



Large buildings including Multi-Residential

Division B, Section 5.6. of the Alberta Fire Code (AFC) applies to fire safety for buildings, parts of buildings, facilities, adjacent buildings or facilities, and associated areas undergoing construction, alteration or demolition operations.

Prior to the commencement of construction, alteration or demolition operations, a fire safety plan, accepted in writing by the Medicine Hat Fire Service, shall be prepared for the site. It is the owner, developer or contractors responsibility to develop the fire safety plan. It is unlawful to start construction or demolition without a fire safety plan. If you begin without a plan in place, you may be ordered to stop work, ordered to remove work already done, or prosecuted as per the Safety Codes Act.

The AFC sets out specific items for inclusion in a mandatory Fire Safety Plan to provide a safe environment for workers and outline emergency procedures at sites where construction, alteration and demolition are occurring. These provisions also ensure that hazard control measures are in place and maintenance of firefighting measures and systems are addressed.

Fire Safety Plans for construction or demolition sites will apply to all inspectors, workers, suppliers and contractors on site. There can only be one Fire Safety Plan for each site. Should circumstances change on site then the plan must be modified appropriately and resubmitted to Medicine Hat Fire Services for review and approval.

A Fire Prevention Officer may review projects during key stages of construction to ensure the work site is safe and complies with the Fire Code.

Please review section 5.6 of the AFC as attached and develop a construction fire safety plan including all relevant sentences that pertain to your project.

Once the construction fire safety plan has been finalized please submit to Medicine Hat Fire Service for review and approval.

Fire Safety Plan CONSTRUCTION and DEMOLITION Sites

THIS PLAN MUST BE POSTED AT EACH JOB SITE. ALL EMPLOYEES/CONTRACTORS ARE EXPECTED TO BE TRAINED ON THE SAFETY PLAN AND AWARE OF THEIR RESPONSIBILITIES.

Permit # _____

Address: _____

Building Name/Site Name: _____

Description of Project: _____

Emergency Contact Person / 24 hr.# _____

Emergency Contact Person / 24 hr.# _____

Muster Point: _____

This plan is designed in conformance with Division B Section 5.6. of the Alberta Fire Code, and on signature, becomes an agreement between the building owner/contractor and Medicine Hat Fire Service.

Building Owner/Contractor

Print Name: _____ Contact # _____

Signature: _____

Date: _____

Fire Safety Codes Officer

Print Name: _____ Contact: 403-529-8282

Signature: _____

Date: _____

The Fire Safety Plan will be site specific and may be reviewed at any time by the *authority having jurisdiction*.

The Fire Safety Plan should be reviewed and updated as the construction site progresses. The Owner and/or Representative of the Owner, is responsible for the Fire Safety Plan until occupancy.

CONSTRUCTION FIRE SAFETY PLAN TEMPLATE

Large Buildings including Multi-Residential

A designate must be appointed and account for all people expected to be on site

A warning system must be in place at all sites

A method of notifying the fire department shall be available at all times

Upon Discovery of Fire or Other Emergency

- Leave fire area immediately
- Close doors behind you where practical
- Turn off equipment if safe to do so
- Notify occupants verbally or sound horn or activate fire alarm system
- Call the Fire Department **9-1-1** (from a safe location)
- Use nearest exit, do not use man lifts or elevators
- Go to mustering point, stay there until instructed to do otherwise
- A supervisor must await the arrival of the Fire Department at the main access point

Fighting a Fire

Attempting to extinguish a fire is a voluntary act.

- Only use a fire extinguisher if safe to do so and you know how to use it
Prior to fighting a fire, notify persons in the immediate area
- Be calm and use good judgment at all times.
- Never attempt to fight a fire alone unless the fire is small and you feel confident that you can extinguish or isolate the fire by using a portable fire extinguisher
- When you have exhausted the extinguisher, back away if unable to totally extinguish the fire
- Ensure you have an exit at your back. Do not get trapped

Emergency Response Numbers:

FIRE/POLICE/AMBULANCE:	9-1-1
POWER	403-526-2828
GAS	403-526-2828

Please review the following pages from the Alberta Fire Code and include all applicable sentences in your fire safety plan. The information on page 3 will satisfy the intent of 5.6.1.3.(1)

5.6.1. General

5.6.1.1. Application

(See Appendix)

1) This Section applies to fire safety for *buildings*, parts of *buildings*, facilities, adjacent *buildings* or facilities, and associated areas undergoing construction, alteration or demolition operations.

