amount of risk and exposure to potential losses during each and every response. Safe arrival at the emergency shall be, and must always remain, the first priority of all emergency vehicle drivers.

In order to accomplish this enormous task all emergency vehicles drivers shall become familiar with, and constantly abide by the following policies and procedures.

1. Circle of safety
Prior to entering the cab and starting the vehicle, the emergency vehicle driver shall make a circle of safety around the vehicle to see that all equipment is secured, that all compartment doors are securely closed and any physical obstructions moved out of the way. During the circle of safety the emergency vehicle driver shall encircle the vehicles and visually inspect all 4 sides and the top of the vehicle before entering the cab. He/she should also verify right side and rear clearance with the person riding in the officer position. This shall be conducted prior to moving the vehicle regardless of whether or not the vehicle is about to leave on an emergency or non-emergency.

2. Vehicle control
All drivers shall attempt to maintain control of the vehicle that they are operating in such a manner as to provide the maximum level of safety for both their passengers and the general public. The emergency vehicle driver shall be aware of his/her rate of closure on other vehicles and pedestrians at all times to make sure that a safe following distance is established and maintained. All drivers shall follow the rule for safe following distance and allow 1 second of following distance for every 10 feet of vehicle length for speeds under 60 km/h and add 1 additional second for each 10 km/h for speeds over 60 km/h.

3. Response speeds
When responding to an emergency only, drivers shall operate the vehicle they are driving at as close to the **posted speed limit** as possible, but not to exceed ten (10) km/h over the posted speed limit, conditions permitting. Examples of conditions requiring slower response speeds include but are not limited to;

- slippery road conditions
- inclement weather
- poor visibility
- heavy or congested traffic conditions
- sharp curves

4. Ordinary travel procedures
All drivers shall obey all traffic laws and traffic control devices when driving any company vehicle under ordinary travel conditions. Any driver observed breaking any traffic laws or driving any vehicle in an aggressive

manner will be subject to disciplinary action including, suspension of driving privileges.

5. Riding policy
The company requires all persons to be seated in approved riding positions and be secured to the vehicle by seat belts whenever the vehicle is in motion. The emergency vehicle driver and/or the person riding in the officer position shall verify that all personnel are personnel are properly seated and in seat belts before the vehicle is moved. Standard communication signals should be formulated and utilized by all personnel.

6. Backing
The company recognizes that backing emergency vehicles is made hazardous by the fact that the driver cannot see much of where he/she intends to go. The company recommends that whenever possible drivers should avoid backing as the safest way to back up a vehicle is not to back up at all.
When it is necessary to back-up any company vehicle all drivers shall follow one of the following two measures.

- The company's first choice of backing procedures is that before any vehicle is put into reverse and backed that a spotter be put in place near the rear of the vehicle. The spotter should be safely positioned so that the emergency vehicle driver can see them at all times. If at any time the emergency vehicle driver loses sight of the spotter, he/she shall stop immediately until the spotter makes himself/herself visible again.

- If conditions exist that make use of spotters impossible, all drivers, before attempting to back up any fire company vehicle, shall will make a circle of safety to see that; no person or persons are directly behind the vehicle or in its intended path of travel; all equipment is secured and that all compartment doors are securely closed; any physical obstructions are moved out of the way. The emergency vehicle driver should also note all potential obstructions in the intended path of travel.

ACKNOWLEDGMENT

I, _____ acknowledge that I have received a copy of the Emergency Vehicle Response Plan and have also been and understand the instructions contained in the policy. I also understand the importance of the safe operational procedures of the company vehicles, and will abide by all of the operating guidelines contained in this document.

Driver: _____

Date: _____

General Manager: _____

Date: _____

SECTION 5 - COMPANY RULES

COMPANY RULES

Alberta Fire & Flood Ltd. Mandatory and General Company Rules and Regulations.

1. All Alberta Fire & Flood employees, sub-trades and visitors shall comply with all requirements of Workplace Health & Safety (WH&S) regulations and the Alberta Fire & Flood Company Safety Policy Manual.
2. Supervisors and Management are to issue employee written warnings and non-compliance reports to employees and sub-trades when they are not complying with Alberta Fire & Flood safety policies.
3. All unsafe acts, unsafe conditions and Near Miss Incidents must be reported to the Crew Chief, Safety Coordinator and Project Manager.
4. All injuries and damage accidents must be reported to the Crew Chief, Safety Coordinator and Project Manager.
5. All work must be performed in accordance with Alberta Fire & Flood Safe Job Procedures and Safe Work Practices or as directed by the Crew Chief or Project Manager.
6. All Alberta Fire & Flood employees and sub-trades are responsible for keeping their work area clean and tidy (housekeeping).

Alcohol and/or Illegal Drug Use Policy

The following offenses are unacceptable on Alberta Fire & Flood worksites. This applies to all personnel, including clients (or representatives), visitors, sub-trades and workers. If there is at any time a breach of the Alberta Fire & Flood Ltd. general Company Rules, the person(s) involved will be issued a written warning and asked to leave the premises immediately. Depending on the offense, a written warning can also be issued “without prejudice”, informing the person that the time off will be without pay. The Project Manager will assess the offence committed and determine if the “without pay” action is necessary.

Zero Tolerance Offenses

1. Possession, sale or consumption of alcohol or illegal drugs (ZERO TOLERANCE).
2. Possession of firearms.
3. Fighting, horseplay, practical jokes.
4. Theft or vandalism.
5. Damaging, disabling or interfering with safety, firefighting or first aid equipment.

6. Arriving for work or remaining at work when the ability to perform your job safely is impeded by alcohol or illegal drug consumption. The Project manager has discretionary authority in this situation when the drugs are legally prescribed, but in your condition, you will be sent home without pay.
7. Use of iPods or portable radios with headsets is prohibited. Hearing must not be obstructed.
8. Personal cell phone use is restricted to coffee breaks, lunch hour and before and after work hours. Limit the use of your cell phone to work related issues while on Company time.

This notice is to be posted at all Alberta Fire & Flood Ltd. worksites.

Substance Abuse Policy

Any employee in the possession of and/ or consumption of alcohol, illegal drugs and / or the misuse of prescription drugs is prohibited from Alberta Fire & Flood Ltd. jobsites including company vehicles.

Any employee taking a prescription drug which is known to possibly impair his / her judgment, co-ordination or perception so as to adversely affect the ability to perform work in a safe manner must notify their supervisor immediately.

When an employee is taking prescription drugs, the supervisor will determine whether work restrictions apply.

Possession or use of intoxicating beverages or unauthorized drugs on the job is strictly forbidden.

Disciplinary action will be taken by management, in accordance with guidelines established by the Human Rights Commission for violators.

Smoking Policy

Government Legislation prohibits smoking in public places and locations where employees can be exposed to second hand smoke. Alberta Fire & Flood Ltd. non-smoking policy includes the office, warehouse facility, company vehicles and Alberta Fire & Flood Ltd. jobsites.

❖ **The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.**

General Safety Rules

1. Accidents, injuries or "**near misses",** regardless of their nature, shall be promptly reported to the Safety Manager.
2. Approved hardhats shall be worn where required on the job by all personnel.
3. "STRIKE ANYWHERE" matches are prohibited.
4. Running is not permitted anywhere, except in the case of an extreme emergency.
5. Safety glasses, goggles and face shields shall be worn when, metal chipping, welding, grinding and for other operations where eye protection is required.
6. Hand tools shall not be used for the purpose other than that intended. All damaged or worn parts shall be promptly repaired or replaced.
7. Only authorized personnel shall operate power tools, with guards furnished by the manufacturer "in place".
8. All electrical hand tools shall be grounded or double insulated.
9. Explosive / power actuated tools shall be used only by persons who have been instructed and trained in their safe use.
10. Compressed gas cylinders shall be in an upright position.
11. Possession or use of intoxicating beverages or unauthorized drugs on the job is strictly forbidden and constitutes grounds for DISMISSAL.
12. Riding on equipment is prohibited. No person shall ride any hook, hoist or other material handling equipment, which is used strictly for handling material and not specifically designed to carry riders.
13. ONLY authorized personnel with appropriate personal protective equipment shall carry out welding and burning operations.
14. Horseplay, fighting, gambling and possession of firearms are strictly forbidden on any Alberta Fire & Flood Ltd. jobsite. Violation of the safety policy will be dealt with accordingly by management.
15. Consuming or being in possession of alcohol or illegal drugs on any Alberta Fire & Flood Ltd. job work site is strictly prohibited.
16. All unsafe acts and conditions, including "NEAR MISS" incidents, are to be reported to the Safety Manager promptly.
17. All incidents that result in damage or injury are to be reported to the Safety Manager immediately.
18. First aid treatment is to be obtained promptly for any/ all injuries.
19. Safety boots and other personal protective equipment is to be worn on all jobsites where required.
20. All work shall be carried out in accordance with appropriate safe work practices and your Safety Manager's direction.

21. Damaging, disabling or interfering with safety, firefighting or first aid equipment is prohibited and constitutes reason for DISMISSAL.
22. Only those tools that are in good repair, with all guards and safety devices in place, shall be used.
23. Every worker shall keep his/her work area clean, neat and orderl

Mandatory Requirements

1. Report to your Safety Manager all-unsafe acts, unsafe conditions and near miss incidents.
2. Report all injuries or accidents immediately.
3. Perform all work in accordance with safe work practices and your Safety Manager's direction.
4. Maintain good housekeeping in your work area at all times.
5. Operate all vehicles and mobile equipment in accordance with site rules and highway regulations.
6. Vehicles are to be kept clean inside and outside at all times.

Prohibitions

The following are prohibited at all times on all company job– sites:

1. Possession or consumption of alcohol or illegal drugs.
2. Possession of firearms.
3. Fighting, horseplay, practical jokes.
4. Theft, vandalism.
5. Damaging, disabling, or interfering with safety, firefighting or first aid equipment.
6. Arriving for work or remaining at work when ability to perform the job safely is impaired.

YOU ARE ACCOUNTABLE
FOR YOUR ACTIONS

Health and Safety Enforcement Policy

The management of Alberta Fire & Flood Ltd. is committed to the health and safety excellence of its workers by providing an injury and accident free workplace. All workers are to abide by the regulations, company rules, and the use of safe work practices and safe job procedures.

Violations will be handled in an objective but firm manner. Documentation is required at each stage.

The steps of the enforcement progression are:

1. **Verbal Warning**
2. **Written warning**
3. **Suspension**
4. **Dismissal**

Any measure or combination of measure deemed appropriate to the circumstance can be used.

- **The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.**

SECTION 6 - PERSONAL PROTECTIVE EQUIPMENT

It is the policy of Alberta Fire & Flood Ltd. to always ensure that the proper and appropriate personal protective equipment is used consistently by all workers and employees.

It is the responsibility of every worker to ensure that he/she is wearing proper PPE when working with any tool or piece of equipment. Proper PPE can be determined by checking Safe Work Practices, Safe Job Procedures or the manufacturer's instructions.

It is required at all jobsites that all workers, employees, sub-trades and visitors wear or use the appropriate and proper personal protective equipment.

This includes, at a minimum:

1. CSA approved **steel-toed work boots** (100% of the time until final flooring is put down, 100% of the time when on exterior of structure). Work boots can be removed at the front door of a private residence, but must be put back on or replaced with CSA approved footwear once at the interior jobsite location except during final clean-up operations and with Crew Chief approval.
2. CSA approved **safety glasses** if the worker's eyes may be injured or irritated at the jobsite.
3. CSA approved **hardhat** (100% of the time until interior boarding is *complete and ceiling is hung.* 100% of the time when on exterior of project).
4. **Fall Protection** is required for work above 3m on a temporary platform and for all work above 1.2m on a permanent platform. Adequate fall protection includes guardrails, handrails, fall restraint, fall arrest, etc.
5. **Full Face Shields** will be provided to and worn by workers when required in the operation of tools such as chainsaws, grinders, etc.
6. **Hearing Protection** will be provided and worn by workers when exposed to excessive noise.
7. **Limb Protection -** Employees are required to wear a minimum of long pants and short sleeved shirt at all times.
8. **Respiratory Equipment** will be provided and worn by workers in accordance with OH&S Regulations as determined by the Safety Coordinator. PPE concerns should be addressed on Hazard Assessments and posted as per Hazard Assessment Policy.

9. **Fall Protection Plans** are to be submitted to Alberta Fire & Flood or the Prime Contractor by each trade where required. Refer to OH&S Regulations.

As Alberta Fire & Flood is a restoration company, frequently our PPE is very specialized. Every project must be assessed and, in the case of possible biohazards (E-coli, mould) and/or other critical task (asbestos, obstacle removal) projects, visited by the Safety Coordinator to ensure proper selection and fit of PPE. The Safety Coordinator will inform the Project Manager.

All sub-contractors shall be contacted by the Project Manager if it is deemed by the Safety Coordinator that specialized PPE is necessary. It is the responsibility of each sub-contractor to provide their workers with all necessary and appropriate PPE as deemed by the Alberta Fire & Flood Ltd. Safety Coordinator. If a sub-contractor arrives without the proper PPE, it may be provided and charged to the sub-contractor.

Anyone caught damaging, disabling or interfering with safety equipment, fire fighting or first aid equipment will be immediately dismissed.

1. It is Alberta Fire & Flood Ltd. policy to have all workers use the proper personal protective equipment when and where required.
2. All employees and visitors are to wear the necessary equipment on all Alberta Fire & Flood Ltd. jobsites.
3. All personal protective equipment used will be in good condition and maintained according to the manufacturer's instructions.
4. Company supplied personal protective equipment that is of questionable reliability, damaged or in need of service or repair will be removed from service immediately.
5. All personal protective equipment that is of questionable reliability, damaged, or in need of service or repair will be removed from service immediately.
6. All personal protective equipment that has been removed from service will be tagged "**out of service**" and will not be returned to service until repaired and inspected by a qualified Alberta Fire & Flood Ltd. employee.

- **The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.**

Foot Protection

GENERAL

1. Safety footwear is designed to protect against foot hazards in the work place. Safety footwear protects against compression, puncture injuries and impact.
2. Safety footwear is divided into three grades, which are indicated, by colored tags and symbols.
3. The **TAG COLOR** tells the amount of resistance the toe will supply to different weights dropped from different heights.
4. The symbol indicates the strength of the sole. For example, a **TRIANGLE** means puncture resistant sole able to withstand 135 kg (300-ft. lbs.) of pressure without being puncture by a 5-cm (2 inch) nail. For more information, look at Alberta's O.H.S. Statute and Regulations or CSA Standard "Protective Footwear" Z195-M1981.
5. It is recommended that only the **GREEN** TRIANGLE grade footwear, which also gives ankle support, be used.
6. Your choice of protective footwear should always over protect, not under protect.

ALWAYS

1. Choose footwear according to the job hazard and CSA Standards.
2. Lace up boot and tie laces securely; boots don't protect if they are a tripping hazard or fall off.
3. Use a protective boot dressing to help the boot last longer and provide greater water resistance (wet conducts current).
4. Choose a high cut boot to provide ankle support (less injuries).

NEVER

1. Wear defective safety footwear (i.e. expose steel toecaps)
2. Under protect your feet or modify safety footwear.

Eye and Face Protection

GENERAL

This personal protective equipment is designed to protect the worker from such hazards as:

1. Flying objects and particles.
2. Molten metals.
3. Splashing liquids.
4. Ultraviolet, infrared and visible radiation (welding)

This personal protective equipment has two types.

The first type, "BASIC EYE PROTECTION" includes:

1. Eyecup goggles.
2. Mono-frame goggles and spectacles with or without side shields.

The second type, "FACE PROTECTION" includes:

1. Metal mesh face shields for radiant heat or hot and humid conditions.
2. Welders' shields or helmets with specified cover filter plates and lens.

HARDENED GLASS, PRESCRIPTION LENS AND SPORT GLASSES ACCEPTABLE SUBSTITUTE FOR PROPER, REQUIRED INDUSTRIAL SAFETY EYE PROTECTION

1. Comfort and fit are very important in the selection of safety eyewear. Lens coating, venting or fittings may be needed to prevent fogging or to fit with regular prescription eyeglasses.
2. Contact lens should **NOT** be worn at the work-site. Contact lens may trap or absorb particles or gases causing irritation or blindness. Hard contact lens may break into the eye when hit and cause severe eye damage.
3. Basic eye protection should be worn with face shields. **FACE SHIELDS** are often not enough to fully protect the eyes from work hazards. When eye and face protection is required, advice from the O. H. & S. office, Material Safety Data Sheet (MSDS) or your supplier will help in your selection.

For more information, look at:

Alberta's O.H. & S. Statute and Regulations.
CSA Standard "Industrial Eye and Face Protectors" Z94.3-M1982

ALWAYS

1. Ensure your eye protection fits properly (close to face)
2. Clean safety glasses daily, more often if needed.
3. Store safety glasses in a safe, clean, dry place when not in use.
4. Replace pitted, scratched, bent and poorly fitted PPE (damaged eye / face protection interferes with vision and will not provide the protection it was designed to deliver).

NEVER

1. Modify eye / face protection.
2. Use eye / face protection which does not have a CSA certification (CSA stamp for the safety glasses is usually on the frame inside the temple near the hinges of the glasses).

EYE PROTECTION FOR WELDERS

Welders and welders' helpers should wear the prescribed equipment. Anyone else working in the area should also wear eye protection where there is a chance they could be exposed to a flash.

Hearing Protection

Hearing protection is designed to reduce the level of sound energy reaching the inner ear.

The "rule of thumb" for hearing protection is: use hearing protection when you can't carry on a conversation at a normal volume when you are 3 feet apart.

