Quality	**36SMn14**	*Technical card*
According to standard	**EN 10087: 2000**	*Lucefin Group*
Number	**1.0764**	

Chemical composition

C%	**Si%** max	**Mn%**	**P%** max	**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**	**Soft annealing**	**Carburizing**	**Hardening on carburized surface**	**Stress-relieving**
1250-950	(HB 228 max)	680 air	850-900	770-810 water / oil / salt bath	180-200

Normalizing	**Direct hardening**	**Directhardening**	**Stress-relieving**	**Pre-heating welding** / **Stress-relieving after welding** not recommended			
900 air	880 water	890 oil or polymer	150-200 furnace cooling	**Ac_1** 710	**Ac_3** 770	**Ms** 345	**Mf** 130

Mechanical properties

Hot-rolled natural forming condition EN 10087: 2000
Testing at room temperature (longitudinal)

size mm		**R**	***HB***
from	to	N/mm²	*for information*
5	10	580-770	*172-231*
10	16	580-770	*172-231*
16	40	560-750	*166-222*
40	63	560-740	*166-219*
63	100	550-740	*163-219*

Hot-rolled quenched and tempered
Testing at room temperature (longitudinal)

R	**Rp** 0.2	**A%**	***HB***
N/mm²	N/mm² min	min	*for inform.*
700-850	480	14	*213-253*
700-850	460	14	*213-253*
670-820	420	15	*203-246*
640-790	400	16	*198-237*
570-720	360	17	*169-223*

Cold-drawn +C EN 10277-3: 2008
Values valid also for +C+SL
Testing at room temperature (longitudinal)

size mm		**R** [a]	**Rp** 0.2 [a]	**A%**	***HB***
from	to	N/mm²	N/mm² min	min	*for inform.*
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*
40	63	580-840	360	8	*172-250*
63	100	560-820	340	9	*162-246*

Hot-rolled peeled-reeled +SH
Values valid also for +SH+SL
Testing at room temperature (longitudinal)

R	**Rp** 0.2	**A%**	**HB**
N/mm²	N/mm² min	min	
560-750			166-222
560-740			166-219
550-740			163-219

[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 10277-3: 2008
Testing at room temperature (longitudinal)

size mm		**R** [c]	**Rp** 0.2 [c]	**A%** [c]	***HB*** [c]
from	to	N/mm²	N/mm² min	min	*for inform.*
5 [b]	10				
10	16				
16	40	670-820	420	15	*203-246*
40	63	640-790	400	16	*198-237*
63	100	570-720	360	17	*169-223*

Quenched and tempered + **Cold drawn** +QT +C
Testing at room temperature (longitudinal)

R	**Rp** 0.2	**A%**	***HB***
N/mm²	N/mm² min	min	*for inform.*
750-1000	525	6	*225-298*
740-990	520	6	*224-297*
720-970	505	8	*223-293*
680-930	475	9	*208-278*
580-840	405	9	*172-250*

[c] values valid also for +C+QT+SL and +QT+C+SL

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

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

36SMn14 EN 10087: 2000 *Technical 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

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