5.6.1.2. Protection of Adjacent Buildings

1) Protection shall be provided for adjacent *buildings* and facilities that would be exposed to fire originating from *buildings*, parts of *buildings*, facilities and associated areas undergoing construction, alteration or demolition operations. (See Appendix)

5.6.1.3. Fire Safety Plan

1) Except as required in Sentence (2), prior to the commencement of construction, alteration or demolition operations, a fire safety plan, accepted in writing by the fire department and the *authority having jurisdiction*, shall be prepared for the site and shall include

a) the designation and organization of site personnel to carry out fire safety duties, including a fire watch service if applicable,

b) the emergency procedures to be followed in the event of a fire, including

i) initiating a fire warning,

ii) notifying the fire department,

iii) instructing site personnel on the procedures to be followed once the warning has been initiated, and

iv) confining, controlling and extinguishing the fire,

c) measures for controlling fire hazards in and around the *building* (see Appendix), and

d) a maintenance procedure for firefighting measures required in Section 5.6.

2) Prior to the commencement of construction, alteration or demolition operations that occur in an existing *building* required to have a fire safety plan conforming to Section 2.8., the revised fire safety plan shall take into account the changes occurring to the *building* and shall be accepted in writing by the fire department and the *authority having jurisdiction*.

3) Where construction, alteration or demolition involves **hot work**, a fire safety plan, accepted in writing by the fire department and the *authority having jurisdiction*, shall be prepared for the site (See Appendix C).

5.6.1.4. Access for Firefighting

- 1) Unobstructed access to fire hydrants, portable extinguishers and to fire department connections for standpipe and sprinkler systems shall be maintained.
- 2) A means shall be provided to allow firefighters to perform their duties on all levels of the *building*.
- 3) Provision shall be made for the use of existing elevators, hoists or lifts to assist firefighting personnel in reaching all levels of the *building*.
- 4) Access routes for fire department vehicles shall be provided and maintained to construction and demolition sites. (See Appendix)
- 5) Where a construction or demolition site is fenced so as to prevent general entry, provision shall be made for access by fire department equipment and personnel.

5.6.1.5. Portable Extinguishers

- 1) In addition to the other requirements of this Code, portable extinguishers shall be provided in unobstructed and easily accessible locations in areas
 - a) where *hot work* operations are carried out,
 - b) where combustibles are stored,
 - c) near or on any internal combustion engines,
 - d) where *flammable liquids* and *combustible liquids* or gases are stored or handled, and
 - e) where temporary fuel-fired equipment is used.
- 2) The extinguishers required by Sentence (1) shall have a minimum rating of
 - a) 2-A:10-B:C on moveable equipment, and
 - b) 4-A:40-B:C in all other locations.

5.6.1.6. Standpipe Systems

(See Appendix)

- 1) Where a standpipe system is to be installed in a *building* under construction or alteration, the system shall be installed progressively in conformance with Subsection 3.2.5. of Division B of the ABC in areas permitted to be occupied.
- 2) Where a standpipe system is to be installed in portions of a *building* under construction or alteration that are not occupied, the following shall apply:
 - a) a permanent or temporary standpipe system is permitted in accordance with Clauses (b) and (c),
 - b) the standpipe system shall be provided with conspicuously marked and readily accessible fire department connections on the outside of the *building* at *street* level and shall have at least one hose outlet at each floor,
 - c) the pipe size, hose valves and water supply shall conform to Subsection 3.2.5. of Division B of the ABC,
 - d) the standpipe system shall, as a minimum, be securely supported and restrained on alternate floors,
 - e) at least one hose valve for attaching fire department hose shall be provided at each intermediate landing or floor level in the *exit* stairway,
 - f) valves shall be kept closed at all times and guarded against mechanical damage,
 - g) the standpipe shall be not more than one floor below the highest forms, staging, and similar combustible elements at all times, and
 - h) temporary standpipe systems shall remain in service until the permanent standpipe installation is complete.

3) Where a *building* being demolished floor by floor is equipped with a standpipe system, the system, together with fire department connections and valves, shall be maintained in operable condition on all *storeys* below the one being demolished, except for the *storey* immediately below it.

5.6.1.7. Hot Surface Applications

1) Roofing operations and other surface applications that involve heat sources and hot processes shall be considered *hot works* and shall conform to the requirements in Sentences (2) and (3) and Section 5.2.

2) Bitumen kettles shall

a) not be located on roofs,

b) be provided with adequate metal covers that are close-fitting and constructed of steel having a thickness of not less than No. 14 sheet metal gauge thickness,

c) be under constant supervision when in operation, and

d) be maintained free of excessive residue.

