

SECTION 22 05 19

METERS AND GAGES FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Liquid-in-glass thermometers.
2. Pressure gages.
3. Gage attachments.
4. Test plugs.
5. Test-plug kits.

B. Related Requirements:

1. Section 22 11 19 "Domestic Water Piping Specialties" for water meters.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 LIQUID-IN-GLASS THERMOMETERS

A. Metal-Case, Compact-Style, Liquid-in-Glass Thermometers:

1. Standard: ASME B40.200.
2. Case: Cast aluminum ; 6-inch nominal size.
3. Case Form: Back angle unless otherwise indicated.
4. Tube: Glass with magnifying lens and blue or red organic liquid.
5. Tube Background: Nonreflective aluminum with permanently etched scale markings graduated in deg F .
6. Window: Glass or plastic.
7. Stem: Aluminum or brass and of length to suit installation.
 - a. Design for Thermowell Installation: Bare stem.
8. Connector: 3/4 inch, with ASME B1.1 screw threads.
9. Accuracy: Plus or minus 1 percent of scale range or one scale division, to a maximum of 1.5 percent of scale range.

2.2 PRESSURE GAGES

- A. Direct-Mounted, Metal-Case, Dial-Type Pressure Gages:
1. Standard: ASME B40.100.
 2. Case: Sealed type(s); cast aluminum or drawn steel ; 4-1/2-inch nominal diameter.
 3. Pressure-Element Assembly: Bourdon tube unless otherwise indicated.
 4. Pressure Connection: Brass, with NPS 1/4 or NPS 1/2 , ASME B1.20.1 pipe threads and bottom-outlet type unless back-outlet type is indicated.
 5. Movement: Mechanical, with link to pressure element and connection to pointer.
 6. Dial: Nonreflective aluminum with permanently etched scale markings graduated in psi .
 7. Pointer: Dark-colored metal.
 8. Window: Glass or plastic .
 9. Ring: Metal, Brass, or Stainless steel.
 10. Accuracy: Grade A, plus or minus 1 percent of middle half of scale range.

2.3 GAGE ATTACHMENTS

- A. Snubbers: ASME B40.100, brass; with NPS 1/4 or NPS 1/2 , ASME B1.20.1 pipe threads and piston -type surge-dampening device. Include extension for use on insulated piping.
- B. Valves: Brass ball , with NPS 1/4 or NPS 1/2 , ASME B1.20.1 pipe threads.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install direct-mounted thermometers in thermowells and adjust vertical and tilted positions.
- B. Install direct-mounted pressure gages in piping tees with pressure gage located on pipe at the most readable position.
- C. Install valve and snubber in piping for each pressure gage for fluids.
- D. Install thermometers in the following locations:
1. Inlet and outlet of each water heater.
- E. Install pressure gages in the following locations:
1. Building water service entrance into building.
 2. Inlet and outlet of each pressure-reducing valve.
 3. Suction and discharge of each domestic water pump.

3.2 CONNECTIONS

- A. Install meters and gages adjacent to machines and equipment to allow service and maintenance of meters, gages, machines, and equipment.

3.3 ADJUSTING

- A. Adjust faces of meters and gages to proper angle for best visibility.

END OF SECTION 22 05 19

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