

Quality	35S20	Free-cutting Steel	<i>Technical card Lucefin Group rev. 2018</i>
According to standard	ISO 683-4 : 2018		
Number	1.0726		

Chemical composition

C%	Si% max	Mn%	P% max	S%	Pb%	Product deviations are allowed
0,32-0,39	0,40	0,70-1,10	0,06	0,15-0,25	-	
± 0.03	± 0.03	± 0.04	± 0.008	± 0.03	-	

Temperature °C

Hot-forming	Natural state +U	Soft annealing +A	Hardening on carburized surface	Stress-relieving +SR	
1230-950	(HB 210 max)	680 cooling 20 °C/h to 300 then air			
Normalizing +N	Direct hardening	Direct hardening	Stress- relieving +SR	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 ISO 683-4: 2018						Hot-rolled quenched and tempered			
Testing at room temperature (longitudinal)						Testing at room temperature (longitudinal)			
size mm		R	HBW			R	Rp 0.2	A%	HBW
from	to	N/mm ²	max			N/mm ²	N/mm ² min	min	for information
5	10	550-720	210			630-780	430	15	192-232
10	16	550-700	204			630-780	430	15	192-232
16	40	520-680	198			600-750	380	16	178-225
40	63	520-670	196			550-700	320	17	159-213
63	100	500-650	190			550-700	320	17	159-213

Cold-drawn +C EN 10277: 2018						Hot-rolled Peeled +SH			
Values valid also for +C+G						Values valid also for +SH+G			
size mm		Testing at room temperature (longitudinal)				Testing at room temperature (longitudinal)			
		R ^{a)}	Rp 0.2 ^{a)}	A% ^{a)}	HB	R	Rp 0.2	A%	HB
from	to	N/mm ²	N/mm ² min	min	for inform.	N/mm ²	N/mm ² min	min	max
5 ^{b)}	10	640-880	480	6	198-263	-	-	-	-
10	16	590-830	400	7	176-249	-	-	-	-
16	40	560-800	360	8	162-240	520-680	-	-	198
40	63	530-760	340	9	156-226	520-670	-	-	196
63	100	510-680	300	9	154-208	500-650	-	-	190

^{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: 2018						Quenched and tempered + Cold-drawn +QT+C			
size mm		Testing at room temperature (longitudinal)				Testing at room temperature (longitudinal)			
		R ^{c)}	Rp 0.2 ^{c)}	A% ^{c)}	HB	R	Rp 0.2	A%	HBW
from	to	N/mm ²	N/mm ² min	min	for inform.	N/mm ²	N/mm ² min	min	for inform.
5 ^{b)}	10	-	-	-	-	700-900	490	9	213-271
10	16	-	-	-	-	700-900	490	11	213-271
16	40	600-750	380	16	178-225	650-850	455	12	200-253
40	63	550-700	320	17	159-213	570-770	400	13	169-231
63	100	550-700	320	17	159-213	550-750	385	14	159-225

^{c)} values valid also for +C+QT+G and +QT+SH

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

EUROPE	ITALY	CHINA	GERMANY	FRANCE	U.K.	RUSSIA	USA
EN	UNI	GB	DIN	AFNOR	B.S.	GOST	AISI/SAE
35S20	35S20		35S20	35S20	35S20		