3) Mops that have been used for spreading bitumen shall be kept outside the *building* in a safe location when not in use.

5.6.1.8. Ignition Sources

(See Appendix)

1) Devices capable of producing ignition, internal combustion engines, temporary heating equipment and associated devices shall be kept at a safe distance from combustible material so as not to cause ignition.

2) The clearance between combustible materials and temporary heating equipment, including *flues*, shall be in conformance with Part 6 of Division B of the ABC or in conformance with the minimum clearances shown on certified heating equipment.

5.6.1.9. Building Services at Demolition Sites

1) Except as required in Sentence (3) and except for water supplies for firefighting, *building* services shall be terminated at a point located outside the *building* or part thereof being demolished. (See Appendix)

2) The service company whose service connections will be affected shall be notified before any action mentioned in Sentence (1) is taken and, if it is necessary to maintain any service, it shall be

a) relocated as necessary, and

b) protected from damage.

3) Temporary service installations shall be installed in conformance with regulations made pursuant to the Safety Codes Act.

5.6.1.10. Fuel Supply Installation

- 1) Fuel supplies for heating equipment and internal combustion engines shall conform to
 - a) CSA B139, "Installation Code for Oil-Burning Equipment," or
 - b) gas regulations made pursuant to the Safety Codes Act.

5.6.1.11. Tank, Piping and Machinery Reservoir Safety at Demolition Sites

1) Tanks, piping and machinery reservoirs at a demolition site shall be taken out of service in conformance with Subsection 4.3.16.

2) Tanks, piping and machinery reservoirs at a demolition site that contain *combustible liquids* or *flammable liquids* or that are likely to contain flammable vapours shall be drained and, except as permitted by Sentence (3), removed prior to the demolition of the *building*.

3) Where it is impracticable to remove tanks, piping or machinery reservoirs from the *building* prior to demolition, such equipment shall be conspicuously identified and removed as soon as conditions permit.

4) Tanks, piping and machinery reservoirs referred to in Sentences (1), (2) and (3) that once contained *combustible liquids*, *flammable liquids* or flammable gases shall be purged with inert materials prior to demolition to prevent an explosion. (See Appendix)

5.6.1.12. Fire Separations in Partly Occupied Buildings

1) Where part of a *building* continues to be occupied, the occupied part shall be separated from the part being demolished or constructed by a *fire separation* having a *fire-resistance rating* of not less than 1 h.

5.6.1.13. Protection during Shutdown

1) Except as permitted in Sentence (2), where a fire protection system is provided, it shall remain operational throughout the construction, alteration or demolition area where reasonably practical.

2) When any portion of a fire protection system is temporarily shut down during construction, alteration or demolition operations, protection during shutdown shall comply with Article 6.1.1.4.

5.6.1.14. Watch

1) A watch, with tours at intervals of not more than 1 h, shall be provided throughout demolition sites when there are occupants in the portion of the *building* not being demolished.

2) Except where a *building* is provided with a fire alarm system or similar equipment, a watch, with tours at intervals of not more than 1 h, shall be provided when a portion of the *building* is occupied while construction operations are taking place.

3) Facilities shall be provided to enable the watcher referred to in Sentences (1) and (2) to

- a) ensure a fire warning is sounded to notify occupants, and
- b) communicate with the fire department.

5.6.1.15. Smoking Restrictions

1) Smoking shall be permitted only under the conditions stated in Subsection 2.4.2.

5.6.1.16. Provision for Egress

1) In areas of a *building* where construction, alteration or demolition operations are taking place, at least one *exit* shall be accessible and usable at all times.

2) In *buildings* being demolished, at least one stairway shall be maintained in usable condition at all times.

5.6.1.17. Fire Warning

1) A means shall be provided to alert site personnel of a fire and such means shall be capable of being heard throughout the *building* or facility.

5.6.1.18. Storage and Use of Dangerous Goods

1) *Combustible liquids* and *flammable liquids* shall be stored and used in conformance with Part 4.

2) *Dangerous goods* shall be stored in conformance with Part 3.

3) *Dangerous goods* shall be used in conformance with Part 5.

5.6.1.19. Temporary Enclosures

1) Fabrics and films used to temporarily enclose *buildings* shall be securely fastened to prevent them from being blown against heaters or other ignition sources.

