4715.0800 MECHANICAL JOINTS.

Subpart 1. **Mechanical joints for cast iron and steel water pipe.** Mechanical joints in cast iron and steel water pipe must be made by means of a flanged collar and rubber ring gasket, secured by the use of an adequate number of steel bolts. The rubber sealing ring must conform to ANSI-A21.11 (AWWA-C11).

Subp. 2. **Mechanical joints in cast iron bell and spigot soil pipe.** Mechanical joints in cast iron soil pipe shall be made by means of a preformed molded rubber ring, secured by pulling the pipe and fittings together in such a way as to compress the molded rubber ring in a manner that will assure a gas and water tight joint. The rubber sealing ring shall conform to ASTM C 564 requirements.

Subp. 3. [Repealed by amendment, 9 SR 1557]

Subp. 4. **Mechanical joints in hubless cast iron soil pipe.** Mechanical joints for hubless cast iron soil pipe and fittings shall be made by using a neoprene sleeve and stainless steel retaining band as specified in CISPI standard 310, ASTM C 1277-06, or ASTM C 1540-04 and in accordance with the manufacturer's installation instructions, by using a transition fitting made of elastomeric material (ASTM C 425 and ASTM C 564) and 300 series stainless steel bands and bolts, or by using a two-part coupling whose housing is fabricated of grey-cast iron (ASTM A 48), with a coupling gasket made of neoprene rubber (ASTM C 564 or CSA/CAN 3-B70), and coupling bolts and nuts made of 18-8 stainless steel.

Subp. 5. **Mechanical pipe couplings and fittings.** Couplings must be made with the housing fabricated in two or more parts of ductile or malleable iron castings in accordance with Federal Specification QQ-I-666c, Grand 11, or with ASTM A47 or ASTM A339. The coupling gasket must be molded synthetic rubber, per ASTM D-735-61, Grade No. R615BZ. Coupling bolts must be oval neck track head type with hexagonal heavy nuts, per ASTM-A-183-60, or ASTM A325.

Pipe fittings used with these pipe couplings must be fabricated or malleable iron castings in accordance with Federal Specifications QQ-I-666c, Grade 11, or with ASTM A47; ductile iron ASTM A339; segweld steel ASTM53 or A106; or IAPMO-approved copper fittings with rolled grooves intended to be used together with copper tubing with cold rolled grooved ends.

These couplings and fittings may be used above ground, for storm drains and leaders, and for water distribution pipe provided exposed parts in contact with water are galvanized, and may be used below ground for water distribution if couplings and fittings are galvanized and the exposed grooves are coal tar enamel coated and wrapped.

Saddle-type fittings secured by steel electroplated U-bolts may be used for aboveground water distribution, if the fittings are galvanized, include a collar fitting into the pipe opening with a gasket, and have IAPMO approval.

All grooving of galvanized pipe must be by the cut groove method.

Subp. 6. **Extracted mechanical joint.** An extracted mechanical joint in copper water distribution pipe must be made by drilling through copper pipe and on retraction must extract a cup shaped extruded collar. The height of the collar must be at least three times the thickness of the copper tube wall and the radius of the extruded collar must be the same thickness as the copper tube wall from which it is being extruded. The joining branch tube must be contour-notched and a retaining dimple must be made before insertion into the extracted collar or another acceptable method must be used to provide proper insertion depth. The joint must be brazed with a brazing material meeting the requirements of part 4715.0820. The joint may be used above ground only.

Subp. 6a. **Field formed coupling for copper tubing.** A field formed coupling in copper water distribution pipe must be made by first annealing the area of the tubing where expansion is desired, and then using a hand tube expander to expand the tube end to accept tubing of the same type and size. Joint clearances must be from .001 to .005 inches, and suitable for the brazing filler metal used. The depth of the expanded area must be as recommended by the tube expander manufacturer, but in all cases must be at least four times the wall thickness of the tubing. All joints must be brazed in accordance with the requirements of part 4715.0820. The couplings must be used above ground only.

Subp. 7. **Mechanical tee coupling for steel pipe.** Couplings utilizing an explosive charge and an internal cutting mechanism may be used to join galvanized steel pipe only. All portions of the coupling exposed to water must be of galvanized steel construction acceptable for contact with potable water. The coupling must only be used above ground and only in areas that are accessible. The coupling must be attached to the steel pipe by use of four allen screws which must be torqued in accordance with the coupling manufacturer's recommendation.

Statutory Authority: *MS s 16B.61; 16B.62; 326.37 to 326.45; 326B.106; 326B.121; 326B.43 to 326B.49*

History: *9 SR 1557; 15 SR 76; 19 SR 590; L 2007 c 140 art 4 s 61; art 6 s 15; art 13 s 4; 33 SR 2042*

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