



Standard Specification for Homogeneous Bituminized Fiber Drain and Sewer Pipe¹

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This specification has been approved for use by agencies of the Department of Defense to replace Federal Specification SS-P-1540B, Type I and for listing in the DoD Index of Specifications and Standards.

1. Scope

1.1 This specification covers homogeneous bituminized fiber drain and sewer pipe and fittings for use in nonpressure conductor and drain systems.

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

2. Referenced Document

2.1 *ASTM Standard:*

D 2314 Methods of Testing Homogeneous Bituminized Fiber Pipe²

3. Materials and Manufacture

3.1 Pipe and couplings shall be composed of an interwoven fibrous structure thoroughly impregnated with a bituminous compound. The wall of the pipe shall be dense and homogeneous, without seams or laminations, and with a smooth interior surface free from obstructions and rough or flaky areas. Bends and fittings shall be of the same material as the pipe, or of a material having equal or better physical and chemical characteristics.

3.2 Pipe and bends 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 bend. The slope of the taper in both pipe and coupling shall be 2° (4° included angle) (see Fig. 1).

3.3 All joints for a given size shall be interchangeable and shall be watertight when properly assembled.

4. Chemical and Physical Requirements

4.1 *Chemical Resistance*—The specimen shall show no evidence of chemical reaction or deterioration of impregnant.

4.2 *Water Absorption*—The maximum water absorption shall be 2 % of the original weight, calculated to the nearest 0.1 %.

4.3 *Boiling Water Resistance*—There shall be no evidence of disintegration or separation into laminations after immersion for 6 h, and the crushing strength shall be as specified in Table 2.

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

4.5 *Kerosine Resistance*—Specimens shall meet the crushing strength requirements specified in Table 2.

4.6 *Resistance to Flattening*—The decrease in diameter shall not exceed 3 % when tested using loads specified in Table 1.

4.7 *Crushing Strengths*—The requirements for dry, wet, and coupling crushing strength shall be as prescribed in Table 2.

4.8 *Beam Strength*—The requirements for beam strength shall be as prescribed in Table 2.

4.9 *Joint Tightness*—There shall be no evidence of the leakage of water at the joint after a period of 24 h.

5. Dimensions

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

5.2 *Bore*—The bore shall be straight and circular in cross section as determined by passing a 1-m (40-in.) long mandrel, 7 mm ($\frac{1}{4}$ in.) smaller in diameter than the nominal diameter of the pipe, freely through the pipe.

5.3 *Length*—The standard length shall be 1.5, 2.4, or 3 m (5, 8, or 10 ft) depending upon the standard practice of the manufacturer. Length measurements shall include the tapered ends of the pipe, and a tolerance of ± 25 mm (± 1 in.) shall be allowed. Lengths other than standard shall be increments of 150 mm (6 in.) from standard and unless otherwise specified up to 20 % of the 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. A coupling shall be supplied with each length of pipe.

5.4 *Dimensions of Bends*—Wall thicknesses of bends shall be not less than those of the corresponding pipe. A round ball 7 mm ($\frac{1}{4}$ in.) smaller in diameter than the nominal size shall pass through the bore of the bend freely. Dimensions of the 45 and 90° bends of the standard sizes furnished are shown in Fig. 2.

5.5 *Five-Degree Angle Couplings*—The dimensions of the 5° angle couplings shall be as specified in Fig. 3.

6. Sampling

6.1 From each lot to be tested or fraction thereof, representing a product of the same size, select at random 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, 5 lengths shall be taken. If one half

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² Annual Book of ASTM Standards, Vol 04.04.