

EN Seamless Pipe

Steel Pipe- Seamless Pipe- EN Seamless Pipe- 【Steel Grade】			
Standard No	Steel Grade	Standard Name	Dimension Range
EN 10208	L210GA, L235GA, L245GA, L290GA, L360GA, L245NB, L290NB, L360NB, L415NB, L360QB, L415QB, L450QB, L485QB, L555QB	Steel Pipes for Pipelines for Combustible Fluids	33.7-1626mm
EN 10210	S235JRH, S275J0H, S275J2H, S355J0H, S355J2H, S355K2H, S275NH, S275NLH, S355NH, S355NLH, S420NH, S420NLH, S460NH, S460NLH	Hot Finished Structural Hollow Sections of Non-alloy and Fine Grain Steels	21.3-1219mm
EN 10216-1	P195TR1, P195TR2, P235TR1, P235TR2, P265TR1, P265TR2	Seamless Steel Tubes for Pressure Purposes-1: Non-alloy Steel Tubes with Specified Room Temperature Properties	10.2-711mm
EN 10216-2	P195GH, P235GH, P265GH, 20MnNb6, 16Mo3, 8MoB5-4, 14MoV6-3, 10CrMo5-5, 13CrMo4-5, 10CrMo9-10, 11CrMo9-10, 25CrMo4, 20CrMoV13-5-5, 15NiCuMoNb5-6-4, X11CrMo5+1, X11CrMo5+NT1, X11CrMo5+NT2, X11CrMo9-1+1, X11CrMo9-1+NT, X10CrMoVNb9-1, X20CrNiV11-1	Seamless Steel Tubes for Pressure Purposes-2: Non-alloy and Alloy Steel Tubes with Specified Elevated Temperature Properties	10.2-711mm
EN 10216-3	P275NL1, P275NL2, P355N, P355NH, P355NL1, P355NL2, P460N, P460NH, P460NL1, P460NL2, P620Q, P620QH, P620QL, P690Q, P690QH, P690QL1, P690QL2	Seamless Steel Tubes for Pressure Purposes-3: Alloy Fine Grain Steel Tubes	10.2-711mm
EN 10216-4	P215NL, P255QL, P265NL, 26CrMo4-2, 11MnNi5-3, 13MnNi6-3, 12Ni14, X12Ni5, X10Ni9	Seamless Steel Tubes for Pressure Purposes-4: Non-alloy and Alloy Steel Tubes with Specified Low Temperature Properties	10.2-711mm
EN 10224	L235, L275, L355	Non-alloy Steel Tubes and Fittings for the Conveyance of Water and Other Aqueous Liquids	26.9-2743mm

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EN 10297-1	E235, E275, E315, E355, E470, E275K2, E355K2, E420J2, E460K2, E590K2, E730K2, C22E, C35E, C45E, C60E, 38Mn6, 41Cr4, 25CrMo4, 30CrMo4, 34CrMo4, 42CrMo4, 36CrNiMo4, 30CrNiMo8, 41NiCrMo7-3-2	Seamless Circular Steel Tubes for Mechanical and General Engineering Purposes-1: Non-alloy and Alloy Steel Tubes	26.9-610mm
EN 10305-1	E215, E235, E355	Steel Tubes for Precision Applications-1: Seamless Cold Drawn Tubes	4-260mm
EN 10305-4	E215, E235, E355	Steel Tubes for Precision Applications-4: Seamless Cold Drawn Tubes for Hydraulic and Pneumatic Power Systems	4-80mm

