



# PRODUCT CATALOG

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# HEAVY-WALL SEAMLESS & WELDED CARBON STEEL PIPE

## 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)

# HEAVY-WALL SEAMLESS & WELDED CARBON STEEL PIPE

## 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

# ALLOY PIPE & TUBE

American Piping Products stocks a range of 4100 series alloy products used for oil and gas applications as well as OEM manufacturers. The 4100 series uses chrome and molybdenum to increase the strength and wear characteristics of carbon steel. American Piping Products has a long history with chrome/moly steels for the power industry so the 4100 series is a natural addition to our current inventories. We specialize in seamless products and we carry pipe sizes in 4130 as well as tubing sizes in 4130 and 4140.

4130 pipe: 2" – 12" nominal O.D.

Wall thickness: Schedule 120 up to 1.500"

4140 tube: 2½" – 18" O.D.

Wall thickness: .500" – 2.500"

## SPECIFICATIONS & GRADES

A519 – 4130

A519 – 4140

API 5CT L80 – equivalent mechanicals

API 5CT P110 – equivalent mechanicals

API 5CT Q125 – equivalent mechanicals

## FLANGES & FITTINGS

4130

## 4130 PIPE

Seamless pipe is tubing made to the pipe schedule. Alloy pipe in the power industry generally refers to A335 material, but in the oil and gas market 4130 pipe is used. This product is made to the pipe schedule but uses A519-4130 as the controlling seamless specification. The material is then heat-treated to L80, P110 or the customer's specified properties. This material is easily welded and is generally used for above-ground applications and utilizes the fittings, flanges and other piping components with the same 4130 chemistry. This product is a good alternative to replace X65 through X80 piping items where the usage or repair is too small for mill production.

A519 – 4130

L80 and P110 heat-treated mechanicals

NPS 2" to 12"

Schedules 120 through XXH

Non-scheduled walls through 1½"

## 4130 TUBING

This product includes all sizes made to A519-4130 but not on the pipe schedule. The material comes in annealed, normalized or quenched-and-tempered. Properties are controlled to L80, P110 or the customer's specified properties. This material is easily welded and generally used for above-ground applications or machined for OEM products.

A519 – 4130  
L80 and P110 heat-treated mechanicals  
O.D. 2.375" to 12.75"  
Wall thickness: .375"–1.500"

## 4140 TUBING

Seamless tubing sizes are used in the oil and gas industry for above-ground and down-hole applications. A519-4140 material is stocked in the annealed, normalized or quenched-and-tempered conditions. The heat-treated material is controlled to L80, P110, Q125 or the customer's specified properties. The material is weldable but requires a pre-heat before welding.

A519 – 4140  
L80, P110, Q125 heat-treated mechanicals  
O.D. 2½" to 15"  
Wall thickness: .375"–4.000"

## CHEMISTRY

		4 1 3 0	4 1 4 0	4 1 4 2
COMPOSITION %	Carbon, max. %	0.28 - 0.33	0.38 - 0.43	0.40 - 0.45
	Manganese %	0.40 - 0.60	0.75 - 1.00	0.75 - 1.00
	Phosphorous, max. %	0.04	0.04	0.04
	Sulfur, max. %	0.04	0.04	0.04
	Silicon, min. %	0.15 - 0.35	0.15 - 0.35	0.15 - 0.35
	Chrome, max. %	0.80 - 1.10	0.80 - 1.10	0.80 - 1.10
	Molybdenum, max. %	0.15 - 0.25	0.15 - 0.25	0.15 - 0.25

# CHROME-MOLY PIPE

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

COMPOSITION %	UNS DESIGNATION:	K41545	S50400	K11597	K21590	K91560	P91 also includes:
	GRADE:	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 required service temperature.

### MATERIALS & MANUFACTURE

The pipe shall be made by the seamless or welding process with the addition of no filler 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	1  3  6		
10 by 7.5	10	14	8	11		-50°	-45°
10 by 6.67	9	12	7	9		-150°	-100°
10 by 5	7	9	5	7		-50°	-45°
10 by 3.33	5	7	3	4			
10 by 2.5	4	5	3	4			



American Piping Products has extensive processing capabilities to ensure that we can meet all of your specifications.

**SAW CUTTING** Our processing facility houses two 24" CNC band saws, one 24" CNC miter saw (24" at 90°, 19" at 45°, 11" at 60°) and one 16" miter saw (16" at 90°, 14" at 45°) that cut steel pipe quickly and cost effectively to your exact specifications.

**MECHANICAL FLAME CUTTING** Mechanical flame cutting equipment is used to cut very large diameter pipe and pipe with wider length tolerances. Available through 36" O.D.

**BLASTING AND PICKLING** Pipe can be put through a sandblasting or pickling process before delivery to clean or prepare the surface for future work.

**BEVELING** We utilize both mechanical and torch-beveling capabilities.

**O.D. PREPARATION** For pipeline applications, our processing team can apply coatings to aid in rust and moisture prevention; including FBE, 3LPE, paint/primer, etc.

## PROFILING

American Piping Products has the ability to significantly reduce production cost. Through profiling and precision cutting, let us turn your engineered drawings into finished parts.

- reduce shop hours
- increase shop production and turnover
- eliminate your risk of human error
- material is ready to fabricate upon arrival
- eliminate useless drops and overage
- capabilities include: beveled ends, straight-cut or beveled holes, saddle cuts

With our Model 600MTS, Vernon 0224MPM-5 – 5-Axis, Plasma Pipe Cutting, Pipe Profiling Machine and 6-Axis CNC Control System, we can fabricate pipe in the following dimensions:

Pipe diameter: 2" – 24" NPS

Wall thickness: 5/32" – 4"