
Standard Specification for

**Reinforced Concrete Culvert,
Storm Drain, and Sewer Pipe**

AASHTO Designation: M 170-20

Technical Subcommittee: 4a, Concrete Drainage Structures

Release: Group 2 (June)

ASTM Designation: C76-16



**American Association of State Highway and Transportation Officials
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1. SCOPE

1.1. This specification covers reinforced concrete pipe intended to be used for the conveyance of sewage, industrial wastes, and storm water, and for the construction of culverts.

1.2. A complete metric companion to M 170 has been developed—M 170M; therefore, no metric equivalents are presented in this specification.

Note 1—This specification is a manufacturing and purchase specification only, and does not include requirements for bedding, backfill, or the relationship between field load condition and the strength classification of pipe. However, experience has shown that the successful performance of this product depends on the proper selection of the class of pipe, type of bedding and backfill, and care that installation conforms to the construction specifications. Owners of the reinforced concrete pipe specified herein are cautioned that they must correlate the field requirements with the class of pipe specified and provide inspection at the construction site.

Note 2—Attention is called to the specification for reinforced concrete D-load culvert, storm drain, and sewer pipe (M 242M/M 242).

2. REFERENCED DOCUMENTS

2.1. *AASHTO Standards:*

- M 6, Fine Aggregate for Hydraulic Cement Concrete
- M 31M/M 31, Deformed and Plain Carbon and Low-Alloy Steel Bars for Concrete Reinforcement
- M 80, Coarse Aggregate for Hydraulic Cement Concrete
- M 85, Portland Cement
- M 86M/M 86, Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
- M 154M/M 154, Air-Entraining Admixtures for Concrete
- M 157, Ready-Mixed Concrete
- M 170M, Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe [Metric]
- M 194M/M 194, Chemical Admixtures for Concrete
- M 240M/M 240, Blended Hydraulic Cement
- M 242M/M 242, Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe
- M 262, Concrete Pipe and Related Products

- M 295, Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
- M 302, Slag Cement for Use in Concrete and Mortars
- M 336M/M 336, Steel Wire and Welded Wire, Plain and Deformed, for Concrete Reinforcement
- T 280, Concrete Pipe, Manhole Sections, or Tile

2.2.

ASTM Standards:

- A36/A36M, Standard Specification for Carbon Structural Steel
- A706/A706M, Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
- C309, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- C1017/C1017M, Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
- C1116/C1116M, Standard Specification for Fiber-Reinforced Concrete

3. TERMINOLOGY

- 3.1. *Definitions*—For definitions of terms relating to concrete pipe, see M 262.

4. CLASSIFICATION

- 4.1. Pipe manufactured in accordance with this specification shall be of five classes identified as Class I, Class II, Class III, Class IV, and Class V. The corresponding strength requirements are prescribed in Tables 1 to 5.