
Standard Specification for Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers

AASHTO Designation: M 259-20¹

Technical Subcommittee: 4a, Concrete Drainage Structures

Release: Group 2 (June)

ASTM Designation: [C789-95a](#)



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1. SCOPE

- 1.1. This specification covers single-cell precast reinforced concrete box sections intended to be used for the construction of culverts and for the conveyance of storm water, industrial wastes, and sewage.
- 1.2. A complete metric companion to M 259 has been developed—[M 259M](#); therefore, no metric equivalents are presented in this specification.
- Note 1**—This specification is primarily a manufacturing and purchasing specification. However, standard designs are included and the criteria used to develop these designs are given in the Appendixes. The successful performance of this product depends on the proper selection of the box section, bedding, and backfill, and care that the installation conforms to the construction specifications. The owner of the precast reinforced concrete box sections specified herein is cautioned that the loading conditions and the field requirements must properly correlate with the box section specified and that inspection at the construction site must be provided.
- Note 2**—[M 273](#) is to be used for box sections with less than 2 ft of cover subjected to highway loading.
- Note 3**—If load-and-resistance factor design (LRFD) is required, then use [ASTM C1577](#).

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
- [M 6](#), Fine Aggregate for Hydraulic Cement Concrete
 - [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 240M/M 240](#), Blended Hydraulic Cement
 - [M 262](#), Concrete Pipe and Related Products
 - [M 273](#), Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers with Less Than 2 ft of Cover Subjected to Highway Loadings
 - [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
- *Standard Specifications for Highway Bridges*

2.2. *ASTM Standards:*

- [C309](#), Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- [C1116/C1116M](#), Standard Specification for Fiber-Reinforced Concrete
- [C1577](#), Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers Designed According to AASHTO LRFD

2.3. *ACI Code:*

- ACI 318-71, Building Code

3. TERMINOLOGY

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

4. TYPES

- 4.1. Precast reinforced concrete box sections manufactured in accordance with this specification shall be of three types identified in Tables 1, 2, and 3, and shall be designated by type, span, rise, and design earth cover.