

L-68-55

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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Fittings for Bituminized Fiber Drain and Sewer Pipe¹

This standard is issued under the fixed designation D 3356; 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 reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This specification covers fittings suitable for use with both homogeneous and laminated-wall types of bituminized fiber pipe.

2. Referenced Documents

2.1 ASTM Standards:

- D 1861 Specification of Homogeneous Bituminized Fiber Drain and Sewer Pipe²
- D 1862 Specification for Laminated-Wall Bituminized Fiber Drain and Sewer Pipe²
- D 2311 Specification for Perforated, Homogeneous Bituminized Fiber Pipe for General Drainage²
- D 2312 Specification for Perforated, Homogeneous Bituminized Fiber Pipe for Septic Tank Disposal Fields²
- D 2313 Specification for Perforated, Laminated-Wall Bituminized Fiber Pipe for Septic Tank Disposal Fields²
- D 2314 Methods of Testing Homogeneous Bituminized Fiber Pipe²
- D 2315 Methods of Testing Laminated-Wall Bituminized Fiber Pipe²
- D 2316 Recommended Practice for Installing Bituminized Fiber Drain and Sewer Pipe²
- D 2417 Specification for Perforated, Laminated-Wall Bituminized Fiber Pipe for General Drainage²
- D 2418 Specification for Perforated, Laminated-Wall Bituminized Fiber Pipe for Airport and Highway Drainage²
- D 2818 Specification for Perforated, Homogeneous Bituminized Fiber Pipe for Airport and Highway Drainage²

3. Materials and Manufacture

3.1 Fittings may be fabricated from the same material as the pipe or may be molded. Couplings and adapters other than bituminized fiber material may be used, provided they have equal or better physical and chemical properties.

3.2 Joints:

3.2.1 The Type I taper shall be accurately machined or molded to the dimensions shown in Fig. 1.

3.2.2 All joints for a given size shall be interchangeable, and shall be watertight when assembled with the pipe.

4. Physical and Chemical Requirements

4.1 All fittings used with homogeneous pipe shall meet pipe test requirements specified in Specification D 1861, and the fittings used with laminated pipe shall comply with the pipe requirements of Specification D 1862.

4.2 The minimum strength requirements for a fitting shall be the same as those required for the largest size pipe that is connected to it.

4.3 Methods for testing homogeneous pipe are described in Methods D 2314, and methods for laminated pipe are described in Methods D 2315. Where practical and if the fitting shape lends itself to test, these same test methods may be used to evaluate a fitting for use with a particular size and type of pipe.

5. Dimensions

5.1 Fittings shall meet the manufacturer's dimensional specifications and shall be acceptable to the user.

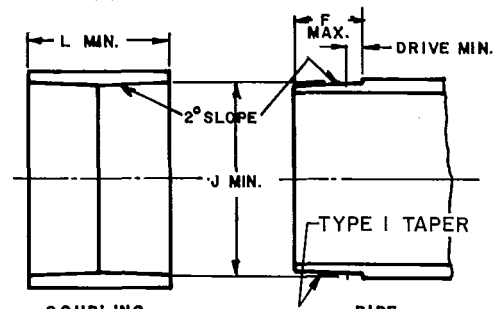
5.2 A testing ball 7 mm (1/4 in.) less in diameter than the nominal pipe size shall readily pass through all fittings.

5.3 Approximate outside dimensions of commercially accepted fittings used with bituminized fiber pipe are shown in the attached fittings drawings (see Figs. 1 through 30).

6. Basis of Acceptance

6.1 The types of tests required and number of fittings to be tested shall be mutually agreed upon between the purchaser and the supplier for any size lot.

NOTE—All dimensions of the following figures are shown in millimetres (inches). Dotted lines indicate the manufacturer's option. All dimensions are subject to the manufacturer's tolerances.



Size	Dimensions, mm (in.)			
	L	F	J	Drive
50 (2)	54.4 (2.14)	25.4 (1.00)	62.0 (2.44)	2.5 (0.10)
75 (3)	64.3 (2.53)	30.5 (1.20)	86.6 (3.41)	2.5 (0.10)
100 (4)	85.1 (3.35)	40.6 (1.60)	113.5 (4.47)	2.5 (0.10)
125 (5)	101.6 (4.00)	49.5 (1.95)	144.0 (5.67)	5.1 (0.20)
150 (6)	101.6 (4.00)	49.5 (1.95)	170.2 (6.70)	5.1 (0.20)
200 (8)	127.0 (5.00)	63.0 (2.48)	233.7 (9.20)	6.4 (0.25)

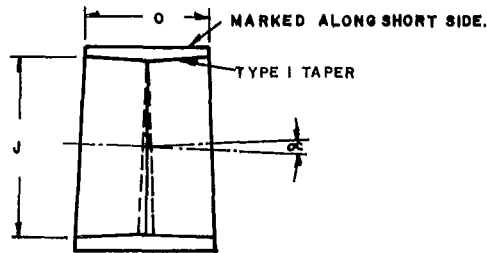
FIG. 1 Fiber Coupling (Straight)

¹This specification is under the jurisdiction of ASTM Committee D-8 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.16 on Bituminous Fiber Pipe.

