



沧州博拓国际贸易有限公司

Cangzhou Botop International Co.,Ltd.

API 5L Grade B Specification

- LSAW Steel Pipe

<https://www.botopsteelpipe.com>

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API 5L Grade B Steel Pipe Overview



API 5L Grade B steel pipe is produced in accordance with the relevant requirements of API 5L and is widely used in pipeline transportation systems in the oil and gas industry.

Grade B may also be referred to as L245. The characteristic is that the minimum **yield strength** of the steel pipe is **245 MPa**.

API 5L line pipe is available in two product specification grades: **PSL1** is primarily used in standard transportation systems, while **PSL2** is suitable for more severe conditions with higher mechanical strength and more stringent testing standards.

The manufacturing process can be seamless (**SMLS**), electric resistance welded (**ERW**), or submerged arc welded (**SAW**) to suit different installation and operational needs.

About Us



Botop Steel is a professional manufacturer of thick-walled large-diameter double-sided submerged arc LSAW steel pipe located in China.

- Location: Cangzhou City, Hebei Province, China;
- Total Investment: 500 million RMB;
- Factory area: 60,000 square meters;
- Annual production capacity: 200,000 tons of JCOE LSAW steel pipes;
- Equipment: Advanced production and testing equipment;
- Specialization: LSAW steel pipe production;
- Certification: API 5L certified.

API 5L Grade B Classification



It is subdivided into several different types based on different Product Specification Levels (PSL) as well as delivery conditions.

This categorization makes the selection of the right line pipe more relevant to meet the needs of a specific project and the requirements of the working environment.

PSL1: B.

PSL2: BR; BN; BQ; BM.

Several special PSL 2 steel tubes are used for special service environments.

Sour service environments: **BNS; BQS; BMS.**

Offshore service environment: **BNO; BQO; BMO.**

Applications requiring longitudinal plastic strain capacity: **BNP; BQP; BMP.**

Delivery Conditions



| PSL | Delivery Condition | Pipe Grade/Steel Grade | |
|-------|---|------------------------|-------|
| PSL1 | As-rolled, normalizing rolled, thermomechanical rolled, thermomechanical formed, normalizing formed, normalized, normalized and tempered; or, if agreed, quenched and tempered for SMLS pipe only | B | L245 |
| PSL 2 | As-rolled | BR | L245R |
| | Normalizing rolled, normalizing formed, normalized, or normalized and tempered | BN | L245N |
| | Quenched and tempered | BQ | L245Q |
| | Thermomechanical rolled or thermomechanical formed | BM | L245M |

The delivery condition of the steel pipe mainly refers to the heat treatment or other treatments carried out at the end of the manufacturing process of the steel pipe, and these treatments have an important influence on the mechanical properties, corrosion resistance, and structural stability of the steel pipe.

API 5L GR.B Steel Pipe Manufacturing Process



In the API 5L standard Grade B pipe can be produced using one of the production processes in the following table.

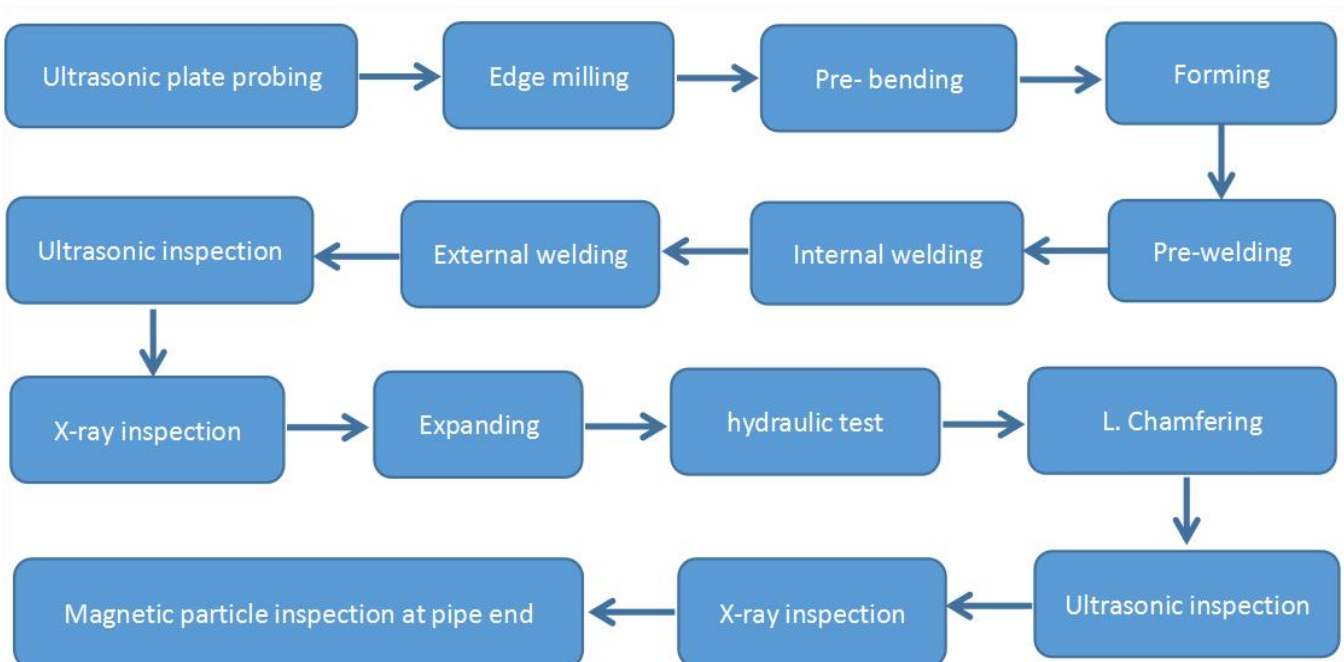
| | | | | | | | |
|---------------------|------|-----|-----|------|------|------|------|
| API 5L PSL1 Grade B | SMLS | LFW | HFW | SAWL | SAWH | COWL | COWH |
| API 5L PSL2 Grade B | SMLS | — | HFW | SAWL | SAWH | COWL | COWH |

