



لوله های فولادی



SEAMLESS

The complex chemical and physical properties of the various grades of carbon steel pipe allow for a broad range of service usage. American Piping Products has the right grade, size and price to meet your requirements including A/SA106 Grade B/C and API 5L X-42 through X-70. A/SA106 Grades B & C are utilized for services ranging from structural supports to steam drum headers with temperature ranges up to 800°, API 5L X Grades 42 through 70 are utilized for the water and petroleum industry to transport liquids or as platforms on offshore rigs.

½" nominal to 24" O.D. seamless pipe
Wall thickness: Schedule 40 up to 4.000"

STANDARD CARBON STEEL PIPE SPECIFICATIONS & GRADES

A/SA106B/C
A/SA53B

FLANGES & FITTINGS

Carbon steel butt-weld fittings: A/SA234 WPB * WPC
Carbon steel forged fittings: A/SA105
Carbon steel flanges: A/SA105

WELDED

American Piping Products distributes an extensive selection of welded pipe including Electronic Resistance Welded (ERW), Electronic Fusion Welded (EFW) and Double Submerged Arc Welded (DSAW) carbon steel pipe along with their respective flanges and fittings. We also carry A139 – Grade B and A252 Grades 2 & 3 spiral weld pipe along with A691 chrome-moly pipe.

Carbon (ERW, EFW & DSAW) Pipe

¾" nominal to 60" O.D.
Wall thickness: Up to 1.500"

SPECIFICATIONS & GRADES

SA53 / A53 welded: Grade B
API 5L welded: Grades B (X-42, X-52, X-60, X-65 and above)
A671 / A672 in all grades

FLANGES & FITTINGS

A/SA234 – WPW or WPWX – Grades B, C
High-yield MSS SP-75 – Grades WPH (Y-42, Y-52, Y-60, Y-65 and above)

SEAMLESS & WELDED

HIGH-YIELD CARBON STEEL PIPE SPECIFICATIONS & GRADES

API 5L seamless B, X-42, X-52, X-60, X-65 and above

HIGH-YIELD CARBON STEEL FLANGES & FITTINGS

High-yield butt-weld fittings: A860 or MSS SP75
WPHY42 (Y52, Y56, Y60, Y65)
High-yield flanges: A694 (F-42, F-52, F-56, F-60, F-65)

A106 & A53 PIPE SPECIFICATIONS

A/SA106 & A/SA53 / NPS ¼"– 30" / Schedules 10 through 160, STD, XH and XXH

SCOPE

Covers seamless carbon steel nominal wall pipe for high-temperature service, suitable for bending, flanging and similar forming operations.

NPS 1½" and under may be either hot-finished or cold-drawn. NPS 2" and larger shall be hot-finished unless otherwise specified.

PROCESS

Killed steel, with primary melting process being open-hearth, basic-oxygen or electric-furnace, is possible when combined with separate degassing or refining.

Steel cast in ingots or strand cast is permissible.

Hot-finished pipe need not be heat-treated.

Cold-drawn pipe shall be heat-treated after the final cold-drawn pass.

TENSILE REQUIREMENTS

	SEAMLESS			CONTINUOUS WELDED
	A53 B	A106 B	A106 C	
Tensile strength, min., psi	60,000	60,000	70,000	45,000
Yield strength, min., psi	35,000	35,000	40,000	25,000

API 5L SEAMLESS & WELDED

API 5L / NPS ¼"– 30" / Schedules 10 through 160, STD, XH and XXH

SCOPE

Covers seamless and welded suitable for use in conveying gas, water, oil and other liquified media.

MATERIALS & MANUFACTURE

The steel for both seamless and welded pipe shall be made by one or more of the following processes: open-hearth, electric furnace or basic-oxygen. The weld seam of electric-resistance welded pipe in Grade B shall be heat treated after welding.

TENSILE REQUIREMENTS

API 5L PSL1					API 5L PSL2				
Grade	Yield		Tensile		Grade	Yield		Tensile	
	min	max	min	max		min	max	min	max
B	35,000		60,000		B	35,000	65,000	60,000	110,000
X42	42,000		60,000		X42	42,000	72,000	60,000	110,000
X52	52,000		66,000		X52	52,000	77,000	66,000	110,000
X56	56,000		71,000		X56	56,000	79,000	71,000	110,000
X60	60,000		75,000		X60	60,000	82,000	75,000	110,000
X65	65,000		77,000		X65	65,000	87,000	77,000	110,000
X70	70,000		82,000		X70	70,000	90,000	82,000	110,000

Chrome-moly pipe has become a standard in the power-generation industry and the petro-chemical industry, not only because of its tensile strength, corrosion resistance and high-temperature strength, but also for its cost-effectiveness. Grades P11, P22, and P-91 are prevalent grades for the power industry, while P5 and P9 are the major refinery processing grades utilized.

