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Standard Specification for Perforated, Laminated-Wall Bituminized Fiber Pipe for Septic Tank Disposal Fields¹

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1. Scope

1.1 This specification covers laminated-wall bituminized fiber perforated pipe for use as septic tank effluent disposal lines with exfiltration.

1.2 The values stated in SI units are to be regarded as the standard.

2. Referenced Document

2.1 ASTM Standard:

D 2315 Methods of Testing Laminated-Wall Bituminized Fiber Pipe²

3. Materials and Manufacture

3.1 *Pipe and Couplings*—Pipe and couplings shall be composed of a multi-ply laminated convolute or spiral fibrous structure, with the laminations being adhered with a heat- and water-resistant adhesive and then thoroughly impregnated with a bituminous compound. The pipe shall have a smooth interior surface free of obstructions and rough or flaky areas. Fittings shall be of the same material as the pipe, or of a material having equal or better physical and chemical properties.

3.2 *Joint Systems*—Pipe and fittings shall use either of the following joint systems:

3.2.1 *Type TJ Joints*—Pipe and fittings shall be provided with accurately machined or molded tapered joints, and a taper-sleeve coupling shall be provided for each length of pipe and for each fitting where applicable. The slope of the taper in both pipe and coupling shall be 2° (4° including angle) (see Fig. 1).

3.2.2 *Type BJ Joints*—Pipe and fittings shall have squarely cut ends, and a split-collar coupling shall be provided for each length of pipe and for each fitting where applicable (see Fig. 2).

4. Physical and Chemical Requirements

4.1 *Resistance to Flattening*—The decrease in diameter shall not exceed 3%, when loaded with 1460 N/m (100 lbf/ft).

4.2 *Crushing Strengths*—The pipe shall have a minimum three-edge-bearing crushing strength of 13.1 kN/m (900 lbf/ft) (wet and dry).

4.3 *Water Absorption*—The maximum water absorption shall be 2% of the original weight.

4.4 *Boiling Water Resistance*—Specimens shall exhibit not less than 90% of the dry crushing strength.

4.5 *Heat Resistance*—The heat shall not cause a weight loss over 1% in the specimen due to exudation of the impregnant.

4.6 *Chemical Resistance*—Specimens shall show no visible sign of chemical reaction or deterioration of the impregnant.

4.7 *Kerosine Resistance*—Specimens shall meet the crushing strength requirements.

5. Dimensions

5.1 *Type TJ Pipe and Couplings*—The dimensions of pipe and couplings shall be as specified in Fig. 1 and Table 1.

5.2 *Type TJ Pipe and Collars*—The inside diameter and wall thickness of Type BJ pipe shall be identical to Type TJ pipe (see Fig. 1 and Table 1), but the pipe shall be finished with square-cut butt ends. A split-collar shall be provided for each pipe length (see Fig. 2).

5.3 *Bore*—The bore shall be straight and circular in cross section as determined by passing a 1-m (40-in.) long mandrel, 6.4 mm (1/4 in.) smaller in diameter than the nominal diameter of the pipe, freely through the bore of the pipe.

5.4 *Length*—Lengths other than standard shall be increments of 152 mm (6 in.) from standard, and unless otherwise specified, up to 20% of short lengths may be supplied in a shipment. No lengths shorter than 1.2 m (4 ft) shall be furnished, with no more than two different short lengths in any one shipment.

5.5 *Perforations*—The pipe shall have perforations circular in shape. They shall be 15.9 ± 1.6 mm ($5/8 \pm 1/16$ in.) in diameter, and shall be arranged in two rows parallel to the axis of the pipe. The perforations shall be spaced approximately 76 mm (3 in.) center to center along the rows. The rows shall be separated by an arc of 110 to 120°.

6. Sampling

6.1 Select, at random, the specimens to be tested from stock of the manufacturer or from shipment. Undamaged specimens only shall be used.

6.2 From each lot to be tested, select a number of lengths equivalent to one half the cube root of the total number of lengths included in the lot, except that in lots of 1000 lengths or less, five lengths shall be taken. If one half the cube root, as calculated, proves to be a fractional number, express it as the next higher whole number.

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² Annual Book of ASTM Standards, Vol 04.04.