

STANDARD REFERENCE:
 UNI 7847 - 79 (Hot-rolled)

RODACCIAI REFERENCES AND COMPARABLE STANDARDS

EUROPE		ITALY	GERMANY	FRANCE	UK	USA
EU 86 - 70		(UNI 7847 - 79) (UNI 10233 - 3: 93)	(DIN 17212-72)	(NF A 35-563-83)	(BS 970 pt.3-96)	ASTM A 29
Grade	N°		Werkstoff	N°		
(C46)	-	C48	(CF 45)	(1.1193)	XC 48 TS	1049

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

ITALY	C	Si	Mn	P / max	S	Cr / max	Mo / max	Ni / max	Al
C48	0,45±0,52	0,15±0,40	0,50±0,80	0,030	0,020±0,035	0,40	0,10	0,40	0,020±0,050

MECHANICAL PROPERTIES - AS ROLLED CONDITION

Delivering condition	Size mm	Rp 0,2 (MPa) min	Rm (MPa)	A5 (%) min	KCU (J) min	HB core	HRC in surface after surface hardening
SOFT ANNEALED	all	-	-	-	-	≤238	-
SPHERODIZING	all	-	-	-	-	≤200	-
ISOTHERMAL ANNEALING	all	-	-	-	-	165÷223	-
NORMALIZED	>16 ≤100	335	610÷760	16	-	180÷225	≤56
QUENCHED AND TEMPERED	≤16	510	730÷875	13	20	215÷260	-
	>16 ≤40	430	680÷830	14	15	200÷250	-
	>40 ≤100	400	630÷770	15	15	185÷230	-

MECHANICAL PROPERTIES - BRIGHT PRODUCT CONDITION* **

Size mm	as Rolled + as Rolled + Turned (+SH)		Quenched + Tempered + Turned (+QT +SH)***			Quenched + Tempered + Cold Drawn (+QT +C)			Cold Drawn (+C)		
	Hardness HB	Rm (MPa)	Rp 0,2 (MPa) min	Rm (MPa)	A5 (%) min	Rp 0,2 (MPa) min	Rm (MPa)	A5 (%) min	Rp 0,2 (MPa) min	Rm (MPa)	A5 (%) min
≥5 ≤10	-	-	-	-	-	595	850÷1050	8	565	750÷1050	5
>10 ≤16	-	-	-	-	-	565	810÷1010	8	500	710÷1030	6
>16 ≤40	172÷241	580÷820	430	650÷800	16	525	700÷900	9	410	650÷1000	7
>40 ≤63	172÷241	580÷820	370	630÷780	17	455	650÷850	10	360	630÷900	8
>63 ≤100	172÷241	580÷820	370	630÷780	17	455	650÷850	11	310	580÷850	8

*For reference only **For size <5 mm the mechanical properties may be agreed at the time of enquiry and order
 ***This values are valid also for Cold drawn + Quenched + Tempered condition (+C +QT)

WORKING TEMPERATURES RECOMMENDED

Operation	Hot forgings deformation	Normalizing	Soft annealing	Quenching in oil	Tempering
°C	850÷1150	850÷890	650÷700	830÷870	550÷660

Mark Rodacciai

Download APP

SURFACE HARDENING STEELS
 NOT ALLOYED

R48TI
