## **Standard Specification for**

# Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe

AASHTO Designation: M 206M/M 206-20<sup>1</sup> Technical Subcommittee: 4a, Concrete Drainage Structures Release: Group 2 (June) ASTM Designation: C506M-16b and C506-16b



American Association of State Highway and Transportation Officials 555 12<sup>th</sup> Street NW, Suite 1000 Washington, D.C. 20004

This is a preview. Click here to purchase the full publication.

**Standard Specification for** 

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

AASHTO Designation: M 206M/M 206-201



Technical Subcommittee: 4a, Concrete Drainage Structures

Release: Group 2 (June)

ASTM Designation C506M-16b and C506-16b

## 1. SCOPE

- 1.1. This specification covers reinforced arch-shaped concrete pipe to be used for the conveyance of sewage, industrial wastes, storm water, and for the construction of culverts.
- 1.2. This specification is applicable for orders in either SI units (M 206M) or in inch-pound units (M 206). SI units and inch-pound units are not necessarily equivalent. Inch-pound units are shown in brackets in the text for clarity, but they are the applicable values when the material is ordered to M 206.

**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 the 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.

### 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 154M/M 154, Air-Entraining Admixtures for Concrete
- M 157, Ready-Mixed Concrete
- M 194M/M 194, Chemical Admixtures for Concrete
- M 240M/M 240, Blended Hydraulic Cement
- 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

This is a preview. Click here to purchase the full publication.

- 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 according to this specification shall be of three classes identified as Class A-II, A-III, and A-IV. The strength requirements are prescribed in Table 1 for SI units or Table 2 for inch-pound units.

#### 5. BASIS OF ACCEPTANCE

- 5.1. Unless otherwise designated by the owner at the time of or before placing an order, there are two separate and alternative bases of acceptance. Independent of the method of acceptance, the pipe shall be designed to meet both the 0.3-mm [0.01-in.] crack and ultimate strength requirements.
- 5.1.1. Acceptance on Basis of Plant Load Bearing Tests, Material Tests, and Inspection of Manufactured Pipe for Visual Defects and Imperfections—Acceptability of the pipe in all diameters and classes produced in accordance with Section 7.1 or Section 7.2 shall be determined by the results of the three-edge-bearing tests as defined in Section 11.3.1; by such material tests as are required in accordance with Sections 6.2, 6.3, 6.5, and 6.6; by an absorption test of the concrete from the wall of the pipe as required in 11.9; and by visual inspection of the finished pipe to determine its conformance with the accepted design and its freedom from defects.
- 5.1.2. *Acceptance on Basis of Material Tests and Inspection of the Complete Product*—Acceptability of the pipe in all diameters and classes produced in accordance with Section 7.1 or 7.2 shall be determined by the results of such material tests as are required in Sections 6.2, 6.3, 6.5, and 6.6; by crushing tests on concrete cores or cured concrete cylinders; by an absorption test of the concrete from the wall of the pipe for each mix design that is used on an order; and by inspection of the finished pipe, including amount and placement of reinforcement, to determine its conformance with the accepted design and its freedom from defects.
- 5.1.3. When agreed upon by the owner and the manufacturer, any portion or any combination of tests itemized in Section 5.1.1 or Section 5.1.2 may form the basis of acceptance.
- 5.2. *Age for Acceptance*—Pipes shall be considered ready for acceptance when they conform to the requirements as indicated by the specified tests.

TS-4a	M 206M/M 206-2	AASHTO
	This is a preview. Click here to purchase the full publication.	