LSAW is the optimum solution for large-diameter, thick-walled steel pipes.

The distinctive feature in appearance is the presence of a weld in the longitudinal direction of the pipe.

SAWL = LSAW (Longitudinal Submerged-Arc Welded).

The following is a flow chart of the production of LSAW steel pipe.



API 5L Grade B Pipe End Type



API 5L Grade B steel pipe end types may vary in PSL1 and PSL2.

PSL 1 Steel Pipe End

Belled end; Plain end; Plain end for special coupling; Threaded end.

Belled end: Limited to tubes with $D \leq 219.1$ mm (8.625 in) and $t \leq 3.6$ mm (0.141 in) at the socket end.

Threaded end: Threaded-end pipe is limited to SMLS and longitudinal seam welded pipe with $D < 508$ mm (20 in).

PSL 2 Steel Pipe End

Plain end.

For plain pipe ends the following requirements should be followed:

The end faces of $t \leq 3.2$ mm (0.125 in) plain end pipe shall be square cut.

Plain-end tubes with $t > 3.2$ mm (0.125 in) shall be beveled for welding. The bevel angle should be $30-35^\circ$ and the width of the root face of the bevel should be 0.8 - 2.4 mm (0.031 - 0.093 in).

API 5L Grade B Chemical Composition



The chemical composition of PSL1 and PSL2 steel pipe $t > 25.0 \text{ mm (0.984 in)}$ shall be determined by **agreement**.

Chemical Composition for PSL 1 Pipe with $t \leq 25.0 \text{ mm (0.984 in.)}$

| Steel Grade | Pipe Type | 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 |
| B (L245) | Seamless Pipe | 0.28 | 1.20 | 0.03 | 0.03 | c,d | c,d | d |
| B (L245) | Welded Pipe | 0.26 | 1.20 | 0.03 | 0.03 | c,d | c,d | d |

^a $Cu \leq 0.50 \%$; $Ni \leq 0.50 \%$; $Cr \leq 0.50 \%$ and $Mo \leq 0.15 \%$.
^b For every 0.01 % decrease in carbon content from the specified maximum carbon content, the permitted manganese content is increased by 0.05 % from the specified maximum manganese content. For Grade B, the maximum manganese content is 1.65 %;
^c Unless otherwise agreed, $Nb + V \leq 0.06 \%$.
^d $Nb + V + Ti \leq 0.15 \%$.
^g No deliberate addition of B is permitted and the residual B $\leq 0.001 \%$.

