



DENVER

THE MILE HIGH CITY

CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS | ENGINEERING DIVISION

Storm Drainage and Sanitary Sewer Construction Detail and Technical Specifications

10.5 Ductile Iron Pipe

10.5.1 General

This section covers material requirements, fittings, field joints and protective coatings for ductile iron pipe.

10.5.2 Referenced Standards

This section references American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), and American Water Works Association (AWWA), which are made a part hereof by such references, and shall be the latest edition and revision thereof. All material, manufacturing, operations, testing, inspection and production of ductile iron pipe shall conform to the following standards;

ASTM A746	Standard Specification for Ductile Iron Gravity Sewer Pipe
AWWA C110/ANSI A21.10	Standard for Ductile-Iron and Gray Iron Fittings, 3 in. – 48 in
AWWA C111/ANSI A21.11	Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
AWWA C151/ASA A21.51	Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water
AWWA C153/ANSI A21.53	Standard for Ductile-Iron Compact Fittings

10.5.3 Pipe Diameter

The diameter indicated on the drawings shall represent the nominal diameter of the pipe. The inside diameter of the pipe after protective lining has been applied shall not be less than that required for cast iron pipe.

10.5.4 Wall Thickness

The minimum wall thickness and /or pressure class of each section of the pipeline shall conform to that indicated on the Contract Documents, and shall be subject to the approval of the Project Construction Engineer.

10.5.5 Grade of Iron

The grade of iron shall be 60-42-10 having a minimum tensile strength of 60,000 psi, a minimum yield strength of 42,000 psi, and a minimum percent of elongation of 10 percent.

10.5.6 Fittings and Specials

Fittings and specials shall be ductile iron at least Class 54 thickness and shall be in accordance to the requirements of either AWWA C153/ANSI A21.53 or AWWA C110/ANSI A21.10. Fittings shall be lined as specified in Section 10.5.7a and coated as specified in Section 10.5.7b below.

10.5.7 Field Joints

Mechanical joints shall conform to AWWA C111/ANSI A21.11.

10.5.8 Protective Coatings

Unless otherwise specified. The interior and exterior surfaces shall conform to the following.

1. Interior surfaces shall be lined with calcium aluminate mortar made of fused calcium aluminate cement and fused calcium aluminate aggregates. The thickness of the lining shall be a minimum of 0.125" for 6" through 12" and 0.1875" for 14" through 24" diameter pipe.
2. The lining shall be Sewpercoat as manufactured by Lafarge Calcium Alumnates or approved equal.
3. Exterior coating shall be a minimum of 1 mil bituminous paint according to AWWA C151/ASA A21.51 - Section 51-8.1.