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²Annual Book of ASTM Standards, Vol 04.04.

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Dimensions, mm (in.)

Size	$\alpha = 5^\circ$		$\alpha = 11\frac{1}{4}^\circ$		$\alpha = 15^\circ$	
	J	O	J	O	J	O
50 (2)	62.0 (2.44)	76.2 (3.0)	62.0 (2.44)	76.2 (3.0)	62.0 (2.44)	76.2 (3.0)
75 (3)	86.9 (3.42)	88.9 (3.5)	86.9 (3.42)	88.9 (3.5)	86.9 (3.42)	88.9 (3.5)
100 (4)	113.5 (4.47)	101.6 (4.0)	113.5 (4.47)	101.6 (4.0)	113.5 (4.47)	101.6 (4.0)
125 (5)	144.0 (5.67)	101.6 (4.0)	144.0 (5.67)	101.6 (4.0)	144.0 (5.67)	101.6 (4.0)
150 (6)	170.4 (6.71)	101.6 (4.0)	170.4 (6.71)	101.6 (4.0)	170.4 (6.71)	101.6 (4.0)
200 (8)	233.7 (9.2)	127.0 (5.0)	233.7 (9.2)	128.5 (5.06)	233.7 (9.2)	128.5 (5.06)

FIG. 2 5°, 11¼°, and 15° Fiber Coupling

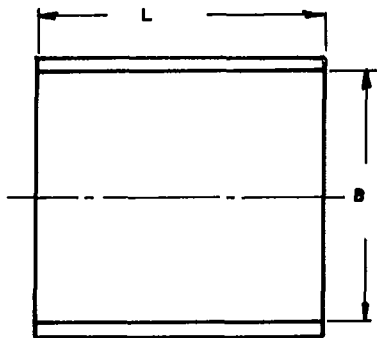
6.2 The lot shall be acceptable when all specimens selected conform to the requirements of Sections 3.2, 4, and 5. If 20 % or less of the samples tested fail to meet the requirements, the supplier shall be allowed to retest two additional samples for each sample that failed; and the lot shall be acceptable if all these tests meet the requirements.

7. Inspection

7.1 Inspection of the material shall be agreed upon by the purchaser and the supplier as part of the purchase contract.

8. Rejection and Resubmittal

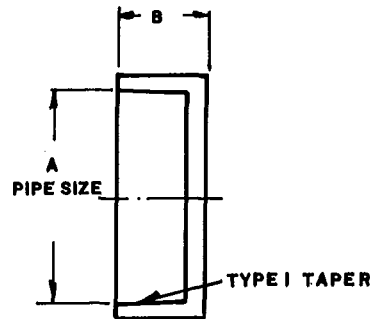
8.1 Failure to conform to the requirements prescribed in this specification shall constitute grounds for rejection. In case of rejection, the supplier shall have the right to reinspect the rejected material and resubmit the lot after removal of those packages not conforming to the requirements.



Dimensions, mm (in.)

Size	L, min	B
50 (2)	114 (4.5)	81.8 (3.22)
75 (3)	127 (5.0)	107.2 (4.22)
100 (4)	140 (5.5)	133.4 (5.25)
125 (5)	152 (6.0)	165.1 (6.50)
150 (6)	152 (6.0)	204.7 (8.06)

FIG. 3 Fiber Joining Sleeve

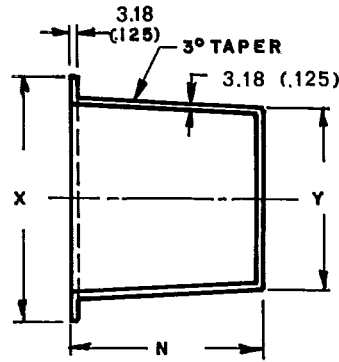


Dimensions, mm (in.)

