

<b>Quality</b>	<b>40NiCrMo3</b>	<b>Flame and Induction</b>	<i>Technical card</i>
According to standard	<b>UNI 7847: 1979</b>	<b>Hardening Steel</b>	<b>Lucefin Group</b>
Number	-		rev. 2018

### Chemical composition

C%	Si%	Mn%	P% max	S% max	Cr%	Mo%	Ni%	
0,37-0,43	0,15-0,40	0,50-0,80	0,030	0,030	0,60-1,00	0,15-0,25	0,70-1,00	Product deviations are allowed
± 0.02	± 0.03	± 0.04	+ 0.005	+ 0.005	± 0.05	± 0.03	± 0.03	

### Temperature °C

Hot-forming	Normalizing +N	Quenching +Q	Quenching +Q	Tempering +T	Stress-relieving +SR		
1100-900	860 air	850 oil or polymer	-	550-650 air	180		
Soft annealing +A	Isothermal annealing +I	Full annealing	End quench hardenability test	Pre-heating welding	Stress-relieving after welding		
700 air (HB max 240)	800 furnace cooling to 650, then air (HB 190-245)	820 furnace cooling (HB max 235)	850 water	not recommended			
				<b>Ac1</b>	<b>Ac3</b>	<b>Ms</b>	<b>Mf</b>
				740	790	330	110

### 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 blanks diameter (mm)		Testing at room temperature (longitudinal)				
from	to	<b>R</b> N/mm <sup>2</sup>	<b>Rp 0.2</b> N/mm <sup>2</sup> min	<b>A%</b> min.	<b>Kcu</b> J min	<b>HB</b> <i>for information</i>
	16	1030-1230	830	10	30	311-363
16	40	980-1180	785	11	30	295-354
40	100	880-1080	690	12	30	263-327
100	160	830-980	640	12	30	249-295
160	250	740-890	540	13	30	224-268

### Cold-drawn

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

No indications from reference standards

UNI 7847 <b>Jominy test HRC</b> 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	<b>HRC</b>	54
<b>min</b>	52	51	50	49	48	46	44	43	39	36	34	33	32	31	30		
<b>max</b>	60	60	59	58	58	57	57	56	55	53	51	49	48	46	45		

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K. B.S.	RUSSIA GOST	USA AISI/SAE
	40NiCrMo3						