

CHAPTER 11 REFRIGERATION

SECTION 1101 is amended as follows:

1101.1 Scope. This chapter shall govern the design, installation, construction and repair of refrigeration systems that vaporize and liquefy a fluid during the refrigerating cycle. Refrigerant piping design and installation, including pressure vessels and pressure relief devices, shall conform to this code. Permanently installed refrigerant storage systems and other components shall be considered as part of the refrigeration system to which they are attached.

NOTE: Brazing certifications required. A person qualified for inspection of brazing or welding of refrigeration piping shall have a valid certification meeting the requirements in OAR 918-098-0900. A person engaged in the brazing or welding of refrigeration piping shall have a valid certification meeting the requirements in OAR 918-440-0015. For refrigeration piping regulated by the State of Oregon Boiler and Pressure Vessel Program, see requirements listed in OAR 918-225-0310. All three of these administrative rules were effective July 1, 2001.

918-098-0900

Refrigeration Inspector Certification

- (1) All persons engaged in the inspection of brazing or welding related to the installation, alteration or repair of refrigeration piping systems, except as regulated by the Oregon Boiler and Pressure Vessel Program under OAR Chapter 918, Division 225, shall:
 - (a) Possess a current and valid A- or B-level Mechanical Inspector Certification issued under OAR 918-098-0120 or 918-098-0130; and
 - (b) Successfully complete a training program in accordance with either Section IX, "Welding and Brazing Qualification" of the ASME Boiler and Pressure Vessel Code, or AWS B2.2, "Standard for Brazing Procedure and Performance Qualification" issued by a division-approved organization.
- (2) Inspector certification for refrigeration piping in one- and two-family dwellings is not required.

918-440-0015

Refrigeration Installer Certification

All persons engaged in brazing or welding related to the installation, alteration or repair of refrigeration piping systems not regulated by the Oregon Boiler and Pressure Vessel Program under OAR Chapter 918, Division 225, shall be certified in accordance with the requirements of this rule.

- (1) The minimum requirement for persons engaged in brazing or welding of refrigeration piping systems is a current and valid certification issued upon completion of a class by a division-approved certifying organization in brazing or welding in accordance with either:
 - (a) Section IX, Welding and Brazing Qualifications of the ASME Boiler and Pressure Vessel Code; or

(b) **AWS B2.2, Standard for Brazing Procedure and Performance Qualification.**

(2) **Refrigeration systems installed in dwelling units regulated under the One and Two Family Dwelling Specialty Code are exempt from this rule.**

(3) All refrigeration piping system requirements not regulated by OAR 918-225-0310 are subject to the **Oregon Mechanical Specialty Code.**

918-225-0310

Refrigerant Piping Systems; Components

(1) **The requirements of OAR 918-225-0430(5) shall be enforced under this rule for all refrigerant piping systems consisting of welded, brazed or mechanically assembled piping and piping fittings exceeding 2 inches NPS, and containing any refrigerant chemical rated as other than A-1 or B-1 by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE 34) as adopted by the Oregon Mechanical Specialty Code.**

(2) **One- and two-family dwelling units and air conditioning refrigeration systems used solely for human comfort are exempt from this rule.**

(3) **All refrigeration piping system requirements other than those regulated by this rule are subject to the Oregon Mechanical Specialty Code.**

1101.5 Fuel gas connection. Fuel gas devices, equipment and appliances used with refrigeration systems shall be installed in accordance with ~~the~~ *International Fuel Gas Code*. Appendix C.

~~**1101.7 Maintenance.** Mechanical refrigeration systems shall be maintained in proper operating condition, free from accumulations of oil, dirt, waste, excessive corrosion, other debris and leaks.~~

~~**1101.8 Change in refrigerant type.** The type of refrigerant in refrigeration systems having a refrigerant circuit containing more than 220 pounds of Group A1 or 30 pounds of any other group refrigerant shall not be changed without prior notification to the code official and compliance with the applicable code provisions for the new refrigerant type.~~

~~**1101.9 Refrigerant discharge.** Notification of refrigerant discharge shall be provided in accordance with the *International Fire Code*.~~

SECTION 1105 is amended as follows:

1105.1 Access. Access to machinery rooms shall be restricted to authorized personnel. A sign shall be posted on the machinery room door prohibiting access by others.

1105.2 Dimensions. A machinery room shall be dimensioned so as to provide clearances required by Chapter 3. There shall be clear head room of not less than 7¼ feet (2210 mm) below equipment and appliances located over passageways.

1105.3 Doors. Each machinery room shall have self-closing, weather-stripped doors opening in

the direction of egress travel. Doors and door openings shall comply with the requirements of the building code.

1105.4 Openings. Openings to other parts of the building that permit passage of escaping refrigerant to other parts of the building are prohibited. Ducts and air handlers in the machinery room that operate at a lower pressure than the room shall be sealed to prevent any refrigerant leakage from entering the airstream.

Exceptions:

1. Egress doors serving the machinery room.
2. Access doors and panels in air ducts and air-handling units, provided that such openings are gasketed and tight fitting.

1105.5 Refrigerant detector. Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in Table 1103.1. Detectors and alarms shall be placed in approved locations

Exception: Detectors are not required for ammonia system complying with Section 1106.8.

~~1105.1 Design and construction.~~ Machinery rooms shall be designed and constructed in accordance with the *International Building Code* and this section.

~~1105.2 Openings.~~ Ducts and air handlers in the machinery room that operate at a lower pressure than the room shall be sealed to prevent any refrigerant leakage from entering the airstream.

~~1105.3 Refrigerant detector.~~ Refrigerant detectors in machinery rooms shall be provided as required by the *International Fire Code*.

(Re-number remaining sections in 1105.)

SECTION 1106 is amended as follows:

1106.3 Construction requirements. The machinery room shall be separated from other occupied space with smoke-tight, 1-hour fire-resistance-rated construction.

1106.4 Opening protection. Opening protection between the machinery room and other occupied spaces shall be approved, self-closing, tight-fitting fire doors with a minimum fire-resistance rating of ¾ hour.

1106.5 Pipe penetrations. All pipe penetrations of the interior walls, ceiling or floor of machinery rooms shall be sealed vapor tight and protected in accordance with the building code.

1106.6 Exterior openings. Openings in exterior walls of machinery rooms shall not be located under any exit, stairway or exit discharge.

1106.7 Egress. Each machinery room shall be provided with a minimum of one exit door that opens directly to the outside.

Exception: Self-closing, tight-fitting doors opening into a vestibule leading directly outside.

(Re-number remaining sections in 1106.)

1106.5 10 Remote controls. Remote control of the mechanical equipment and appliances located in the machinery room shall be provided at an approved location immediately outside the machinery room and adjacent to its principle entrance. ~~as required by the *International Fire Code*.~~

(Re-number remaining sections in 1106.)

SECTION 1109 is amended as follows:

~~**SECTION 1109 PERIODIC TESTING**~~

~~**1109.1 Testing required.** The following emergency devices and systems shall be periodically tested in accordance with the manufacturer's instructions and as required by the code official:~~

- ~~1. Treatment and flaring systems.~~
- ~~2. Valves and appurtenances necessary to the operation of emergency refrigeration control boxes.~~
- ~~3. Fans and associated equipment intended to operate emergency pure ventilation systems.~~
- ~~4. Detection and alarm systems.~~