



Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers¹

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1. Scope

1.1 This specification covers single-cell precast reinforced concrete box sections cast monolithically and intended to be used for the construction of culverts and for the conveyance of storm water industrial wastes and sewage.

1.2 This specification is the companion to SI Specification C1433M; therefore, no SI equivalents are shown 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 [Appendix X1](#). The successful performance of this product depends upon the proper selection of the box section, bedding, backfill, and care that the installation conforms to the construction specifications. The purchaser of the precast reinforced concrete box sections specified herein is cautioned that proper correlation of the loading conditions and the field requirements with the box section specified, and provision for inspection at the construction site, are required.

2. Referenced Documents

2.1 ASTM Standards:²

- [A615/A615M](#) Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- [A1064/A1064M](#) Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
- [A706/A706M](#) Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
- [C31/C31M](#) Practice for Making and Curing Concrete Test Specimens in the Field
- [C33/C33M](#) Specification for Concrete Aggregates
- [C39/C39M](#) Test Method for Compressive Strength of Cylindrical Concrete Specimens
- [C150/C150M](#) Specification for Portland Cement

¹ This specification is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.07 on Acceptance Specifications and Precast Concrete Box Sections.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

- [C260/C260M](#) Specification for Air-Entraining Admixtures for Concrete
 - [C309](#) Specification for Liquid Membrane-Forming Compounds for Curing Concrete
 - [C494/C494M](#) Specification for Chemical Admixtures for Concrete
 - [C497](#) Test Methods for Concrete Pipe, Manhole Sections, or Tile
 - [C595/C595M](#) Specification for Blended Hydraulic Cements
 - [C618](#) Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
 - [C822](#) Terminology Relating to Concrete Pipe and Related Products
 - [C990](#) Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
 - [C989/C989M](#) Specification for Slag Cement for Use in Concrete and Mortars
 - [C1017/C1017M](#) Specification for Chemical Admixtures for Use in Producing Flowing Concrete
 - [C1116/C1116M](#) Specification for Fiber-Reinforced Concrete
 - [C1602/C1602M](#) Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
 - [C1619](#) Specification for Elastomeric Seals for Joining Concrete Structures
 - [C1675](#) Practice for Installation of Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
 - [C1677](#) Specification for Joints for Concrete Box, Using Rubber Gaskets
- 2.2 *AASHTO Standard*:³
[Standard Specifications for Highway Bridges](#)

3. Terminology

3.1 *Definitions*—For definitions of terms relating to concrete pipe, see Terminology [C822](#).

4. Types

4.1 Precast reinforced concrete box sections manufactured in accordance with this specification shall be one of two types

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001.