1. Remember that this is only a rule of thumb. Any sound over 80 decibels requires hearing protection. Hearing loss can be very gradual, usually happening over a number of years.
2. The most common types of hearing protection are earplugs and earmuffs. If you choose to use other types of hearing protection, ask your safety supplier or O.H. & S. office for further information.
3. It is important to have different styles of hearing protection available. Different styles allow a better chance of a good fit. Each person's head, ear shape and size are different. One style may not fit every person on your crew. If hearing PPE does not fit properly or is painful to use, the person will likely not use it. If hearing protection is not fitted, it will not supply the level of protection it was designed to deliver.
4. Most earplugs, if properly fitted, generally reduce the noise to the point where it is comfortable (takes the sharp edge off the noise).
5. Workers should have their hearing tested at least every year, twice a year if they work in a high noise area.

If your hearing protection does not take a sharp edge off the noise, or if workers have ringing, pain, headaches or discomfort in the ears, your operation requires the advice of an expert.

For further information, look at the CSA Standard "Hearing Protectors" Z94.2 M1984

Head Protection

Safety headgear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

The recommended type of headgear is the Class B hard hat, which has the required "dielectric strength". There are many designs but they all must meet the CSA requirements for Class B industrial head protection.

Most head protection is made up of two parts:

1. The shell (light and rigid to deflect blows).
2. The suspension (to absorb and distribute the energy of the blow).

Both parts of the headgear must be compatible and maintained according to manufacturer's instructions. If attachments are used with headgear, they must be designed specifically for use with the specific headgear used. Bump caps are not considered a helmet. In Alberta they can only be used when the only hazard is where the worker might strike his / her head against a stationary object.

INSPECTION AND MAINTENANCE

Proper care is required for headgear to perform efficiently. The service life is affected by many factors including temperature, chemicals, sunlight and ultraviolet light (welding). The usual maintenance for headgear is simply washing with a mild detergent and rinsing thoroughly.

ALWAYS

1. Replace headgear that is pitted, holed, cracked or brittle.
2. Replace headgear that has been subjected to a blow even though damage cannot be seen.
3. Remove from service any headgear if its serviceability is in doubt.
4. Replace headgear and components according to manufacturer's instructions.
5. Consult O.H. & S. or your supplier for information on headgear.

NEVER

1. Drill, remove peaks and alter the shell or suspension in any way.
2. Use solvents or paints on the shell (makes shells break down).
3. Put chinstraps over the brims of Class B headgear.
4. Use any liner that contains metal or conductive material.
5. Carry anything in the hardhat while wearing the hardhat.

Refer to *Occupational Health and Safety Act General Safety Amendment Regulation 34 / 95*

Limb and Body Protection

Due to the number of different hazards, it is not possible to cover specialized limb and body protection in detail. These types of hazards are known as "**JOB EXPOSURES"** (exposure to fire, temperature extremes, body impacts, corrosives, molten metals, cuts from sharp or abrasive materials).

Personal Protective Equipment in this category would be items such as:

1. Leg, arm, chin and belly guards.
2. Specialty hand pads and grips.
3. Leather aprons and leggings.
4. Full body suits.
5. Flame and Chemical Resistant clothing.
6. Various types of plastic boot covers and overshoes.

For more information on the type of specialty personal protective equipment you require, check your local O.H. & S. office. With all personal protective equipment, following the manufacturer's instructions on its use, care and cleaning is critical and will help you get the full service life from your personal protective equipment.

GLOVES AND MITTS

Personal protective equipment for the hands includes finger guards, thimbles and cots, hand-pads, mitts, gloves and barrier creams. Choose hand personal protective equipment that will protect against the job hazard. Gloves should fit well and be comfortable. This type of personal protective equipment has to be protected against chemicals, scrapes, abrasions, heat and cold, punctures and electrical shocks.

TYPES

Personal protective equipment for the hands comes in many forms, each designed to protect against certain hazards. Gloves most commonly used are made from leather, cotton, rubber, synthetic rubbers and other man-made materials or combinations of materials.

Vinyl coated or leather gloves are good for providing protection while handling wood and metal objects. When selecting personal protective equipment, keep the following in mind: look for anything at the job-site that may be a hazard to the hands. If gloves are to be used, select the proper type of glove for the job to be done. Inspect and maintain hand personal protective equipment on a regular basis. If in doubt about the selection or need for a glove or personal hand protective equipment consult your safety supplier, Material Safety Data Sheet (MSDS) or local O. H. & S. office.

ALWAYS

1. Inspect hand personal protective equipment for defects before use.
2. Wash all chemicals and fluids off gloves before removing them.
3. Ensure that gloves fit properly.
4. Use proper hand personal protective equipment for the job.
5. Follow manufacturer's instructions on the care and use of the personal protective equipment you are using.
6. Ensure exposed skin is covered (no gap between the sleeve and the hand personal protective equipment).

NEVER

1. Wear gloves when working with moving machinery (gloves can get caught or tangled).
2. Wear hand personal protective equipment with metal parts near electrical equipment.
3. Use gloves or hand protection that is worn out or defective.

Respiratory Protective Equipment

Respiratory protection falls into two categories.

1. The second category is ATMOSPHERE SUPPLY RESPIRATORS, including self-contained breathing apparatus (SCBA) or supplied air breathing apparatus (SABA) airline systems and protective suits that completely enclose the worker and incorporate a life support system.
2. Only APRs will be dealt with here. The second category of respirators requires much more specific information and training. If you need to use atmosphere-supplying respirators, you should get expert advice.

APRs

There are two basic types of APRs:

1. Disposable filter type with or without charcoal or chemical filter "buttons".
2. The reusable rubber facemask type with disposable or rechargeable cartridges.

The choice depends on your job, labour, cost and maintenance facility.

It is important to remember that APRs are limited to the areas where there is sufficient oxygen to support life. APRs do not supply or make oxygen.

The service life is affected by the type of APR, the wearer's breathing demand and the concentration of airborne contaminants. When an APR is required, consult the

Material Safety Data Sheet (MSDS), OH&S or the supplier for the exact specifications for the APR.

Facial hair can prevent a good seal and fit of an APR:

One to three days growth is the worst.

Follow the manufacturer's instructions to the letter regarding the mask, filters, cartridges and other components. Workers who must use respiratory protection should be clean-shaven.

Rule of thumb "no more than 2 day's growth"

An APR is only as good as its seal and the ability to filter out the contaminants it was designed to filter.

COMBINATION RESPIRATORS

This type of APR combines separate chemical and mechanical filters. This allows for the change of the different filters when one of them becomes plugged or exhausted before the other filter (usually dust filter plugs up before the chemical filter). **This type of respirator is suitable for most spray painting and welding.**

For more information:

1. Material Safety Data Sheet (MSDS).
2. Alberta OH&S Statute and Regulations.
3. The local OH&S office.
4. The safety equipment supplier.
5. CSA Standards "Compressed Breathing Air" Z180.1-M1978.
6. "Selection, Care and Use of Respirators" Z94.4-M1982.
7. Chemical Hazards Regulations (Alberta Reg.8/82).

ALWAYS

1. Train workers very carefully in the APR's use, care and limitations.
2. Ensure that respirators are properly cleaned and disinfected after each shift, according to the manufacturer's instructions.
3. Dispose of exhaust cartridges and masks in sealed bags or containers.
4. Keep new, unused filters separate from old, used filters.
5. Monitor APR use; they are useless just hung around the workers neck.
6. Replace filters when breathing becomes difficult.

NEVER

1. Use for protection against materials, which are toxic in small amounts.
2. Use with materials that are highly irritating to the eyes.
3. Use with gases that can't be detected by odour, throat or nose irritation.
4. Use with gases not effectively halted by chemical cartridges regardless of concentration (read the cartridge label).
5. Use respirators or masks if the serviceability is in doubt.
6. Use APRs where oxygen content in the air is less than 16% or 18 kilopascals (partial pressure or greater).

Protective Clothing

Alberta Fire & Flood Ltd. will ensure that whenever an employee is in potential danger from physical, chemical and / or biological hazards, the employee will wear suitable protective clothing to protect his body from injury.

Information about specific protection from chemicals can be obtained from the respective Material Safety Data Sheets (MSDS).

For protection from cold temperatures, employees and sub-contractors are recommended to wear layered clothing that can be removed or added as required.

Long sleeve clothing should be worn at all times for protection from sunburns, scratches, insects and excessive dirt.

Baggy, loose or torn clothing will not be permitted on the worksite.

GLOVES

Gloves may be required to provide hand protection for the employee. For normal work, cotton or leather gloves are appropriate.

Specialized gloves will be required to protect the employee against the effects of chemicals, heat and cold, sharp objects, electric shock or abrasions.

Information on the type of hand protection required to prevent chemical exposure can be found in the Materials Safety Data Sheet (MSDS) manual.

FIRE RESISTANT WORKWEAR

Alberta Fire & Flood Ltd. will require employees and sub-contractors to have available, and wear, suitable Fire- resistant clothing whenever they are potentially exposed to a flammable and / or combustible atmosphere.

FIRE RESISTANT CLOTHING

Workers involved on worksites or in operations that have been classed, or having a fire and explosion hazard, will be required to wear the following:

OUTER CLOTHING

Materials that is inherently non-flammable and does not melt when exposed to heat. Material that does not cause a build-up of static electricity.

EXAMPLES:

1. Nomex 111, Proban Cotton
2. PBI (Polybenzimidazole Fiber), Flamex, Cotton
3. Wool, Melton, Leather

Hardhat liners will also be required to be fire resistant.

INNER CLOTHING

Material that does not melt when exposed to heat:

EXAMPLES

Cotton / Denim / Silk

NOTE: Nylon and 100% polyester clothing will not be accepted as inner or outer clothing on an industrial worksite.

1. Every worker shall provide and wear clothing suitable for the conditions and work being performed.
2. Shirts and full length trousers or pants shall be worn at all times while on the job.
3. Close fitting and clean-cut clothing shall be worn.
4. Head and facial hair shall be completely confined or cut short.
5. Dangling neckwear, neckties, jewelry, rings or other similar items shall **NOT** be worn.
6. Hard hats must be worn at all times (except while operating mobile equipment).
7. Proper goggles, face shields and other eye protection must be worn when engaged in work where there is an eye hazard.
8. A worker shall wear CSA approved work boots.
9. Workers shall wear suitable protective clothing when handling harmful substances injurious to the skin.

SECTION 7 - PREVENTATIVE MAINTENANCE PROGRAM

Vehicle and Equipment Maintenance

Overview of Code of Practice

This COP contains the basic practices of vehicle and equipment maintenance to be implemented at the main corporate office. The purpose of this COP is to provide a set of guidelines for the workers regarding vehicle maintenance and the maintenance of equipment used in the business operations.

Standards and Specifications

1. Conduct vehicle maintenance operation only with designated service agencies.
2. Whenever possible, perform all vehicle and equipment maintenance activities at an indoor location with a concrete floor.
3. Always use drip pans.
4. Absorbent spill clean-up materials shall be available in maintenance areas and shall be disposed of properly after use.

Waste Management – Spill Prevention, Containment and Countermeasures

1. Do not dump or dispose of oils, grease, fluids and lubricants onto the ground.
2. Do not dump or dispose of batteries, used oils, antifreeze and other toxic fluids into a storm drain or any other watercourse.
3. Collect wastes in properly labelled containers and dispose of them properly.

Spill Response and Reporting

1. Conduct cleanups of any fuel spills immediately after discovery.
2. Spills are to be cleaned up using dry cleaning methods only. Spills shall be cleaned with a dry, absorbent material and the area is to be swept clean.
3. Collected waste is to be disposed of properly.

Maintenance and Inspection

1. Periodically check for leaks and damaged equipment and make repairs as necessary.

Vehicle and Equipment Maintenance Procedures

Vehicle Inspection

1. Using the vehicle inspection form, ensure daily pre and post trip inspections take place.
2. File Vehicle Inspection Forms in a separate Vehicle Inspection File for each vehicle.

Vehicle Maintenance

1. Create a **Vehicle Maintenance File** for each vehicle.
2. Attach to front of each **Vehicle Maintenance File** a schedule of preventive maintenance to be accomplished.
3. Attach to front of **Vehicle Maintenance File** a log summarizing all scheduled and unscheduled maintenance activities which were accomplished.
4. Utilize the **Preventive Maintenance Form** for all scheduled maintenance. Have maintenance provider indicate on form what scheduled maintenance took place.
5. Attach to **Preventive Maintenance Form** any work orders, purchase orders and/or invoices related to that particular piece of scheduled maintenance work.
6. File in the vehicle maintenance file the **Preventive Maintenance Form** with attachments.
7. When a running maintenance problem occurs and the maintenance required is not scheduled, have the driver fill out the top part of the **Vehicle Defect Form**.
8. Have the maintenance provider fill out the bottom of the **Vehicle Defect Form** indicating how the problem was corrected.
9. Attach to the **Vehicle Defect Form** any work orders, purchase orders and/or invoices related to that particular piece of unscheduled maintenance work.
10. File in the **Vehicle Maintenance File** the **Vehicle Defect Form** with attachments.
11. Keep **Vehicle Maintenance File** for each vehicle in chronological order or maintenance activities which took place.

Vehicle Inspection Policy

In keeping with current legislation and safety considerations, Alberta Fire & Flood has adopted a Vehicle Inspection Policy.

1. All personnel driving company vehicles are responsible for the health and safety of any passengers. There is NO SMOKING in any company vehicles.
2. Driving a company vehicle while under the influence of alcohol or drugs is reason for immediate dismissal.
3. If your driver's license is suspended for any reason, inform your Crew Chief and Safety Coordinator as soon as possible.
4. Each vehicle will be equipped with a 2lb fire extinguisher and First Aid Kit with visible signage in the rear window, a driver hazard vest and emergency triangles.
5. Every vehicle will have an informal inspection performed daily, prior to use. Walk around your vehicle. This inspection should include tires, brakes, gas, head and tail lights. This inspection should be noted in your daily operations reporting.
6. A formal inspection should be done monthly using the Vehicle Inspection Form. This should be passed in to the Safety Coordinator for perusal and major repair decisions. Minor repairs, tires and servicing are to be booked by the driver, with the authorization of Management.

❖ **The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.**

Number of Kilometers	Oil Change	Tire Rotation	Wheel Balancing	Brake Inspection	Cooling System	Engine Service	Transmission Service
5 000 km or 3 months	√						
10 000 km or 6 months	√	√					
15 000 km or 9 months	√						
20 000 km or 12 months	√	√	√	√	√		
25 000 km or 15 months	√						
30 000 km or 18 months	√	√					
35 000 km or 21 months	√						
40 000 km or 24 months	√	√	√	√	√	√	√
45 000 km or 27 months	√						
50 000 km or 30 months	√	√					
55 000 km or 33 months	√						
60 000 km or 36 months	√	√	√	√	√		
65 000 km or 39 months	√						
70 000 km or 42 months	√	√					
75 000 km or 45 months	√						
80 000 km or 48 months	√	√	√	√	√	√	√
85 000 km or 51 months	√						
90 000 km or 54 months	√	√					
95 000 km or 57 months	√						
100 000 km or 60 months	√	√	√	√	√		

Equipment Preventative Maintena

Equipment	Safety Check	Testing	Cleaning	Equipment	Safety Check	Testing	Cleaning
Fork Lift	√			Extension Cords	√		√
Scissor Lifts	√			Wobble Lights	√		√
Dehumidifiers	√		√	Power Drills	√		√
Fans	√		√	Table Saw	√		√
Blowers	√		√	Air Tools	√		√
Vacuum Cleaners	√		√	Framing Nailers	√		√
Ozone Machine	√		√	Fencing Trailer	√		
Scrubbers	√	√	√	Trailers	√		
Texture Machine	√		√	Hydoxyl Machine	√	√	√
Paint Machines	√		√	NIKRO Hepa Scrubber	√	√	√
Step Ladders	√		√	Extension Ladders	√		√

Tested only if machines are used on mould jobs.

Safety Checks are done before the equipment is used on any job

Equipment is **cleaned** immediately when it is returned to the shop.

Preventative Maintenance Procedure

The Alberta Fire & Flood Ltd. Policy for Tools and Equipment and Maintenance espouses that quality work requires quality equipment. Regular inspection, cleaning and maintenance of tools and equipment is the responsibility of all Alberta Fire & Flood employees. All tools and equipment must be kept in an excellent state of repair at all times.

1. Tools or equipment needing repair are to be tagged out and placed in the Tool Repair Bin. Defective Tools or equipment shall then be repaired by a Manufacturer's authorized repair person.
2. All tools and equipment shall be inspected upon return to the shop.
3. No worker should re-start a tool without a basic visual inspection.
4. All Crew Chiefs must ensure their workers are aware of this policy and the process to follow if a tool needs repair.
5. Crew Chiefs will monitor workers to ensure the program is being adhered to.
6. All workers must be familiar with the manufacturer requirements for safe operation shall ensure their tools are used in accordance with manufacturer and regulatory standards.

Regular inspection, cleaning and maintenance of tools and equipment is the responsibility of all Alberta Fire & Flood workers. All tools and equipment must be maintained in an excellent state of repair at all times, as per applicable legislation.

There is a clearly marked <u>'Repair'</u> bin for those tools that need servicing.

