

Quality	36CrMn4	Flame and Induction	<i>Technical card</i>
According to standards	UNI 7847: 1979	Hardening Steel	Lucefin Group
Number	-		rev. 2018

Chemical composition

C%	Si%	Mn%	P% max	S% max	Cr%	
0,33-0,39	0,15-0,40	0,80-1,10	0,030	0,030	0,90-1,20	Product deviations are allowed
± 0.02	± 0.03	± 0.06	+ 0.005	+ 0.005	± 0.05	

Temperature °C

Hot-forming	Normalizing +N	Quenching +Q	Quenching +Q	Tempering +T	Stress-relieving +SR		
1100-850	870 air	850 oil or polymer		550-650 air	180		
Soft annealing +A	Isothermal annealing +I	Natural state +U	End quench hardability test	Pre-heating welding	Stress-relieving after welding		
700 air (HB max 230)	800 furnace cooling to 650, then air (HB 170-215)	-	850 water	not recommended			
				Ac1	Ac3	Ms	Mf
				750	800	320	100

Mechanical properties

Hot-rolled mechanical properties on test blank after **quenching and tempering** (values valid for untreated products)

For quenched and tempered material supply, values must be guaranteed on the product

UNI 7847:1979. Use only as reference

test blank diameter (mm)		Testing at room temperature (longitudinal)				
from	to	R N/mm ²	Rp 0.2 N/mm ² min	A% min.	Kcu J min	HB <i>for information</i>
	16	880-1080	685	12	25	263-327
	16	780-930	590	13	25	232-278
	40	740-890	540	14	25	224-268

For dimensions over 100 mm, mechanical properties can be agreed upon before order placement

Cold-drawn

size mm		Testing at room temperature (longitudinal)				
from	to	R N/mm ²	Rp 0.2 2 N/mm ² min	A% min	Kcu J min	HB

No indications from reference standards

UNI 7847 Jominy test HRC grain size 5 min.															Min. surface hardness after hardening and stress-relieving		
mm distance from quenched end																	
	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50	HRC	52
min	50	49	48	47	44	41	39	37	34	32	31	30	29	28	27		
max	58	58	57	56	55	54	54	53	50	48	46	45	44	43	43		

Thermal Expansion	10 ⁻⁶ · K ⁻¹	▶	12.0	12.8	13.5
°C	20	100	200	300	

The symbol ▶ indicates temperature between 20 °C and 100 °C, 20 °C and 200 °C ...

EUROPE	ITALY	CHINA	GERMANY	FRANCE	U.K.	RUSSIA	USA
EN	UNI	GB	DIN	AFNOR	B.S.	GOST	AISI/SAE
37Cr4 ~	36CrMn4	36Cr4	37Cr4 ~	38C4 ~		SchCh10	5135 ~