

**CS Part 7. Welding and Cutting
Compared With
29 C.F.R. 1926 Subpart J – Welding and Cutting**

As of November 2015

Summary: The significant differences between CS Part 7. Welding and Cutting and the regulations found in 29 C.F.R. 1926 Subpart J – Welding and Cutting are in:

- Employer and employee responsibilities
- Requirements generally.
- Fuel gas use
- Hot metal warning
- Cylinders
- Oxygen
- Hoses and connections
- Arc Welding and Cutting
- Personal protective equipment
- Fire precautions

The comparisons show only those provisions where MIOSHA rules are different than OSHA or where MIOSHA rules are not included in 29 C.F.R.

****means there is a comparable OSHA rule to this paragraph

MIOSHA	OSHA
<p>R 408.40711 Employer and employee responsibilities. Rule 711. (1) An employer shall do all of the following: (a) Assure that each employee has received safety training in the use of equipment for welding operations and instruction in the rules of this part before allowing the employee to use the equipment.</p>	<p>1926.350(d) Use of fuel gas. The employer shall thoroughly instruct employees in the safe use of fuel gas, as follows...</p> <p>1926.351(d) Operating instructions. Employers shall instruct employees in the safe means of arc welding and cutting as follows...</p> <p>1926.353(a) Mechanical ventilation. For purposes of this section, mechanical ventilation shall meet the following requirements: 1926.353(a)(1) Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems. 1926.353(a)(2) General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits, as defined in subpart D of this part. 1926.353(a)(3) Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits as defined in subpart D of this part. 1926.353(a)(4) Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air. 1926.353(a)(5) All air replacing that withdrawn shall be clean and respirable.</p>

MIOSHA	OSHA
<p>R 408.40711(1)(b) Assure that an employee in charge of the operation of oxygen or fuel gas supply equipment or of oxygen or fuel gas systems is instructed and judged competent for this work by the employer before being left in charge. Rules and instructions covering the operation and maintenance of oxygen or fuel gas distribution piping systems shall be readily available.</p> <p>(2)****</p>	<p>No comparable OSHA provisions</p> <p>Equivalent</p>
<p>R 408.40712 Requirements generally.</p> <p>Rule 712. (1) Only apparatus designed for use with fuel gas or oxygen, such as a torch, regulator, pressure-reducing valve, acetylene generator, and manifold, shall be used for welding or cutting.</p> <p>(2) Fuel gas, oxygen, or compressed air shall not flow from a cylinder or manifold through a torch or other device equipped with a shutoff valve unless the pressure is reduced by a regulator attached to the cylinder or manifold.</p> <p>(3) to (4)****</p> <p>(5) Oxygen shall only be used for welding or cutting.</p> <p>(6)****</p>	<p>No comparable OSHA provisions except:</p> <p>1926.353(d) Use of fuel gas. 1926.353(d)(3) Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.</p> <p>Equivalent</p> <p>1926.353(a)(6) Oxygen shall not be used for ventilation purposes, comfort cooling, blowing dust from clothing, or for cleaning the work area.</p> <p>Equivalent</p>
CYLINDERS	
<p>R 408.40722 Storage.</p> <p>Rule 722. (1) ****</p> <p>(2) A cylinder shall be stored away from any source of heat more than 125 degrees Fahrenheit.</p> <p>(3) ****</p>	<p>Equivalent</p> <p>No comparable OSHA provisions</p> <p>Equivalent</p>
<p>R 408.40722(4) Where different gases are stored, they shall be grouped by types. Groupings shall separate the fuel gases from the oxidizing gases as specified in subrule (1) of this rule.</p> <p>(5) ****</p> <p>(6) A cylinder shall not be stored in basements or pits.</p>	<p>No comparable OSHA provision except:</p> <p>1926.350(a)(10) Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour</p> <p>Equivalent</p> <p>No comparable OSHA provision</p>

