



Designation: C 444M – 03

## Standard Specification for Perforated Concrete Pipe (Metric)<sup>1</sup>

This standard is issued under the fixed designation C 444M; 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 Department of Defense.*

### 1. Scope

1.1 This specification covers perforated concrete pipe intended to be used for underdrainage.

1.2 This specification is the metric counterpart of Specification C 444.

### 2. Referenced Documents

2.1 *ASTM Standards:*

**C 822** Terminology Relating to Concrete Pipe and Related Products<sup>2</sup>

### 3. Terminology

3.1 *Definitions*—For definitions of terms relating to concrete pipe, see Terminology **C 822**.

### 4. Classification

4.1 Pipe manufactured to this specification shall be of two classes, Type 1 and Type 2, describing two arrangements of perforations for pipe manufactured to the standard specifications for plain or reinforced concrete pipe, and their classifications.

4.1.1 Type 1 perforated pipe shall have circular perforations conforming to 6.1 and Table 1.

4.1.2 Type 2 perforated pipe shall have slotted perforations conforming to 6.2 and Table 2.

4.1.3 It is intended that perforated pipe shall be specified by reference to this specification and the specification for the type and class of pipe desired.

NOTE 1—Example: “Perforated concrete pipe shall conform to the requirements of Specification C 444M Type 2, and all applicable requirements of Specification C 14M, Class 2.”

### 5. Basis of Acceptance

5.1 The acceptability of the pipe shall be determined by the results of all applicable tests (Note 2) prescribed for the type and class of pipe specified, and by inspection to determine

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C13 on Concrete Pipe and is the direct responsibility of Subcommittee C13.01 on Nonreinforced Concrete Sewer, Drain, and Irrigation Pipe.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.05.

**TABLE 1 Number of Rows of Perforations Required**

Internal Designated Diameter, mm	Rows of Perforations
100	4
150	4
200	4
250	6
300	6
350	6
375	6
400	6
450	8
500	8
525	8
600	8
675 and larger	space rows approximately 150 mm

whether the pipe conforms to this specification as to design and freedom from defects.

NOTE 2—It is intended that all tests will be applicable except those having to do with permeability and the hydrostatic test.

### 6. Perforations

6.1 *Type 1*—Perforations shall be circular, not more than 8 mm or less than 5 mm in diameter, and arranged in rows parallel to the axis of the pipe. Perforations shall be 75 mm center-to-center, along rows. The spigot or tongue end shall not be perforated for a length equal to the depth of the socket, or depth of the groove plus 19 mm and perforations shall continue

**TABLE 2 Requirements for Length and Spacing of Slots**

Internal Designated Diameter, mm	Slot Length, mm	Slot Spacing, <sup>A</sup> mm
100	25	75
150	38	75
200	50	100
250	50	100
300	75	150
350	75	150
375	75	150
400	75	150
450	75	150
500	75	150
525	75	150
600	75	150
675 and larger	100	150

<sup>A</sup>See 6.2 for exceptions for plain-end pipe.