

Quality	35S20	Free-cutting Steel	<i>Technical card Lucefin Group rev. 2024</i>
According to standard	ISO 683-4 : 2018		
Number	1.0726		

Chemical composition					
C%	Si%	Mn%	P%	S%	Pb%
	max		max		
0,32-0,39	0,40	0,70-1,10	0,06	0,15-0,25	-
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	

Product deviations are allowed

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 ISO 683-7:24						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%	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 ISO 683-7:24						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		