Chemical Composition for PSL 2 Pipe with $t \leq 25.0 \text{ mm (0.984 in.)}$

| Steel Grade | Pipe Type | Mass Fraction, Based on Heat and Product Analyses % max | | | | | | | | | Carbon Equivalent ^a %max | |
|-------------|--------------------------|---|------|-----------------|-------|-------|------|------|------|-------|-------------------------------------|-------------------|
| | | C ^b | Si | Mn ^b | P | S | V | Nb | Ti | Other | CE _{fw} | CE _{pcm} |
| BR (L245R) | Seamless and Welded Pipe | 0.24 | 0.40 | 1.20 | 0.025 | 0.015 | c | c | 0.04 | e,l | 0.43 | 0.25 |
| BN (L245N) | | 0.24 | 0.40 | 1.20 | 0.025 | 0.015 | c | c | 0.04 | e,l | 0.43 | 0.25 |
| BQ (L245Q) | | 0.18 | 0.45 | 1.40 | 0.025 | 0.015 | 0.05 | 0.05 | 0.04 | e,l | 0.43 | 0.25 |
| BM (L245M) | Welded Pipe | 0.22 | 0.45 | 1.20 | 0.025 | 0.015 | 0.05 | 0.05 | 0.04 | e,l | 0.43 | 0.25 |

^a Based on product analysis, for seamless pipe with $t \geq 20.0 \text{ mm (0.787 in.)}$, the CE limits shall be as agreed; the CE_{fw} limits apply if $C > 0.12 \%$ and the CE_{pcm} limits apply if $C \leq 0.12 \%$.
^b For every 0.01 % decrease in carbon content from the specified maximum carbon content, the permitted manganese content is increased by 0.05 % from the specified maximum manganese content. For Grade B, the maximum manganese content is 1.65 %.
^c Unless otherwise agreed, $Nb + V < 0.06 \%$.
^e Unless otherwise agreed, $Cu \leq 0.50 \%$; $Ni \leq 0.30 \%$; $Cr \leq 0.30 \%$ and $Mo \leq 0.15 \%$.
^l Unless otherwise agreed no intentional addition of B is permitted and residual B $< 0.001 \%$.

For PSL2 steel pipe products analyzed with a carbon content of $\leq 0.12\%$, the carbon equivalent CE_{pcm} can be calculated using the following formula:

$$CE_{pcm} = C + \frac{Si}{30} + \frac{Mn}{20} + \frac{Cu}{20} + \frac{Ni}{60} + \frac{Cr}{20} + \frac{Mo}{15} + \frac{V}{15} + 5B$$

API 5L Grade B Chemical Composition



For PSL2 steel pipe products analyzed with a carbon content > 0.12%, the carbon equivalent CE_{Iw} can be calculated using the formula below:

$$CE_{Iw} = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Ni + Cu)}{15}$$

API 5L Grade B Mechanical Property



The mechanical properties of API 5L Grade B LSAW steel pipe mainly include the following tests:

Tensile Property; Bend Test; Flattening Test; Guided-bend Test; CVN Impact Test for PSL 2 Pipe; DWT Test for PSL 2 Welded Pipe.

Tensile Property

PSL1 GR.B Tensile Properties

| Pipe Grade | Pipe Body of Seamless and Welded Pipe | | | Weld Seam of EW, LW, SAW, and COW Pipe |
|------------|---|--|--|--|
| | Yield Strength $R_{to.5}$ MPa(ksi), min | Tensile Strength R_m MPa(ksi), min | Elongation (on 50 mm or 2 in.) A_r %, min | Tensile Strength R_m MPa(ksi), min |
| L245 or B | 245 (35,500) | 415 (60,200) | Note | 415 (60,200) |

PSL2 GR.B Tensile Properties

| Pipe Grade | Pipe Body of Seamless and Welded Pipe | | | | | Weld Seam of HFW SAW and COW Pipe | |
|--|--|-----------------|--|-----------------|--------------------------------------|--|--|
| | Yield Strength $R_{to.5}$ MPa(ksi) | | Tensile Strength R_m MPa (ksi) | | Ratio ^a $R_{to.5}/R_m$ | Elongatio (on 50 mm or 2 in.) A_r % | Tensile Strength R_m MPa (psi) |
| | min | max | min | max | max | min | min |
| L245R or BR L245N or BN L245Q or BQ L245M or BM | 245 (35,500) | 450 (65,300) | 415 (60,200) | 655 (95,000) | 0.93 | Note | 415 (60,200) |

^a This limit applies for pipe with D > 323.9 mm (12.750 in.).

API 5L Grade B Mechanical Property



Bend Test

No part of the specimen shall be cracked and the weld shall not crack.

Flattening Test

Not applicable to LSAW steel pipe.

Suitable for EW, LW, and CW manufacturing types of tubes.

Guided-bend Test

Reveal any cracks or ruptures in the weld metal longer than 3.2 mm (0.125 in), regardless of depth.