Steel Pipe- Seamless Pipe- EN Seamless Pipe- 【Dimension】							
Outside Diameter -“D” (mm)	Wall Thickness -“S” (mm)		Outside Diameter -“D” (mm)	Wall Thickness -“S” (mm)		Outside Diameter -“D” (mm)	Wall Thickness -“S” (mm)
Calculation of Unit Weight: $W = 0.02466 * S * (D-S)$							
4.0	0.5-1.2		50.0	1.0-10.0		177.8	2.0-50.0
5.0	0.5-1.2		51.0	2.0-12.5		180.0	3.5-20.0
6.0	0.5-2.0		54.0	2.0-14.2		190.0	3.5-22.0
7.0	0.5-2.0		55.0	1.0-12.0		193.7	2.0-55.0
8.0	0.5-2.5		57.0	2.0-14.2		200.0	3.5-22.0
9.0	0.5-2.8		60.0	1.0-12.5		203.0	6.3-65.0
10.0	0.5-3.0		60.3	2.0-16.0		219.1	2.0-65.0
10.2	1.6-2.6		63.5	2.0-16.0		220.0	4.5-25.0
12.0	0.5-4.0		65.0	1.0-14.0		224.5	6.3-14.2
12.7	1.8-3.2		70.0	2.0-17.5		229.0	6.3-70.0
13.5	1.8-3.6		73.0	2.0-17.5		240.0	4.5-25.0
14.0	0.5-4.0		75.0	1.0-16.0		244.5	2.0-70.0
15.0	0.5-5.0		76.1	2.0-20.0		260.0	5.0-25.0
16.0	0.5-6.0		80.0	1.0-16		273.0	2.0-80.0
17.2	1.8-4.5		82.5	2.0-22.2		298.5	7.1-80.0
18.0	0.5-6.0		85.0	1.5-16.0		323.9	2.3-80.0
19.0	2.0-5.0		88.9	2.0-25.0		355.6	2.6-100.0
20.0	0.5-7.0		90.0	1.5-16.0		368.0	8.8-100.0
21.3	2.0-5.0		95.0	2.0-18.0		406.4	2.6-100.0
22.0	0.5-7.0		100.0	2.0-18.0		419.0	10.0-100.0

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25.0	0.5-8.0		101.6	2.0-28.0		457.0	3.2-100.0
25.4	2.0-6.3		108.0	2.0-30.0		508.0	3.2-100.0
26.0	0.5-8.0		110.0	2.0-18.0		521.0	12.5-100.0
26.9	2.0-8.0		114.3	2.0-32.0		559.0	3.2-100.0
28.0	0.5-8.0		120.0	2.0-18.0		610.0	3.2-100.0
30.0	0.5-10.0		121.0	4.0-36.0		660.0	4.5-25.0
31.8	2.0-8.0		127.0	2.0-36.0		711.0	4.5-60.0
32.0	0.5-10.0		130.0	2.5-18.0		762.0	4.5-50.0
33.7	2.3-10.0		133.0	2.0-36.0		813.0	4.5-36.0
35.0	0.5-11.0		139.7	2.0-36.0		864.0	4.5-36.0
38.0	0.5-11.0		140.0	2.5-18.0		914.0	4.5-36.0
40.0	1.0-11.0		141.3	2.0-36.0		1016	4.5-36.0
42.0	1.0-10.0		150.0	3.0-20.0		1067	5.0-36.0
42.4	2.0-11.0		152.4	2.0-40.0		1118	5.0-36.0
44.5	2.0-12.5		159.0	2.0-40.0		1168	5.0-36.0
45.0	1.0-10.0		160.0	3.0-20.0		1219	5.0-36.0
48.0	1.0-10.0		168.3	2.0-45.0			
48.3	2.0-12.5		170.0	3.0-20.0			

Steel Pipe- Seamless Pipe- EN Seamless Pipe- 【Dimension Tolerance】						
Standard	Tolerance on Dimension					
	Outside Diameter			Wall Thickness		Length
	(mm)					
EN 10208	Outside Diameter	Pipe except the end	Pipe end	T≤4	±0.6	Random Length: See Table 1 . Fixed lengths shall be delivered with a Tolerance of ±500mm
	D≤60	±0.5 ±0.75%D	±0.5 ±0.5%D	4<T<25	+15% -12.5%	
	60<D< SPAN>≤610	Whichever is the greater	Whichever is the greater	T≥25	+3.75 -3.0 or ±10%	
	610<D< SPAN>≤1430				±1%D	
	D>1430	By Agreement	By agreement			
EN 10210	±1% with a minimum of ±0.5 and a maximum of ±10			-10%		See Table 2

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EN 10216- (1, 2, 3, 4)	See Table 3 , Table 4		$L \leq 6000$	+10 0
			$6000 < L \leq 12000$	+15 0
			$L > 12000$	+by agreement 0
EN10224	$\leq \pm 1\% D$ or ± 0.5 whichever is the greater	See Table 5	See Table 6	
EN 10297-1	See Table 7		$L \leq 6000$	+10 0
			$6000 < L \leq 12000$	+15 0
			$L > 12000$	+by agreement 0
EN 10305-1	$\pm 0.05 \text{ mm}$ whichever is the greater	$\pm 10\%$ or $\pm 0.1 \text{ mm}$ Whichever is the greater	$L \leq 500$	a
			$500 < L \leq 2000$	+3 0
			$2000 < L \leq 5000$	+5 0
			$5000 < L \leq 8000$	+10 0
			> 8000	a
			a: an agreed unilateral tolerance is specified for the exact length.	