<u>Inspection & Repair Policy</u>

1. Formal tool and equipment inspections will be done as per the schedule.
2. All tools and equipment shall be cleaned and inspected upon return to the shop. An Equipment Sign-out Sheet is available to check-in/check-out items and these must be dated and signed by the worker taking the equipment. The worker who signed the check-out sheet is responsible to return the item clean and in good working condition.
3. **Check prior to use:** electrical cords, On/Off switches, Safe guards, fluids, shafts, casing, blade/disc condition, batteries and all components and/or accessories
4. Visual inspection of equipment and tools should be done each time you return to work (in the morning, after lunch). Defective equipment must be given a repair tag and removed from service. Tools/

5. Tools/ equipment requiring service shall be tagged with a “Repair” tag, the date, worker’s name and the problem written on the tag. Any necessary comments should also be written on this tag. The Safety Coordinator will keep a log of all tools sent out for servicing, when and where and the date of return.
6. Tools/equipment requiring re-certification will be tagged with a ‘Re-Cert’ tag and brought to the Repair bin for action by the Crew Chief. The Safety Coordinator will send the item out to an authorized dealer or dealer/manufacturer approved repair shop. A log of all tools/equipment sent out for re-certification will also be kept by the Safety Coordinator.
7. All servicing of tools and equipment will be done by authorized dealer/manufacturer approved repair facilities.
8. It is the responsibility of the Orientation to ensure that all workers are familiar with this system and the responsibility of the Crew Chief to ensure this system is followed by all workers.
9. It is the responsibility of every worker to ensure that he/she is wearing proper PPE when working with any tool or piece of equipment. Proper PPE can be determined by checking Safe Work Practices, Safe Job Procedures or manufacturer’s instructions.

The Vehicle Inspection Policy is covered under that section of this manual.

- **The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.**

Care, Control and Custody of Customer Vehicles

Introduction

Emergency vehicle drivers have in their care, custody and control most of the major assets possessed by the Emergency Response services (the vehicle and all the portable medical equipment). Emergency vehicle drivers also have a higher standard of care to provide and must make every attempt possible to provide due regard for the health and safety of others. Drivers must constantly monitor and reduce the amount of risk and exposure to potential losses during each and every trip. In order to accomplish this, all emergency vehicle drivers shall become familiar with, and constantly abide by the following procedures.

Procedures

1. Circle of Safety
    a. Prior to entering and starting the vehicle, the emergency vehicle driver shall make a circle of safety around the vehicle to see that all equipment is secured, that all doors are securely closed and physical obstructions moved out of the way. During the circle of safety the emergency vehicle driver shall encircle the vehicles and visually inspect all four sides before entering the vehicle.
2. Vehicle Control and Right-of-Way
    a. All drivers shall attempt to maintain control of the vehicle that they are operating in such a manner as to provide the maximum level of safety for both themselves and the general public.
    b. All drivers shall follow the rule for safe following distance and allow 1 second of following distance for every 3 meters of vehicle length for speeds under 50 kilometres per hour and add 1 additional second for each 10 kilometres per hour for speed over 50 kilometres per hours.
3. Ordinary Travel Procedures
    a. All drivers shall obey all traffic laws and traffic control devices when driving any emergency vehicle under ordinary travel conditions. Any driver observed breaking any traffic laws or driving any vehicle in an aggressive manner will be subject to disciplinary action, including suspension of driving privileges.

Emergency Vehicle Driver Acknowledgement

4. Backing Up the Emergency Vehicle
    a. We recognize that backing emergency vehicles is made hazardous by the fact that the driver cannot see much of where he/she intends to go. We recommend that whenever possible drivers should avoid backing up as the safest way to back up a vehicle is not to back up at all. When it is necessary to back-up any emergency vehicle all drivers shall follow one of the two following measures.
    b. Our first choice is that before any vehicle is put into reverse and backed up that a spotter be put in place near the rear of the vehicle. The spotter should be safely positioned so that the emergency vehicle driver can them him/her at all times. If at any time the emergency vehicle driver loses sight of the spotter, he/she shall stop immediately until the spotter makes himself/herself visible again.
    c. If conditions exist that make the use of spotters impossible, all drivers, before attempting to back up any emergency vehicle, shall make a circle of safety to see that:

i. No person or persons are directly behind the vehicle or in its intended path of travel;
ii. All equipment is secured and that all compartment doors are securely closed;
iii. Any physical obstructions are moved out of the way. The emergency vehicle driver should also note all potential obstructions in the intended path of travel.

Emergency Vehicle Driver Acknowledgement

I, _____ acknowledge that I have received a copy of the Alberta Fire and Flood's Code of Practice for the Care, Control and Custody of Emergency Vehicles and have also been trained and understand the items and instructions contained in this COP. I also understand the importance of safe operation of the Emergency vehicles and will abide by all of the tactical and administrative operating guidelines contained in this document.

Signed: _____

Date: _____

Original: Personnel File
Copy: Alberta Fire and Flood's authorize driver

Alberta Fire and Flood's Driver Policy

All personnel who will be certified to operate a motorized vehicle with Alberta Fire and Flood will meet the following requirements:

1. AFF will obtain a driving record on all employees at their time of hire. Employment will be dependent on your driving record. Current driving records on employees will be maintained by AFF management;
2. Must be at least eighteen years of age;
3. Must have the approval of Management before beginning Defensive Driver training.
4. Must successfully complete a Defensive Driving Course;
5. Must not have accumulated more than 6 traffic demerit points during the two years prior to the start of your employment at AFF;

6. Have not been convicted of any of the following violations within the last 5 years immediately prior to the start of their employment at AFF:
    a. Driving while intoxicated;
    b. Impaired driving;
    c. Reckless driving;
    d. Driving while under the influence of drugs and/or alcohol.
7. You *must* notify management of any changes in the status of your driving record, such as tickets, restrictions, suspensions, etc. Failure to notify management of these changes will result in disciplinary action up to and including termination of employment.

ALL PERSONNEL MUST HAVE AND CONTINUE TO MEET THE REQUIREMENTS OF THIS POLICY TO OPERATE AN AFF OWNED MOTOR VEHICLE. FINAL APPROVAL, DISAPPROVAL, REVOCATION OF A DRIVER'S PRIVILEGE WILL RESIDE WITH THE MANAGEMENT OF AFF.

SECTION 8 - TRAINING and COMMUNICATIONS

Safety Training

Alberta Fire & Flood Ltd. is committed to the ongoing education of its workers maintaining a workforce that is properly trained and competent.

The purpose of this policy is to ensure that all employees of Alberta Fire & Flood receive sufficient general and specialized training and that productive safety meetings are held regularly throughout the company.

1. It is required that all new employees participate in an orientation and pass a comprehension quiz regarding that orientation prior to beginning work at Alberta Fire & Flood jobsites.
2. Training records will be maintained for each employee along with expiration dates. It is the responsibility of the Safety Manager to ensure that employee certifications are maintained current.
3. New employees will be asked to produce proof of training and AB Driver's License.
4. The First Aid Training Policy is that one in four of all employees shall be trained in Standard First Aid w/CPR, 2 day course. As a condition of employment, Alberta Fire & Flood requires every new employee to certify or re-certify in this first aid course. Upon successful completion of the 90 Probationary period, and with submission of a paid receipt, Alberta Fire & Flood will reimburse the new employee for the cost of the course.
5. It shall be the responsibility of the Safety Manager to evaluate the training needs of employees on a regular basis and to implement training as required.
6. Project Managers are required to consult with the Safety Manager at the project planning stage if specialized training needs are foreseeable.
7. All in-house (on-site or otherwise) training will be performed by competent individuals.
8. All workers will receive their general WHMIS as it is required on most of our jobsites. The Safety Manager will be responsible to train new employees in WHMIS.
9. Workers must be trained in the safe operation of the equipment they are required to operate.

Safety Meetings

1. Alberta Fire & Flood Crew Chiefs are responsible for leading and documenting Toolbox Safety Meetings. Documentation includes the date, the location or job number, topics discussed and the printed names and signatures of every participant.
2. A Toolbox Safety Meeting will take place at the beginning of every job, with attendance being mandatory.
3. The Safety Manager will formulate an Agenda for, and schedule Monthly Safety Meetings.
4. Monthly mandatory Safety Meetings will be held and will include the review of at least one SWP or SJP. All attendees will sign the attendance sheet and minutes will be taken and posted.
5. It is the sub-contractors responsibility to ensure that all sub-trade workers are adequately trained to perform their job duties safely.

Courses

Alberta Fire & Flood will assume all costs associated with improving the quality and standards of service and safety subject to the following:

1. Management approval must be obtained prior to course enrollment.
2. Employee must successfully complete the course.

Furthermore:

If it is determined by management that an employee requires job specific training, he/she will receive his/her regular hourly wage; however, if the employee has *requested* training outside of the necessary to perform his assigned duties, he/she may not be paid his regular wage. Management will review each request individually and a decision will be made on, among other factors, merit and applicability to current and future projects.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.

TRAINING REQUIREMENTS

As a requirement of current Alberta regulations, employers are required to provide training for workers who may be exposed to a harmful environment at a work site. All Alberta Fire & Flood Ltd. employees will require training in the following programs:

TRAINING PROGRAMS and FREQUENCY

1.	WHMIS (Workplace Hazardous Material Information System)	3 years
2.	Fire Extinguisher, Use and Maintenance	3 years
3.	Hearing Conservation	As required
4.	Emergency Response Procedure	As required
5.	Standard / Emergency First Aid	3 years
6.	Specific Safe Job procedures	As required
7.	Incident / Accident Reporting	As required
8.	H2S training	3 years
9.	Confined Space Training	3 years

When the term “as required” is used to determine the frequency of re-training, it is assumed that the worker will have or, will receive the initial training as he/she is hired. The management will determine the need for any subsequent training.

Many of the required training courses can be procured from independent consulting firms or training institutions. These courses however, tend to provide general information only.

Alberta Fire & Flood Ltd. will evaluate each course syllabus to determine the effectiveness of the course material. Additional on-site training may be required to complete the training requirements.

A training record will be maintained on each employee. The records will be checked semi-annually to determine the requirements for employee training.

Unless special arrangements are made, Alberta Fire & Flood Ltd. **will not be required to provide safety training for sub-contractors.** All contractors have the responsibility to ensure that they and their employees have received adequate training acceptable to Alberta Fire & Flood Ltd. standards before commencing a task.

Safety Orientation for New Employees Training Outcome
Alberta Fire & Flood will provide a high quality Safety Orientation to all newly hired employees.

The orientation is to include the review of the sections of the Safety Manual with the new hire and getting him/her to sign off that they have understood the information explained to them. This is done with the use of a quiz.

The Safety Orientation is to inform them of their rights and obligations and the company expectation of employee conduct regarding health and safety on the job.

A new hire Safety Orientation is mandatory by Company Policy.

Safety orientation will give the Safety Manager a chance to get a better understanding for the new hire's experience and common knowledge of safety in construction.

There are 13 sections to the Alberta Fire & Flood Safety Manual:

1. **Company Policy**
   This is the statement informing the new hire that the company will never knowingly put them at risk or make them perform any unsafe tasks. Discuss the Refusing Unsafe Work and the requirement to report all unsafe acts.
2. **Hazard Assessment**
   This section let the new hire know that Alberta Fire & Flood performs scheduled hazard assessments, at the start of projects and whenever the scope of work changes. The new hire needs to know that he will be expected to participate in the Hazard Assessment process.
3. **Practices & Procedures**
   Let the new hire know that he/she is to review the SWP and SJP prior to performing a task that may be foreign to them or if they are uncertain of how Alberta Fire & Flood wants the task done. Inform the new hire that a copy is in the Safety Manual and a copy of the Safety Manual is available at the head office for referencing. Questions will be promptly answered.
4. **Rules & Regulations**
   The WH&S Regulations are the rules that Alberta Fire & Flood complies with and the new hire is to comply with these regulations as instructed by the Crew Chief. Inform the new hire that a copy of the Red Book (show it) is available at the office. Cover the Alberta Fire & Flood Company Rules and discuss expectations briefly. Discuss the 3-strike rule. Discuss the Harassment Policy.
5. **Personal Protective Equipment**
   The new hire should know that they are expected to wear appropriate clothing for a construction site. Discuss no shorts, undershirts (muscle shirts), sneakers, etc. An acceptable shirt would be a t-shirt with an approx. 6" sleeve. Discuss mandatory PPE (HH/glasses/boots) and Alberta fire & Flood funding policy for CSA approved boots. Specialized PPE will be supplied at Alberta Fire & Flood's cost. Training will be provided when necessary. Discuss that not wearing PPE carries consequences.

6. **Preventative Maintenance**
   Simple: If it is broken, Alberta Fire & Flood will take action to have it fixed. Explain the tag-out system and show them the repair bin. Explain the need for pre-use inspection, not using damaged extension cords, not using tools with improper, removed or broken safety devices. Never work with damaged tools or equipment.
   If the new hire will be issued a vehicle, discuss the Vehicle Inspection Policy.
7. **Training & Communication**
   The new hire needs to understand that company training ranges from Toolbox Meetings to Mould or Asbestos Awareness. Discuss mandatory attendance at Safety Meetings and the H&S Committee and their duties. Discuss the Working Alone Policy.
   Alberta Fire & Flood cooperates with the ACSA in their effort to establish a training program and all training is reported to them. This will enable companies to confirm worker training even when certificates are lost or not issued.
   Alberta Fire & Flood will pay for any specialized training required by the company. Discuss Toolbox Meetings and their training value.
   It is very important that you discuss the Modified or Light Duties Program. If Modified or Light duties are assigned and refused, the worker runs the risk of losing WCB benefits and his employment. A company is not allowed to assign demeaning modified duties.
   ALL WORKERS MUST BE WHMIS TRAINED.

8. **Safety Inspections**
   Discuss the Inspection Policy with the new hire and that all results will be posted. Let the employee know that he/she will be expected to take part in inspections from time to time.
9. **Incident & Accident Investigations**
   Inform the new hire that all accidents and incidents, including near miss incidents are reported. That by reporting and tracking these incidents we can establish the areas where more training is required or proper PPE is not being used, etc. We can also prevent re-occurrence.
   Alberta Fire & Flood cooperates with the ACSA in their effort to establish a statistical database of accidents and incidents, therefore, all accidents or incidents are reported to them voluntarily. This will help companies to train prior to necessity.

All employees are expected to cooperate during an investigation and will be expected to provide all and any pertinent information they may have, have heard, or have seen, to the investigator.

10. **Emergency Preparedness**
    Discuss the air horn and the emergency signals. Discuss the Muster Point and Emergency Response Plan and procedure. Let them know they may be given a supporting role (ie: directing the ambulance from the main road). Discuss Fire Extinguishers and how to use them. Evacuation or return to work is established at the Muster Point by the Crew Chief.
    WCB forms must be filled out for all injuries whether you have lost time or not, along with an Accident/Injury Report.
11. **Records & Statistics**
    As a company we keep track of information to measure our performance. We cooperate with ACSA efforts to establish databases for easy referencing.
12. **Environment**
    Let the new hire know that Alberta Fire & Flood complies with all environmental laws as we frequently work with contaminated materials. We dispose of contaminated materials as required.
13. **H&S Committee**
    Briefly discuss the role and duties of the members of the H&S Committee and frequency of meeting.

SAFETY MEETINGS

Safety meetings are important forums where information and ideas can be transferred from management to the employees and vice versa. The singular objective at all safety meetings should be to enhance the safety awareness of the participants. There are two (2) types of safety meetings currently in use at Alberta Fire & Flood Ltd.

Scheduled Safety Meetings and Job-Site Toolbox Meetings

1. Safety meetings will be held every month or sooner, depending on company operations or unforeseen circumstances.
2. These meetings will be held at a convenient time and location to ensure that the majority of employees can attend.
3. Either the Safety Manager or his designate will chair the safety meetings. All employees are encouraged to participate at the meeting.

Job-Site Toolbox Meeting

Before starting any job involving more than one employee and where there is a reasonable possibility that, employees could be injured, a job-site toolbox meeting

will be held. The senior Alberta Fire and Flood Ltd. representative on the worksite will direct the meeting.

The topics included in the pre-job toolbox meeting include:

1. A complete list of Alberta Fire & Flood Ltd. employees and subcontractors working on the jobsite. (All personnel must print and sign in)
2. Date, address and job or file number must be included
3. Description of the job, including any possible interference. (work permit).
4. Expected time (duration of job)
5. Specific employee's responsibility during normal operations and during an emergency. (perform a head count)
6. Availability and location of site and personal protective equipment.
7. Contingency plan.
8. Emergency response.

Sub-Contractor Safety Agreement

Alberta Fire & Flood is committed to providing the best most efficient service available. In keeping with this, we are instituting a Safety Policy to manage jobsite safety and reporting obligations. Frequently Alberta Fire & Flood will perform Prime Contractor duties.

As such, certain requirements are necessarily performed by our sub-contractors.

1. No sub-trade will be on an Alberta Fire & Flood jobsite without a certified Journeyman present at all times.
2. All sub-contractors are required to adhere to the Alberta Fire & Flood Safety Manual minimally.
3. Fall Protection Plans are to be forwarded to our Safety Manager prior to commencing work.
4. Work boots, hardhat and safety glasses are the minimum PPE and all workers must wear them or have them readily available.
5. Appropriate clothing must be worn by all workers on site. CSA approved work boots, jeans or workpants, t-shirts with an approx. 6" sleeve and work shirts are appropriate. Not appropriate are: sneakers or any other non-CSA approved footwear, undershirts (muscle shirts), shorts and extremely baggy jeans.
6. All workers must receive a Site Safety Orientation prior to entering the worksite.
7. All visitors must sign in and out and be provided with the necessary PPE.
8. Toolbox Safety Meetings: The Crew Chief of all sub-trades MUST attend Alberta Fire & Flood Safety Meetings. If his crew does not attend these meetings, the sub-trade Crew Chief must hold a Safety Meeting and cover **at least** those topics covered in the Alberta Fire & Flood Meeting. A copy of the

Minutes of the sub-trade meeting, along with written attendance must be provided to Alberta Fire & Flood.

