



**Products** – Steel Tube For Other Industries – Seamless heat-resistant steel tube  
DIN17175

Mechanical properties at room temperature

Steel grade		Tensile strength MPa	Yield strength 1), 2) for wall thickness in mm MPa, minimum			Elongation at fracture (L=5do) % minimum		Impact strength DVM specimens 3) J, Minimum
			≤16	>16≤40	>40≤60	Longitudinal	Transversal	Transversal
Code number	Material number							
St35.8	1.0305	360-480	235	225	215	25	23	34
St45.8	1.0405	410-530	255	245	235	21	19	27
17Mn4	1.0481	460-580	270	270	260	23	21	34
19Mn5	1.0482	510-610	310	310	300	19	17	34
15Mo3	1.5415	450-600	270 4)	270	260	22	20	34
13CrMo44	1.7335	440-590	290 4)	290	280	22	20	34
10CrMo910	1.7380	450-600	280	280	270	20	18	34
14MoV63	1.7715	460-610	320	320	310	20	18	41
X20CrMoV121	1.4922	690-840	490	490	490	17	14	34 5)

- 1) For tubes of ≤30mm outside diameter and ≤3mm wall thickness the minimum values are by 10MPa lower.  
 2) For >60mm wall thickness, the values of tubes from the steels St35.8, St45.8, 17Mn4, 19Mn5, 15Mo3 and 14MoV63 are subject to agreement; for wall thickness >60 to ≤80mm a minimum value of 270MPa or 260MPa applies for tubes from the steels 13CrMo44 and 10CrMo910 and a minimum value of 490MPa for tubes from the steel X20CrMoV121  
 3) When testing longitudinal specimens the minimum impact strength is 14 J higher  
 4) A 15MPa higher minimum value applied for ≤10mm wall thickness



5) For hot extruded tubes the minimum value falls to 27 J

Minimum 0.2% yield limit of seamless tubes at elevated temperature

Steel grade		Wall thickness S, mm	0.2% Yield limit at MPa, Minimum							
Code number	Material number		200°C	250°C	300°C	350°C	400°C	450°C	500°C	550°C
St35.8	1.0305	≤ 16	185	165	140	120	110	105		
		16 < S ≤ 40	180	160	135	120	110	105		
		40 < S ≤ 60	175	155	130	115	110	105		
		60 1)								
St45.8	1.0405	≤ 16	205	185	160	140	130	125		
		16 < S ≤ 40	195	175	155	135	130	125		
		40 < S ≤ 60	190	170	150	135	130	125		
		60 1)								
17Mn4	1.0481	≤ 40	235	215	175	155	145	135		
		40 < S ≤ 60	225	205	165	150	140	130		
19Mn5	1.0482	≤ 40	255	235	205	180	160	150		
		40 < S ≤ 60	245	225	195	170	155	145		
15Mo3	1.5415	≤ 40 2)	225	205	180	170	160	155	150	
		40 < S ≤ 6	210	195	170	160	150	145	140	



		0 1)								
13CrMo44	1.7335	≤40 2)	240	230	215	200	190	180	175	
		40 < S ≤	230	220	205	190	180	170	165	
		60	220	210	195	180	170	160	155	
		60 < S ≤								
		80								
10CrMo910	1.7380	≤40	245	340	230	215	205	195	185	
		40 < S ≤	235	230	220	205	195	185	175	
		60	225	220	210	195	185	175	165	
		60 < S ≤								
		80								
14MoV63	1.7715	≤40	270	255	230	215	200	185	170	
		40 < S ≤	260	245	220	205	190	175	160	
		60 1)								
X20CrMoV121	1.4922	≤80	430	415	390	380	360	330	290	250

1) For wall thicknesses greater than 60 mm the values are subject to agreement

2) For wall thicknesses ≤10mm, 15MPa higher minimum 0.2% yield limits apply at all temperatures