Table 1 Requirements for Random Length Groups in EN 10208

Length Group	Length Range For 90% of Order Item ¹⁾	Minimum Average Length of Order Item	Shortest Length of Order Item
(m)			
r1	6-11	8	4
r2	9-14	11	6
r3	10-16	13	7
r4	11-18	15	8
1) The upper limit is the maximum value for the length of each individual pipe.			

Table 2 Tolerances on Manufacture's Delivered Length in EN 10210

Type of Length	Range of Length or Length L	Tolerance
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Random length	4000<L< SPAN>≤16000mm with a range of 2000 per order item	10% of sections supplied may be below the minimum for the ordered range but not shorter than 75% of the minimum range length
Approximate length	4000mm≤L≤16000mm	±500mm
Exact length	2000mm≤L≤6000mm	-0, +10mm
	>6000mm	-0, +15mm

Table 3 Tolerances on Outside Diameter and Wall Thickness in EN 10216-(1, 2, 3, 4)

Outside Diameter -D (mm)	Tolerances on D	Tolerances on T for a T/D ratio			
		≤0.025	>0.025 ≤0.050	>0.050 ≤0.10	>0.10
D≤219.1	±1% or ±0.5mm	±12.5% or ±0.4mm whichever is the greater			
D>219.1	whichever is the greater	±20%	±15%	±12.5%	±10%
For outside diameters D≥355.6 mm it is permitted to exceed the upper wall thickness locally by a further 5% of the wall thickness T					

Table 4 Tolerances on Outside Diameter and Wall Thickness for Tubes Ordered Cold Finished in EN 10216-(1, 2, 3, 4)

Tolerance on D	Tolerance on T
±0.5% or ±0.3mm whichever is the greater	±10% or ±0.2mm whichever is the greater

Table 5 Tolerances on Thickness for Seamless Tubes in EN 10224

Outside Diameter (mm)	Tolerance on Thickness for T/D ratio (%)			
	≤2.5	>2.5 ≤5.0	>5.0 ≤10.0	>10.0
D≤219.1	±12.5% or ±0.4mm whichever is the greater			
D>219.1	±20%	±15%	±12.5%	±10%

Table 6 Tolerance for Exact Length in EN 10224

Length - L (mm)	Tolerance on Length
	Tube outside diameter

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	<406.4mm	≥406.4mm
2000<L≤6000	-0, +10mm	-0, +25mm
6000<L≤12000	-0, +15mm	-0, +50mm
L>12000	-0, +by agreement	

Table 7 Tolerances on Outside Diameter and Wall Thickness in EN 10297-1

Outside Diameter - D (mm)	Tolerances on D	Tolerances on T for a T/D ratio		
		≤0.025	>0.025 ≤0.050	>0.050
D≤219.1	±1% or ±0.5mm	±12.5% or ±0.4mm whichever is the greater		
D>219.1	whichever is the greater	±20%	±15%	±12.5%

