

Quality	36CrMn4
According to standards	UNI 7847: 1979
Number	

Chemical composition

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

Temperature °C

Hot-forming	Normalizing	Quenching	Quenching	Tempering	Stress-relieving		
1100-850	870 air	850 oil or polymer		550-650 air	180		
Soft annealing	Isothermal annealing	Natural state	End quench hardenability 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	R _{p 0.2}	A%	C%	K _{cu}	HB
		N/mm ²	N/mm ² min	min.	min.	J min	<i>for information</i>
	16	880-1080	685	12		25	263-327
16	40	780-930	590	13		25	232-278
40	100	740-890	540	14		25	224-268

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

Cold-drawn

diameter mm		Testing at room temperature (longitudinal)					
from	to	R	R _{p 0.2}	A%	C%	K _{cu}	HB
		N/mm ²	2 N/mm ² min	min	min.	J min	

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 extremity																	
	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		

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