

Quality	38SMn28	Free-cutting Steel	<i>Technical card</i>
According to standard	ISO 683-4: 2018		Lucefin Group
Number	1.0760		rev. 2018

Chemical composition

C%	Si%	Mn%	P%	S%	Pb%	
	max		max			
0,35-0,40	0,40	1,20-1,50	0,06	0,24-0,33	-	Product deviations are allowed
± 0.03	± 0.03	± 0.06	± 0.008	± 0.03	-	

Temperature in °C

Hot-forming	Natural state +U	Soft annealing +A	Full annealing	Stress-relieving +QT+C+SR
1100-900	- (HB max ~ 230)	690 air	-	300
Normalizing +N	Direct hardening	Direct hardening	Tempering +T	Pre-heating welding Stress-relieving after welding
870-840 air	850 water	880 olio o polimero	540-680 aria	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)			
sezione mm	R	HBW		R	Rp 0.2	A%	HBW
oltre fino a	N/mm ²	max		N/mm ²	N/mm ² min	min	per inform.
5 10	580-780	228		700-850	480	15	204-253
10 16	580-750	219		700-850	460	15	204-253
16 40	560-730	213		700-850	420	15	204-253
40 63	560-730	213		700-850	400	16	204-253
63 100	550-700	204		630-800	380	16	192-240

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)			
from	to	R ^{a)}	Rp 0.2 ^{a)}	A%	HBW	R	Rp 0.2	A%	HBW
		N/mm ²	N/mm ² min	min	for inf.	N/mm ²	N/mm ² min	min	max
5 ^{b)}	10	700-960	550	6	204-288	-	-	-	-
10	16	660-960	500	6	202-288	-	-	-	-
16	40	610-900	420	7	182-271	560-730	-	-	213
40	63	600-840	400	7	178-250	560-730	-	-	213
63	100	580-820	350	8	172-246	550-700	-	-	204

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			
Testing at room temperature (longitudinal)						Testing at room temperature (longitudinal)			
from	to	R ^{c)}	Rp 0.2 ^{c)}	A% ^{c)}	HBW	R ^{d)}	Rp 0.2 ^{d)}	A% ^{d)}	HBW
		N/mm ²	N/mm ² min	min	for inf.	N/mm ²	N/mm ² min	min	for inf.
5 ^{b)}	10	-	-	-	-	850-1000	595	9	253-298
10	16	-	-	-	-	850-1000	595	9	253-298
16	40	700-850	420	16	213-253	700-900	490	11	213-271
40	63	700-850	400	16	213-253	700-900	490	12	213-271
63	100	630-800	380	16	192-240	700-900	490	12	213-271

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

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

d) values valid also for +QT+C+G

EUROPE	ITALY	SPAIN	GERMANY	FRANCE	UK	SWEDEN	USA
EN	UNI	UNE	DIN	AFNOR	B.S.	SS	AISI/SAE
38SMn28	38SMn28					38SMn28	