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# **Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe**

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**AASHTO Designation: M 207M/M 207-20<sup>1</sup>**

**Technical Subcommittee: 4a, Concrete Drainage Structures**

**Release: Group 2 (June)**

**ASTM Designation: [C507M-16](#) and [C507-16](#)**



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## 1. SCOPE

- 1.1. This specification covers reinforced elliptically shaped concrete pipe to be used for the conveyance of sewage, industrial wastes, and storm water, and for the construction of culverts.
- 1.2. Pipe designed for placement with the major axis horizontal shall be designated as “horizontal elliptical pipe.” Pipe designed for placement with the major axis vertical shall be designated as “vertical elliptical pipe.”
- 1.3. This specification is applicable for orders in either SI units (M 207M) or in inch-pound units (M 207). 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 207.
- 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.

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## 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
- [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

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### 3. TERMINOLOGY

- 3.1. *Definitions*—For definitions of terms relating to concrete pipe, see [M 262](#).

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### 4. CLASSIFICATION

- 4.1. Pipe manufactured according to this specification shall be of five classes each for horizontal elliptical and vertical elliptical pipe with identification as follows:

Horizontal Elliptical Pipe	Vertical Elliptical Pipe
Class HE-A	Class VE-II
Class HE-I	Class VE-III
Class HE-II	Class VE-IV
Class HE-III	Class VE-V
Class HE-IV	Class VE-VI

- 4.2. The strength requirements for horizontal elliptical pipe are prescribed in Table 1 when using SI units and Table 2 when using inch-pound units; strength requirements for vertical elliptical pipe are prescribed in Table 3 when using SI units and Table 4 when using inch-pound units.