Reveal any cracks or ruptures in the parent metal, HAZ, or fusion line longer than 3.2 mm (0.125 in) or deeper than 12.5 % of the specified wall thickness.

CVN Impact Test for PSL 2 Pipe

CVN (Charpy V-Notch) Impact test, a standardized test method for evaluating the toughness of materials when subjected to rapid impact loads.

The following requirements apply to grades \leq X60 or L415.

API 5L Grade B Mechanical Property



| CVN Absorbed Energy Requirements for Pipe Body of PSL 2 Pipe | |
|--|--|
| Specified Outside Diameter D mm (in.) | Full-size CVN Absorbed Energy min Kv J (ft.lbf) |
| ≤762 (30) | 27 (20) |
| > 762 (30) to 2134 (84) | 40 (30) |

DWT Test for PSL 2 Welded Pipe

The average shear area per test shall be $\geq 85\%$ at $0\text{ }^{\circ}\text{C}$ ($32\text{ }^{\circ}\text{F}$) test temperature.

For tubes with wall thickness $>25.4\text{ mm}$ (1 in.), the acceptance requirements for the DWT test shall be negotiated.

Hydrostatic Test



Test Time

All sizes of seamless and welded steel tubes with $D \leq 457$ mm (18 in.): test time \geq 5s;

Welded steel pipe $D > 457$ mm (18 in.): test time \geq 10s.

Test Frequency

Each steel pipe.

Test pressures

The hydrostatic test pressure P of a plain-end steel pipe can be calculated by using the formula.

$$P = 2St/D$$

S is the hoop stress. the value is equal to the specified minimum yield strength of the steel pipe x a percentage, in MPa (psi);

For API 5L Grade B, the percentages are 60% for the standard test pressure and 70% for the optional test pressure.

For $D < 88.9$ mm (3.500 in.), it is not necessary that the test pressure exceed 17.0 MPa (2470 psi);

Hydrostatic Test



t is the specified wall thickness, expressed in millimeters (inches);

D is the specified outside diameter, expressed in millimeters (inches).



Nondestructive Inspection



For **SAW tubes**, two methods, **UT** (ultrasonic testing) or **RT** (radiographic testing), are usually used.

ET (electromagnetic testing) is not applicable to SAW tubes.

Welded seams on welded pipes of grades \geq L210/A and diameters \geq 60.3 mm (2.375 in) shall be nondestructively inspected for full thickness and length (100 %) as specified.



Specify Outside Diameter and Wall Thickness



Standardized values for specified outside diameters and specified wall thicknesses of steel pipe are given in **ISO 4200** and **ASME B36.10M**.