5.6.1.20. Disposal of Combustible Refuse

1) Combustible refuse in sufficient quantities to constitute a fire hazard shall be moved to a safe location. (See also Subsection 8.2.5. of Division B of the ABC.)

5.6.1.21. Occupied Buildings

1) When a *building* is occupied prior to its completion or during extensive alterations to it, fire safety measures in the occupied portions of the *building* shall be maintained or alternate provisions made.

2) Measures shall be taken to cordon off and control access to the work areas.

3) Required *exits* from the occupied area shall be maintained or alternate *means of egress* shall be provided. (See Appendix)

5.6.2. Excavation

5.6.2.1. Services Shut-off

1) Except as provided in Article 5.6.2.2., before excavation begins, *building* services shall be shut off, terminated and *labelled* so as to be easily identifiable outside the limits of the excavation. (See also Sentence 5.6.1.9.(1).)

2) The service company whose service connections will be affected shall be notified before any action mentioned in Sentence (1) is taken and, if it is necessary to maintain any service, it shall be

- a) relocated as necessary, and
- b) protected from damage.

5.6.2.2. Maintaining Existing Services

1) Existing gas, electrical, water, steam and other services are permitted to be left within the area of the excavation provided that

- a) before work begins, the service company concerned has *approved* the proposed method of operation,
- b) the location of the services is determined before excavation commences,
- c) a suitable method of excavation is adopted that will ensure that the services are not damaged, and
- d) the services are provided with suitable temporary supports.

5.6.3. Additional Requirements for Residential and Business and Personal Services Occupancies

5.6.3.1. Application

1) This Subsection applies only to *buildings* conforming to Articles 3.2.2.50. and 3.2.2.58. of Division B of the ABC.

5.6.3.2. Smoking Restrictions

1) Where smoking is permitted on a construction, alteration, or demolition site, it shall only be permitted in designated smoking areas, which shall

- a) be located not less than 3 m away from the *building* or part of the *building* that is under construction, demolition, or alteration,
- b) be identified with appropriate signage,
- c) be provided with safe receptacles for the disposal of smoking materials, and
- d) have a clearance of not less than 3 m from any combustible storage or combustible refuse maintained at all times. (See Appendix)

5.6.3.3. Site Security

(See also Article 8.2.1.3. of Division B of the ABC.)

- 1) A strongly constructed fence, boarding or barricade not less than 1.8 m high shall be erected around the perimeter of the construction or demolition site.
- 2) Barricades shall have
 - a) a reasonably smooth surface facing the outside, and
 - b) no openings other than those required for access.
- 3) Access openings through barricades shall be equipped with gates, which shall be
 - a) kept closed and locked when the site is unattended, and
 - b) maintained in place until completion of the construction or demolition activity.
- 4) Fencing, boarding and barricades shall be constructed and maintained in a manner that does not restrict access to the construction or demolition site for firefighting purposes or to fire protection equipment.

5.6.3.4. Site Identification

- 1) A sign identifying the street address of the construction or demolition site shall be visible from the access route at the entrance to the site at all times.
- 2) A sign identifying the floor level, stair location and street address shall be posted at each floor in a stairway required by Sentence 5.6.3.5.(1).

5.6.3.5. Construction Access

- 1) During construction and in addition to the means of access required by Sentences 5.6.1.4.(2) and (3), at least one stairway shall be provided that
 - a) consists of treads and risers complying with the dimensional requirements of Article 3.4.6.8. of Division B of the ABC,
 - b) is equipped with one handrail conforming to Sentences 3.4.6.5.(3), (4), (5), (9), (11), and (12) of Division B of the ABC,
 - c) is not less than 900 mm wide, and
 - d) is equipped with guards that are
 - i) not less than 920 mm high when measured vertically to the top of the guard from a line drawn through the outside edges of the stair nosings, and
 - ii) not less than 1 070 mm high around landings.
- 2) At least one stairway conforming to Sentence (1) shall be
 - a) extended upward as each floor is installed in new construction, or
 - b) maintained for each floor still remaining during demolition.

5.6.3.6. Disposal of Combustible Refuse

- 1) A minimum clearance of 3 m shall be maintained between containers for the disposal of combustible refuse and *exits*.
- 2) The disposal chutes described in Clause 8.2.5.2.(1)(b) of Division B of the ABC shall
 - a) be constructed of noncombustible material, or
 - b) terminate not less than 2 m above the disposal bin they serve.

