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Definition and Applications

API 5L X80

- ALLLAND Production Standards Overview

1. Definition

API 5L X80 is a high-strength microalloyed line pipe steel produced under the American Petroleum Institute (API) 5L standard. As an API-certified steel pipe manufacturer with 25 years of experience, ALLLAND Steel Pipe Manufacturing Company possesses the production capability for the full range of API 5L line pipes from Grade B to X120.

2. ALLLAND API 5L X80 Steel Pipe Dimensions

Parameters	Dimensions
O.D.	21.3 mm – 1420 mm（0.5" – 56"）
WT	2.0 mm – 80 mm（0.08" – 3.15"）
Length	4 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

In API 5L X80 steel pipe is primarily used for ultra-high-pressure long-distance oil and gas pipelines, transnational energy transmission trunk lines, offshore oil and gas development projects, and high-pressure natural gas backbone networks. Offering excellent strength, toughness, and reliability under extreme operating conditions and in projects requiring high safety standards, it stands as a key high-end steel grade in modern energy transmission systems.

Critical Tolerances

Item	Size Range	Tolerance
OD	≤ 60.3 mm	±0.5 mm
	>60.3 mm ~ ≤168.3 mm	±0.75%
	>168.3 mm ~ ≤610 mm	±0.75%
	>610 mm	±0.75%
WT	≤ 15.0 mm	-12.5% / +Unspecified
	>15.0 mm	-10% / +Unspecified
LENGTH	Random length	4.88 m – 12.2 m
	Exact length	±500 mm
	Double random length	10.7 m – 12.2 m

Chemical and Mechanical Properties

1. Chemical Composition (wt%, max)

Element	C	Mn	P	S	Si	V	Nb	Ti	CE
Content (%)	≤ 0.12	≤ 1.80	≤ 0.020	≤ 0.010	≤ 0.45	≤ 0.10	≤ 0.10	≤ 0.04	≤ 0.45

2. Mechanical Properties

Item	Required Value
Yield Strength	≥550 MPa (79,800 psi)
Tensile Strength	625 – 825 MPa (90,000 – 119,000 psi)
Elongation	≥ 16%
Impact Toughness	PSL2 Mandatory (CVN test)
Hardness	≤ 22 HRC（Control is recommended.）
Service Temperature	-20°C ～ 350°C

Testing Requirements

Regarding mechanical properties, every batch of steel pipes must undergo tensile testing,

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ALLLAND STEEL PIPE