

<b>Quality</b>	<b>46SPb20</b>
According to standard	<b>EN 10087: 2000</b>
Number	<b>1.0757</b>

## Chemical composition

C%	Si%	Mn%	P%	S%	Pb%	Deviations allowed for analysis product
	max		max			
0,42-0,50	0,40	0,70-1,10	0,06	0,15-0,25	0,15-0,35	
± 0.03	+ 0.03	± 0.04	+ 0.008	± 0.03	+0.03 -0.02	

## Temperature °C

Hot-forming	Natural state	Soft annealing	Carburizing	Hardening on carburized surface	Stress-relieving
1230-950	(HB 234 max)	680 air			
Normalizing	Direct hardening	Direct hardening	Stress-relieving	Pre-heating welding	Stress-relieving after welding
860 air	840 water	860 oil or polymer	540-680 furnace cooling		not recommended

## Mechanical properties

Hot-rolled natural forming condition EN 10087: 2000				Hot-rolled quenched and tempered EN 10087: 2000			
Testing at room temperature (longitudinal)				Testing at room temperature (longitudinal)			
size mm	R	HB		R	Rp 0.2	A%	HB
from to	N/mm <sup>2</sup>	for information		N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	for info.
5 10	590-800	175-240		700-850	490	12	213-253
10 16	590-780	175-232		700-850	490	12	213-253
16 40	590-760	175-225		650-800	430	13	200-240
40 63	580-730	172-216		630-780	370	14	192-232
63 100	560-710	166-211		630-780	370	14	192-232

Cold-drawn +C EN 10277-3: 2008				Hot-rolled Peeled-Reeled +SH				
Values valid also for +C+SL				Values valid also for +SH+SL				
size mm	Testing at room temperature (longitudinal)			Testing at room temperature (longitudinal)				
from to	R a)	Rp 0.2 a)	A%	HB	R	Rp 0.2	A%	HB
	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	for info.	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	
5 b) 10	740-980	570	5	224-295				
10 16	690-930	470	6	210-278				
16 40	640-880	400	7	198-263	590-760			175-225
40 63	610-850	380	8	183-253	580-730			172-216
63 100	580-820	340	8	172-246	560-710			166-211

a) for flats and special sections, yield point can be - 10% and tensile strength can be ± 10%

b) for thickness < 5 mm, mechanical properties should be agreed before order placement

Cold-drawn + quenching and tempering +C +QT EN 10277-3: 2008				Quenched and tempered + cold-drawn +QT +C				
size mm	Testing at room temperature (longitudinal)			Testing at room temperature (longitudinal)				
from to	R c)	Rp 0.2 c)	A% c)	HB c)	R	Rp 0.2	A%	HB
	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	for info.	N/mm <sup>2</sup>	N/mm <sup>2</sup> min	min	for info.
5 b) 10					850-1000	595	8	253-298
10 16					800-950	560	9	240-286
16 40	650-800	430	13	200-240	700-850	490	10	213-253
40 63	630-780	370	14	192-232	700-850	490	11	213-253
63 100	630-780	370	14	192-232	650-850	455	11	200-253

c) values valid also for +C+QT+SL and +QT+C+SL

b) for thickness < 5 mm, mechanical properties should be agreed before order placement

# 46SPb20

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K B.S.	RUSSIA GOST	USA AISI/SAE
46SPb20	46SPb20		45SPb20	46SPb20	46SPb20		41L50