A, Pipe Size	B
50 (2)	30.7 (1.21)
75 (3)	36.6 (1.44)
100 (4)	47.2 (1.86)
125 (5)	56.4 (2.22)
150 (6)	56.4 (2.22)
200 (8)	79.4 (3.125)

FIG. 4 Plastic or Fiber Cap (For Type I Fiber Pipe)

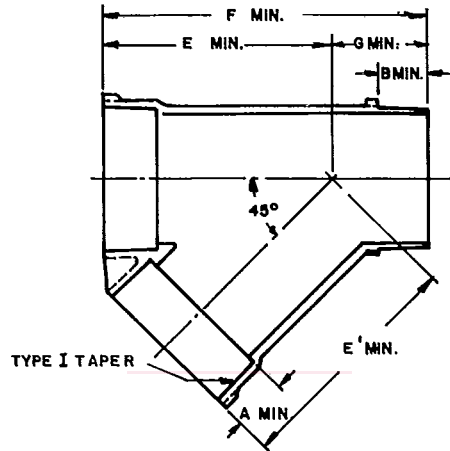
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Dimensions, mm (in.)

Size	50 (2)	75 (3)	100 (4)	125 (5)	150 (6)
X	72.9 (2.87)	95.3 (3.75)	127.0 (5.00)	152.4 (6.00)	177.8 (7.00)
Y	48.3 (1.90)	73.7 (2.90)	99.1 (3.90)	121.9 (4.80)	148.6 (5.85)
N	76.2 (3.00)	76.2 (3.00)	101.6 (4.00)	101.6 (4.00)	101.6 (4.00)

FIG. 5 Plastic Plug

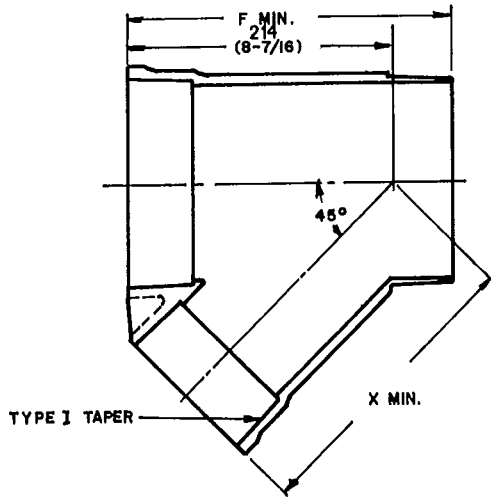


Dimensions, mm (in.)

Size	F	G	E	E'	A, min	B, min
75 (3)	231.1 (9.1)	77.7 (3.06)	152 (6.0)	152 (6.0)	31.2 (1.23)	29.7 (1.17)
100 (4)	256.5 (10.1)	72.9 (2.87)	183 (7.2)	190 (7.5)	41.9 (1.65)	39.6 (1.56)

FIG. 6 Molded Wye—Closed Coupled

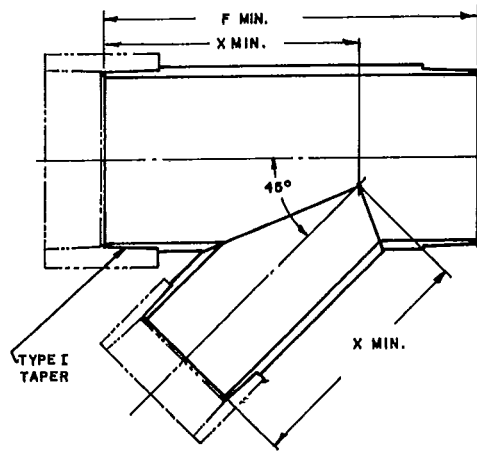
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Dimensions, mm (in.)

Main	Branch	F	X
150 (6)	100 (4)	257 (10.125)	235 (9.25)
200 (8)	100 (4)	444 (17.5)	254 (10.0)

FIG. 7 Molded Reducer Wye



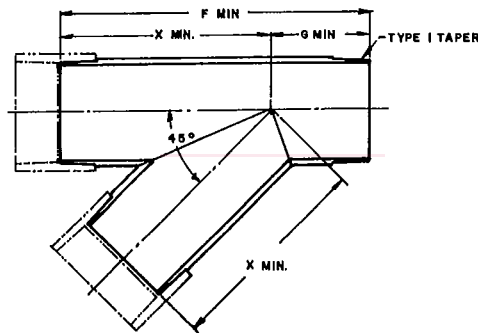
Dimensions, mm (in.)

Main	Branch	F	X
150 (6)	100 (4)	257 ^A (10.125 ^A) 343 ^B (13.5 ^B)	235 ^A (9.25 ^A) 171 ^B (6.75 ^B)
200 (8)	100 (4)	444 (17.5)	254 (10.0)

^A Molded Wye.
^B Standard Wye.