9. Copies of all training certificates must be provided to Alberta Fire & Flood prior to a worker entering the worksite.
10. Sub-trade workers must be trained in WHMIS.
11. Sub-trades are required to immediately provide MSDS to the Crew Chief for all hazardous goods brought on site.
12. Sub-trade workers must be trained in First Aid if not accompanied by a first aid trained Alberta Fire & Flood worker.
13. Hazard Assessments must be done at the start of the job and every time the scope of work changes. Copies of All Hazard Assessments must be provided to Alberta Fire & Flood.
14. Alberta Fire & Flood has adopted a 3-Strike disciplinary action plan. This policy will also apply to all sub-trades.
15. Housekeeping – all sub-trades are to maintain a clean work area. All garbage must be disposed of and tools put away nightly. It is the policy of Alberta Fire & Flood to clean and/or sweep their work area prior to going home at night.
16. All incidents, including Near-Miss Incidents will be reported to the Alberta Fire & Flood Crew Chief.
17. Any and all tools and equipment brought onto the worksite by the sub-trade shall be in safe operating condition and used only by competent workers.

Sub-contractor Name: _____

Address: _____

Authorized Signature of Acceptance:

_____

Print Name/Title:

_____

Date: _____

SECTION 9 - INSPECTIONS

The purpose of this Safety Inspections Policy is to control the loss of human and physical resources by identifying and correcting unsafe actions and conditions.

Inspections aid in enhancing compliance to legislated requirements and worker compliance to company policy. Inspections also help management identify where improvements can be made. By observing work practices and physical conditions, we are able to identify situations where a potential for injury or loss may occur.

Inspections of construction activities will **document and verify** compliance with Federal, Provincial OH&S and Municipal regulations.

Definition

Inspection: A physical condition evaluation of a work area or process to identify levels of compliance with established safe work practices, procedures, general rules and safety standards.

Safety Audit: An evaluation used to determine an organization's compliance to its established Safety System. Audits include inspections as part of its overall evaluation.

An inspection will cause the recognition, assessment and control of sub-standard acts, conditions, practices or procedures observed while performing site duties. Information gathered during inspections will be used as a learning tool to help in the development of better controls and to help us recognize hazardous situations and minimize or eliminate them.
Since Alberta Fire & Flood generally performs work of a short duration (days rather than weeks), an alternate schedule has been adopted. Informal Inspections are to be performed quarterly with Formal Yearly Inspections taking place as per the Inspection Policy.

All inspections will be reviewed by the Safety Manager and the Project Manager and any concerns will be addressed immediately. The Safety Manager will monitor the reporting to determine if the findings indicate a need for specific or additional action or training.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.

Safety Inspections

Safety inspections of company activities and company owned worksites will be performed periodically to identify unsafe acts and conditions that could potentially cause or create injuries or property damage.

The inspections are a gauge by which the employees and subcontractors can determine how effective they are in promoting safety attitudes and actions in the workplace. The inspections will be performed by Supervisors and are designed to acknowledge good, acceptable performances as well as unacceptable performances.

The inspection report is designed for company use and is not intended to replace accepted reports or inspection forms developed for specific situations or designed to comply with specific Alberta Regulations.

Responsibilities

The Safety Manager is responsible for the overall operation of the program.

The Safety Manager is responsible for directing formal inspections on job sites that they control and for involving workers in such inspections.

Supervisors are responsible for conducting ongoing informal inspections of areas where their crews are working.

Workers are responsible for participating in and contributing to the Inspection Program.

SECTION 10 - INVESTIGATIONS

Investigation Policy

Alberta Fire & Flood Ltd. requires all incidents or accidents involving employees and/or equipment to be reported and investigated, as per applicable legislation. Timely and accurate reporting is. Reporting and investigations are critical in the prevention of similar occurrences. Investigations are intended to determine the root cause of an incident, not to assign blame.

The following types of accidents will be formally investigated:

1. Accidents that result in injuries requiring off-site medical aid.
2. Accidents that cause property damage or interrupt operation with potential loss exceeding $2,000.
3. Injuries that have the potential to result in one or both of the above.
4. All incidents that, by regulation must be reported to WH&S, WCB or regulatory agencies.
5. Formal investigations are required any time the Fire Department, Police or ambulance or any other emergency response service has been called. The Crew Chief is required to report to the Safety Coordinator immediately if any of the above services have been called to an Alberta Fire & Flood worksite. The Safety Coordinator will then report to the appropriate agencies and management, as required.

Alberta Fire & Flood will investigate incidents so that root causes can be determined and corrective actions can be implemented to prevent recurrence.

1. Investigations are to include the worker involved if possible, the Crew Chief, Project Manager and, depending on the severity of the incident, the Safety Coordinator.
2. In situations involving substantial injury or loss, preserve the accident scene to ensure important evidence is not disturbed or lost and details are not forgotten. This is required by law for any serious injury or accident.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.

***The safety information in this policy does not take precedence**

Incident Reporting and Investigation

An “incident” is defined as any downgrading, unforeseen occurrence that causes or has the potential to cause:

Personal Injury; and / or Property Damage

Incidents are classified in the following ways:

1. First Aid Injury.
2. Lost Time Injury.
3. Partial or Permanent Disability.
4. Property Damage Above a Certain Cost.
5. Environmental and / or Social Impact.

All incidents exact a price; this price can be manifested in reduced efficiency, pain and suffering and / or loss of money and time.

The reason for an incident investigation is to determine the cause of an incident in order to prevent the incident from recurring. It is not designed to lay blame.

The size of incident is not important. It has been proven that large, serious incidents were preceded by a number of seemingly unimportant small incidents.

NOTIFICATION OF NEXT – OF - KIN

Under no circumstances should the name of an accident victim or fatality be released without permission from the management of our company and/ or the R.C.M.P.

It is important that the employee's next of kin be notified as soon as possible. The names, addresses and telephone numbers of next of kin are included in the employee's personnel file.

FATAL INJURY

This notification should only be made in person and only with the family, clergy, doctor or friend. The R.C.M.P. or city police will assist with the notification whenever possible and will ensure the notification is complete.

Never release the victim's name until the next of kin is notified.

MEDIA RELATIONS

If the company should arrive at the scene of an emergency before the company has prepared a statement, the senior Alberta Fire & Flood Ltd. representative at the scene of the emergency is authorized to release the following statement:

“We are currently dealing with the emergency situation to ensure the safety of personnel, property, public and the environment. A more comprehensive statement will be released as soon as more factual information has been determined”.

Do not speculate on the cause of the emergency or provide the media with any type of statement that is “**OFF THE RECORD”.**

Before admitting the media onto Alberta Fire & Flood Ltd. property, the senior Alberta Fire & Flood Ltd. representative shall ensure that the area is absolutely safe and admittance will not hamper emergency services or investigations. The media shall always be accompanied while on Alberta Fire & Flood Ltd. property or any site or property under the care, custody and control of Alberta Fire & Flood Ltd.

SECTION 11 - EMERGENCY PREPAREDNESS

The first priority in any emergency response situation is the health and safety of our employees, sub-contractors and the general public.

A viable emergency response plan (ERP) shall be in place on all of our jobsites and all company offices. This plan shall be an integral part of all job pre-planning processes. These plans shall be designed to reduce or eliminate the effects of accidents or incidents related to the failure of administrative or engineered controls put in place by Alberta Fire & Flood Ltd., our sub-contractors or our clients. All projects shall be reviewed to identify their specific emergency preparedness requirements.

First Aid personnel and equipment shall meet or exceed all relevant legislation.

Included in the Emergency Response Plan will be:

1. the address of the location of the jobsite,
2. the emergency phone numbers for all pertinent utilities: gas, water, electricity,
3. the office phone number, along with home or cell phone numbers for the Safety Coordinator and the Project Manager, and
4. a map clearly showing where the site Muster Point shall be or definitive and noted discussion during the initial Safety Meeting of its location, along with building exits.

This Emergency Response Plan will be prominently posted and reviewed, along with air horn signals and procedures, with all workers at the pre-commencement Toolbox Safety Meeting.

The Project Manager and Crew Chief, in cooperation with the Safety Manager is responsible for the formulation and posting of the Site Emergency Response Plan. The Crew Chief is responsible to review the ERP as the scope of work changes to ensure continued effectiveness.

A pro-active Emergency Response Plan pre-planning process will reduce the potential for accidents, incidents and injuries.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.

****The safety information in this policy does not take precedence ****

A properly executed response to an emergency will minimize the negative effect on people, property, the environment and the daily operation of Alberta Fire & Flood.

Identify the risks that occur in our workplace based on the type of work and tasks performed that have the potential for loss. Once we identify the associated risks, we can look at emergency scenarios and ensure that:

1. an effective communication system is in place for both onsite and offsite communication,
2. the appropriate level of first aid and transportation requirements, particularly in remote locations,
3. every worker involved in the project is aware of their Emergency Response role.

Check and maintain all emergency equipment including Fire Extinguisher inspection and tags, First Aid Kit stock and air horn reliability.

Classify the emergency so everyone knows what they will be dealing with.

1. **Minor:** can be handled by on site First Aid station. Has the potential of danger to personnel, the public, environment or equipment.
2. **Serious**: Injuries that include off-site medical aid and loss time accidents.
3. **Major**: Death, dismemberment, long term loss time, explosion, fire, flood, crane failing and two or more days in the hospital require reporting to the WCB and/or OH&S.

Fire Calls

1. Is everyone out of the building?
2. If not, where in the building are they located?
3. Where is the fire located in the building?
4. Tell the operator if any chemicals are in the building.
5. Is an ambulance required?
6. Have someone meet the fire crew/ambulance.

Dangerous Goods Spill

1. Are there any injuries?
2. What product was spilled?
3. How many liters?
4. Exact location of accident.
5. Is an ambulance required?
6. Is spill under control?

Medical Aid Calls

1. Patient complaint.
2. Is patient conscious? yes / no
3. Is patient alert? yes / no
4. Difficulty breathing? yes / no
5. Approximate age of patient?
6. Male or female?

Vehicle Accident

1) Are there any injuries?
2) If so, how many?
3) Ambulance required?
4) Are there any fuel leaks?
5) How many vehicles are involved?
6) Location of accident?

Heart Attack!! Tell operator if someone has first aid and has started CPR.
Tell operator if someone has first aid and has started CPR.

Emergency Response Plan

STAY CALM
NOTIFY ALL SITE PERSONNEL

1. Stop all work.
2. Lower all loads.
3. Shut down all equipment and tools.
4. Evacuate the site and assemble at muster station.
5. Work to be resumed only under the direction of Prime Contractor.

SUPERVISORS

1. Call the Construction Manager or Superintendent.
2. Designate personnel to direct traffic on site.
3. Assign person to meet emergency vehicles(s).
4. Perform name check-off at muster station.
5. Assist with emergency (but do not hinder).

COMMUNICATIONS DESIGNATE

Under the direction of Supervisors – Call for necessary emergency vehicles giving:

1. Your name.
2. Location.
3. Type of emergency.
4. Entrance route scene.

PROJECT FIRST AIDERS

1. Perform the necessary First Aid.
2. Phone for any needed materials or information.
3. Assist with the emergency.

****This emergency plan is only to be used if the Prime Contractor has not provided one on site****

SECTION 12 - RECORDS, STATISTICS and MODIFIED DUTY

Statistics and Record Keeping

Alberta Fire & Flood has instituted a record keeping system to keep an inventory of tools and equipment and tracks and records all scheduled tools/equipment maintenance and all tools/equipment requiring regulatory re-certification.

Training records will be maintained for each employee along with expiration dates. It is the responsibility of the Safety Coordinator to ensure that employee certifications are maintained current.

The Office Administrator will be the WCB contact and will provide relevant reports to the Safety Coordinator on a monthly basis that has been generated by WCB.

A copy of our WCB Clearance Letter will be on file at all times in the main office.

A copy of our WCB Performance Ratio will be kept on file in the main office.

It is important that Alberta Fire & Flood maintain records and statistics as this will aid in identifying where training is required.

The terms, record keeping and statistics refer to the methods of recording and tracking the safety and performance of Alberta Fire & Flood Ltd. All documentation pertaining to the safety program will be retained in the company's Master Safety Manual at the main office for further reference.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.
****The safety information in this policy does not take precedence ****

Modified Work Program

Alberta Fire & Flood Ltd. has developed a Modified Work Program for injured workers.

When a worker cannot perform his duties due to a work related injury, it is to the worker's advantage that they remain on the job. Alberta Fire & Flood will assist in the rehabilitation of the injured worker by assigning him, if possible and available, work that he/she is capable of performing.

There will be no salary adjustment while participating in the Modified Work Program.

Types of modified work are:

1. modifying an existing job;
2. providing transitional work;
3. providing alternate duties;
4. providing a training opportunity;
5. All or any combination of the above.

Modified Work Procedures

1. Provide the information package. When an injury requires medical treatment, provide the employee with the WCB package to take to the physician and have him return the package.
2. Collect all documents and forward to WCB and inform them that Alberta Fire & Flood does have a Modified Work Program.
3. Make an offer of Modified Work. Present a written offer to the employee stating the specific job to be performed, the hours of employment and the length of placement. Rate of pay will not change. The offer should be signed by the employee and Management and forwarded to WCB immediately.
4. Refusal of Offer: Any refusal by an employee to participate in the Modified Work Program shall be dealt with immediately. Interview the employee and record the reasons for not participating. Inform the WCB Case manager immediately.
5. Monitor the return to work. Once placed on modified work, the WCB Case manager and Alberta fire & Flood Management will monitor the progress of the employee and address any concerns immediately.
6. Return to Regular Duties. When medical clearance for return to regular duties is received, inform the WCB. The Case Manager will continue to monitor the employee's return to regular duties.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar.

MODIFIED WORK PROGRAM

This program was designed by the Workers Compensation Board to help workers who become injured on the job. There are a number of companies that have implemented this program into their safety program and have found it very successful.

The way the program works, is that when a worker is injured he/she must report the injury immediately to their Supervisor. The next step is for the worker to see their physician as to the severity of the injury. The worker must indicate to their physician that the company has a light duty modified work program. The physician will then indicate on the medical report whether the injured worker is capable of doing the following:

Extreme Light Duties include: duties performed in an office setting such as filing, answering phones etc. there is no physical work or lifting.

Light Duty means: working in the shop, plant etc. sweeping floors, painting, light warehouse duties. the employee may be required to lift up to 5-kgs in weight.

Moderate Duty means: work in the shop or plant doing general janitorial duties the employee may be required to lift up to 15-kgs in weight.

In order for this program to be effective, we need your co-operation. Statistics have proven that an injured worker on a modified light duty program recovers sooner than staying at home.

In case of an injury, you must take the company medical assessment form to your physician at the time of your first visit. The top section is to be completed by your Supervisor and your physician will complete the bottom section. Remember to return this form to your Supervisor after your visit to the Doctor.

Remember the final decision as to whether you qualify to go on this program is between your physician, yourself and the Workers Compensation Board physicians.

SECTION 13 - WASTE MANAGEMENT & ENVIRONMENT

Environment Management System (EMS)

Introduction

An environmental management system is the part of Alberta Fire and Floods overall management system pertaining to the development, implementation, achievement, review, and maintenance of the organization's environmental policy.

For many industries, environmental concerns are at the forefront of corporate issues today. Having a documented environmental management system ensures that your policies are effectively understood and implemented, and that your environmental management system is an integral part of your overall management system.

The Seventeen (17) Requirements of the EMS

1. **Environmental Policy** – a statement of the organization's commitment to the environment
2. **Environmental Aspects and Impacts** - identify environmental attributes of products, activities and services and their effects on the environment
3. **Legal and Other Requirements** - identify and ensure access to relevant laws and regulations
4. **Objectives and Targets and Environmental Management Program** - set environmental goals for the organization and plan actions to achieve objectives and targets
5. **Structure and Responsibility** - establish roles and responsibilities within the organization
6. **Training, Awareness and Competence** - ensure that employees are aware and capable of their environmental responsibilities
7. **Communication** - develop processes for internal and external communication on environmental management issues
8. **EMS Documentation** - maintain information about the EMS and related documents
9. **Document Control** - ensure effective management of procedures and other documents
10. **Operational Control** - identify, plan and manage the organization's operations and activities in line with the policy, objectives and targets, and significant aspects
11. **Emergency Preparedness and Response** - develop procedures for preventing and responding to potential emergencies
12. **Monitoring and Measuring** - monitor key activities and track performance including periodic compliance evaluation

13. **Evaluation of Compliance** - develop procedure to periodically evaluate compliance with legal and other requirements
14. **Nonconformance and Corrective and Preventive Action** - identify and correct problems and prevent recurrences
15. **Records** - keep adequate records of EMS performance
16. **EMS Audit** - periodically verify that the EMS is effective and achieving objectives and targets
17. **Management Review** – annually review the EMS as per the Safety Management Schedule.

The Environment Management System's Code of Practice meets the requirements of the ISO 14000 – 2004 Standards.

Environmental Policy Statement

Alberta Fire & Flood believes that a healthy environment is essential throughout all stages of construction and is committed to minimizing or eliminating harmful environmental effects associated with our operations.

We require that all products and processes that may have a negative effect on the environment, are used, handled, stored and disposed of in a manner compliant with all appropriate legislation and best work practices.

MSDS are kept in each work vehicle and in the shop. All employees will be WHMIS trained.

Alberta Fire & Flood Ltd. will follow all applicable legislation and regulations.

Copies of the Occupational Health & Safety Handi-Guide Regulation & Code are readily available in both the office/shop and each work vehicle.

Alberta Fire & Flood Ltd. is committed to protecting human health and the environment through regulatory compliance and the continuous review of our operations.

