



Definition and Applications

API 5L PSL 1

- ALLLAND Production Standards Overview

1. Definition

API 5L PSL1 is a specification established by the American Petroleum Institute (API) within the API 5L standard for steel pipes used in the oil and gas industry to transport oil, natural gas, and other fluids. In the API 5L standard, PSL (Product Specification Level) refers to the product specification level, which defines different quality grades for line pipe steel in terms of manufacturing requirements, chemical composition, mechanical properties, testing, and quality control.

2. ALLLAND API 5L PSL1 Steel Pipe Dimensions

Parameters	Dimensions
O.D.	21.3 mm – 610 mm (0.5" – 24")
WT	2.77 mm – 60 mm (Sch 10 – Sch 80)
Length	6 m – 12 m (19' – 40')
Material	Carbon steel / Low-alloy high-strength steel
Process	Seamless/ ERW/ SSAW/ LSAW
Connection	Butt-weld/ Socket-weld/ Threaded

3. Application

AAPL 5L PSL1 carbon steel pipes are a type of conventional industrial transmission pipeline characterized by stable performance, moderate cost, and a comprehensive range of specifications (including seamless and various welded types). They are suitable for pipeline projects involving low pressure and low-risk transport media.

Critical Tolerances



OD	OD Tolerance	WT	WT Tolerance
≤ 48.3 mm (≤ 2")	±0.8 mm	≤ 5 mm	12.5% / +不限制
60.3 – 168.3 mm (2"–6")	±0.8% or ±0.5 mm	5 – 15 mm	-10% / +不限制
168.3 – 610 mm (6"–24")	±0.75%	≥ 15 mm	-8% / +不限制
> 610 mm (>24")	±0.5%	—	—

Chemical and Mechanical Properties

1. Chemical Composition (wt%, max)

Grade	Mass fraction, % based on heat and product analyses a,g						
	C	Mn	P	S	V	Nb	Ti
	max b	max b	max	max	max	max	max
Seamless Pipe							
A	0.22	0.9	0.03	0.03	—	—	—
B	0.28	1.2	0.03	0.03	c,d	c,d	d
X42	0.28	1.3	0.03	0.03	d	d	d
X46	0.28	1.4	0.03	0.03	d	d	d
X52	0.28	1.4	0.03	0.03	d	d	d
X56	0.28	1.4	0.03	0.03	d	d	d
X60	0.28 e	1.40 e	0.03	0.03	f	f	f
X65	0.28 e	1.40 e	0.03	0.03	f	f	f
X70	0.28 e	1.40 e	0.03	0.03	f	f	f
Welded Pipe							
A	0.22	0.9	0.03	0.03	—	—	—
B	0.26	1.2	0.03	0.03	c,d	c,d	d
X42	0.26	1.3	0.03	0.03	d	d	d
X46	0.26	1.4	0.03	0.03	d	d	d
X52	0.26	1.4	0.03	0.03	d	d	d
X56	0.26	1.4	0.03	0.03	d	d	d
X60	0.26 e	1.40 e	0.03	0.03	f	f	f
X65	0.26 e	1.45 e	0.03	0.03	f	f	f
X70	0.26e	1.65 e	0.03	0.03	f	f	f

2. Mechanical Properties

Grade	Tensile Properties – Pipe Body of SMLS and Welded Pipes PSL 1			
	Yield Strength a	Tensile Strength a	Elongation	Tensile Strength b

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