DIN Seamless Tube

Steel Pipe- Seamless Pipe- DIN Seamless Tube- 【Standard】			
Standard No	Steel Grade	Standard Name	Dimension Range
DIN 1630	St37.4, St44.4, St52.4	Seamless Circular Tubes of Non Alloy Steels With Very High Quality Requirements	10.2-660 mm
DIN 2391-1	St30Si, St30Al, St35, St45, St52	Seamless Precision Steel Tubes	4-260 mm
DIN 2440	St33.2	Steel Tubes Medium Weight Suitable for Screwing	10.2-165.1 mm
DIN 2441	St33.2	Steel Tubes Heavy Weight for Suitable for Screwing	10.2-165.1 mm
DIN 2445-1	St 52.4	Seamless Steel Tubes Subjected to Dynamic Loading-1 Hot Finished Tubes for Use in Fluid Power Systems, Rated for Pressures from 100 bar to 500 bar	21.3-355.6mm
DIN 2445-2	St 37.4	Seamless Steel Tubes Subjected to Dynamic Loading-2 Precision Tubes for Use in Fluid Power Systems, Rated for Pressures from 100 bar to 500 bar	4-50mm
DIN 2460	St35	Steel Pipes for Water Pipelines	DN80-500
DIN 17172	StE210.7, StE240.7, StE290.7, StE320.7, StE360.7, StE385.7, StE415.7, StE290.7TM, StE320.7TM, StE360.7TM, StE385.7TM, StE415.7TM, StE445.7TM, StE480.7TM	Steel Pipes for Pipe Lines for the Transport of Combustible Fluids and Gases	10.2-660 mm
DIN 17173	TTSt35N, TTSt35V, 26CrMo4, 11MnNi53, 13MnNi63, 10Ni14, 12Ni19, X8Ni19	Seamless Circular Tubes Made from Steels with Low Temperature Service	10.2-660 mm
DIN 17175	St35.8, St45.8, 17Mn4, 19Mn5, 15Mo3, 13CrMo910, 10CrMo910, 14MoV63, X20CrMoV121	Seamless Circular Tubes Made From Steels with Elevated Temperatures	10.2-660 mm
DIN 17176	25CrMo4, 13CrMo44, 10CrMo910, 12CrMo910, 12CrMo1210, 12CrMo195, X12CrMo91, 20CrMoV135, X20CrMoV121	Seamless Circular Steel Tubes for Hydrogen Service at Elevated Temperatures and Pressures.	10.2-660 mm

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DIN 17179	StE225, WStE255, TStE255, EStE255, StE285, WStE285, TStE285, EStE285, StE355, WStE355, TStE355, EStE355, StE420, WStE420, TStE420, EStE420, StE460, WStE460, TStE460, EStE460	Seamless Circular Fine Grain Steel Tubes Subject To Special Requirements	10.2-660 mm
DIN 28180	St 37.0, St 35.8, TT St 35N, 15Mo3, 13CrMo4 4	Seamless Steel Tubes for Tubular Heat Exchangers	16-38mm

Steel Pipe- Seamless Pipe- DIN Seamless Tube- 【Dimension】						
Outside Diameter -“D” (mm)	Wall Thickness -“S” (mm)		Outside Diameter -“D” (mm)	Wall Thickness -“S” (mm)		Outside Diameter -“D” (mm)
						Wall Thickness -“S” (mm)
Calculation of Unit Weight: $W = 0.02466 * S * (D-S)$						
4	0.5-1.0		22	1.0-3.0		80
5	0.75-1.0		25	1.6-7.0		88.9
6	0.75-2.25		26.9	2.0-7.1		101.6
8	1.0-2.5		28	1.5-5.0		114.3
10	1.0-3.0		30	1.6-8.0		139.7
10.2	2.0-2.65		33.7	2.6-10.0		152.4
12	1.0-3.5		35	2.0-6.0		165.1
13.5	2.35-2.9		38	2.0-10.0		168.3
14	1.0-4.0		42	2.0-4.0		177.8
15	1.0-3.0		42.4	2.6-11.0		193.7
16	1.0-4.5		48.3	2.6-12.5		219.1
17.2	2.65-2.9		50	4.0-13.0		273.0
18	1.0-3.0		60.3	3.2-16.0		323.9
20	1.5-5.5		65	8.0		355.6
21.3	2.0-5.6		76.1	3.6-20.0		

Steel Pipe- Seamless Pipe- DIN Seamless Tube- 【Dimension Tolerance】			
Standard	Tolerance		
	Outside Diameter	Wall Thickness	Length
	mm		
DIN 1630	See Table 1	See Table 2	See Table 3
DIN 2391	See Table 4	10 %	See Table 5
DIN 2440	See Table 6	-12.5%, + A	±1m

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DIN 2441	See Table 6				-12.5%, + A		±1m	
DIN 17172	See Table 7				≤130	10%	Fixed Length	±500
					>130	12.5%		
DIN 17173	See Table 1				See Table 2		See Table 3	
DIN 17175	See Table 1				See Table 2		See Table 3	
DIN 17176	See Table 8				See Table 2		See Table 3	
DIN 17179	See Table 1				See Table 2		See Table 3	
DIN 28180	Outside Diameter	Class 1	Class 2	Class 3	See Table 9	≤5000	-0, +5	
	16-30	±0.08	Not Applicable	±0.50		>5000 -10000	-0, +10	
	38	±0.15				>10000	By agreement	
A: The upper limit is fixed by the permissible weight deviation.								