We intend to meet this commitment through the application of the following principles:

1. Introduction of environmental requirements as an integral part of our business operations,
2. Minimization of health hazards,

3. Evaluation and assessment of our construction operations to provide environmental protection,
4. Assessment of potential environmental risks,
5. Evaluation and monitoring of our environmental performance to applicable standards,
6. Providing education and training, and
7. Maintaining an effective communication and reporting system.

The information in this policy does not take precedence over applicable government legislation, with which all workers should be familiar. *The safety information in this policy does not take precedence

Hazardous Waste Containment

The Containment Unit's role is to control and contain liquid spills. The Containment Unit will need to verify, assess the spill and isolate the leak. They should use the following procedures, which can also be found in the Western Canadian Spill Services Manual:

SPILL RESPONSE ACTIONS

1. **Clear the area** – remove everyone from the area who could be affected by the spill
2. **Assess the situation** – determine level of response required, and the appropriate action, material and PPE required for handling the situation
3. **Stop the spill** – if possible and safe, shut off the source of the spill
4. **Contain the spill** (Diking and absorbents) – prevent any flow off of location if possible. If not possible, try to keep spilled product from flowing into a watercourse. Do not endanger unit personnel in attempting to stop / change the flow of spilled product
5. **Record** – As soon as possible after the situation has been assessed and a response initiated.
6. **Report the spill** – As part of your communications / reporting procedures with Superiors.
7. **Spill Responders** should consider taking the following assessment equipment:
    a. Appropriate personal protective equipment (PPE)
    b. Camera and film
    c. Combustible / toxic / O_2 deficiency monitors
    d. Copy of the Emergency Response Plan (ERP)
    e. Communications equipment
    f. Colored ribbon and hazard warning ribbon

g. Compass
h. Emergency Response Map detailing pipelines, Emergency Shut down (ESD) Valves, or Block Valves, Resident locations, etc.
i. Measuring device (tape, topofil, chain)
j. Note book / tape recorder
k. Plywood / plastic to block culvert if appropriate
l. Shovel
m. Soils and topographic maps
n. Soil sampling equipment and containers
o. Sorbent boom if appropriate and available
p. Quantabs for produced water spills

8. Determine initial manpower and equipment needs following assessment. Pass manpower and equipment needs to the Hazmat / Spill Supervisor.
9. Conduct initial hazard assessment and implementation of safety controls
10. Establish site perimeter / security
11. Implement initial containment if safe to do so
12. Coordinate with Hazmat / Spill Supervisor a safe location to be used as a staging area for manpower and equipment
13. Determine type of spilled product, volume spilled and concerns related to its location through sampling and analysis of the spill material
14. Identify product characteristics and concerns (MSDS)
15. Identify areas where flammable and / or toxic vapours may be a concern
16. Identify areas that may be oxygen deficient
17. Identify potential consequences of an uncontrolled ignition
18. Identify confined spaces
19. Identify slippery and / or unstable surfaces, overhead / underground power lines, pipelines and utilities and other physical hazards
20. Install warning signs, barricades, barriers and markers as necessary
21. Identify the area impacted by the spill and implement zones of control (Hot Zone – Hazard Area, Warm Zone – Limited Access, Cold Zone – Support Zone
22. Identify an escape route in the event of a vapour plume shift or uncontrolled ignition
23. Identify spill boundary and land uses in the area(s) affected by the spill
24. Continuously monitor weather conditions
25. Develop a safe approach plan
26. Develop a containment plan to prevent spilled product from migrating from the site
27. Implement containment plan using appropriate containment methods

28. Following detailed site assessment, select one of, or a combination of the following containment techniques:
    a. Culvert blocks
    b. Bell holes / trenches
    c. Dikes / inverted weirs
    d. Water flushing
    e. In situ burning
    f. Sorbents for residual oil
    g. Equipment
29. Regardless of technique chose, remember that **SAFETY** is the number one priority
30. Utilize a culvert block to contain spilled product from migrating through the culvert
31. Utilize bell holes / trenches to contain a spill, prevent further migration of fluids and to collect fluids for recovery by vacuum, tank truck or pump suction hose
32. Utilize dikes and inverted weirs to contain and recover fluids
33. In forested soils or soils with high organic matter content, a low-pressure cold water flush may be appropriate to direct produced water (salt water) spills to a recovery area
34. Utilize hot water flushing to direct oil to a recovery area
35. Utilize in-situ burning of an oil spill, as a containment method, when:
    a. Regulatory approval has been given
    b. It is unsafe to contain and recover the product with men and equipment
    c. Burning would prevent immediate contamination of a sensitive area
    d. Equipment usage would cause a greater overall negative impact
    e. Oil on water or thin / broke ice is of an adequate thickness and in-situ burning is the best response
    f. Further mechanical cleanup is unfeasible
36. A controlled burn is possible
37. Controls are in place to ensure safe, effective burn and it is contained to spill site
38. Use of sorbents for recovery of residual oil – normally handled by the Clean up Unit
39. Use of appropriate containment equipment (backhoes, dozers, pumps, skimmers)
40. Watercourses – containment
41. Determine appropriate control point for containment operations

42. Select the exact location in the control point area to deploy containment equipment
43. Lakes and sloughs - containment
44. Predict locations where oil will contact shore
45. Ensure safety of workers
46. Contain spilled oil
47. Ice-covered watercourses – containment
48. Following site assessment, determine ice slot location
49. Determine location for series of deflection boards and oil recovery hole
50. Choose appropriate equipment to create ice slot or deflection board slot
51. Remove ice blocks from slot, if using ice slotting technique
52. Conduct routine site condition assessments and modify containment plan accordingly

CONTAINMENT AND CONTROL

Safety **Defensive** Containment (contain as close to the source as safe and practical)

1. Retain (let collect in a natural low area or sump)
2. Isolate (deny entry via safe distance from spilled material)
3. Dike (make small curb with dirt around drain)
4. Dam (build overflow dam for product that sinks in water)
5. Divert (build small berm to change direction of flow)
6. Disperse (apply fog spray in chlorine cloud)
7. Dilute (apply water to water soluble material)
8. Cover (lay salvage cover over powder spill)
9. Foam (apply to large gasoline spill)
10. Other (shovels, sand bags, heavy earth moving equipment, absorbents, booms, etc.)

Safety **Offensive** Containment requires the following activities:

1. Plug and patch (fix faulty valve or hole in drum)
2. Absorb (applying absorbent pads to oil spill)
3. Transfer (removing product to waste truck or new container)
4. Containerize (put leaking drum into over pack drum)
5. Re-position (upright or roll and chock leaking container)
6. Other (hot-tap, vent and burn, flaring)

Employee Self-Assessment & Validation Containment Unit Questions

1. What types of containment methods are used by the Containment Unit?
    a. Booms, absorbent curtains, dikes or trenches
    b. Sump pumps, isolation booms, diversion curtains

c. Sump and recover pumps, air booms, damming booms
d. Land, Marine / Aquatic, Under Ice

2. Dikes or trenches are built:
   a. To absorb or dilute a spill
   b. No larger than required
   c. Around the entire perimeter of the spill
   d. To divert or disperse the spill
3. One of the priorities of the Containment Unit is:
   a. To assess the situation and recommend sheltering recommendations
   b. To establish minimums and define boundaries
   c. To contain the spill
   d. To establish perimeter security
4. As a member of the Containment Unit, you must have a valid Surface Water Oil Spill Containment and Recovery Certificate. As part of this course, you will be provided information on spill response techniques and equipment deployment options for various environmental and climatic conditions. Identify three of the following spill containment techniques:
   a. Culvert blocks
   b. Double bale seam insertion
   c. Transient Vapour Zone Containment
   d. Bell holes / trenches
   e. Inverted culvert
   f. Culvert Discharge
   g. Soil dispersion method
   h. Dikes / Inverted Weirs
   i. Cold water flushing
5. The 15 minute occupational exposure limit for SO2 in Alberta is:
   a. 5 ppm
   b. 2 ppm
   c. 15 ppm
   d. 10 pm
6. The Containment Unit is responsible for:
   a. Spill clean up according to the Spill Control Plan
   b. Containment of spill according to the Spill Control Plan
   c. Containment and clean up of spill according to the Spill Control Plan
   d. Containment of spill according to the Emergency Response Plan
7. What is NOT one of the containment methods on land?
   a. Diversion of streams

b. Diking and damming
c. Retention and isolation
d. Sump and recover

8. What is one of the containment methods under ice?
   a. Absorption or dispersion
   b. Diversion of clean streams
   c. Covering or foaming
   d. Bring spill material to water surface
9. Who is responsible for ordering WCSS resources?
   a. Hazmat / Spill Director
   b. Site Director
   c. Source Control Supervisor
   d. Hazmat / Spill Supervisor
10. There are six containment methods on land. Name four:
    a. Retention and recovery
    b. Sump and recovery
    c. Covering or isolation
    d. Diking and damming
    e. Diversion or absorption
    f. Absorption or dispersion
    g. Retention and isolation
    h. Absorption or dilution
    i. Retention and dispersion
    j. Dilution and isolation
11. What is one of the problems caused by hot water vapour when attempting hot water flushing to direct oil to a recovery area?
    a. Exposure to water vapour requires specialized personal protective equipment
    b. Fire equipment and resources must be on stand-by at the site
    c. Exposure to water vapour may impair or render monitor sensors inoperative
    d. Exposure to water vapour may cause recovered fluids to escape the containment area

Soil Erosion Control

Introduction

Runoff from construction sites can contribute significant sediment loads to receiving water. Thus, effective erosion and sediment control at construction sites are crucial in storm water management. This Code of Practice focuses on the development of

erosion and sediment control plans at construction sites. Good planning is the first step in preventing sediments from damaging the receiving water ecosystem. However, it is equally important to ensure erosion and sediment control measures are correctly installed and maintained on site.

Water Erosion

Water-induces soil erosion is caused primarily by falling raindrops which dissipate their energy and the shearing force of surface runoff. The whole process involves detachment of soil materials, transport of soil materials and deposition of eroded materials.

There are four main erosion types as described below.

1. Raindrop erosion is caused by the direct impact of falling rain drops on soil particles. This impact dislodges soil particles and splashes them into the air. The dislodged soil particles can then be easily transported by the flow of surface runoff.
2. Sheet erosion is referred to the removal of a layer of exposed surface soil by the action of raindrop splash and runoff. The water moves in broad sheets over the land and is not confined in small depressions.
3. Rill and gully erosion is caused by concentrated runoff in rivulets, cutting several inches deep into the soil surface. These grooves are called rills. Gullies may develop in unrepaired rill or in other areas where a concentrated flow of water moves over the soil.
4. Steam and channel erosion is caused by increases in the volume and velocity of the runoff.

Erosion Control Planning (ESC)

The principles of ESC are prevention of erosion and control of sediments from leaving the construction site. Erosion prevention should be the primary objective of ESC planning. However, conventional approach to ESC planning is still focused on sediment control unless regulatory agencies enact strict regulation on erosion prevention.
The typical steps of ESC planning are identification of problem areas, selection of erosion and sediment control measures, and preparation of documents and drawings.

Problem Areas

The typical areas at construction sites where erosion and sediment are likely to occur are:

1. Unprotected steep slopes which are prone to erosion as runoff velocity is high;

2. Any construction works near or at streams or waterways where dislodged sediments can enter the water directly;
3. Unprotected drainage ways such as ditches which are a source of sediments as runoff concentrates and moves quickly;
4. Storm inlets which should be protected from sediment laden runoff and may clog underground storm sewers. High discharge velocity at a storm sewer outfall may cause significant erosion downstream.
5. Large flat exposed areas are prone to sheet erosion and should be protected.
6. Borrow and stockpile locations are exposed areas which are disturbed continuously over the construction period.

Principles of ESC

1. **Plan the development to fit the site characteristics.**
   Site characteristics such as topography, soils, drainage patterns and covers should be considered when developing a site. Areas which are prone to erosion should be left undisturbed and undeveloped if possible. Entrance and exit point for runoff should be protected from erosion and equipped with sediment control devices.
2. **Minimize the extent of the disturbed area and the duration of exposure and stabilize disturbed areas as soon as possible.**
   Conventional land development practices favour grading of the whole site in the beginning of the project. Sometimes, a development may take years to complete. Thus, we have these disturbed areas which may last a long time and subject to erosion. The key of ESC is to minimize the extent of disturbed areas by phasing. Grading of development site should be consistent with the development plan. By staging construction and preserving existing vegetation, erosion can be reduced significantly. Once a land surface is disturbed, we should minimize the duration of exposure by protecting it from erosion if possible. Typically, if an area is not going to be worked on for more than 45 days, it should be protected by erosion control mats.
3. **Keep runoff velocity low.**
   Runoff velocity should be kept as low as possible. For drainage ways such as ditches, high velocity can be reduced by a series of rock check dams which break the flow velocity. Overland flow velocity can be reduced by minimizing slope length and steepness.
4. **Direct the runoff from problem areas.**
   Concentrated flows should be diverted away from areas as discussed in the last section.
5. **Retain sediment within the site area.**

Sediment control devices such as sediment control ponds should be used to retain sediments from leaving the site.

6. **Implement a thorough maintenance and follow-up program.**
   Poorly maintained ESC devices are not going to work effectively. Budgets should be allocated for inspection and maintenance of ESC devices over the construction period.
7. **Planning should be focused on pre-grading, after grading, during construction, and after construction phases.**
   Different techniques may be required for each phase of development.

Erosion Control Devices

1. Erosion control devices include:
   a. Temporary seeding;
   b. Temporary mulching;
   c. Permanent sodding;
   d. Temporary or permanent erosion control blankets;
   e. Permanent vegetative buffer strips.

2. Sediment control devices include:
   a. Site fencing;
   b. Straw bakes;
   c. Sediment basins;
   d. Sediment traps;
   e. Storm inlet traps;
   f. Rock check dams;
   g. Interception berms/swales

The ESC Plan

1. An ESC plan is:
    a. A written descriptive portion and a visual component of maps and plans;
    b. Details depend upon the construction site and the surrounding steams and lands;
    c. It is often integrated with storm water management or drainage reports;
    d. Location maps and property lines;
    e. Limits of disturbance;
    f. Existing site information;
    g. Proposed grading;
    h. Control measure details;
    i. Construction schedule;
    j. Stabilization details.
2. The reasons for a failed ESC plan may be:
    a. The E & S plan did not address all stages of construction;
    b. Changes occurred on adjacent sites;
    c. On-site changes were made;
    d. Devices were improperly installed;
    e. Maintenance activities were not conducted;
    f. Excessive rainfall occurred.

APPENDIX A - Traffic Control (Temporary)

GENERAL

Traffic control is required when traffic must be moved through or around highway or street construction, maintenance operations or utility work on or adjacent to a roadway. **The traffic control described and illustrated herein is generally the minimum required.** No one standard sequence of signs or other control devices can be set up as an inflexible arrangement for all conditions and locations, due to the variety of conditions encountered. It should also be recognized that while the Traffic Control Safe Job Procedures contains mandatory language such as “shall” there may be circumstances where strict compliance with such requirements is not reasonable and it will be necessary to deviate from the requirements.

Throughout this Safe Job Procedure, the term “work zone” means an area in which construction, maintenance or utility activities take place, on or adjacent to a roadway, to the extent that the passage of public traffic may be influenced. Where cyclists and/or pedestrians are likely to be present in work zones, due consideration must also be given to their safety requirements.

This Safe Job Procedure sets forth basic principles and prescribes standards for the design, application, installation and maintenance of the various types of traffic control through work zones. These include signs, signals, lighting devices, markings, barricades, channelization, and hand signaling devices. Minimum standards of application are prescribed for typical situations and for methods of controlling traffic through work zones. A number of typical situations are illustrated to show the recommended application of standard protective devices for pre-planned, scheduled, work on roads and streets in Calgary.
It is understood that in emergency situations it may not be possible to meet these minimum standards.

FUNDAMENTAL PRINCIPLES

All traffic control devices used in work zones should closely conform to the applicable specifications of this Safe Job Procedure.
Work zones can present motorists, cyclists and pedestrians with unexpected or unusual situations as far as traffic operations are concerned. Because of this, special care should be taken in applying traffic control techniques.
Principles and procedures which experience has shown to enhance the safety of road users and workers in the vicinity of work areas include the following:

1. Traffic safety in construction zones is an integral and high priority element of every project from planning through design and construction. Similarly, maintenance and utility work should be planned and conducted with the safety of road users and workers kept in mind at all times.
    a) The basic safety principles governing the use of permanent traffic control on undisturbed roadways and roadsides should also govern the design of traffic control in work zones. The goal should be to route traffic through such zones with traffic control devices as nearly as possible comparable to those for normal situations.
    b) A traffic control plan in detail appropriate to the complexity of the project should be prepared and understood by all responsible parties before work begins. Any changes in the agreed traffic control plan should be pre-approved by the road authority before implementation.
2. Traffic movement should be inhibited as little as possible.
    a) The traffic control plans for work zones should be designed on the assumption that motorists will only reduce speed if they clearly perceive a need to do so. Reduced speed zones should only be used where a clearly demonstrated need exists.
    b) Any changes in traffic pattern, such as lane narrowings, dropped lanes or other main roadway transitions requiring rapid maneuvers, should be avoided.
    c) Where emergency vehicles will pass through a work zone it may be necessary to make special provision for such vehicles especially on high speed or high volume roadways.
    d) Construction time should be minimized to reduce exposure to potential hazards.
3. Motorists should be guided in a clear and positive manner while approaching and traversing work zones.
    a) Adequate warning, delineation and channelization by means of proper pavement marking, signing and use of other devices which are effective under varying conditions of light and weather should be provided to assure motorists of positive guidance in advance of and through work zones.
    b) Inappropriate pavement markings should be removed for long duration work to eliminate any misleading cues to drivers in all conditions of light and weather. On short term maintenance projects, however, it may be determined that such removal is more hazardous than leaving the existing markings in place. If so, special attention must be paid to providing additional guidance by other traffic control measures.

c) Traffic control persons (TCPs), when used, can provide positive guidance to motorists traversing work zones. TCPs must be employed when all other methods of controlling traffic are considered inadequate to warn, direct and regulate drivers.

