

# EN 10217-1

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## Production Standard of EN 10217-1

### •EN 10217-1

The EN 10217-1 standard is the European standard for welded pressure pipes, it governs the technical requirements for carbon steel tubes. This standard is suitable for welding carbon steel tubes which having specified room temperature properties and rated pressures.

The essential requirements of this standard are minimum yield point strength and tensile strength, elongation, weldability, Impact values, non-destructive test, etc. This standard is widely used in the construction of pressure vessels and piping systems in the oil and gas, petrochemical, and Power industries.

### •Dimensions and Sizes of EN 10217-1

#### - Outside Diameter and Wall Thickness Tolerance on EN 10217-1

O.D.	Tolerance on		
	O.D.	Wall Thickness	
D	D	T ≤ 5	5 < T ≤ 40
D ≤ 219.1	±1% or ±0.5 Whichever is the greater	±10% or ±0.3 Whichever is the greater	±8% or ±2 Whichever is the greater
D > 219.1	±0.75% or ±6		

Whichever is the greater

**- Length Tolerance on EN 10217-1**

Length L	Tolerances on Exact Length for O.D. (D)	
	< 406.4	≥ 406.4
L ≤ 6000	+10, 0	+25, 0
6000 < L ≤ 12000	+15, 0	+50, 0
L > 12000	+ by agreement, 0	-

**- EN 10217-1 TR1 Thickness Specified**

NPS	O.D. (mm)	Wall Thickness (mm)	Tolerances on the O.D. (mm)		Mass per Unit of Length (kg/m)
			Max.	Min.	
1"	33.7	2.3	34	33.4	1.78
1.25"	42.4	2.3	42.7	42.1	2.27
1.5"	48.3	2.3	48.6	48	2.61
2"	60.3	2.3	60.6	60	3.29
2.5"	76.1	2.6	76.4	75.8	4.71
3"	88.9	2.9	89.2	88.6	6.15
4"	114.3	3.2	114.6	114	8.77
5"	139.7	3.6	140	139.4	12.1
6"	168.1	4	168.7	167.9	16.21
8"	219.1	5	219.5	218.7	26.4
10'	273.1	5	275.15	271.05	33.1
12'	323.9	5.6	326.33	321.47	43.97

**- EN 10217-1 TR2 Thickness Specified**

NPS	O.D. (mm)	Minimum Wall Thickness (mm) with Standard Tolerance	Tolerances on the O.D. (mm)		Mass per Unit of Length (kg/m)
			Max.	Min.	
1"	33.7	2.6	34	33.4	1.99
1.25"	42.4	2.6	42.7	42.1	2.55
1.5"	48.3	2.6	48.6	48	2.93
2"	60.3	2.6	60.6	60	3.7
2.5"	76.1	2.6	76.4	75.8	4.71
3"	88.9	2.9	89.2	88.6	6.15
4"	114.3	3.2	114.6	114	8.77

5"	139.7		3.6	140	139.4	12.1
6"	168.1		4	168.7	167.9	16.21
8"	219.1		4.5	219.5	218.7	23.82
10'	273.1		5	275.15	271.05	33.1
12'	323.9		5.6	326.33	321.47	43.97

## ●Chemical Composition of EN 10217-1

Steel Grade		C	Si	Mn	P	S	Cr b	Mo b	Ni b	Al tot	Cu b c	Nb b	Ti b	V b	Cr+Cu +Mo+ Ni b
Steel Name	Steel Number	max.	max.	max.	max.	max.	max.	max.	max.	min.	max.	max.	max.	max.	max.
P195 TR1	1.0107	13	35	70	25	20	30	8	30	–	30	10	4	2	70
P195 TR2	1.0108	13	35	70	25	20	30	8	30	0,0 2 d	30	10	4	2	70
P235 TR1	1.0254	16	35	120	25	20	30	8	30	–	30	10	4	2	70
p235 TR2	1.0255	16	35	120	25	20	30	8	30	0,0 2 d	30	10	4	2	70
P265 TR1	1.0258	20	40	140	25	20	30	8	30	–	30	10	4	2	70
P265 TR2	1.0259	20	40	140	25	20	30	8	30	0,0 2 d	30	10	4	2	70

a Elements not included in this Table shall not be intentionally added to the steel without the agreement of the purchaser, except for elements which may be added for finishing the cast. All appropriate measures shall be taken to prevent the addition of undesirable elements from scrap or other materials used in the steel making process.

b The content of these elements need not be reported unless intentionally added to the cast.

c Option 3: In order to facilitate subsequent forming operation, an agreed maximum copper content lower than indicated and an agreed specified maximum tin content shall apply.

d This requirement is not applicable provided the steel contains a sufficient amount of other nitrogen binding elements, which shall be reported.

## ●Mechanical Properties Tensile Strength and Yield Strength of EN 10217-1

Steel Grades		Tensile Properties					Impact Properties		
Steel Name	Steel Number	Upper Yield Strength		Tensile Strength	Elongation		Minimum Average Absorbed Energy		
		T≤16	16<T≤40				At a Temperature of °C		
		Mpa		Mpa	l	t	0	-10	0
P195TR1	1.0107	195	185	320-440	27	25	–	–	–
P195TR2	1.0108	195	185	320-440	27	25	40	28	27
P235TR1	1.0254	235	225	360-500	25	23	–	–	–
P235TR2	1.0255	235	225	360-500	25	23	40	28	27
P265TR1	1.0258	265	255	410-570	21	19	–	–	–
P265TR2	1.0259	265	255	410-570	21	19	40	28	27