¼" nominal to 24" O.D. seamless pipe
Wall thickness: Schedule 40 through XXH

SPECIFICATIONS & GRADES

SA335 & A335: Grades P5, P9, P11, P22, P91
A691 1¼" chrome through 9 chrome (welded alternative to A335)

FLANGES & FITTINGS

Alloy butt-weld fittings: A/SA234
WP5, WP9, WP11 (Class 1 & 2), WP22 (Class 1 & 3), WP91

Alloy-forged fittings & flanges: A/SA182
F5, F9, F11 (Class 1 & 2), F22 (Class 1 & 3), F91

A335 PIPE SPECIFICATIONS

A/SA335 / NPS ¼"– 24" / Schedules 40 through 160, STD, XH and XXH

SCOPE

This specification covers nominal wall and minimum wall seamless ferritic alloy-steel pipe intended for high-temperature service. Pipe ordered to this specification shall be suitable for bending, flanging (vanstoning) and similar forming operations, and for fusion welding.

MATERIALS & MANUFACTURE

Pipe may be either hot-finished or cold-drawn.

CHEMICAL REQUIREMENTS

	UNS DESIGNATION:					
	GRADE:					
	K41545	S50400	K11597	K21590	K91560	P91 also includes:
	P5	P9	P11	P22	P91	
Carbon	0.15 max	0.15 max	0.05 - 0.15	0.05 - 0.15	0.08 - 0.12	V at 0.18 - 0.25
Manganese	0.30 - 0.60	0.30 - 0.60	0.30 - 0.60	0.30 - 0.60	0.30 - 0.60	N at 0.030 - 0.070
Phosphorous	0.025	0.025	0.025	0.025	0.020	Ni at 0.40 max
Sulfur, max	0.025	0.025	0.025	0.025	0.010	Al at 0.02 max
Silicon, min	0.50 max	0.25 - 1.00	0.50 - 1.00	0.50 max	0.20 - 0.50	Cb at 0.06 - 0.10
Chrome	4.00 - 6.00	8.00 - 10.00	1.00 - 1.50	1.90 - 2.60	8.00 - 9.50	Ti at 0.01 max
Molybdenum	0.45 - 0.65	0.90 - 1.10	0.44 - 0.65	0.87 - 1.13	0.85 - 1.05	Zr at 0.01 max

A333 PIPE SPECIFICATIONS

A/SA-333 Grades allow for cold temperature service to minus 150°F. Material is always provided in the normalized condition at a minimum and Charpy Impact tested to a specific temperature range to assure compliance with the requires service temperature.

MATERIALS & MANUFACTURE

The pipe shall be made by the seamless or welding process with the addition of no filter metal in the welding operation.

HEAT TREATMENT REQUIREMENTS

All seamless and welded pipe shall be treated to control their microstructure by the following methods:

- Normalizing per A333 / A333M-05 section 4.2.1.1; section 4.2.1.2 or section 4.2.1.3
- Quenched and Tempered per A333 / A333M-05 section 4.2.1.1
- Double Normalized and Tempered per A333 / A333M-05 section 4.2.1.2

SIZES

¼" nominal to 24" O.D.

Wall thickness: Schedule 10 through XXH

SPECIFICATIONS & GRADES

SA333 & A333: Grades 1, 3 & 6

A671 CC65 CL22 EFW @ -50°F (welded alternative to A333)

FLANGES & FITTINGS

Flanges – A/SA 350 LF2, LF3

A/SA-420 WPL6, WPL3

TENSILE REQUIREMENTS

	Grade 1		Grade 3		Grade 6	
	psi	MPa	psi	MPa	psi	MPa
Tensile strength, min.	55,000	380	65,000	450	60,000	415
Yield strength, min.	30,000	205	35,000	240	35,000	240

MINIMUM AVERAGE NOTCHED BAR IMPACT VALUE

Size of Specimen, min.	Each set of 3 Specimens		1 Specimen Only of a set		IMPACT TEMPERATURE		
	ft-lbf	J	ft-lbf	J	Grade	Min Impact Test Temp	
						°F	°C
10 by 10	13	18	10	14			
10 by 7.5	10	14	8	11	1	-50°	-45°
10 by 6.67	9	12	7	9	3	-150°	-100°
10 by 5	7	9	5	7	6	-50°	-45°
10 by 3.33	5	7	3	4			
10 by 2.5	4	5	3	4			



ISO 9001 ISO 14001 ISO 29001 ISO 45001 ISO 9001 ISO 14001 ISO 29001 ISO 45001 ISO 9001 ISO 1

