



Designation: C 858 – 07

# Standard Specification for Underground Precast Concrete Utility Structures<sup>1</sup>

This standard is issued under the fixed designation C 858; 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.

## 1. Scope

1.1 This specification covers the recommended design criteria and manufacturing practices for monolithic or sectional precast concrete utility structures. Concrete pipe and box culverts are not covered under this specification. Also, precast concrete manholes covered in Specification C 478 are excluded from this specification.

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

- A 82/A 82M Specification for Steel Wire, Plain, for Concrete Reinforcement
- A 184/A 184M Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
- A 185/A 185M Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
- A 496/A 496M Specification for Steel Wire, Deformed, for Concrete Reinforcement
- A 497/A 497M Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete
- A 615/A 615M Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- A 706/A 706M Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
- A 996/A 996M Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
- C 31/C 31M Practice for Making and Curing Concrete Test Specimens in the Field
- C 33 Specification for Concrete Aggregates
- C 39/C 39M Test Method for Compressive Strength of Cylindrical Concrete Specimens
- C 42/C 42M Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- C 94/C 94M Specification for Ready-Mixed Concrete
- C 150 Specification for Portland Cement

- C 192/C 192M Practice for Making and Curing Concrete Test Specimens in the Laboratory
- C 231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
- C 260 Specification for Air-Entraining Admixtures for Concrete
- C 330 Specification for Lightweight Aggregates for Structural Concrete
- C 478 Specification for Precast Reinforced Concrete Manhole Sections
- C 494/C 494M Specification for Chemical Admixtures for Concrete
- C 595 Specification for Blended Hydraulic Cements
- C 618 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
- C 857 Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
- 2.2 American Concrete Institute Standard:
  - ACI 318 Building Code Requirements for Reinforced Concrete<sup>3</sup>
- 2.3 American Welding Society Standard:
  - AWS-D1.4 Structural Welding Code Reinforcing Steel<sup>4</sup>

## 3. Terminology

### 3.1 Definition of Term Specific to this Standard:

- 3.1.1 *utility structure*—a structure that is used by electric, gas, communication, or similar industries.

## 4. Ordering Information

4.1 Unless otherwise stipulated by the purchaser in his order, a structure produced in accordance with this specification and constructed in accordance with the design drawings approved by the purchaser shall be acceptable.

## 5. Materials

5.1 *Cement*—Portland cement shall conform to the requirements of Specification C 150 or shall be portland blast-furnace slag cement or portland pozzolan cement conforming to the requirements of Specification C 595.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C27 on Precast Concrete Products and is the direct responsibility of Subcommittee C27.10 on Utility Structures.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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

<sup>4</sup> Available from American Welding Society (AWS), 550 NW LeJeune Rd., Miami, FL 33126, <http://www.aws.org>.