



Designation: C 858 – 83 (Reapproved 1997)

## 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 approval. A superscript epsilon ( $\epsilon$ ) 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:

- A 82 Specification for Steel Wire, Plain, for Concrete Reinforcement<sup>2</sup>
- A 184/A184M Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement<sup>2</sup>
- A 185 Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement<sup>2</sup>
- A 496 Specification for Steel Wire, Deformed, for Concrete Reinforcement<sup>2</sup>
- A 497 Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement<sup>2</sup>
- A 615/A615M Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement<sup>2</sup>
- A 616/A616M Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement<sup>2</sup>
- A 617/A617M Specification for Axle-Steel Deformed and Plain Bars for Concrete Reinforcement<sup>2</sup>
- A 706/A706M Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement<sup>2</sup>
- C 31 Practice for Making and Curing Concrete Test Specimens in the Field<sup>3</sup>
- C 33 Specification for Concrete Aggregates<sup>3</sup>
- C 39 Test Method for Compressive Strength of Cylindrical Concrete Specimens<sup>3</sup>
- C 42 Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete<sup>3</sup>

- C 94 Specification for Ready-Mixed Concrete<sup>3</sup>
  - C 150 Specification for Portland Cement<sup>4</sup>
  - C 192 Practice for Making and Curing Concrete Test Specimens in the Laboratory<sup>3</sup>
  - C 231 Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method<sup>3</sup>
  - C 260 Specification for Air-Entraining Admixtures for Concrete<sup>3</sup>
  - C 330 Specification for Lightweight Aggregates for Structural Concrete<sup>3</sup>
  - C 478 Specification for Precast Reinforced Concrete Manhole Sections<sup>5</sup>
  - C 494 Specification for Chemical Admixtures for Concrete<sup>3</sup>
  - C 595M Specification for Blended Hydraulic Cements<sup>4</sup>
  - C 618 Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete<sup>3</sup>
  - C 857 Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures<sup>5</sup>
- #### 2.2 American Concrete Institute Standard:
- ACI 318 Building Code Requirements for Reinforced Concrete<sup>6</sup>
- #### 2.3 American Welding Society Standard:
- AWS-D1.4 Structural Welding Code Reinforcing Steel<sup>7</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.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C-27 on Precast Concrete Products, and is the direct responsibility of Subcommittee C27.10 on Utility Structures.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 01.04.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 04.02.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 04.01.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 04.05.

<sup>6</sup> Available from the American Concrete Institute, P.O. Box 19150, Detroit, Mich., 48219.

<sup>7</sup> Available from the American Welding Society (AWS), P.O. Box 351040, 550 LeJune Rd., N. W., Miami, FL 33135.