

Quality		38SMn28		Free-cutting Steel		Technical card			
According to standard		ISO 683-4: 2018				Lucefin			
Number		1.0760				Group rev.			
						2024			
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 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%	HBW	R	Rp 0.2	A%	HBW
from	to	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 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)}	HBW	R ^{d)}	Rp 0.2 ^{d)}	A% ^{d)}	HBW
from	to	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					d) values valid also for +QT+C+G				
b) for thickness < 5 mm, mechanical properties should be agreed before order placement									
EUROPE	ITALY	SPAIN	GERMANY	FRANCE	UK	SWEDEN	USA		
EN	UNI	UNE	DIN	AFNOR	B.S.	SS	AISI/SAE		
38SMn28	38SMn28					38SMn28			