4. To ensure acceptable levels of operation, routine inspection of traffic control devices should be performed.
   a) Individuals who are trained in the principles of traffic control should be assigned responsibility for safety at work sites. The most important duty of these individuals is to ensure that all traffic control devices are in conformity with the traffic control plan and are effective in providing safe conditions for motorists, pedestrians, cyclists and workers.
   b) From time to time, modification of traffic controls may be required in order to expedite traffic movement and to ensure safety. It is essential that the individual responsible for traffic control also has the authority to control the progress of work on the project in its relation to maintaining safe conditions, including the authority to modify controls or halt work until remedial safety measures are taken.
   c) Work sites should be carefully monitored under varying conditions of traffic volume, light and weather to ensure that traffic control measures are operating effectively and that all devices used are appropriate, clearly visible, clean and in good repair.
   d) When activity in a work zone ceases, for whatever reason or duration, it is very important that adequate traffic control is maintained to guide, warn and regulate public traffic through any hazards or unusual traffic patterns; keeping in mind the most adverse conditions that could reasonably be expected to occur, prior to the recommencement of work.
   e) When warranted, an engineering analysis should be made of all accidents occurring within work zones. Work zones should be monitored to identify and analyze traffic accidents or conflicts. As examples, skid marks or damaged traffic control devices may indicate needed changes in the traffic control.
   f) Work zone accident records should be analyzed periodically to guide officials in improving work zone operations.
   g) When no longer needed, traffic control devices must be removed or covered.
5. The maintenance of roadside safety requires constant attention during the life of the work zone because of the potential increase in hazards.

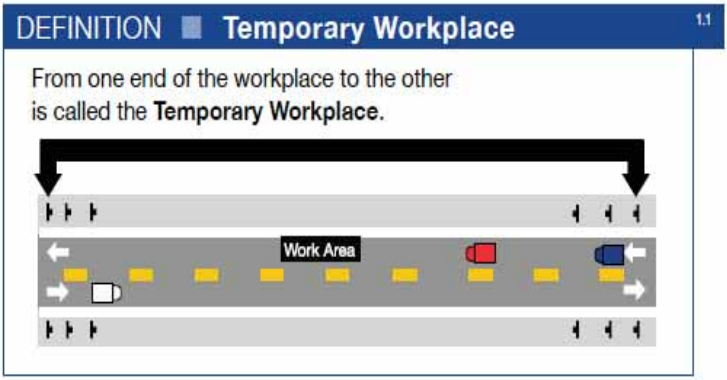
a) To accommodate errant and disabled vehicles, it is desirable to provide an unencumbered roadside recovery area that is as wide as practicable.
b) Channelization of traffic should be accomplished by the use of pavement markings and signing, flexible posts or drums, delineators, cones, barricades and other lightweight devices which will yield if hit by errant vehicles.
c) Whenever practicable, construction equipment and materials should be stored clear of the travelled roadway. If this is not possible, such obstructions should be clearly marked and the path around them delineated.

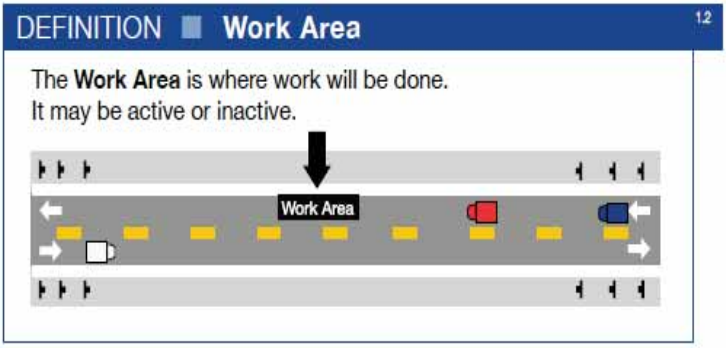
Traffic Control Procedures

Role of Traffic Control Person

As a traffic control person, you have an important job on construction maintenance, and utility projects. You regulate the traffic at temporary workplaces to keep it safe for worker and motorists.
Your role is to:

1. Warn workers of any danger.
2. Safely direct traffic through temporary workplaces.
3. Make sure that public traffic has priority over work-related traffic.
4. Allow work to continue safely and efficiently.
5. Stop traffic whenever needed by the work situation.





Clothing and Accessory Requirements

You must wear at all time:

1. A hard hat CSA certified Class E or G.
2. A shirt with sleeves.
3. A safety vest which must meet the requirement of a Class 2 vest as described in CSA Z96-02. It must have fluorescent background materials and Level 2 retrorelfective striping which contrasts the background material. It must cover the upper body to the belt-line, and be worn over the clothing.
4. Arm cuffs (2) which must be made from material meeting the same standards as the safety vest. Each cuff must be 175 mm long with two 50 mm wide retroreflective stripes evenly spaced along the length.
5. Full length pants.

6. Safety footwear CSA certified Grade 1 (these have a green triangular CSA patch on the outside and a green rectangular label on the inside).

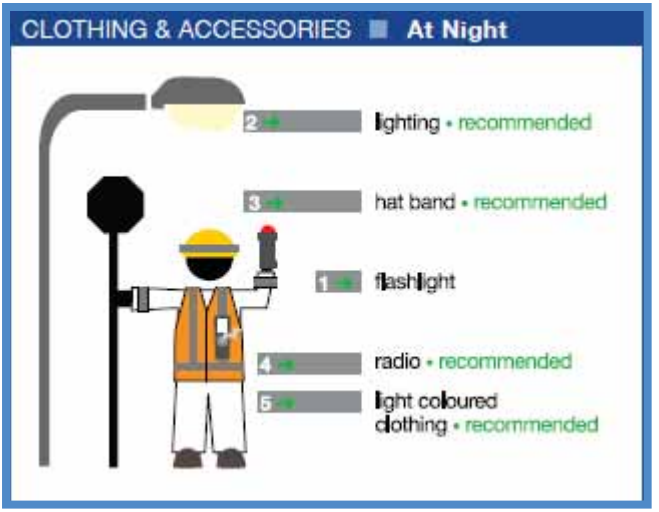
AT NIGHT

You must:

1. Use a flashlight with a red cone attachment.

Recommended:

2. Stand under a streetlight if one is available or use temporary overhead lighting. If using temporary overhead lighting made sure that it does not cause glare for oncoming traffic.
3. Wear a retrorelfective band, ASTM Type III (high intensity) on hard hats.
4. If using two-way radio, they should have voice activated microphones so that you have a free hand for your flashlight.
5. Wear white overalls, or light colored clothing.



IN THE SUN

You must:

1. Wear CSA certified sunglasses when a hazard is creating by blinding sun.

Recommended:

2. Wear a long sleeved shirt that you cannot easily see through to protect your skin.
3. Wear long pants that you cannot easily see through to protect your skin.
4. Wear a sun screen protector (SPF) of 15 or more on all exposed skin.
5. Carry drinking water.

IN CONDITION HAZARDOUS TO THE EYES

- You must wear: CSA approved eye protection.

IN THE RAIN

Recommended:

- Rain gear in highly visible color or orange or yellow.
- CSA certified Grade 1 footwear.

IN THE COLD

Recommended:

- Hard hat liner
- Layered clothing
- Gloves.

IN THE SUMMER

Recommended

- Insect repellant

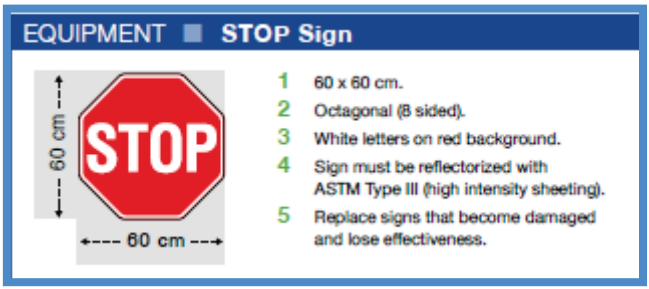
AT ALL TIMES:

You must have:

- Pen or pencil
- Paper or notebook

Note: Traffic Control Persons must know the name and contact information for their immediate supervisor responsible for the workplace.

EQUIPMENT



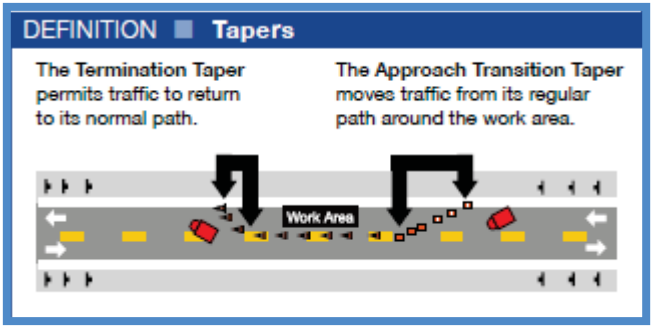
EQUIPMENT ■ SLOW Sign

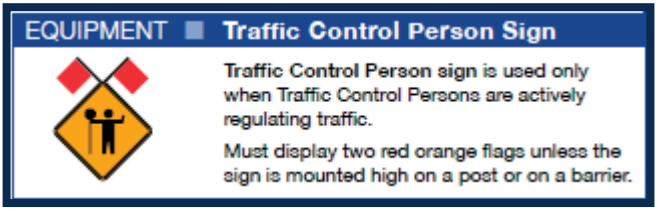
1. 45 x 45 cm.
2. Diamond shaped.
3. Black letters on yellow background.
4. Sign must be reflectorized with ASTM Type III (high intensity sheeting).
5. Replace signs that become damaged and lose effectiveness.

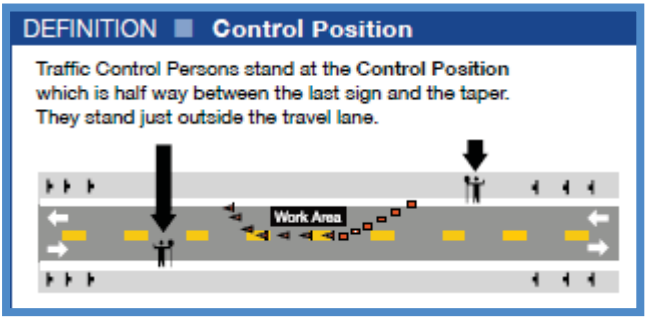
EQUIPMENT ■ STOP/SLOW Paddle

Signs must be mounted back to back on a pole so that the top of the signs are at least 2.5 m from the bottom of the pole.

ON THE JOB BASICS







THE CONTROL POSITION

Your control position beside the road must:

1. Allow you to see and be seen by oncoming traffic;
2. Permit traffic enough time to stop safely; (Check vehicle stopping distances)
3. Provide you with an escape route if a driver makes a mistake;

4. Be just outside the travel lane, with the sign paddle resting on the edge line.
5. Never be in a group, beside a vehicle, or beside or near a distraction;
6. Be halfway between the beginning of the Taper and the Traffic Control Person sign. Don't stand too close to the taper.
7. Allow you to see the other Traffic Control Person if there are no radios.

When a Third Traffic Control Person is needed for visual signaling, they must stand outside the travel lanes and be visible to both other Traffic Control Persons.
You must take the control position when:

- The Traffic Control Person sign goes up, not before.

You must not leave the control position unless:

1. Relieved by another Traffic Control Person;
2. The job ends, the road is cleared of workers and equipment, and normal traffic flow has been restored.
3. You are moving to avoid an accident.

ORDER OF TRAFFIC

It is important not to hold up public traffic longed than needed. Make sure that the conditions are safe for both moving and waiting traffic. It is dangerous for backups to occur over railway crossing and into intersections.

There are three types of traffic. In order of importance they are:

1. **Emergency vehicles when responding to an emergency;**
2. **General public traffic is given priority when there are no emergency vehicles;**
3. **Construction traffic.**

SETTING UP THE TEMPORARY WORKPLACE

LAYING OUT SIGNS AND TAKING THE CONTROL POSITION

This procedure explains how Traffic Control Persons take the Control Position while workers are laying out signs. This is one example of how to set up a workplace.

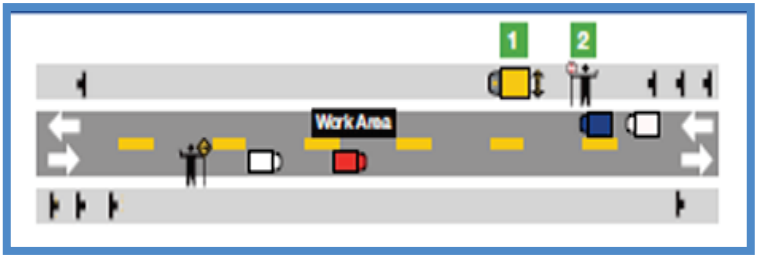
1. Workers begin on the shoulder of the road, on the same side of the road and in front of Work Area.
2. Workers lay out signs by offloading from the side of the vehicle that is farthest from the open traffic land.
3. Following the set-up of the Traffic Control Person sign the first Traffic Control Person takes the Control Position with the Stop sign directed to the ditch (check for escape route).

4. Workers pass the Work Area and continue laying out signs.
5. Make a safe and legal turn.
6. On the opposite side of the road from, and approaching the Work Area along the right shoulder, workers lay out signs.
7. Following the set-up of the second Traffic Control Person the second Traffic Control Person takes the Control Position in advance of the Work Area with the Stop sign directed to the ditch (check for escape route).
8. Workers end by placing the last sign. All signs and Traffic Control Persons are now in place.

LAYING OUT DRUMS AND CONES

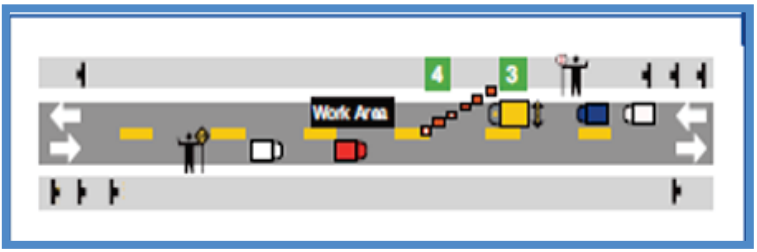
This procedure explains how Traffic Control Persons protect workers that are laying out drums and cones. In this example, at the start of laying out drums and cones, all signs and Traffic Control Persons are in place.

1. Workers begin on the shoulder of the road, on the same side of the road as, and in front of the work area.
2. The Traffic Control Person on the same side of the road as the Work Area stops traffic. The other Traffic Control Person allows traffic to flow.

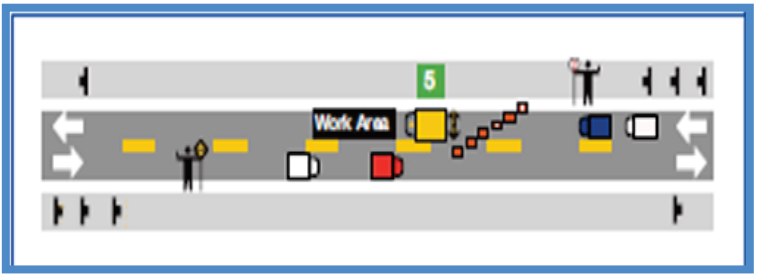


3. The Service Vehicle moves into the middle of the lane to be closed.

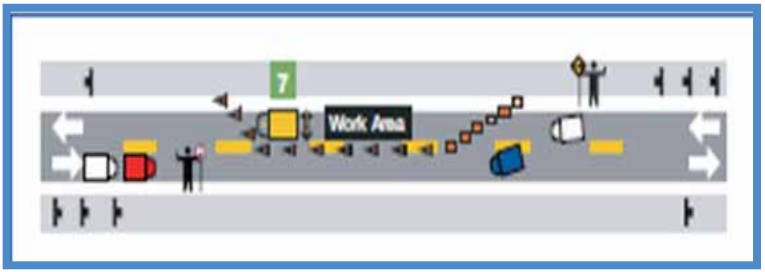
4. Workers lay out the drums for the approach transition tape; they start at the road should and work towards the center line.



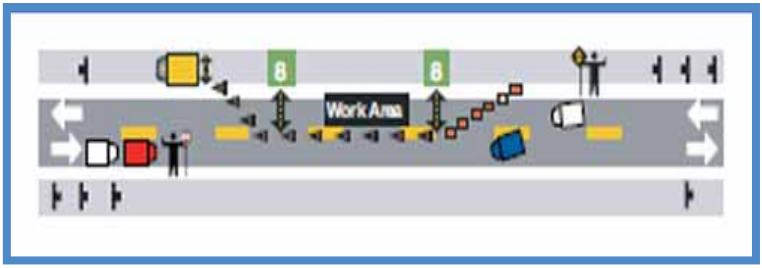
5. The Service Vehicle drives through he drums and takes a position inside the approach transition taper.



6. The Traffic Control Persons may now regulate traffic through the Traffic Control Person Zone.
7. The Service Vehicle moves forward as cones are laid out; to finish with the termination taper.



