


### MATERIAL SPECIFICATIONS

- A.1.1. Cast iron pipe shall conform to the requirements of AWWA C106 (Cast Iron Pipe Centrifugally Cast in Metal Molds for Water or other Liquids) or AWWA C108 (Cast Iron Pipe Centrifugally Cast in Sand-Lined Molds for Water or other Liquids) and shall be Class 100 or Class 150 where shown in the Drawing; or ISO Recommendation R-13 (Cast Iron Pipes, Special Castings and Cast Iron Parts for Pressure Main Lines) and shall be Class LA, however, the hydrostatic test pressure shall be 2.45MPa (355 psi) for all sizes.
- A.1.2. Pipe shall be furnished with bell and spigot ends with rubber "push-on" joints, flange joints, or flexible coupling.
- A.1.3. The pipe shall be lined with cement mortar in accordance with the requirements of AWWA C104 (American Standard for Cement-Mortar Lining for Cast-Iron Pipe and Ductile-Iron Pipe and Fittings for Water)
- A.1.4. Cast iron fitting shall conform to the requirements of AWWA C110 (American Standard for Cast Iron and Ductile Iron Fittings, 2-in through 48-in., for Water and Other Liquids) or ISO R13 (Cast Iron Pipes, Special Casting and Cast Iron Parts for Pressure Mainlines).
- A.1.5. Fittings are manufactured of ductile iron grade 70-50-05 (minimum tensile strength: 70,000psi; minimum yield strength: 50,000; minimum elongation: 5%) as specified in AWWA C110 or C153.
- A.1.6. Fittings shall be furnished with mechanical or flanged joints.
- A.1.6.1 Mechanical Joints: All mechanical joint fittings will be Bell and Bell unless otherwise specified. Mechanical joint fittings shall be rated for 350 psi working pressure for sizes 4-in – 24-in.
- A.1.6.2 Flanges: All flanges are plain without projections and are furnished smooth or with shallow serrations. The flanges shall conform to ISO 7005 – 2. Flanged fittings shall be rated for 250 psi working pressure for sizes 4-in – 64-in.
- A.1.6.3 Bolts, Studs and Nuts: Bolts are hex head machine bolts with regular or heavy hex nuts as specified. Studs with one hex nut each are required for tapped flanges. Bolts, studs and nuts are low-carbon steel per ASTM A307 Grade B; threads are ANSI B1.1 Coarse Thread Series, Class 2A external and Class 2B internal. Recommended studs are the same length as corresponding bolt length with "tap end" threaded approximately the same length as flange thickness.
- A.1.7. All fittings shall be epoxy coated internally and externally in accordance to AWWA C116 (Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service).

*This is an excerpt from the original CWD Standard Technical Specifications.*


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