



Definition and Applications

API 5L X52

- ALLLAND Production Standards Overview

1. Definition

API 5L X52 is pipeline-specific steel conforming to API 5L standards, guaranteed to have a minimum yield strength of 52,000 psi (360 MPa). Due to its controllable cost, high strength, and manageable construction challenges, this steel grade sees extremely high usage globally, particularly in major projects.

2. ALLLAND API 5L X52 Steel Pipe Dimensions

| Parameters | Dimensions |
|-------------------|----------------------------------------------|
| O.D. | 21.3 mm – 1420 mm (0.5" – 56") |
| WT | 2.0 mm – 50 mm (0.08" – 2.0") |
| 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

API 5L X52 steel pipe is widely used in medium-to-high-pressure oil and gas transmission pipelines, long-distance natural gas and crude oil gathering and transportation systems, as well as municipal gas and industrial water supply projects; it is also suitable for water conservancy infrastructure and certain offshore engineering projects, offering excellent stability and cost-effectiveness in medium-to-high-strength pipeline systems.



ALL

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 of API 5L X52

1. Chemical Composition (wt%, max)

| Element | C | Mn | P | S | Si | V | Nb | Ti | CE |
|-------------|--------|--------|---------|---------|--------|--------|--------|--------|--------|
| Content (%) | ≤ 0.26 | ≤ 1.40 | ≤ 0.030 | ≤ 0.030 | ≤ 0.45 | ≤ 0.05 | ≤ 0.05 | ≤ 0.04 | ≤ 0.40 |

2. Mechanical Properties

| Item | Required Value |
|---------------------|--------------------------------------|
| Yield Strength | ≥ 360 MPa (52,200 psi) |
| Tensile Strength | 460 – 760 MPa (66,700 – 110,000 psi) |
| Elongation | ≥ 21% |
| 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, covering yield strength, tensile strength, and elongation.

www.allandsteel.com

sales@allandsteel.com

