



Standard Specification for Circular Precast Reinforced Concrete Manhole Sections¹

This standard is issued under the fixed designation C478; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

PART I—GENERAL

1. Scope

1.1 This specification covers the manufacture and purchase requirements of products used for the assembly and construction of circular vertical precast reinforced concrete manholes and structures used in sewer, drainage, and water works.

1.2 Part I, Sections 1 – 11, of this specification presents general requirements and requirements that are common to each precast concrete product covered by this specification.

1.3 Part II of this specification presents specific requirements for each manhole product in the following sections:

Product	Section
Grade Rings	12
Flat Slab Tops	13
Risers and Conical Tops	14
Base Sections	15
Steps and Ladders	16

NOTE 1—Future products will be included in Part II in a future revision of this specification.

1.4 This specification is the inch-pound companion to Specification C478M; therefore, no SI equivalents are presented in the specification.

NOTE 2—This specification is a manufacturing and purchase specification only and does not include requirements for backfill, or the relationship between field load conditions and the strength requirements of the manhole products and appurtenances. Experience has shown, however, that the successful performance of this product depends upon the proper selection of the product strength, type of foundation and backfill, and care in the field installation of the manhole products and connecting pipes. The owner of the project for which these products are specified herein is cautioned to require inspection at the construction site.

2. Referenced Documents

2.1 ASTM Standards:²

- A615/A615M Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- A706/A706M Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
- A1064/A1064M Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
- C33/C33M Specification for Concrete Aggregates
- C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens
- C150/C150M Specification for Portland Cement
- 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
- 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

2.2 ACI Standard:³

- 318 Building Code, Requirements for Reinforced Concrete

¹ This specification is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.06 on Manholes and Specials.

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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.

³ Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.aci-int.org>.