**02 DEPARTMENT OF PROFESSIONAL AND FINANCIAL REGULATION**

**41 OFFICE OF PROFESSIONAL AND OCCUPATIONAL REGULATION**

 **BOILER AND PRESSURE VESSEL SAFETY PROGRAM**

**Chapter 75: LOW PRESSURE BOILERS**

**Summary**: This Chapter establishes specific requirements for the identification, construction, installation, inspection, and operation of low pressure boilers.

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**SECTION 1. Exemptions**

1. Hot water heating boilers and hot water supply boilers are exempt from the certificate inspection process set forth in this Chapter, provided the following conditions are met:

1. The boilers are constructed and installed in accordance with Program rules and pass an initial installation inspection; and
2. The heat input to any one object is less than 200,000 Btu/hour.

**SECTION 2. New Installations**

1. **Registration and Certification**

Before any low pressure boiler is operated in the State of Maine, the owner of the low pressure boiler must register the low pressure boiler with the director and must obtain a current, valid inspection certificate for the low pressure boiler.

2. **Installation Inspections**

 Before placing a new low pressure boiler in operation beyond routine testing, the owner must:

A. Notify the director in writing; and

B. Pass an initial inspection of a low pressure boiler is conducted by an Inspector in accordance with the applicable code specified in Chapter 73 of these rules. The initial inspection must consist of an external inspection, and an internal inspection if construction permits. The Inspector must report the results of the inspection to the director on a form approved by the director.

3. **Relocation**

 Before a relocated low pressure boiler is installed, the owner must petition the chief inspector for a variance in accordance with Chapter 71 of these rules for approval of the installation. The chief inspector must perform the initial inspection of a relocated boiler.

**SECTION 3. Existing Low Pressure Boilers**

1. **Rules Applicable to Construction and Installation.** The design, construction, construction-related inspection, installation, and stamping of all existing low pressure boilers must comply with the rules of the Program that were in effect at the time of installation.

 2. **Rules Applicable after Installation.** The maintenance, operation and post-installation inspection of all existing low pressure boilers must comply with the rules of the Program in effect at the time of the maintenance, operation, or post-installation inspection.

**SECTION 4. Registration Numbers**

1. **Display; Not Transferable**. The assigned State of Maine registration number must appear on each low pressure boiler at all times. The registration number assigned to a low pressure boiler may not be transferred to another boiler.

2. **Low Pressure Boiler Numbers**. The Inspector must place the assigned State of Maine registration number, preceded by the letter “H,” on a self-locking tag issued by the director and must affix the tag to a suitable fitting on the low pressure boiler.

**SECTION 5. Periodic Inspections of Low Pressure Boilers**

1. **Inspection Methods and Frequency**. Before the initial inspection certificate expires, and annually thereafter, all low pressure boilers in the State must be inspected as follows:

1. An Inspector must perform one (1) annual certificate inspection, which must be an external inspection conducted while the boiler is in operation; and
2. When construction permits, an Inspector must perform an internal inspection every third year.

2. **Report**. An Inspector must submit to the director a report of each inspection performed pursuant to Section 5, Subsection 1 of this Chapter on a form approved by the director.

**SECTION 6.** **MAWP of Existing Low Pressure Boilers Not Constructed to Code**

1. The MAWP on the shell of a low pressure boiler or drum shall be determined by the strength of the weakest course computed from the thickness of the plate, the tensile strength of the plate, the efficiency of the longitudinal joint, the inside diameter of the course, and the factor of safety allowed by Paragraph A of Section 6, Subsection 1 of this Chapter. The formula for determining MAWP is as follows:

**TStE** = MAWP, PSIG

RFS

**Where**:

TS = Ultimate tensile strength of shell plates, PSI

R = Inside radius of the weakest course of the shell or drum, inches.

t = Minimum thickness of shell plates in weakest course, inches.

E = Efficiency of longitudinal joint, as calculated in the ASME Boiler and Pressure Vessel Code adopted in Chapter 73 of the Program’s rules.

FS = Factor of Safety allowed by Paragraph A.

A. **Factor of Safety**. The factor of safety must be at least five (5).

 B. **Tensile Strength**. When the tensile strength of steel or wrought-iron shell plates is not known, it must be assumed to be 55,000 PSI for steel and 45,000 PSI for wrought iron.

C. **Strength of Rivets**. Calculations concerning riveted joints must be those established by the ASME Boiler and Pressure Vessel Code adopted in Chapter 73 of these rules, or as approved by the director.

**SECTION 7. Pitch Horizontal Firetube Boilers**

 Horizontal firetube boilers must be pitched toward the blow-off outlet not less than one (1) inch for each ten (10) feet of tube length when set.

**SECTION 8. Manual Dampers**

 Fully closable manual dampers are prohibited on automatically fired low pressure boilers. The owner must ensure that any such existing dampers are removed.

AUTHORITY: 32 M.R.S. §§ 15103-A, 15102

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