Designation: D 1694 – 95 (Reapproved 2000)

An American National Standard

Standard Specification for Threads 60° (Stub) for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe[1]

This standard is issued under the fixed designation D 1694; 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.

1. Scope*

1.1 This specification covers the geometry and dimensions of a thread system for fiberglass pipe.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information purposes only.

NOTE 1—There is no similar or equivalent ISO standard.

2. Referenced Documents

2.1 *ASTM Standards:*

D 883 Terminology Relating to Plastics[2]

D 1600 Terminology for Abbreviated Terms Relating to Plastics[2]

E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods[3]

F 412 Terminology Relating to Plastic Piping Systems[4]

3. Terminology

3.1 *General*—Definitions are in accordance with Terminologies D 883 and F 412 and abbreviations are in accordance with Terminology D 1600, unless otherwise indicated.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *fiberglass pipe, n*—a tubular product containing glass fiber reinforcements embedded in or surrounded by cured thermosetting resin; the composite structure may contain aggregate, granular, or platelet fillers, thixotropic agents, pigments, or dyes; thermoplastic or thermosetting liners or coatings may be included.

4. Thread Geometry and Dimensions

4.1 *Geometry*—The geometry of the thread form shall be in accordance with Fig. 1 and shall be defined as modified by the American National Standard 60° stub thread. The male thread may be preceded by a cylindrical pilot of length equal to two thread pitches and the outside diameter equal to or less than the theoretical diameter of the thread if it were extended to the end of the pilot.

4.2 *Dimensions*—All sizes of pipe from 1½ to 20 in. in diameter inclusive shall have 8 threads per inch, tapered 1 in 32 on the diameter, and shall conform to the dimensions specified in Table 1. The geometry of the gage to measure the 60° stub shall be in accordance with Fig. 2. The dimensions and tolerances for all size gages shall conform to the dimensions listed in Table 2 and Table 3, respectively.

5. Precision of Measurement

5.1 The measurement experience of an individual manufacturer of threads in accordance with this specification has shown the following indexes of precision:

5.1.1 *Micrometer Caliper*—The multi-micrometer-operator-specimen-day precision is ±0.001 in. (0.025 mm) (2S) as defined in Practice E 177.

5.1.2 *Optical Comparator with Micrometer Head Readout*—The single-optical comparator and multi-operator-specimen-day precision is ±0.001 in. (0.025 mm) (2S) as defined in Practice E 177.

6. Keywords

6.1 fiberglass pipe; pipe; thread dimensions; threads

[1] This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.23 on Reinforced Plastic Piping Systems.

Current edition approved March 10, 2000. Published June 2000. Originally published as D 1694 – 59. Last previous edition D 1694 – 95.

[2] *Annual Book of ASTM Standards*, Vols 08.01 and 08.04.

[3] *Annual Book of ASTM Standards*, Vols 04.01 and 14.02.

[4] *Annual Book of ASTM Standards*, Vol 08.04.