| Permissible Specified Outside Diameter and Specified Wall Thickness | | |
|---|---|----------------------------------|
| Specified Outside Diameter D mm (in.) | Specified Wall Thickness t mm (in.) | |
| | Special Light Sizes ^a | Regular Sizes |
| ≥ 10.3 (0.405) to < 13.7 (0.540) | — | ≥ 1.7 (0.068) to ≤ 2.4 (0.094) |
| ≥ 13.7 (0.540) to < 17.1 (0.675) | — | ≥ 2.2 (0.088) to ≤ 3.0 (0.118) |
| ≥ 17.1 (0.675) to < 21.3 (0.840) | — | ≥ 2.3 (0.091) to ≤ 3.2 (0.125) |
| ≥ 21.3 (0.840) to < 26.7 (1.050) | — | ≥ 2.1 (0.083) to ≤ 7.5 (0.294) |
| ≥ 26.7(1.050) to < 33.4 (1.315) | — | ≥ 2.1 (0.083) to ≤ 7.8 (0.308) |
| ≥ 33.4(1311}5) to < 48.3 (1.900) | — | ≥ 2.1 (0.083) to ≤ 10.0 (0.394) |
| ≥ 48.3 (1.900) to < 60.3 (2.375) | — | ≥ 2.1 (0.083) to ≤ 12.5 (0.492) |
| ≥ 60.3 (2.375) to < 73.0 (2.875) | ≥ 2.1 (0.083) to ≤ 3.6 (0.141) | > 3.6 (0.141) to ≤ 14.2 (0.559) |
| ≥ 73.0 (2.875) to < 88.9 (3.500) | ≥ 2.1 (0.083) to ≤ 3.6 (0.141) | > 3.6 (0.141) to ≤ 20.0 (0.787) |
| ≥ 88.9 (3.500) to < 101.6 (4.000) | ≥ 2.1 (0.083) to ≤ 4.0 (0.156) | > 4.0 (0.156) to ≤ 22.0 (0.866) |
| ≥ 101.6(4.000) to < 168.3 (6.625) | ≥ 2.1 (0.083) to ≤ 4.0 (0.156) | > 4.0(0.156) to ≤ 25.0 (0.984) |
| ≥ 168.3 (6.625) to < 219.1 (8.625) | ≥ 2.1 (0.083) to ≤ 4.0 (0.156) | > 4.0 (0.156) to ≤ 40.0(1.575) |
| ≥ 219.1 (8.625) to < 273.1 (10.750) | ≥ 3.2 (0.125) to ≤ 4.0 (0.156) | > 4.0 (0.156) to ≤ 40.0 (1.575) |
| ≥ 273.1 (10.750) to < 323.9 (12.750) | ≥ 3.6 (0.141) to ≤ 5.2 (0.203) | > 5.2 (0.203) to ≤ 45.0 (1.771) |
| ≥ 323.9 (12.750) to < 355.6 (14.000) | ≥ 4.0 (0.156) to ≤ 5.6 (0.219) | > 5.6 (0.219) to ≤ 45.0 (1.771) |
| ≥ 355.6 (14.000) to < 457 (18.000) | ≥ 4.5 (0.177) to ≤ 7.1 (0.281) | > 7.1 (0.281) to ≤ 45.0 (1.771) |
| ≥ 457 (18.000) to < 559 (22.000) | ≥ 4.8 (0.188) to ≤ 7.1 (0.281) | > 7.1 (0.281) to ≤ 45.0(1.771) |
| ≥ 559 (22.000) to < 711 (28.000) | ≥ 5.6 (0.219) to ≤ 7.1 (0.281) | > 7.1 (0.281) to ≤ 45.0 (1.771) |
| ≥ 711 (28.000) to < 864 (34.000) | ≥ 5.6 (0.219) to ≤ 7.1 (0.281) | > 7.1 (0.281) to ≤ 52.0 (2.050) |
| ≥ 864 (34.000) to < 965 (38.000) | — | ≥ 5.6 (0.219) to ≤ 52.0 (2.050) |
| ≥ 965 (38.000) to < 1422 (56.000) | — | ≥ 6.4 (0.250) to ≤ 52.0 (2.050) |
| ≥ 1422 (56.000) to < 1829 (72.000) | — | ≥ 9.5 (0.375) to ≤ 52.0 (2.050) |
| ≥ 1829 (72.000) to < 2134(84.000) | — | ≥ 10.3 (0.406) to ≤ 52.0 (2.050) |

^a Pipe having the combination of specified outside diameter and specified wall thickness is defined as special light size pipe; other combinations given in this table are defined as regular size pipe.

Dimensional Tolerances



Tolerances for Diameter and Out-of-roundness

The diameter of a steel pipe is defined as the circumference of the pipe in any circumferential plane divided by π .

| Specified Outside Diameter D mm (in.) | Diameter Tolerances mm (in.) | | | | Out-of-roundness Tolerances mm (in.) | |
|---|----------------------------------|---------------------------------------|--------------------------------------|---------------|--|---|
| | Pipe Except the End ^a | | Pipe End ^{a,b,c} | | Pipe Except the End ^a | Pipe End ^{a,b,c} |
| | SMLS Pipe | Welded Pipe | SMLS Pipe | Welded Pipe | | |
| < 60.3 (2.375) | -0.8 (0.031) to +0.4 (0.016) | | -0.8 (0.031) to +0.4 (0.016) | | 1.2 (0.048) | 1.2 (0.036) |
| ≥ 60.3 (2.375) to 168.3 (6.625) | ±0.0075D | | -0.4 (0.016) to +1.6 (0.063) | | 0.020D for D/t ≤ 75; by agreement for D/t > 75 | 0.015D for D/t ≤ 75; by agreement for D/t > 75 |
| ≥ 168.3 (6.625) to 610 (24.000) | ±0.0075D | ±0.0075D, but maximum of ±3.2 (0.125) | ±0.005D, but maximum of ±1.6 (0.063) | | 0.020D | 0.015D |
| ≥ 610 (24.000) to 1422 (56.000) | ±0.01D | ±0.005D, but maximum of ±14.0 (0.063) | ±2.0 (0.079) | ± 1.6 (0.063) | 0.015D, but maximum of 15 (0.6) for D/t ≤ 75; by agreement for D/t > 75 | 0.01D, but maximum of 13 (0.5) for D/t ≤ 75; by agreement for D/t > 75 |
| > 1422 (56.000) | As agreed | | | | | |

^a The pipe end includes a length of 100 mm (4.0 in.) at each of the pipe extremities.
^b For SMLS pipe, the tolerances apply for t < 25.0 mm (0.984 in.), and the tolerances for thicker pipe shall be as agreed.
^c For expanded pipe with D ≥ 219.1 mm (8.625 in.) and for nonexpanded pipe, the diameter tolerance and the out-of-roundness tolerance may be determined using the calculated inside diameter (the specified outside diameter minus two times the specified wall thickness) or measured inside diameter rather than the specified outside diameter (see 10.2.8.3).

