

# A Safe Workplace

## A Workplace Safety and Health Manual for Your Community

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		Approved By: Harvey Bostrom
Subject: G-2	Welding and Cutting	Effective: April 01, 2005
		Revised: April 1, 2011

**PPE Required:** Steel-toe boots, safety glasses, hard hat, gloves, coveralls, fire extinguisher, first aid kit

**Note:** Only trained personnel may perform operations that require welding or cutting.

Refer to part 17 of WSH Reg. 217 (2006) part 6 PPE, CAN/CSA-W117.2-01 (R2006). Safety in Welding, Cutting and Allied Processes.

**General:**

1. Before starting to weld or cut inspect the work area around and below to ensure that sparks or molten metal will not fall on workers or combustible materials.
2. Check to see that suitable fire extinguishing equipment is available in the work area.
3. Each employee is responsible for maintaining the welding or cutting equipment that they use to ensure good operating condition.
4. When welding or cutting, approved goggles or hoods must be worn with suitable filter lenses. Sunglasses or tinted safety glasses are not acceptable.
5. Keep all welding leads and cutting hoses up off the floors, walkways and stairways. Each employee is responsible for ensuring that equipment they are using complies with all applicable safety requirements.
6. Never weld or cut on barrels, tanks, piping or other systems which may have contained either combustible or unknown products.

**Welding:**

1. When arc welding is being done near other employees, they must be protected from the arc rays by noncombustible screens or they must wear proper eye protection.
2. The frames of all welding machines must be grounded.
3. Welding or cutting torches must be disconnected from any cylinders and the cylinder caps reinstalled when stored in any enclosure or building. If this equipment is to be unattended for more than 45 minutes, all cylinder valves must be closed and hoses depressurized.
4. Regulators must be equipped with flashback arresters and check valves.

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5. If a cylinder catches fire and cannot be extinguished properly, a stream of water should be sprayed on it to keep the cylinder cool to prevent rupturing while the fuel is burning out.

### **Cutting Torches:**

1. Do not use matches to light torches. Arc igniters must be used.
2. A torch should only be used for its intended purpose and not to be used for other practices such as lighting cigarettes.
3. Appropriate gloves must be worn.
4. When a crescent or special wrench is required to operate the acetylene valve, the wrench must be kept in position on the valve.

### **Storage and Handling of Cylinders (Compressed Gas):**

1. The valve protective caps must be kept on all cylinders not in actual use.
2. All cylinders must be stored and transported in an upright position and adequately secured to prevent tipping.
3. Cylinders must not be taken into confined spaces.

### **Ventilation and Protection:**

1. Welding, cutting and heating performed in confined spaces require general mechanical or local exhaust ventilation to reduce the concentrations of smoke and fumes to acceptable levels.
2. If adequate ventilation cannot be provided, employees must be provided with and required to use air supplied breathing apparatus.
3. When welding, cutting or heating metals having toxic significance, such as zinc, lead, cadmium or chromium-bearing metals in open air, an approved respirator must be worn. Ensure adequate ventilation prior to commencing work. Follow MSDS recommendations for type of material and electrode being used. Coated metals, galvanized steel, aluminum, welding rods and wire all present serious respiratory hazards. Refer to the Manitoba Workplace Safety & Health welding guidelines and MSDS.
4. All manholes must be mechanically ventilated prior to and during work inside. The

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ventilator hose must extend to the floor of the manhole. The ventilator intake above ground must be at least three (3) feet from the manhole entrance and at least of equal distance from any exhaust from the internal combustion engine.

5. Refer to part 15 *The Manitoba Workplace Safety and Health Act and Regulations* and WSH manual section III-C-G9 and the Manitoba Code of Practice, confined space entry work. No person is to enter a confined space without proper training.