MIOSHA	OSHA
<p>(7) Where a liquid or gaseous oxygen system is used to supply gaseous oxygen for welding and cutting and the system has a storage capacity of more than 20,000 cubic feet (560 cubic meters), measured at 14.7 psia and 70 degrees Fahrenheit, including unconnected reserves at the site, the system shall be as prescribed in National Fire Protection Association Standard NFPA 50, "Standards for Bulk Oxygen Systems at Consumer Sites," 1974 edition, which is adopted by reference in R 408.40709.</p>	<p>1910.253(c) Manifolding of cylinders 1910.253(c)(2)(v) An oxygen manifold or oxygen bulk supply system which has storage capacity of more than 13,000 cubic feet (364 cubic meters) of oxygen (measured at 14.7 psia (101 kPa) and 70 degrees F. (21.1 degrees C.), connected in service or ready for service, or more than 25,000 cubic feet (700 cubic meters) of oxygen (measured at 14.7 psia (101 kPa) and 70 degrees F. (21.1 degrees C.), including unconnected reserves on hand at the site, shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.</p>
HOSES AND REGULATORS	
<p>R 408.40731 Hoses and connections. Rule 731. (1) Hose and hose connections used for a welding operation shall be as prescribed in paragraph 3.5.6 of the American National Standard Institute Standard ANSI/AWS Z49.1, "Safety in Welding and Cutting and Allied Processes," 1973 edition, which is adopted by reference in R 408.40709.</p> <p>(2)****</p> <p>(3) Parallel hoses shall be color coded as follows: (a) Red—fuel gases. See subrule (4) of this rule. (b) Green—oxygen. (c) Black—inert gas or air.</p> <p>(4) The employer shall assure that only approved hose is used for LP gas.</p> <p>(5) A hose and its connections shall be inspected before each shift for burns, leaks, worn places, or other defects which could affect the safety of an employee. Suspected leaks shall be checked by use of a grease-free soap solution.</p> <p>(6) to (8)****</p>	<p>1926.350(f) Hose. 1926.350(f)(1) Fuel gas hose and oxygen hose shall be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.</p> <p>Equivalent</p> <p>No comparable OSHA provisions</p> <p>1926.350(f)(3) All hose in use, carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion, or be in any way harmful to employees, shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.</p> <p>Equivalent</p>

MIOSHA	OSHA
PERSONAL PROTECTIVE EQUIPMENT	
<p>R 408.40751 Personal protective equipment. Rule 751. (1) A welder shall wear face and eye protection when performing welding operations and by other employees exposed to a risk of injury from spatter or flash, or both. The protective devices shall be provided for as prescribed in Construction Safety Standard Part 6 "Personal Protective Equipment," as referenced in R 408.40709. (2) The employer shall provide welding gloves at no expense to the employee and the employee shall wear them to protect their hands and wrists. (3) The employer shall provide other protective devices, such as, but not limited to, body protection, chaps, and curtains, at no expense to the employee, and the employee shall use them when exposed to a risk of injury by flash burn, sparks, and foreign bodies.</p>	<p>1910.252 General requirements. 1910.252(b) Protection of personnel 1910.252(b)(iii)(3) Protective clothing –General requirements. Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of 1910.132 of this part. Appropriate protective clothing required for any welding operation will vary with the size, nature, and location of the work to be performed.</p>
GENERAL FIRE RULES	
<p>R 408.40761 Fire precautions. Rule 761. (1) to (3)**** (4) A minimum of 1 2A-10BC portable fire extinguisher shall be immediately available to the work area during welding operations. (5)**** (6) The connection, by welding, of branches to a pipeline carrying a flammable substance shall be performed in accordance with the regulations of the department of transportation, 49 C.F.R. Part 192, "Minimum Federal Safety Standards for Gas Pipelines," which are adopted by reference in R 408.40709. (7) Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.</p>	<p>Equivalent</p> <p>No comparable OSHA provision except: 1910.252 General requirements 1910.252(a)(ii) Fire extinguishers. Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed.</p> <p>Equivalent</p> <p>No comparable OSHA provisions</p>

MIOSHA	OSHA
<p>R 408.40762 Welding drums, barrels, tanks, or other containers. Rule 762. (1) to (4)****</p> <p>(5) Welding on natural gas pipelines shall be as prescribed by the regulations of the department of transportation, 49 C.F.R. Part 192, "Minimum Federal Safety Standards for Gas Pipelines," which are adopted by reference in R 408.40709.</p>	<p>Equivalent</p> <p>See 49 C.F.R. Part 192, Minimum Federal Safety Standards for Gas Pipeline</p>

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