NOTE—Alternative construction—use same size main and branch with reducer coupling.

FIG. 8 Fiber Reducer Wye—Standard Coupled

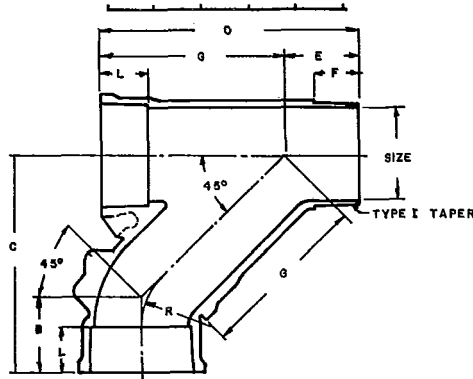


Dimensions, mm (in.)

Size	F	G	X
50 (2)	171 (6.75)	86 (3.4)	133 (5.25)
75 (3)	292 (11.5)	99 (3.9)	190 (7.5)
100 (4)	330 (13.00)	107 (4.2)	222 (8.75)
125 (5)	387 (15.25)	117 (4.6)	267 (10.5)
150 (6)	425 (16.75)	119 (4.7)	284 (11.2)
200 (8)	533 (21.0)	147 (5.8)	356 (14.0)

FIG. 9 Fiber Wye—Standard Coupled

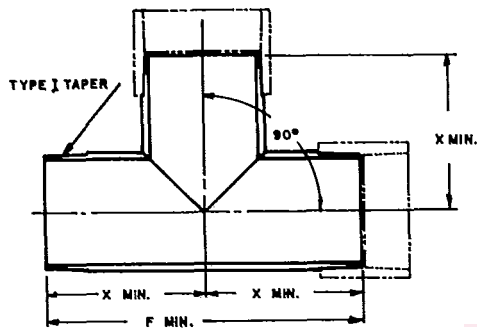
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Dimensions, mm (in.)

Size	F	L	E	G	O	R	C	B
75 (3)	30.5 (1.20)	44.4 (1.75)	78 (3.06)	154 (6.06)	232 (9.13)	60 (2.38)	197 (7.75)	70 (2.75)
100 (4)	40.6 (1.60)	50.8 (2.00)	83 (3.25)	197 (7.75)	279 (11.00)	76 (3.00)	243 (9.56)	83 (3.25)

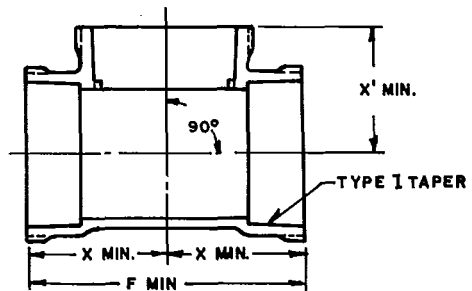
FIG. 10 Molded Sanitary Wye (Combination Wye and 1/8 Bend)



Dimensions, mm (in.)

Size	F, min	X, min
50 (2)	216 (8.5)	108 (4.25)
75 (3)	254 (10.0)	127 (5.0)
100 (4)	305 (12.0)	152 (6.0)
125 (5)	324 (12.75)	162 (6.37)
150 (6)	343 (13.5)	171 (6.75)
200 (8)	444 (17.5)	222 (8.75)

FIG. 11 Fiber Tee—Standard Coupled

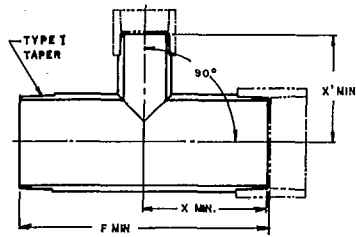


Dimensions, mm (in.)

Size	F	X'	X
75 (3)	179 (7.06)	83 (3.25)	90 (3.53)
100 (4)	219 (8.62)	102 (4.00)	109 (4.31)

FIG. 12 Molded Tee—Closed Coupled

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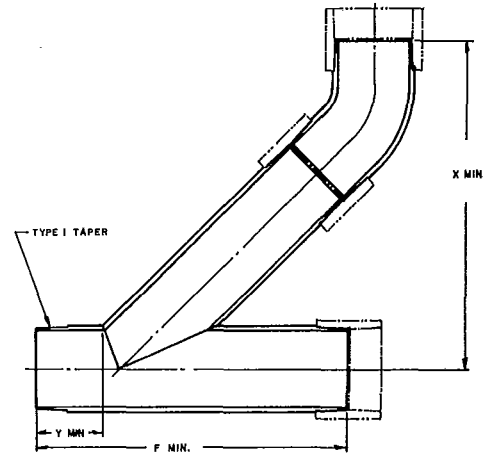


Dimensions, mm (in.)

