

PIPES FOR OIL-GAS PIPELINES API 5L

Seamless and welded pipes for liquid-gas hydrocarbons & water

USE	Oil and natural gas industry
STEEL GRADE	B - L245/X42 - L290/X52 - L360/X60 - L415/X65 - L450
PROCESSING	<ul style="list-style-type: none"> ➤ Seamless ➤ Welded (EW – SAW)

TOLERANCES THICKNESS

Nominal thickness of seamless pipes (mm) ⁽²⁾	Tolerance (mm) ⁽¹⁾
$t \leq 4$	+0,6 / -0,5
$4 < t < 25$	+ 0,15 t / -0,125 t
$t \geq 25$	+3,7 / - 3,0 or + 0,1 t / - 0,1 t

Nominal thickness of welded pipes (mm) ⁽³⁾⁽⁴⁾	Tolerance (mm) ⁽¹⁾
$t \leq 5$	+/-0,5
$5 < t < 15$	+/-0,1 t
$t \geq 15$	+/-1,5

(1) If an order is confirmed with the minimum permitted thickness tolerance as per the above table, the upper thickness tolerance shall be increased sufficiently to maintain the applied range tolerance

(2) For pipes with $D \geq 355,6\text{mm}$ and $t \geq 25\text{mm}$ a tolerance of 0,05t may be added for a localized point, when the mass tolerance has not been reached

(3) The upper tolerance for thicknesses is not applied in the welding area

(4) Any other restrictions must be identified in the standard

OUTSIDE DIAMETER

Diameter (mm)	Pipe body (mm) ⁽¹⁾		Pipe ends (mm) ⁽¹⁾⁽²⁾⁽³⁾	
	Seamless	Welded	Seamless	Welded
$D < 60,3$	-0,8 / +0,4		-0,4 / +1,6	
$60,3 \leq D \leq 168,3$	+/-0,0075 D			
$168,3 < D \leq 610$	+/-0,0075 D	+/-0,0075 D max +/-3,2	+/-0,005 D max +/-1,6	
$610 < D \leq 1422$	+/-0,01 D	+/-0,005 D max +/-4	+/-2,0	+/-1,6
$D > 1422$	as per agreements			

OUT OF ROUNDNESS

Diameter (mm)	Pipe body (mm) ⁽¹⁾		Pipe ends (mm) ⁽¹⁾⁽²⁾⁽³⁾	
$D < 60,3$	Included in diameter tolerances			
$60,3 \leq D \leq 168,3$	0,020 D		0,015 D	
$168,3 < D \leq 610$				
$610 < D \leq 1422$	0,015 D with max 15mm for $D/t \leq 75$	as per agreements for $D/t > 75$	0,01 D with max 13mm for $D/t \leq 75$	as per agreements for $D/t > 75$
$D > 1422$	as diameter tolerances			

(1) The "pipe end" is considered as a length of 100mm from each end

(2) For seamless pipes, the tolerances applied for $t \leq 25$ and the tolerances for larger thicknesses must be agreed

(3) For pipes with $D \geq 219,1\text{mm}$ the diameter and out of roundness tolerances may be determined by using the following formula:

$$D_i = D - 2t$$

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MASS

The Kg/m mass per unit of length will be calculated with the following formula:

$$M = t(D - t) \times C$$

The mass tolerance for each pipe must not differ from the nominal mass of + 10% / - 3,5%; any other restrictions should be identified in the standard

STRAIGHTNESS

- $\leq 0,2\%$ on the total length of the pipe
- The maximum allowable deviation relating to a length must be $< 4\text{mm/m}$

MARKING

With plate applied to the bundle for $D \leq 48,3\text{mm}$ and marked in paint on one end for $D > 48,3\text{mm}$ with the following information:

- Manufacturer's name or trademark
- Diameter and thickness
- Grade
- PSL1 or PSL2
- Length
- Cast number
- Any additional instructions

CERTIFICATION

UNI EN 10204

SIZE

RANGE

ASME B36.10