***A Summary of Changes section appears at the end of this standard.**

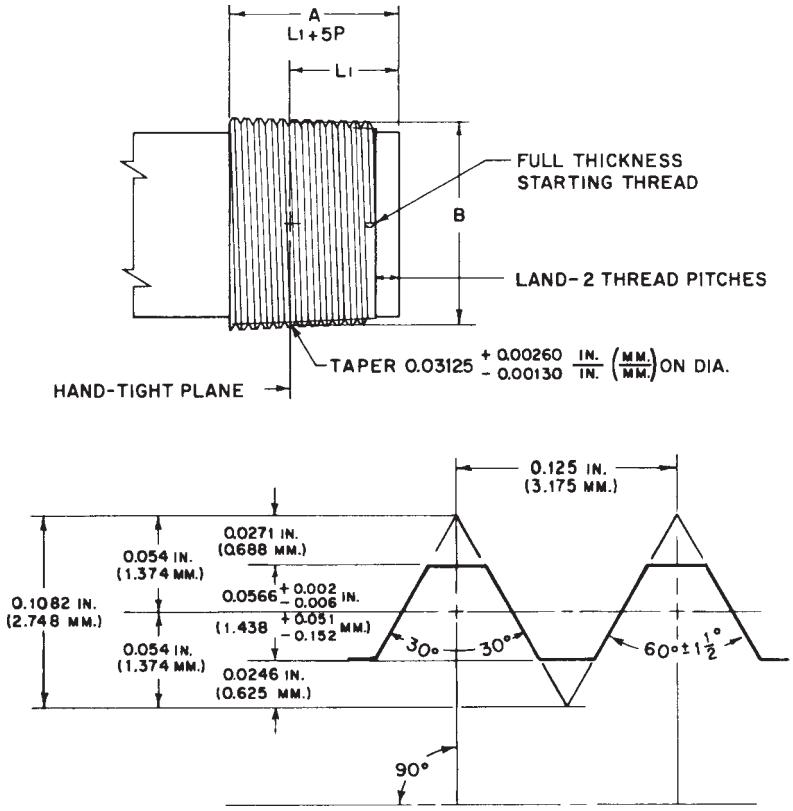

FIG. 1 Thread Geometry (see Table 1)

TABLE 1 Theoretical Dimensions—Pipe Thread, in. (mm) (see Fig. 1)

NOTE 1—Tolerance on lead per inch (25.4 mm) ±0.003 in. (±0.076 mm), cumulative ±0.006 in. (±0.152 mm).

NOTE 2—All sizes 0.125-in. (3.175-mm) pitch.

NOTE 3— Thread will make up with ring gage shown in Fig. 2.

NOTE 4—All dimensions are given up to five decimal places only to avoid errors in computations, not to indicate required precision.

Nominal Pipe Size, in.	*A*		L_1		B^A	
	in.	mm	in.	mm	in.	mm
1½	1.750	44.45	1.125	28.58	1.99422	50.6532
2	1.938	49.23	1.313	33.35	2.47509	62.8673
2½	2.125	53.98	1.500	38.10	2.98094	75.7159
3	2.375	60.32	1.750	44.45	3.61375	91.7892
3½	2.500	63.50	1.875	47.62	4.11765	104.5883
4	2.625	66.68	2.000	50.80	4.62156	117.3876
4½	2.750	69.85	2.125	53.98	5.12547	130.1869
5	2.875	73.02	2.250	57.15	5.69237	144.5862
5½	3.000	76.20	2.375	60.32	6.13328	155.7853
6	3.125	79.38	2.500	63.50	6.76219	171.7596
8	3.375	85.72	2.750	69.85	8.77000	222.7580
10	3.500	88.90	2.875	73.02	10.89890	276.8321
12	3.500	88.90	2.875	73.02	12.89890	327.6321
14	3.500	88.90	2.875	73.02	14.14890	359.3821
16	3.500	88.90	2.875	73.02	16.14890	410.1821
18	3.500	88.90	2.875	73.02	18.14890	460.9821
20	3.500	88.90	2.875	73.02	20.14890	511.7821

[A] Pitch diameter of hand-tight plane.