Main	Branch	F	X	X'
75 (3)	50 (2)	254 (10)	127 (5)	121 (4.75)
100 (4)	50 (2)	305 (12)	152 (6)	133 (5.25)
100 (4)	75 (3)	305 (12)	152 (6)	133 (5.25)
125 (5)	50 (2)	324 (12.75)	162 (6.37)	146 (5.75)
125 (5)	75 (3)	324 (12.75)	162 (6.37)	152 (6.0)
125 (5)	100 (4)	324 (12.75)	162 (6.37)	152 (6.0)
150 (6)	50 (2)	343 (13.5)	171 (6.75)	159 (6.25)
150 (6)	75 (3)	343 (13.5)	171 (6.75)	165 (6.5)
150 (6)	100 (4)	343 (13.5)	171 (6.75)	165 (6.5)
150 (6)	125 (5)	343 (13.5)	171 (6.75)	165 (6.5)
200 (8)	50 (2)	444 (17.5)	222 (8.75)	184 (7.25)
200 (8)	75 (3)	444 (17.5)	222 (8.75)	190 (7.5)
200 (8)	100 (4)	444 (17.5)	222 (8.75)	190 (7.5)
200 (8)	125 (5)	444 (17.5)	222 (8.75)	190 (7.5)
200 (8)	150 (6)	444 (17.5)	222 (8.75)	190 (7.5)

NOTE—Alternative construction—use same size main and branch with reducer coupling.

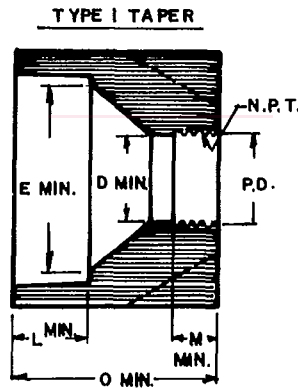
FIG. 13 Fiber Reducer Tee—Standard Coupled



Dimensions, mm (in.)

Size	F, min	X, min	Y, min
75 (3)	356 (14)	387 (15¼)	83 (3¼)
100 (4)	406 (16)	432 (17)	89 (3½)

FIG. 14 Fiber Sanitary Tee—Standard Coupled



Dimensions, mm (in.)

Iron Pipe Size	Fiber Pipe Size	O, min	L, min	E, min	P.D.	D, min,	M, min
50 (2)	75 (3)	79 (3.1)	32 (1.25)	76 (3.0)	58.4 (2.3)	51 (2.0)	22 (0.875)
50 (2)	100 (4)	109 (4.3)	42 (1.65)	102 (4.0)	58.4 (2.3)	51 (2.0)	22 (0.875)
50 (2)	125 (5)	135 (5.3)	51 (2.00)	127 (5.0)	58.4 (2.3)	51 (2.0)	22 (0.875)
50 (2)	150 (6)	147 (5.8)	51 (2.00)	152 (6.0)	58.4 (2.3)	51 (2.0)	22 (0.875)
65 (2½)	75 (3)	79 (3.1)	32 (1.25)	76 (3.0)	54.9 (2.16)	64 (2.5)	32 (1.25)
65 (2½)	100 (4)	109 (4.3)	42 (1.65)	102 (4.0)	54.9 (2.16)	64 (2.5)	32 (1.25)
65 (2½)	125 (5)	135 (5.3)	51 (2.00)	127 (5.0)	54.9 (2.16)	64 (2.5)	32 (1.25)
65 (2½)	150 (6)	147 (5.8)	51 (2.00)	152 (6.0)	54.9 (2.16)	64 (2.5)	32 (1.25)
75 (3)	100 (4)	96 (3.8)	42 (1.65)	102 (4.0)	86.1 (3.39)	76 (3.0)	32 (1.25)
75 (3)	125 (5)	122 (4.8)	51 (2.00)	127 (5.0)	86.1 (3.39)	76 (3.0)	32 (1.25)
75 (3)	150 (6)	140 (5.5)	51 (2.00)	152 (6.0)	86.1 (3.39)	76 (3.0)	32 (1.25)
100 (4)	125 (5)	107 (4.2)	51 (2.00)	127 (5.0)	111.3 (4.38)	102 (4.0)	35 (1.37)
100 (4)	150 (6)	127 (5.0)	51 (2.00)	152 (6.0)	111.3 (4.38)	102 (4.0)	35 (1.37)

FIG. 15 Expanding Fiber Adapter—Fiber Pipe to Threaded I.P.