Table 1 Permissible Deviations in Outside Diameter in DIN 1630, DIN 17173, DIN 17175, DIN 17179

Outside Diameter - da mm	Permissible Deviation in Diameter	
	Tube Barrel and Tube Ends	At Tube ends, Subject to Particular agreement
<100	±1% da; (values up to ±0.5mm are permitted)	±0.4mm
100≤da<200	±1% da	±0.5% da
≥200	±1% da	±0.6% da

Table 2 Permissible Deviations Wall Thickness in DIN 1630, DIN 17173, DIN 17175, DIN 17176, DIN 17179

Permissible Deviation in Wall Thickness for Outside Diameter, da. and Wall Thicknesses, s								
da≤130mm			130mm<da≤320mm			320mm<da≤660mm		
s≤2	2<s≤4	s>4	s≤0.05da	0.05da<s≤0.11da	s>0.11da	s≤0.05da	0.05da<s≤0.09da	s>0.09da
+5%	+12.5%	±9%	+17.5%	±12.5%	±10%	+20%	+15%	+12.5%
-10%	-10%		-12.5%			-15%	-12.5%	-10%

Table 3 Types of Length and Permissible Deviations in Length in DIN 1630, DIN 17173, DIN 17175, DIN 17176, DIN 17179

Type of Length		Permissible Deviations in Length, mm
Manufacturing Length		By agreement
Specified Length		±500
Exact Length	≤6m	-0, +10
	>6-12m	-0, +15

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	>12m	By agreement
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Table 4 Permissible Deviation in Outside Diameter in DIN 2391

Outside Diameter	Permissible Deviation		Outside Diameter	Permissible Deviation		Outside Diameter	Permissible Deviation
4-10mm	±0.08mm		75-80mm	±0.35mm		170-180mm	±0.90mm
12-30mm	±0.1mm		85-90mm	±0.40mm		190-200mm	±1.0mm
32-40mm	±0.15mm		95-100mm	±0.45mm		220-240mm	±1.20mm
42-50mm	±0.20mm		110-120mm	±0.50mm		260mm	±1.30mm
55-60mm	±0.25mm		130-140mm	±0.70mm			
65-70mm	±0.30mm		150-160mm	±0.80mm			

Table 5 Types of Length and Permissible Deviations in Length in DIN 2391

Type of Length		Permissible Deviations in Length, mm	
Manufacturing Length		By agreement	
Fixed Length		<2000	±500
		≥2000	10%
Exact Length	≤500mm	-0, +2	
	>500-2000mm	-0, +3	
	>2000-5000	-0, +5	
	>5000-7000	-0, +10	
	>7000	By agreement	

Table 6 Permissible Deviations in Outside Diameter in DIN 2440, DIN 2441

Outside Diameter (mm)	Max (mm)	Min (mm)		Outside Diameter (mm)	Max (mm)	Min (mm)
10.2	10.6	9.8		48.3	48.8	47.9
13.5	14.0	13.2		60.3	60.8	59.7
17.2	17.5	16.7		76.1	76.6	75.3
21.3	21.8	21.0		88.9	89.5	88.0
26.9	27.3	26.5		114.3	115.0	113.1
33.7	34.2	33.3		139.7	140.8	138.5
42.4	42.9	42.0		165.1	166.5	163.9

Table 7 Permissible Deviations in Outside Diameter in DIN 17172

Nominal Outside	Max. Permissible Diameter Variation
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Diameter - "D" (mm)	Pipe Body	Pipe End
D<200	±1%(Values up to ±0.5mm are permissible in all case)	±1%(Values up to ±0.5mm are permissible in all case)
200≤D<500	±1%	±0.7%
500≤D	±1%	1.6mm

Table 8 Permissible Deviations in Outside Diameter in DIN 17176

Manufacturing Process	Limit Deviation of Outside Diameter	
Cold Forming	±0.75%	
Hot Forming	≤100mm	±0.75%
	>100-320mm	±0.9%
	>320mm	±1.0%

Table 9 Permissible Deviations in Wall Thickness in DIN 28180

Tube Outside Diameter	Permissible Deviations In Wall Thickness for Thicknesses	
	Up to 2	Exceeding 2
Tolerance of Classes 1 and 2	±0.20	±10% of Wall Thickness
Tolerance Class 3	±0.20	-10%, +15% of Wall Thickness