8. Workers position a flashing light unit at the termination taper, and the approach transition taper.



PICKING UP DRUMS AND CONES

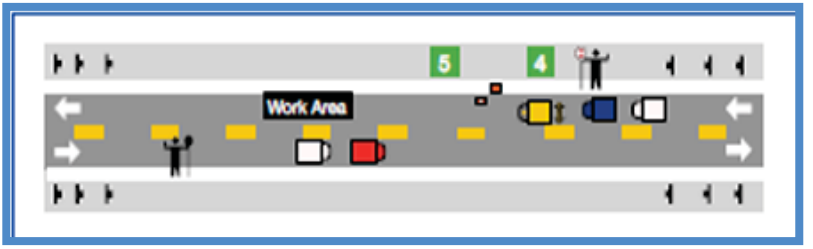
This procedure explains how Traffic Control Persons protect workers that are picking up the drums and cones. Before picking up drums and cones workers must make sure the road is safe to open to traffic. A typical starting position is shown in the drawing below.

1. Workers remove the flashing light unit starting at the termination taper.

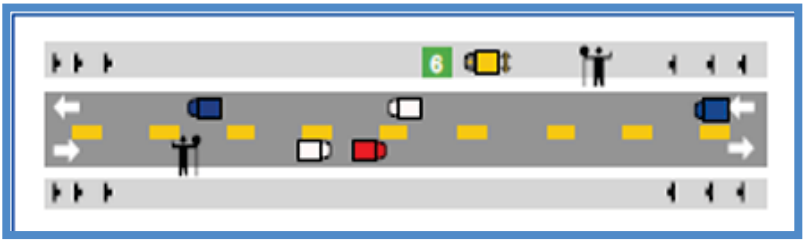
2. Workers with a service vehicle remove all cones; they begin with the termination taper and end at the approach transition taper.

3. The Traffic Control Person on the same side of the road as the Work Area stops traffic flow.

4. The Service Vehicle takes a position in the middle of the closed lane. It should be placed approximately half way between the Traffic Control Person and the beginning of the approach transition taper.
5. Starting at the center line, and working toward the edge of the road, workers remove the drums in the approach transition taper.



6. When all obstacles and workers are off the travel lane, the Service Vehicle leaves the lane.



7. When the lanes are cleared, the Traffic Control Persons stand down.
8. Drums, cones, work vehicles and warning lights are now off the travel lanes and normal traffic flow has been restored.

EMERGENCY VEHICLE APPROACH

An emergency vehicle is to be given the highest priority and every reasonable help to pass the workplace safely and without delay.

At the approach of an emergency vehicle you must:

1. Warn the other Traffic Control Person by: signaling with Stop/Slow Paddle or by radio message;
2. Turn both Paddle Signs to show Stop Sign, given traffic time to stop safely;
3. Allow the Traffic Control Person Zone to clear;
4. Check the safety of the Traffic Control Person Zone;
5. Allow the emergency vehicle to pass the Stop sign. Do not wave the driver through. The emergency vehicle driver must judge workplace safety on their own and pass the Stop sign without your signal.
6. Check for other emergency vehicles before starting normal traffic flow.

Important: when using Stop/Slow Paddles for visual signaling, Traffic Control Persons must know in advance who will turn their paddle to Slow first, to restore traffic flow.

FORBIDDEN BEHAVIOR

Traffic Control Persons regulating traffic must NOT:

1. Be assigned or attempt to carry out any other work;
2. Permit the Traffic Control Person sign to be displayed when a Traffic Control Person is not regulating traffic.
3. Stand near any other person or object (to do so reduces visibility and effectiveness);
4. Carry out a conversation that is not related to traffic control;
5. Sit or lean on anything: tree, post, vehicle, etc.;
6. Use a T.V., radio (other than a two-way radio),tape player, MP3 or any device that limits sight, hearing and causes distraction;
7. Turn their back to oncoming traffic;
8. Become impatient or lose their temper;
9. Try to slow traffic by displaying the Stop sign and then flipping t show the Slow;
10. Leave their post without being replaced.
11. Allow the Stop/Slow paddle to be supported. It must be freestanding and held in position only by the Traffic Control Person.

Traffic Control Persons must not regulate traffic if their judgment is impaired in any way, or if for any reason they have suffered a reduction in their performance that could increase the hazard to themselves, road workers or road users.

APPENDIX B - Asbestos Management System

Asbestos Management System

Asbestos: Controls for Construction, Renovation and Demolitions

OVERVIEW

Asbestos is a generic term describing a number of naturally occurring fibrous minerals that have been used in a wide range of products because of their insulating acoustical, fire protection and chemical resistant properties. There are different types of asbestos which include:

1. **Chrysotile** – natural rock serpentinite is the raw material from which chrysolite asbestos is obtained. Another old and not less romantic name is fossil flax, all because asbestos readily separates into long thin flexible fibers of down to 0.5 millimeters in diameter.

The new asbestos regulations in Canada contain an important change. They now state that not only do you have to know where asbestos might be contained, but also need to identify what type of asbestos it might be.
As there is no way to tell what type of asbestos is present in most materials by looking at them, this now means that more testing is required than previously and therefore, a type one and a half is the best option for most premises.

asbestos. This form of asbestos was found and is mined in South Africa and is considered to be one of the most hazardous forms of the material, second only to the blue asbestos, In fact, a large portion of South Africans who worked in the many asbestos mines there have been sickened with some sort of asbestos related disease. Countless numbers have died.

   a. From the amphibole group, which is naturally more hazardous than serpentine asbestos, amosite asbestos was, at one time, the second most prevalent type of asbestos found in building materials, accounting for about 5% of all asbestos used in factories and other commercial building. Its color comes from the natural presence of iron and magnesium found in this form of asbestos.

b. The amosite variety of asbestos was used primarily as a fire retardant in thermal insulation products like, ceiling tiles. Brown asbestos is now banned in most countries and has been for a number of years, but it can still be found in older products and structures, therefore still posing potential dangers, especially because this form of asbestos is highly friable. That means it crumbles easily when damaged, therefore releasing airborne

3. **Anthophyllite, Tremolite, and Actinolite** – These three types are rare and found mainly as contaminants in other minerals.

The three most common types of asbestos that were mainly used ir wide range of products are Chrysotile (white asbestos), Crocidolite (blue asbestos) and Amosite (brown or gray asbestos).

Until the late 1960's, industry used both serpentine (75%) and amphibole (25%) asbestos. Subsequently, the use of chrysolite increased to approximately 95% while blue and gray asbestos declined to 5%. Asbestos is one of the most useful and versatile minerals known to man mainly because of its unique properties, flexibility, tensile strength, insulation (from heat and electricity) and chemical inertness. It is the only natural mineral that can be spun and woven like cotton or wool into useful fibers and fabrics.

More than 3 000 products and their uses have been identified. Most homes/commercial building prior to 1990 many contain asbestos products in one form or another. Asbestos products have been used in thousands of commercial and private buildings. Some other uses of asbestos include fencing, asbestos pipes, thermal insulation, fire proofing, as an additive in paints and sealants, in textiles such as felts and theatre curtains, in gaskets, and in friction products like brake linings and clutches. During the peak building years i.e. 1950's, 1960's, 1970's, asbestos found its way into most public building, for example, hospitals, schools, libraries, office blocks and factories. Workplaces such as ship engine rooms, and power stations were heavily insulated with sprayed limpet insulation.

Type 1 Asbestos OPERATION

What are Type 1 Operations?

Type 1 operations include the following:

1. Installing or removing less that 7. 5 square meters of ceiling tiles containing asbestos or 8 square feet or ten 4-foot by 2-foot ceiling tiles without it being broken, cut, drilled, abraded, ground, sanded, or vibrated.
2. Installing or removing non-friable asbestos-containing material other than ceiling tiles, with it being broken, cut, drilled, abraided, ground, sanded, or vibrated.
3. Breaking, cutting, drilling, abrading, grinding, sanding, or vibrating non-friable asbestos containing materials if a)you wet the material AND b) you use only non-powered hand tools.
4. Removing less that one square meter of drywall where asbestos joint-filling compound was used.

DRYWALL JOINT FILLING COMPOUND
Early drywall joint-filling compounds contained significant amounts of asbestos fibers. This particular use was specifically prohibited in 1980. Still, it may be found in building constructed several years later.

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 Work

1. Eating, drinking, smoking and chewing gum are prohibited.
2. If a worker requests a respirator and protective clothing for Type 1 operations, the employer must provide them. The respirator must be the proper type with filters suitable for asbestos. Once the worker s request respirators, they must wear them. Protective clothing must be impervious to asbestos fibers. Once workers request protective clothing, they must also wear them.

a. Protective clothing is used for two reasons:
   i. To prevent transfer of dust and waste into clean areas; and
   ii. To guard unprotected workers, their families, and the public from secondary exposure to asbestos.

3. Before beginning work, visible dust must be removed by wiping with a damp cloth or by vacuuming with a special HEPA filtered vacuum.
   a. HEPA (High Efficiency Particulate Aerosol) vacuums are specially designed to trap very small particles. They catch at least 99.97% of all particles 0.3 microns or larger.
4. Never use compressed air to clean asbestos dust off surfaces. This just blows the fibres into the air.
5. When you with to cut, shape or drill the non-friable materials, you must wet the work (water plus wetting agent 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.

WETTING AGENT
Water alone is not sufficient to control dust and fibres. You must add a "wetting agent" to reduce the water's surface tension. This increases the water's ability to penetrate the material and get into nooks and crannies. To make this "amended" water you can use ordinary dishwasher detergent...one cup of detergent for every 20 liters of water.

6. You must use a dropsheet (typically 6 mil polyethylene) below the work area to help control the dust.
7. 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.
8. 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.
9. Asbestos waste and disposable coveralls must be placed in dust-tight containers and labeled with warning signs.
10. 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.

11. 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.
12. Containers must be cleaned by damp wiping or HEPA vacuuming before being removed from the work area.
13. You must dispose of waste at a landfill site that will accept asbestos material.
14. 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 before 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

What are Type 2 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:

1. Removing all or part of a false ceiling in buildings containing sprayed asbestos fireproofing if it is likely that asbestos fibers are resting on top of the ceiling. This is likely when fireproofing is deteriorating or damaged;
2. Removing or disturbing less that 1 square meter of friable asbestos materials – for example, repairing an insulated pipe joint or removing some fireproofing to fasten a new pipe hanger;
3. 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;
5. Installing or removing more than 7.5 square meters of ceiling time containing asbestos, without it being broken, cut, drilled, abraded, ground, sanded or vibrated;
6. Breaking, cutting, drilling, abraded, grinding, sanding or vibrating non-friable asbestos containing materials if the material is not wetted and the work is done only with non-powered hand-held tools.
7. Removing one square meter or more of drywall where the joint-filling compound contains asbestos;

8. Working on non-friable asbestos with power tools that are attached to dust collecting devices equipped with HEPA filters. If you need t power-grind or machine the asbestos product and your tools are not equipped with HEPA –filtered dust collectors refer to next section.
9. Using a glove bag to remove asbestos containing insulation;
10. Cleaning or removing filters used in air-handling equipment in a building with sprayed asbestos fireproofing;
11. Any other operation that is not Type 1 or Type 3, but one that may cause exposure to asbestos.

To prevent an electric shock, any power tools used around water must be equipped with a ground fault circuit interrupter and be maintained properly. If leading currents are detected, the ground fault circuit interrupter switches off the power to that circuit to prevent a lethal dose of electricity.

Controls for Type 2 Operations

1. Workers involved in Type 2 operations must wear a NIOSH-approved respirator. The employer must provide workers with training on the individual respirators they will be using. The training must cover:
    a. Selection of respirator
    b. Fitting
    c. Inspection
    d. Use
    e. Care and Maintenance
    f. Cleaning and Disinfecting
    g. Limitations of the Respirator

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 respirator. 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.

Refer to the Safety Manual for more information on the use, care, and disposal of respirators and protective equipment.

2. 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 or Buffalo boots. They can washed or disposed of as contaminated waste

   Protective clothing is required for two reasons:

   a. To prevent transfer of dust and waste into clean areas; and
   b. To guard unprotected workers, their families and the public from secondary exposure to asbestos.

3. Only those workers wearing the required respirators and protective clothing are permitted in the work area.
4. You must never eat, drink, smoke, or chew gum in the work area.
5. Never use compressed air to remove asbestos dust from a surface.
6. 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.
7. You must add a wetting agent to the water.
8. Any dust on exposed surfaces must be cleaned by damp-wiping or HEPA vacuuming before starting work which may disturb the dust.
9. Warning signs are required for all Type 2 activities.
10. For ceiling removal (to gain access to a work area) and for removal of less than 1 square meter of friable asbestos-containing material indoors, an 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 2 operations, 6-mil polyethylene dropsheets should be adequate.
11. You must put waste asbestos, disposable clothing, the enclosure and the barrier materials (such as polyethylene sheeting0 and any other contaminated items into dust-tight containers labeled with warning signs. The containers must be damp-wiped or HEPA-vacuumed to remove any surface contamination before you take the containers out of the work area.
12. 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. Drop sheets and enclosures must be decontaminated and wetted before disposal.

13. After the work is completed, barriers and portable enclosures that are rigid and that will be reused must be cleaned by damp-wipe or HEPA vacuuming. Barriers and portable enclosures must not be reused unless they are rigid and can be cleaned.
14. 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.
15. A washbasin, water, soap, and towels must be provided for workers to wash their hands before leaving the work area. Workers must also wash before eating, drinking, smoking, or any such activities.

Glove Bag Operations

All the procedures t hat apply to Type 2 operations also apply to glove bag operations. If addition, you must do the following:

1. Separate the work area from the rest of the workplace by walls, barricades, fencing or other suitable means;
2. 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.
3. Place polyethylene dropsheets below the work area.
4. The glove bag must be strong and large enough to hold the material you are removing.
5. You must 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.
6. Check the glove bag for damage or defects.
7. Be careful not to puncture the glove bag.
8. When you’ve finished removing the asbestos:
    a. Damp-wipe and HEPA vacuum the tools;
    b. Wet down the inside walls of the glove bag;
    c. Thoroughly wet the material inside the glove bag;
    d. Wipe down the pipe (or whatever the asbestos was r removed from) and seal it with suitable encapsulant;
    e. Evacuate air from the bag using a HEPA vacuum and place the glove bag, with the waste inside, in a suitable dust-tight container;
    f. Clean up the work area by damp-wiping or DEPA vacuuming.

TYPE 3 ASBESTOS OPERATIONS

What are Type 3 Operations?

Type 3 operations include the following:

1. Removing or disturbing more than 1 square meter of friable asbestos-containing material;
2. Spraying a sealant onto friable asbestos material;
3. Cleaning or removing air-handling equipment in building with sprayed asbestos fireproofing;
4. Repair, alteration, or demolition of kilns, metallurgical furnaces, and other installations with asbestos refractory material;
5. Disturbing non-friable asbestos material in any way with power tools not attached to dust collection equipped with HEPA vacuums;
6. Repair, alteration, or demolition of building which are or were used to manufacture asbestos products unless the asbestos was cleaned up and removed before March 15, 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:

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

The following sections provide all the details.

Worker Protection

A: Protective Clothing

Protective clothing is required for two reasons:

1. To prevent transfer of dust and waste into clean areas;
2. To guard unprotected workers, their families, and the public from secondary exposure to asbestos.

Protective clothing must:

1. Fit the worker;
2. Not readily retain asbestos dust or allow it to penetrate. Although it is not a regulatory requirement, we recommend one-piece disposable coveralls with hood for Type 3 operations;
3. Have tight fitting cuffs at the wrists and ankles and on the hoods of overalls;
4. Cover the head and feet. Although it is not a regulatory requirement, we recommend laceless rubber boots because they are very easy to clean when leaving the work area. Footwear with laces will trap asbestos fibers between the laces and should not be used.
5. Be immediately repaired or replaced if torn.

Head coverings should be close-fitting and cover the parts of the head and neck not covered by the respirator. The head straps of respiratory equipment should be worn under the head covering.

Street clothes must not be worn under coveralls.

Any protective clothing (including rubber boots, reusable coveralls, and disposable coveralls) exposed to the work area must be cleaned either by damp-wiping or HEPA vacuuming before leaving the work area. If contaminated reusable coveralls are to be laundered, they should first be placed in dust-tight bags which are soluble in hot water can be loaded, unopened, into a washing machine. These inner bags should then be placed inside a second bag which is sealed and labeled prior to being sent to laundry facilities that specialize in cleaning asbestos-contaminated clothing.

Disposable coveralls that will not be reused must be disposed of as describe in the next section.

IT CAN GET HOT IN THERE!
Protective clothing can contribute to a worker's heat stress, especially in summer.

B: Respiratory Protection

The primary means of exposure to asbestos fibers is inhalation. Despite the use of other control measures such as wet removal, workers involved in Type 3

operations will still encounter airborne asbestos. For this reason, respirators are an important control method.

The respirator requirements for Type 3 operations vary according to:

1. The size of the operation;
2. Whether the ACM is friable or non-friable;
3. They type of asbestos present (chrysotile, or asbestos other than chrysotile);
4. Whether the ACM is wet or dry;
5. Whether power tools or non-power tools are used for the removal;
6. Whether the power tool is attached to a dust-collecting device equipped with a HEPA filter or not.

All workers required to wear a respirator must follow the written procedures developed by Alberta Fire and Flood that are located in the Safety Manual.

Wherever possible, the respirators should be assigned to individual workers for their exclusive use. Otherwise the respirators must be properly sanitized before being used by someone else.

Workers cannot be assigned to an asbestos work operation unless they are physically able to perform the operation while wearing the respirator.

Site Preparation – indoor projects

Indoor Type 3 operations require strict controls to prevent asbestos dust from contaminating other areas. The work area must be completely enclosed and isolated from the rest of the location in order to:

1. Prevent and contain the spread of asbestos dust;
2. Prevent other people in the rest of the building from being exposed to asbestos;
3. Restrict access of authorized personnel.

