

ASTM A795

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Production Standard of ASTM A795

● ASTM A795

ASTM A795 fire sprinkler pipe and industrial pipes are specific types of carbon steel pipes designed for fire sprinkler systems, following the standards set by the American Society for Testing and Materials (ASTM).

ASTM A795 specifies the requirements for black and hot-dipped galvanized welded and seamless steel pipes in NPS 1/2 to NPS 10, including those used in industrial applications.

The ASTM A795 standard covers material, dimensions, testing methods, marking, packaging, and labeling for these pipes, ensuring their safety and quality. There are two grades, A and B, with Grade B requiring post-weld heat treatment to eliminate untempered martensite for enhanced strength and durability. This ASTM A795 standard is crucial in industries like oil and gas, where both industrial pipes&fire sprinkler pipes are frequently used.

•Dimensions and Sizes of ASTM A795

Dimensions, Weights, and Test Pressure for Light-Weight Fire Protection ASTM A795 Pipe—Schedule 10A										
NPS Designator	O.D.		Nominal Wall Thickness		Weight Plain End		Test Pressure			
							Furnace-Welded		Seamless and Electric-Resistance-Welded	
	Inch	mm	Inch	mm	lb/ft	kg/m	psi	MPa	psi	MPa
3/4	1.05	26.7	0.083	2.11	0.86	1.28	500	3.45	700	4.83
1	1.315	33.4	0.109	2.77	1.41	2.09	500	3.45	700	4.83
1 1/4	1.66	42.2	0.109	2.77	1.81	2.69	500	3.45	1000	6.89
1 1/2	1.9	48.3	0.109	2.77	2.09	3.11	500	3.45	1000	6.89
2	2.38	60.3	0.109	2.77	2.64	3.93	500	3.45	1000	6.89
2 1/2	2.88	73	0.12	3.05	3.53	5.26	500	3.45	1000	6.89
3	3.5	88.9	0.12	3.05	4.34	6.46	500	3.45	1000	6.89
3 1/2	4	101.6	0.12	3.05	4.98	7.41	500	3.45	1200	8.27
4	4.5	114.3	0.12	3.05	5.62	8.37	500	3.45	1200	8.27
5	5.56	141.3	0.134	3.4	7.78	11.58	B	B	1200	8.27
6	6.63	168.3	0.134	3.4	9.3	13.85	B	B	1000	5.51
8	8.63	219.1	0.188C	4.78	16.96	25.26	B	B	800	4.83
10	10.75	273.1	0.188C	4.78	21.23	31.62	B	B	700	6.89

A: Schedule 10 corresponds to Schedule 10S as listed in ANSI B 36.19 for NPS 3/4 through 6 only.
 B: Furnace-welded pipe is not made in sizes larger than NPS 4.
 C: Not Schedule 10.

Dimensions, Weights, Test Pressures for Standard-Weight Fire Protection ASTM A795 Pipe—Schedule 30 and Schedule 40										
NPS Designator	O.D.		Nominal Wall Thickness		Weight Plain End		Test Pressure			
							Furnace-Welded		Seamless and Electric-Resistance-Welded	
	Inch	mm	Inch	mm	lb/ft	kg/m	psi	MPa	psi	MPa
1/2	0.84	21.3	0.109	2.77	0.85	1.27	700	4.83	700	4.83
3/4	1.05	26.7	0.113	2.87	1.13	1.69	700	4.83	700	4.83
1	1.32	33.4	0.133	3.38	0.68	2.5	700	4.83	700	4.83

1 1/4	1.66	42.2	0.14	3.56	2.27	3.39	1000	6.89	1000	6.89
1 1/2	1.9	48.3	0.145	3.68	2.72	4.05	1000	6.89	1000	6.89
2	2.38	60.3	0.154	3.91	3.66	5.45	1000	6.89	1000	6.89
2 1/2	2.88	73	0.203	5.16	5.8	8.64	1000	6.89	1000	6.89
3	3.5	88.9	0.216	5.49	7.58	11.29	1000	6.89	1000	6.89
3 1/2	4	101.6	0.226	5.74	9.12	13.58	1200	8.27	1200	8.27
4	4.5	114.3	0.237	6.02	10.8	16.09	1200	8.27	1200	8.27
5	5.56	141.3	0.258	6.55	14.63	21.79	C	C	1200	8.27
6	6.63	168.3	0.28	7.11	18.99	28.29	C	C	1200	8.27
8	8.63	219.1	0.277A	7.04	24.72	36.82	C	C	1200	8.27
10	10.75	273.1	0.307A	7.8	34.27	51.05	C	C	1000	6.89

A: NPS 1/2 through 6—Schedule 40; NPS 8 and 10—Schedule 30.

B: Based on 20-ft (6.1-m) lengths.

C: Furnace-welded pipe is not made in sizes larger than NPS 4.

●Chemical Composition of ASTM A795

TABLE 3 Chemical Requirements				
Si	C	Mn	P	S
Type E (Electric-Resistance-Welded Pipe) & Type S (Seamless Pipe)				
Open-Heath Electric-Furnace or Basic-Oxygen				
Grade A	0.25	0.95	0.035	0.035
Grade B	0.3	1.2	0.035	0.035

●Mechanical Properties of ASTM A795

Test Pressure			
furnace-welded		Seamless and Electric-Resistance-Welded	
psi	kPa	psi	kPa
700	4800	700	4800
700	4800	700	4800
700	4800	700	4800
1000	6900	1000	6900
1000	6900	1000	6900

1000	6900	1000	6900
1000	6900	1000	6900
1000	6900	1000	6900
1200	8300	1200	8300
1200	8300	1200	8300
C	C	1200	8300
C	C	1200	8300
C	C	1200	8300
C	C	1000	6900