Dimensional Tolerances



Tolerances for Wall Thickness

| Wall Thickness t mm (in.) | Tolerances ^a mm (in.) |
|--|--|
| SMLS Pipe^b | |
| ≤ 4.0 (0.157) | +0.6 (0.024) -0.5 (0.020) |
| > 4.0 (0.157) to < 25.0 (0.984) | +0.150t -0.125t |
| ≥ 25.0 (0.984) | +3.7 (0.146) or +0.1t, whichever is the greater -3.0 (0.120) or -0.1t, whichever is the greater |
| Welded Pipe^{c, d} | |
| ≤ 5.0 (0.197) | ±0.5 (0.020) |
| > 5.0 (0.197) to < 15.0 (0.591) | ±0.1t |
| ≥ 15.0 (0.591) | ±1.5 (0.060) |
| <p>^a If the purchase order specifies a minus tolerance for wall thickness smaller than the applicable value given in this table, the plus tolerance for wall thickness shall be increased by an amount sufficient to maintain the applicable tolerance range.</p> <p>^b For pipe with D ≥ 355.6 mm (14.000 in.) and t ≥ 25.0 mm (0.984 in.), the wall thickness tolerance locally may exceed the plus tolerance for wall thickness by an additional 0.05t, provided that the plus tolerance for mass (see 9.14) is not exceeded.</p> <p>^c The plus tolerance for wall thickness does not apply to the weld area.</p> <p>^d See 9.13.2 for additional restrictions.</p> | |

Dimensional Tolerances



Tolerance for Length

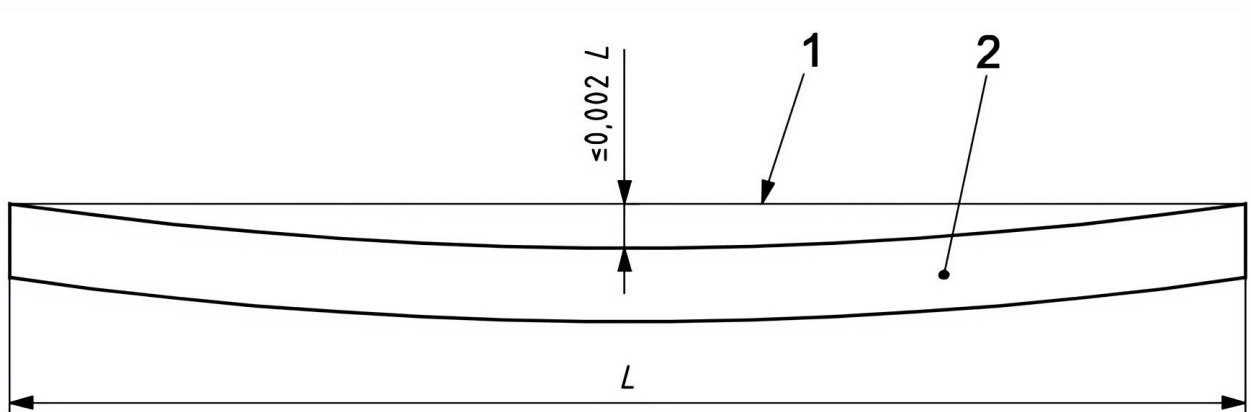
Approximate lengths shall be delivered within a tolerance of ± 500 mm (20 in.).

Tolerances for **random length**:

| Random Length Designation m (ft) | Minimum Length m (ft) | Minimum Average Length for Each Order Item m (ft) | Maximum Length m (ft) |
|-------------------------------------|--------------------------|--|--------------------------|
| Threaded-and-coupled Pipe | | | |
| 6 (20) | 4.88 (16.0) | 5.33 (17.5) | 6.86 (22.5) |
| 9 (30) | 4.11 (13.5) | 8.00 (26.2) | 10.29 (33.8) |
| 12 (40) | 6.71 (22.0) | 10.67 (35.0) | 13.72 (45.0) |
| Plain-end Pipe | | | |
| 6 (20) | 2.74 (9.0) | 5.33 (17.5) | 6.86 (22.5) |
| 9 (30) | 4.11 (13.5) | 8.00 (26.2) | 10.29 (33.8) |
| 12 (40) | 4.27 (14.0) | 10.67 (35.0) | 13.72 (45.0) |
| 15 (50) | 5.33 (17.5) | 13.35 (43.8) | 16.76 (55.0) |
| 18 (60) | 6.40 (21.0) | 16.00 (52.5) | 19.81 (65.0) |
| 24 (80) | 8.53 (28.0) | 21.34 (70.0) | 25.91 (85.0) |