Requirements for site preparation

1. Polyethylene sheeting or other suitable material that is impervious to asbestos, held in place with appropriate tape and adhesive, is normally used to build the

enclosure. Typically, 6 mil polyethylene is used on the walls and heavier polyethylene is used on the floor. (It must withstand foot traffic.)

a. When existing walls aren't appropriate for the enclosure, it may be necessary to erect temporary walls to which the plastic barrier can be attached.
b. All joints must overlap and be taped to ensure the area is completely sealed off. Regulations require you to have one or more transparent observational windows when you're using opaque enclosures for operations where non-friable asbestos is disturbed in any way with power tools not attached to dust collectors equipped with HEPA vacuums. Keep the windows clean and unobstructed.

2. During the construction of the enclosure, asbestos material should not be disturbed until the enclosure is complete and negative air in place. In situations where asbestos debris or dust is lying on any surface of the work area and will be disturbed during the construction of the enclosure then the area must be precleaned using a damp cloth, or by using a vacuum equipped with a HEPA filter, before the enclosure is built. Suitable protective equipment, including respirators, should be worn during precleaning and during all work which disturbs asbestos during the building of the enclosure.

Wet Wiping Procedures

- **Wet wipe with clean water and paper towels to remove any residue.**
- **Dispose of paper towels as asbestos waste.**

HEPA Vacuum Procedures

- **Vacuum the contaminated area in parallel passes with each pass overlapping the previous pass.**
- **Vacuum the area a second time, in the same manner, in passes at right angles to the first passes.**

Never use compressed air to clean asbestos dust off surfaces – it is prohibited. It just blows the fibers into the air.

3. The ventilation system serving the work area must be shut down and sealed off.

4. Any furnishings that can be removed must be damp-wiped or HEPA vacuumed if dusty and taken out of the enclosure before other work begins. Items which cannot be moved must be cleaned and sealed with polyethylene sheeting.
5. If scaffolding is used during the asbestos removal operations the open ends of the scaffold must be sealed.
6. Any openings such as stairways, doors (including elevator doors0, windows, and pipe/conduit penetrations must be sealed off.
7. If asbestos is being removed from an entire floor, the elevators must be prevented from stopping at that floor.
8. With two exceptions, all Type 3 operations require a negative pressure of 0.02 inches of water inside the enclosure relative to the area outside the enclosure. You can do this by:
    a. Running negative air units equipped with HEPA filters inside the enclosure and venting them outside, and
    b. Making sure that the enclosure is sealed from the surrounding area. The better the area is sealed, the easier it will be to maintain a negative pressure.
9. Air always moves from positive pressure to negative pressure. By maintaining negative air pressure, air will always move from the non-contaminated or "clean" area into the enclosure, instead of the other way. Without negative air pressure, dust could get out of the enclosure through cracks, tears, ducting, or even through the door enclosures.
10. A competent worker must measure the pressure difference between the inside and outside of the enclosure at regular intervals. A digital pressure monometer will measure the differential pressure. Because air pressures can vary within a large enclosure it is recommended that the differential pressure be measured in a variety of locations.
11. Warning signs must be posted outside and at every entrance to the work area.
12. If you plan to use the wet removal methods, the electrical power supply to the area should be shut down, isolated, locked, and tagged to prevent electrical shock.
13. Any temporary power supply for tools or equipment should have a ground fault circuit interrupter (GFCI).
14. A competent worker must inspect the work area for defects in the enclosure at the beginning and end of each shift. Any defect must be repaired immediately – no work is allowed until the defect is repaired.

Entry/Decontamination Facility

1. You must set up an entry/decontamination facility that keeps airborne asbestos within the dirty area and provides a place for workers to contaminate themselves as well as their tools, materials, and equipment.
2. The facilities will need to have a separate “dirty” changing room for contaminated work clothing, and a separate “clean” changing room for clean or personal clothing. The showers should be located between the two changing rooms so that it is necessary to pass through them when going from one changing room to the other. The clean and dirty ends should be fitted with adequate seating and be of sufficient size for changing purposes.
3. The doorway should be fitted with overlapping polyethylene curtains on each side so that they close behind workers passing through. This “airlock” will help the spread of dust.
4. There must be a temporary shower with hot and cold running water so workers can wash off residual asbestos before they leave the contaminated area.
5. A competent worker must inspect the work area for defects in the decontamination facility at the beginning and end of each work shift. Any defect must be repaired immediately – no work is allowed until the defect is repaired.

Procedure for entry and decontamination

These entry and decontamination procedures must be followed every time workers enter or exit the work area.

Part A: Entry Procedures

1. Workers enter the clean change room and:
    a. Remove street clothes
    b. Put on disposable coveralls
    c. Inspect their respirators
    d. Replace filter and perform other maintenance
    e. Put on and seal-check respirators
    f. Go to the curtained doorway
2. Workers enter the shower room and go (without showering) into the equipment room.
3. Here, they put on their boots, hardhats, and other equipment from the previous shift.
4. Workers enter the dirty work area through the fast curtained doorway.

Part B: Decontamination Procedures

1. Workers enter the dirty change room and remove any visible dust from their protective clothing by damp-wiping or HEPA vacuuming.
2. Workers remove and discard disposable coveralls and store the protective equipment, tools, and equipment to be reused. They continue to wear their respirators.
3. Workers enter the shower area via the curtained doorway and shower with their respirators on, rinsing off the respirator. They then remove the respirator and continue showering. With most respirators, the filters, blowers, and battery pack must be kept out of the shower to prevent damage. Damp wipe them before taking them off.
4. Workers must exit the clean side, and enter the change room via the curtained doorway, and change into their street clothes.
5. Used towels should be treated as asbestos waste and put into a sealable container.
6. Any tools or equipment used in the work area should be decontaminated by damp-wiping or HEPA vacuuming before taken out of the area.
7. If necessary, arrangements must be made so that female workers can decontaminate themselves separately from make workers.

A: Removal

1. Wherever possible, asbestos containing materials (ACM) should be wetted before removal starts. Unless wetting creates a hazard, it is not recommended to remove ACM material when the material is dry. To improve penetration of the water and reduce runoff and dry patches a wetting agent must be added to the water. You need to spray this amended water repeatedly to penetrate the ACM and to keep it wet. High pressure water spray should not be used.
2. Any electric tools and equipment used in wet removal operations must be equipped with a GFCI to prevent shock.

B: Clean-up and Storage

1. Asbestos waste must be cleaned up frequently and regularly by HEPA vacuuming, damp mopping, or wet-sweeping before it dries out. It might be necessary to spray down asbestos debris with amended water to keep it damp after it is removed.
2. Asbestos waste and protective clothing that will not be reused and must be place in a suitable container for disposal. Dropsheets, polyethylene sheets, and enclosure materials must be wetted before they are place in a suitable container for disposal.

3. A suitable container is:
    a. Dust tight
    b. Suitable for the type of waste (if the waste is sharp, such as floor tiles, the container must be rigid and puncture proof). Examples of suitable containers are 6 mil polyethylene bags (always double bag them) or polyethylene drums.
4. You must always damp-wipe or HEPA vacuum the surface of the container to remove asbestos dust before taking it out of the work area. Containers must be removed from the workplace frequently and at regular intervals.
5. Before sealing the first 5 mil polyethylene bag, use a HEPA vacuum to suck any excess air out of it. Seal the bag by twisting the top tightly, folding it over, and sealing it with duct tape. Damp-wipe or HEPA vacuum the outside of the bag before it is moved from the work area to the decontamination area. Once in the decontamination area, place the bag into a second 6 mil polyethylene bag and seal it.
6. Don't place waste materials with sharp edges – such as floor, wall, or ceiling tiles – into a bag. These items should be neatly stacked together. Wrap each stack in 2 layers of 6 mil polyethylene. Then place it in a suitable container for asbestos waste.
7. After cleaning up and removing the asbestos waste, the work area must be thoroughly washed down with amended water it is possible to do so.
8. Once all the asbestos has been removed, tools and equipment – including scaffolding, ladders, etc. – must be thoroughly cleaned by damp-wiping or HEPA vacuuming to remove any settled asbestos dust. The negative air units must keep operating during this time.

C: Visual Inspection

1. A competent worker must conduct a visual inspection to ensure that the enclosure and the work area inside the enclosure are free from visible asbestos –containing material. A thorough visual inspection consists of verifying that there is not debris or residue from removed ACM and that all the visible dust or debris in the work area has been cleaned up. If visible residue, dust or debris remain, it must be cleaned up using wet wiping or HEPA vacuuming before lockdown (gluedown) is applied and clearance sampling is started.
2. The visual inspection should be standard operating procedures for Visual Inspections of Asbestos Abatement Projects.

D: Lockdown/gluedown

1. Although it is not a regulated requirement, it is a standard industry practice to apply a lock-down sealant throughout the containment area to seal down any invisible dust and fibers undetected during the visual inspection after the removal activities.
2. The lockdown sealant needs to be compatible with any materials that will be installed over the sealant such as fireproofing material. The supervisor will verify this with the manufacturer.
3. The sealant should be applied in accordance with the manufacturer's recommendations.
4. There are a number of lockdown sealants available and the one you choose must be appropriate for the intended use.
5. Lockdown sealants are available in clear and color mixtures. They will require different drying time, depending on the manufacturer.
6. After the first coat, an inspection should be conducted to see if a second coat is necessary.
7. If applying two coats, consider using a different color to ensure complete coverage. You will be able to see the areas where only one coat has been applied.
8. Certain lockdown sealants can pose a health risk if used in a confined space.
9. Review the MSDS for hazards, required PPE and control measure to use when applying the sealant.
10. Follow the manufacturer's instructions.

E: Clearance Air Testing

1. Clearance air testing must be performed upon completion of Type 3 removal or repair operations except under any of the following conditions:
    a. The operation involves work only on non-friable ACM using a power tool not equipped with a HEPA filtered vacuum.
    b. The work is done outdoors
    c. The work is done in a building that will be demolished and only the asbestos removal and demolition workers will enter the building.
2. Only a competent worker can conduct clearance air testing after an acceptable visual inspection and after the work are inside the enclosure is dry. You must keep the barriers, enclosure, decontamination facility, and negative air pressure units operating until the work area inside enclosure passes the clearance air test (less that 0.01 fibers/cubic centimeter). If the work area does not pass the test, cleaning, decontamination, inspection

and lockdown measures inside the enclosure must be repeated before retesting.

3. Within 24 hours after receiving the clearance air testing results, the owner and the employer must post a copy of the results.

F: Teardown

1. All polyethylene used for lining and in enclosures must be wetted, disposed of as asbestos waste, and not be reused. Drop sheets must be wetted and then folded so that any residual dust or scrap is contained inside the folds. Dispose of dropsheets as asbestos waste.
2. 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.
3. After the work area has passed both the visual inspection and air-clearance test, you can shut down the negative air filtration units. The negative air system must be completely decontaminated. All pre-filters must be removed and disposed of as asbestos waste. Seal the inlet and outlet with 2 layers of 6 mil polyethylene.
4. Teardown should be done as a Type 2 operation and workers must be adequately protected.

G: Disposal of Asbestos-Containing Materials (ACM)

1. A regulation describes types of containers, labeling, and disposal procedures. There are also regulations concerning the transportation of dangerous goods (TDG).
2. Some municipalities will not accept asbestos waste at their landfills. Check with your local authorities to find the nearest disposal site.

Sampling of Materials Suspected to Contain Asbestos
Bulk Sampling

If is considered to be a low risk activity and the appropriate procedures need to be followed.

1. Sample materials when the immediate area is not in use and there are no unprotected workers nearby. (Only the persons doing the sampling should be in the immediate area.)
2. Spray the material with a light mist of water.

3. Take the sample in a manner that avoids disturbing it any more than necessary. If there is a cover over the suspected asbestos which must be damaged for access, it must be properly repaired immediately after the sample is collected.
4. Take a representative sample from within the material by penetrating the entire depth of the material, since materials may have been applied in more than one layer or covered with paint or another protective coating.
5. Ensure that materials having different appearances, colors, or textures are sampled.
6. Place the samples in sealable, impervious containers and label them as laboratory samples.
7. The containers should have WHMIS labels that contain the following information (sample quantity less than 10 kg):
    a. Product identifier;
    b. A statement to the effect that the material may contain asbestos;
    c. The statement “Hazardous laboratory sample. For hazard information or in an emergency call…” and an emergency telephone number’
8. If pieces of the material break during sampling, clean the contaminated area with a HEPA vacuum or by wet-wiping.. Where necessary, polyethylene drop cloths should be placed under the sample area to catch and contain loose waste generated during sampling.
9. The workers doing the sampling must war an appropriate respirator (at least a half mask air purifying respirator equipped with high efficiency particulate filters) and should also wear disposable gloves and change gloves each time a sample is collected. The gloves will be disposed of as asbestos waste.
10. Ensure that sampling tools and other equipment used during sampling are properly decontaminated.
11. Put waste materials into labeled bags appropriate for asbestos work.
12. Samples should be collected at random locations and need to be representative of the materials sampled.
13. For any homogeneous materials which includes: fireproofing, drywall joint compound, ceiling tiles, stucco, acoustical and stipple finishes and visually similar floor tiles the following must be collected:
    a. 3 samples for less than 1 000 square feet;
    b. 5 samples for areas between 1 000 and 5 000 square feet;
    c. 7 samples for areas greater than 5 000 square feet.
14. One quality assurance/quality control sample should be collected every 20 samples or per building.

For Vermiculite Samples

Procedures for sampling vermiculite insulation are somewhat different than for other asbestos containing materials. The objective is to determine whether or not the product is of the type that is asbestos contaminated rather than determine how much asbestos is present. There are three important factors that must be considered when sampling this material.

1. The concentration of asbestos in the product is highly variable, so more than one sample is required.
2. Because asbestos fibers can be present at low concentration, typically, a larger sample size is required.
3. Asbestos fibers tend to fall off from the product and settle at the bottom of the insulation layer. Samples must be taken that represent the entire thickness of the insulation layer. The sampling procedure should follow the basic steps outlined below. This procedure may need to be modified, depending on where and how the material is installed.

Equipment

1. 4 liter plastic bag (such as a large heavy duty zip lock freezer bag)
2. Metal scoop with a flat edge
3. Appropriate protection equipment (gloves, coveralls, half-mask respirator with high efficiency particulate filters such as P 100s).

Procedure

1. Insert the scoop into the insulation until it reaches the bottom substrate, move it along the bottom and raise it through the remaining material. Deposit the material collected into the plastic bag.
2. Collect multiple scoops at random spots to make up the sample.
3. Seal the bag and wipe the outside with a damp cloth (or place bag into another bag).
4. Label the samples
5. At least 4 liter samples should be taken at each sampling site. The scoop should be cleaned between samples.

APPENDIX C - Respirator Guide

HEALTH AND SAFETY MANUAL
ACKNOWLEDGEMENT FORM

I, _____

(Print Name)

of_____

(If not an AFF employee, print name and address of company)

Acknowledge that I have received the Alberta Fire and Flood Health and Safety Manual for Employees and Contractors and have familiarized myself with the relevant sections.

Further, I acknowledge that I understand my responsibilities pertaining to health, safety and the environment.

Date: _____

Signature of AFF
Employee or contractor: _____

Signature of AFF
Representative: _____

Return the completed form to the AFF Health and Safety Manager

Respirator Selection Guide

All respirators must be approved by the National Institute for Occupational Safety and Health (NIOSH) or an equivalent.

Types of Respirators

Air Purifying

Activities/Contaminants	Hazards	Disposable			Reusable Half-face and Full-face				Powered Air Purifying Respirator (PAPR)		Air Supp: Airline (5)
											
		Efficiency (%)			Chemical cartridges	Particulate cartridges efficiency (%)			Chemical cartridges	Particulate cartridges efficiency (%)	
		95	99	100		95	99	100		100	
Grinding, sanding, woodworking, general dust, ...	Low hazard particulates	✓ (1)	✓ (1)			✓ (1)	(1)				
Lead, cadmium, arsenic, ...	High hazard particulates			✓ (1)				✓ (1)			
Asbestos removal (7)	Class 1			✓ (1)				✓ (1)			
	Class 2							✓ (1)			
	Class 3									✓ (1)	✓
Welding, cutting, brazing	Welding fumes	✓	✓	✓		✓	✓	✓			
Microbials removal (4)	Mold and bacteria	✓	✓	✓		✓ (3)	✓ (3)	✓ (3)		✓ (3)	
Solvent, organic vapour, paint, thinners, Formaldehyde, ... (8)	Chemical contaminants				✓ (2)				✓ (2)		✓
Ammonia, acid gases, ...	Chemicals irritating to the eyes				✓ (9)						✓
Autobody paint	Isocyanate paints										✓
Confined space rescue or areas where the contaminants have not been measured	Unknown concentration of contaminants or immediately dangerous to life and health atmosphere										✓ (6)

vailable in the N, R or P classes. N means no oil mist resistance; R means some oil resistance and P means oil mist resistant.
ges may be fitted with dust pre-filters when particulates are present.
es may be used in addition to particulate cartridges, if a bleach is used as a disinfec tant.

This chart is to be used as a guide and rep
most common applications where respirato

Alberta Fire & Flood
Restoration Service

DANGER

Construction Site
Restricted Access

Personal Protective Equipment

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Hazardous Materials (WHIMS)

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

All workers / visitors must sign in / out at the worksite safety management station.

AFF Safety Manager

Alberta Fire & Flood Restoration Service

7029 Farrell Road SE
Calgary, AB
T2H 0T3

Phone: **403.204.2259**
Fax: **403.204.3398**