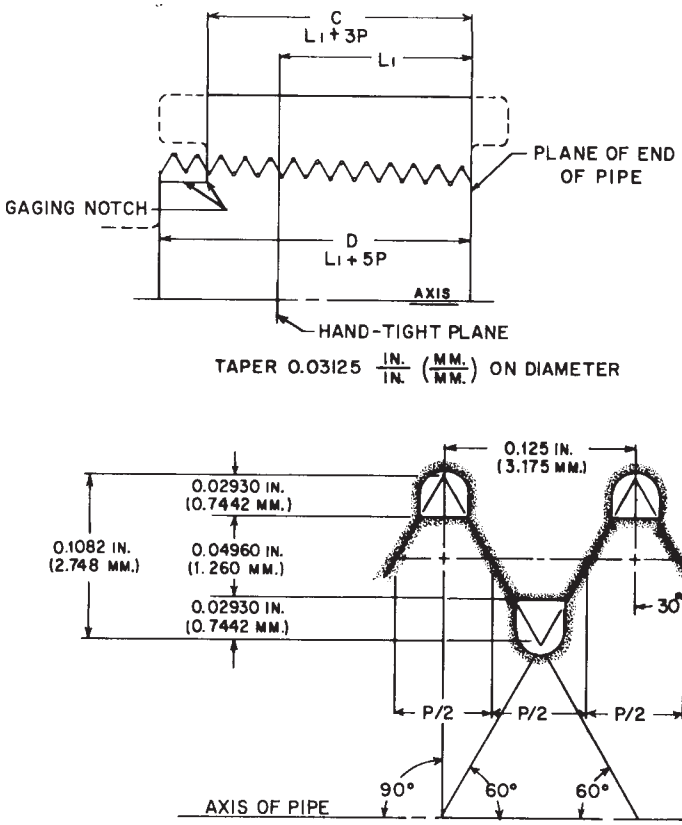

FIG. 2 Geometry of Thread Gage (see Table 2)

TABLE 2 Theoretical Dimensions—Pipe Thread Gage, in. (mm) (see Fig. 2)

NOTE 1—All dimensions are given up to five decimal places only to avoid errors in computations, not to indicate required precision.

Nominal Pipe Size, in.	*C*		*D*		*E*[A]		L_1	
	in.	mm	in.	mm	in.	mm	in.	mm
1½	1.500	38.10	1.750	44.45	1.99422	50.6532	1.125	28.58
2	1.688	42.88	1.938	49.23	2.47509	62.8673	1.313	33.35
2½	1.875	47.62	2.125	53.98	2.98094	75.7159	1.500	38.10
3	2.125	53.98	2.375	60.32	3.61375	91.7892	1.750	44.45
3½	2.250	57.15	2.500	63.50	4.11765	104.5883	1.875	47.62
4	2.375	60.32	2.625	66.68	4.62156	117.3876	2.000	50.80
4½	2.500	63.50	2.750	69.85	5.12547	130.1869	2.125	53.98
5	2.625	66.68	2.875	73.02	5.69237	144.5862	2.250	57.15
5½	2.750	69.85	3.000	76.20	6.13328	155.7853	2.375	60.32
6	2.875	73.02	3.125	79.38	6.76219	171.7596	2.500	63.50
8	3.125	79.38	3.375	85.72	8.77000	222.7580	2.750	69.85
10	3.250	82.55	3.500	88.90	10.89890	276.8321	2.875	73.02
12	3.250	82.55	3.500	88.90	12.89890	327.6321	2.875	73.02
14	3.250	82.55	3.500	88.90	14.14890	359.3821	2.875	73.02
16	3.250	82.55	3.500	88.90	16.14890	410.1821	2.875	73.02
18	3.250	82.55	3.500	88.90	18.14890	460.9821	2.875	73.02
20	3.250	82.55	3.500	88.90	20.14890	511.7821	2.875	73.02

[A] Pitch diameter of hand-tight plane.

TABLE 3 Tolerances for Gage, in. (mm)

Element	Ring Gage		Plug Gage	
	in.	mm	in.	mm
Pitch diameter	...	...	±0.0010	±0.025
Taper	+0.0002	+0.0002	+0.0010	+0.001
	−0.0014	−0.036	−0.0000	−0.000
Lead[A]	±0.0010	±0.025	±0.0005	±0.0127
Crest truncation	+0.0025	+0.064	+0.0025	+0.064
	−0.0015	−0.038	−0.0015	−0.038
Half angle of thread	±0.25°		±0.17°	
Mating standoff	±0.100	±2.5		

[A] *Lead Tolerance*—Maximum allowable error in lead between any two threads whether adjacent or separated by any amount not exceeding full length of thread less one full thread at each end.

SUMMARY OF CHANGES

Committe D-20 has identified the location of the following changes to this standard since the last issue D1694–95 that may impact on the use of this standard.

*(1)*Added “Summary of Changes” Section.