Tolerance for Straightness

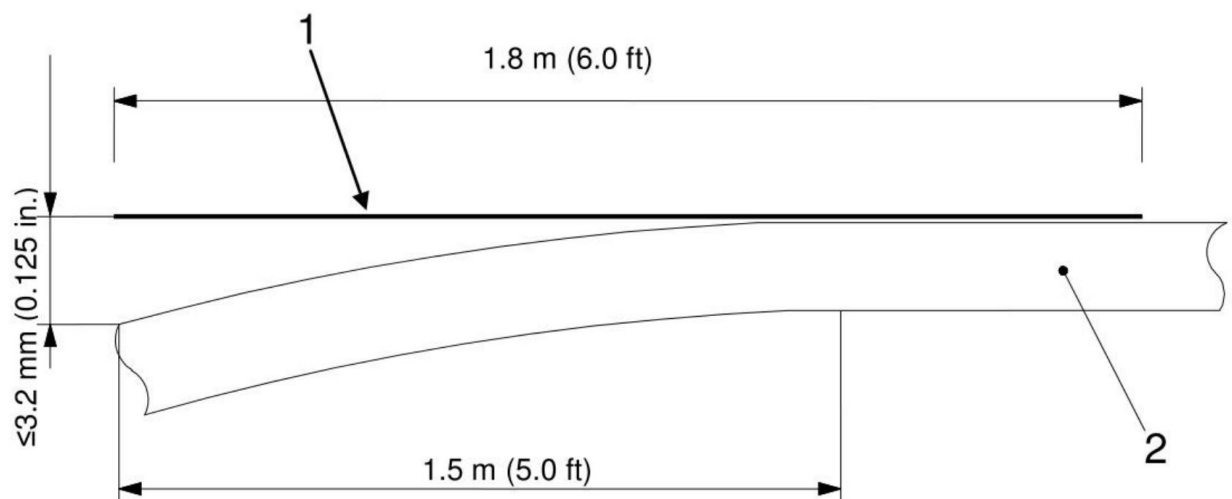
Straightness deviation over the entire length of the tube: $\leq 0.200 L$;



Dimensional Tolerances



Straightness deviation of 1.5 m (5.0 ft) pipe end of steel pipe: $\leq 3.2\text{mm}$ (0.125 in.).

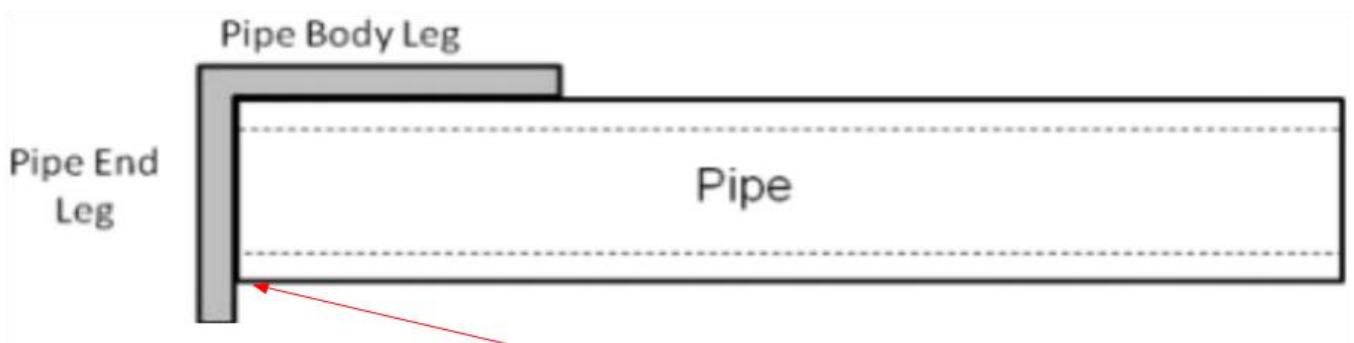


- Key**
- 1 straight line
 - 2 pipe

Figure 2—Measuring End Straightness

Tolerance for Straightness

The out-of-squareness shall be $< 1.6\text{ mm}$ (0.063 in.). The out-of-squareness is measured as the gap between the end of the pipe and the pipe end leg.