5.6.3.7. Water Supply

- 1) An adequate water supply for firefighting shall be provided as soon as combustible construction material arrives on the site. (See Appendix)

5.6.3.8. Hydrant Access

- 1) Hydrants on a construction, alteration, or demolition site shall
 - a) be clearly marked with a sign,
 - b) be accessible, and
 - c) have an unobstructed clearance of not less than 2 m at all times.

Appendix to Section 5.6 of the Alberta Fire Code

A-5.6.1.1. The degree of application should be determined in advance in conjunction with the authority having jurisdiction. In construction, alteration or demolition operations that do not pose an exposure hazard to other buildings or to occupants, the degree of application of Section 5.6. may be minimal.

The degree of application of Section 5.6. to each operation should be determined in advance, as part of the fire safety plan for the operation, taking into consideration such issues as the size of the operation, exposure of adjacent buildings or facilities to hazards, and the site conditions. Operations can range from large multi-storey buildings to small single-storey residences and may include additions or alterations to existing buildings.

In order to satisfy Sentence 8.1.1.1.(3) of Division B of the ABC, all of the relevant requirements of this Section must be complied with; in particular, the requirement for a fire safety plan in Article 5.6.1.3. must be addressed prior to the commencement of work.

A-5.6.1.2.(1) Methods and materials used to protect adjacent buildings and facilities can range from active to passive systems such as spatial separation, installing water curtains, using construction methods and materials that include gypsum sheathing, or erecting a temporary fire barrier such as a fire tarpaulin.

A-5.6.1.3.(1)(c) The control of fire hazards in and around buildings being constructed, renovated or demolished includes fire protection for combustible construction materials and combustible refuse on the site. The sizes of piles of materials and refuse and the location of such piles in relation to adjacent buildings are factors that should be taken into consideration in determining which fire protection measures to implement. The selection of fire protection measures for demolition operations will also depend on the demolition procedure being used, the specific conditions existing on the site and the firefighting capabilities of the responding fire department.

It is the intent of this Code that requirements regarding the outdoor storage of materials stated in Section 3.3. be referred to and applied at construction and demolition sites.

A-5.6.1.4.(4) Access for Firefighting. The fire safety plan for the construction or demolition site of buildings conforming to Article 3.2.2.50. or 3.2.2.58. of Division B of the ABC should take into consideration the design of the access route to the building under construction as well as the elevation of the access route relative to the uppermost floor level to facilitate firefighter access to the roof. (See Sentence 3.2.5.6.(2) of Division B of the ABC.)

A-5.6.1.6. Not all aspects of Subsection 3.2.5. of Division B of the ABC are applicable to unoccupied areas of buildings, parts of buildings, facilities and associated areas undergoing construction, alteration or demolition operations.

When the temperature causes freezing conditions, the standpipe should be drained to prevent damage to the equipment. It is not expected that hoses and nozzles be made available in the building undergoing construction, alteration or demolition operations, as they will be brought to the relevant floor by the responding fire department.

A-5.6.1.8. Minimum clearances shown on certified heating equipment or as described in Part 6 of Division B of the ABC should be provided between combustible materials and temporary heating equipment, including flues such as exhaust discharges from internal combustion engines.

A-5.6.1.9.(1) A safe area for the location of terminated building services, such as gas and fuel lines, electrical lines, and water and steam piping, is in an area away from the building or part thereof that is safe enough so as not to cause damage to the building or part thereof in the event of their accidental breakage. In some cases, terminated services can be located directly outside the building or part thereof if adequate protection is provided, and in others, they can be located at the property line and/or service connection.

A-5.6.1.11.(4) Guidance on methods of rendering inert tanks, piping and machinery reservoirs is available in NFPA 326, "Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair."

A-5.6.1.21.(3) Where exits are obstructed by construction while the building is occupied, an alternative means of egress must be established. Replacing a window with a door and providing the necessary step and walkway could be an acceptable temporary solution.

A-5.6.3.2.(1) Note that the intent of Sentence 5.6.3.2.(1) in relation to the alteration of a floor, suite or room in an existing building is not to prevent smoking elsewhere in the building where smoking would normally be permitted.

A-5.6.3.7.(1) The water supply referred to in Sentence 5.6.3.7.(1) may be either natural or developed, and need not be the final water supply for the finished building.

Appendix C

4.1.5. Fire Prevention and Protection

4.1.5.7. Hot Works

1) *Hot works* shall be performed in conformance with Section 5.2.

Section 4.11. Tank Vehicles

4.11.2.2. Hot Works

1) *Hot works* performed on or in close proximity to a *tank vehicle* shall conform to Section 5.2. and Article 4.11.2.6.

