

Submittal Data

ASTM A333 Grades 1 & 6

Scope

Covers seamless carbon steel Grades 1 & 6 pipe for low temperature service.

Heat Treatment

Cold-drawn pipe shall be heat treated after the final cold draw pass at a temperature not less than 1500°F.

Hydrostatic & Nondestructive Electric Testing

Standard testing is a nondestructive test in the form of eddy current or ultrasonic testing. When specified by the purchaser, hydrostatic inspection can be on for 2" sizes and smaller. Test pressure is 2500 psi. Test pressure shall be maintained for a minimum of 5 seconds.

End Finish

Plain End:

NPS 1-1/2 and smaller shall be either plain end square cut or plain end beveled at the option of the manufacturer. NPS 2 ends shall be beveled to angle 30° +5°, -0° with a root face of 1/16 x 1/32".

Available Coatings

ASTM A333 seamless pipe is available in three different coatings:

- Blue or Clear UV Coating
- Pickled and Oiled
- Bare

Tensile Requirements Grade 1 Grade 6

Yield Strength, min	30,000 psi	35,000 psi
Tensile Strength, min	55,000 psi	60,000 psi
Elongation in 2"	35% Min	30% Min

Chemical Requirements Composition, % Max-Grade 1

Carbon ^A	Manganese	Phosphorus	Sulfur	Silicon ^B
0.30	0.40/1.06	0.025	0.025	---
Copper ^B	Nickel ^B	Chromium ^B	Molybdenum ^B	Vanadium ^B
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Chemical Requirements Composition, % Max-Grade 6

Carbon ^A	Manganese	Phosphorus	Sulfur	Silicon
0.30	0.29/1.06	0.025	0.025	0.10 Min
Copper	Nickel	Chromium	Molybdenum	Vanadium
0.40	0.40	0.30	0.12	0.08

^A For each reduction of 0.01% below the specified carbon maximum, an increase of 0.05% manganese above the specified maximum will be permitted up to a maximum of 1.35%

^B There are no reporting requirements for these elements.



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Charpy Requirements

Impact temperature -50°F / -45°C.
Impact strength per chart in current A333 standard.

Frequency of Tests

Tensile tests and flattening tests shall be made on a sufficient number of pipes to constitute 5% of the lot, but in no case less than 2 pipes.

Permissible Variations in Wall Thickness

Minimum wall thickness at any point shall not be more than 12.5% under nominal wall thickness specified. Maximum wall thickness at any point shall not be greater than 20.0% over nominal wall thickness.

Workmanship

Visual imperfections such as scabs, seams, laps or tears shall not exceed 5% of the nominal wall thickness.

Permissible Variations in Outside Diameter

NPS 1-1/2 and under $\pm 1/64''$
NPS 2 $\pm 1/32''$

Permissible Variations in Weight per Foot

Pipe shall not vary more than 10% over and 3.5% under the standard specified.

Product Marking

The marking shall include CDS, the schedule number and the letters "LT" followed by the temperature at which the impact tests were made, except when a lower test temperature is required because of reduced specimen size, in which case, the higher impact test temperature applicable to a full-size specimen should be marked.

Dimensions and Weights

The dimensions and weights furnished under this specification are in agreement with the standardized dimensions and weights specified in ASME ANSI B 36.10.

Plain End Dimensions Schedules 40 & 80

Nominal Size	O.D. Inches	Schedule 40		Schedule 80	
		Wall	Weight Lb/Ft	Wall	Weight Lb/Ft
1/8	0.405	N/A	N/A	N/A	N/A
1/4	0.540	.088	0.43	.119	0.54
3/8	0.675	.091	0.57	.126	0.74
1/2	0.840	.109	0.85	.147	1.09
3/4	1.050	.113	1.13	.154	1.48
1	1.315	.133	1.68	.179	2.17
1-1/4	1.660	.140	2.27	.191	3.00
1-1/2	1.900	.145	2.72	.200	3.63
2	2.375	.154	3.66	.218	5.03

Plain End Dimensions Schedules 160 & XXS

Nominal Size	O.D. Inches	Schedule 160		Schedule XXS	
		Wall	Weight Lb/Ft	Wall	Weight Lb/Ft
1/8	0.405	N/A	N/A	N/A	N/A
1/4	0.540	N/A	N/A	N/A	N/A
3/8	0.675	N/A	N/A	N/A	N/A
1/2	0.840	.188	1.31	.294	1.72
3/4	1.050	.219	1.95	.308	2.44
1	1.315	.250	2.85	.358	3.66
1-1/4	1.660	.250	3.77	.382	5.22
1-1/2	1.900	.281	4.86	.400	6.41
2	2.375	.344	7.462	.436	9.029



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