Dimensional Tolerances



Tolerances for the Weld Seam

Maximum Permissible Radial Offset for SAW and COW Pipe.

| Specified Wall Thickness t mm (in.) | Maximum Permissible Radial Offset ^a mm (in.) |
|---|--|
| ≤ 15.0 (0.590) | 1.5 (0.060) |
| > 15.0 (0.590) to 25.0 (0.984) | 0.1t |
| > 25.0 (0.984) | 2.5 (0.098) |

^a These limits apply also to strip/plate end welds

Maximum Permissible Weld Bead Height for SAW and COW Pipe (Except at Pipe Ends).

| Specified Wall Thickness mm (in.) | Weld Bead Height mm (in.) maxim | |
|--------------------------------------|---------------------------------------|---------------|
| | Internal Bead | External Bead |
| ≤ 13.0 (0.512) | 3.5 (0.138) | 3.5 (0.138) |
| > 13.0 (0.512) | 3.5 (0.138) | 4.5 (0.177) |

The weld shall have a smooth transition to the surface of the adjacent steel pipe.

Pipe end welds are to be ground to a length of 100 mm (4.0 in.) with a residual weld height of ≤ 0.5 mm (0.020 in.).

Dimensional Tolerances



Tolerances for Mass

Each steel pipe:

- a) for special light size pipe: -5.0% - +10.0%;
- b) for pipe in Grade L175, L175P, A25, and A25P: -5.0% - +10.0%;
- c) for all other pipes: -3.5% - +10.0%.

Pipe per lot (\geq 18 tons (20 tons) for order lot):

- a) for grades L175, L175P, A25, and A25P: -3.5 %;
- b) for all other grades: -1.75 %.

API 5L GR.B Applications



API 5L Grade B steel pipe is a type of line pipe, mainly used to transport fluids such as oil, natural gas, and water, and is one of the commonly used materials in the oil and gas industry.

Oil and gas transmission systems: API 5L Grade B steel pipe is commonly used in oil and gas field extraction and processing facilities to transport crude oil and natural gas to gathering systems or processing facilities.

Water pipelines: Additional surface treatments, such as coatings or cladding, may be applied to improve their corrosion resistance for use in the conveyance of water, including water supply and irrigation systems.

Refineries: In refineries, API 5L Grade B steel pipe is used to transport a variety of chemicals and intermediates derived from the fractional distillation of crude oil.

Construction and infrastructure: In the construction industry, for building bridges, support structures, or other important infrastructure projects, especially where long-distance transportation of fluids is required.

API 5L Grade B Equivalent



ASTM A106 Grade B: Seamless carbon steel tubing typically used for high-temperature service, with chemical composition and mechanical properties very similar to API 5L Grade B. ASTM A106 Grade B is commonly used for the transport of high-temperature water vapor, chemicals, and petroleum products.

ASTM A53 Grade B: This is another type of carbon steel pipe, which can be welded or seamless, and is widely used in mechanical, construction, and other engineering applications. Although it is primarily used for low-pressure and temperature applications, some of its mechanical property parameters are similar to API 5L Grade B.

EN 10208-2 L245NB: Used for manufacturing pipelines for transporting flammable gases and other liquids. L245NB (1.0457) is a medium-strength pipeline steel with mechanical properties similar to API 5L Grade B.

ISO 3183 L245: Used in pipeline transportation systems in the oil and gas industry. L245 in ISO 3183 is very close in properties to API 5L Grade B and can often be used interchangeably.

Additional Services We Can Provide



Botop Steel not only provides high-quality API 5L Grade B steel pipe, but also offers you a series of supporting services, including a wide range of anti-corrosion coating options, personalized packaging solutions, and comprehensive logistics support to ensure that we can meet your various needs.

We are committed to creating a one-stop sourcing platform that allows you to conveniently access all the products and services you need. With our professional and reliable services, you can complete every step of your project efficiently and hassle-free, ensuring quality and progress. Our goal is to be your most trustworthy partner.

Technical Support

Our company is committed to providing comprehensive technical support services covering all stages of a project. From pre-project tender preparation to mid-project procurement and transportation arrangements, to post-project maintenance and troubleshooting, our professional team can provide you with expert advice and support.

Additional Services We Can Provide



Packaging

We offer a variety of packaging options, including bales, tarps, crates, and pipe caps, which can be customized to meet your specific needs.

