

Quality	36SMn14	Free-cutting Steel	<i>Technical card</i>
According to standard	ISO 683-4: 2018		Lucefin Group
Number	1.0764		<i>rev. 2018</i>

Chemical composition

C%	Si%	Mn%	P%	S%	Pb%	
0,32-0,39	0,40	1,30-1,70	0,06	0,10-0,18	-	Product deviations are allowed
± 0.03	± 0.03	± 0.06	± 0.008	± 0.03	-	

Temperature °C

Hot-forming	Natural state +U	Soft annealing +A	Carburizing	Hardening on carburized surface	Stress-relieving +SR		
1250-950	- (HB 228 max)	680 air	850-900	770-810 water / oil / salt bath	180-200		
				Pre-heating welding	Stress-relieving after welding		
Normalizing +N	Direct hardening	Direct hardening	Stress-relieving +SR	not recommended			
900 air	880 water	890 oil or polymer	150-200 furnace cooling	Ac1 710	Ac3 770	Ms 345	Mf 130

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 inform.
5 10	580-770	225		700-850	480	14	213-253
10 16	580-770	225		700-850	460	14	213-253
16 40	560-750	219		670-820	420	15	203-246
40 63	560-740	216		640-790	400	16	198-237
63 100	550-740	216		570-720	360	17	169-223

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%	HBW	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	
5 ^{b)} 10	660-960	500	6	202-290	-	-	-	-
10 16	620-920	440	6	190-275	-	-	-	-
16 40	600-900	390	7	178-271	560-750	-	-	219
40 63	580-840	360	8	172-250	560-740	-	-	219
63 100	560-820	340	9	162-246	550-740	-	-	216

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 ^{c)}	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	for inform.
5 ^{b)} 10	-	-	-	-	750-1000	525	6	225-298
10 16	-	-	-	-	740-990	520	6	224-297
16 40	670-820	420	15	203-246	720-970	505	8	223-293
40 63	640-790	400	16	198-237	680-930	475	9	208-278
63 100	570-720	360	17	169-223	580-840	405	9	172-250

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

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

36SMn14 ISO 683-4: 2018Technical card **Trafilix****Table of tempering** values obtained at room temperature on rounds of Ø 10 mm after quenching at 850 °C in water

HB	421	421	409	381	344	294	247
HRC	45	45	44	41	37	31	24
R N/mm²	1480	1480	1430	1300	1140	970	820
Tempering at °C	50	100	200	300	400	500	600

HRC hardness after quenching at 845 °C in oil. For information

diameter mm	surface	½ radius	core
12,5	48	43	42
25	34	28	23
50	28	22	18
100	21	18	16

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K. B.S.	RUSSIA GOST	USA AISI/SAE
36SMn14	35SMn10		36SMn14	36SMn14			1137