2) No person shall smoke or use open flame within 7.5 m of a *tank vehicle* that is being loaded, unloaded or repaired.

Section 5.2. Hot Works

5.2.1. General

5.2.1.1. Application

1) This Section shall apply to *hot works* involving open flames or producing heat or sparks, including, without being limited to, cutting, welding, soldering, brazing, grinding, adhesive bonding, thermal spraying and thawing pipes. (See Appendix Below)

2) Except as provided in this Section, *hot works* described in Sentence (1) shall conform to CAN/CSA-W117.2, "Safety in Welding, Cutting and Allied Processes."

5.2.1.2. Training

1) *Hot works* shall be performed only by personnel trained in the safe use of equipment in conformance with this Section.

5.2.2. Hot Work Equipment

5.2.2.1. Maintenance

1) *Hot work* equipment shall be maintained in good operating condition.

5.2.2.2. Inspection

1) *Hot work* equipment shall be examined for leakage or defects prior to each use.

2) Leaks or defects found in *hot work* equipment shall be repaired prior to use.

5.2.2.3. Equipment Not in Use

1) All valves shall be closed and gas lines bled when Class 2 gas *hot work* equipment is not in use.

2) Electric *hot work* equipment shall be de-energized when not in use.

5.2.2.4. Compressed Gas Equipment

1) The design and installation of oxygen-fuel gas equipment shall conform to NFPA 51, "Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes."

- 2) Unalloyed copper piping shall not be used for acetylene gas.
- 3) Oil or grease shall not be used with equipment for oxygen.
- 4) Cylinders of Class 2 gases shall conform to Part 3.

5.2.3. Prevention of Fires

5.2.3.1. Location of Operations

- 1) Except as provided in Sentence (2), *hot work* shall be carried out in an area free of combustible and flammable contents, with walls, ceilings and floors of *non-combustible construction* or lined with noncombustible materials.
 - 2) When it is not practicable to undertake *hot work* in an area described in Sentence (1),
 - a) combustible and flammable materials within a 15 m distance from the *hot work* shall be protected against ignition in conformance with Article 5.2.3.2.,
 - b) a fire watch shall be provided during the *hot work* and for a period of not less than 60 min after its completion in conformance with Article 5.2.3.3., and
 - c) a final inspection of the *hot work* area shall be conducted 4 h after completion of work.
 - 3) When there is a possibility of sparks leaking onto combustible materials in areas adjacent to the area where *hot work* is carried out,
 - a) openings in walls, floors or ceilings shall be covered or closed to prevent the passage of sparks to such adjacent areas, or
 - b) Sentence (2) shall apply to such adjacent areas.

5.2.3.2. Protection of Combustible and Flammable Materials

- 1) Any combustible and flammable material, dust or residue shall be
 - a) removed from the area where *hot work* is carried out, or
 - b) protected against ignition by the use of noncombustible materials.
- 2) Combustible materials or *building* surfaces that cannot be removed or protected against ignition as required in Sentence (1) shall be thoroughly wetted where *hot work* is carried out.
- 3) Any process or activity that produces flammable gases or vapours, *combustible dusts* or *combustible fibres* in quantities sufficient to create a fire or explosion hazard shall be interrupted and the hazardous conditions shall be removed before any *hot work* is carried out.

5.2.3.3. Watch

- 1) The exposed areas described in Sentences 5.2.3.1.(2) and (3) shall be examined for ignition of combustible materials by personnel equipped with and trained in the use of fire extinguishing equipment.

5.2.3.4. Work on Containers, Equipment or Piping

- 1) *Hot work* shall not be performed on containers, equipment, or piping containing *flammable liquids*, *combustible liquids* or Class 2.1 flammable gases unless

- a) they have been cleaned and tested with a gas detector to ascertain that they are free of explosive vapours, or
- b) safety measures are taken in conformance with good engineering practice (see Appendix A).

2) *Hot work* shall not be performed on a totally enclosed container.

3) *Hot work* shall not be performed on metal objects that are in contact with combustible materials unless safety precautions are taken to prevent their ignition by conduction.

5.2.3.5. Work Adjacent to Piping

- 1) When *hot work* is to be carried out near piping containing a Class 2.1 flammable gas, the piping shall
- a) conform to Sentence 5.2.3.4.(1), or
 - b) be protected by a thermal barrier against the passage of heat.

5.2.3.6. re Extinguishing Equipment

- 1) At least one portable fire extinguisher shall be provided in the *hot work* area.