

STANDARD REFERENCE:

UNI 7845-78 (Hot-rolled products)

RODACCIAI REFERENCES AND COMPARABLE STANDARDS

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
EN 10083-3: 2006 EN 10277-5: 2008		(UNI 7845-78)	(DIN 17200-86)		(NF A 35-552-86)	(BS 970 pt.3-96)	ASTM A 29
Grade	N°		Werkstoff	N°			
-	-	30CrMo4	-	-	30 CD 4	-	-

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

C	Si	Mn	P /max	S / max	Cr	Mo	Al
0,27÷0,34	0,15÷0,40	0,40÷0,70	0,035	0,035	0,80÷1,10	0,15÷0,25	0,020÷0,050

MECHANICAL PROPERTIES - AS ROLLED CONDITION*

Size mm	HB max to condition		Quenched and tempered (+QT)			
	Treated to improve shearability (+S)	Soft annealing (+A)	R _{p0,2} (MPa) min	R _m (MPa) min	A ₅ (%) min	KCU (J) min
≤ 16	255	220	685	880÷1080	12	32,5
> 16 ≤ 40	255	220	635	830÷1030	12	32,5
> 40 ≤ 100	255	220	520	740÷880	13	30
> 100 ≤ 160	255	220	420	690÷830	15	30

*For reference only

MECHANICAL PROPERTIES - BRIGHT PRODUCTS CONDITION

Size mm	as Rolled+Turned (+A+SH)	Quenched+Tempered+Turned (+QT+SH)*			Quenched+Tempered+Cold Drawn (+QT+C)			as Rolled+Cold Drawn(+A+C)
	Hardness HB max	R _{p0,2} (MPa) min	R _m (MPa)	A ₅ (%) min	R _{p0,2} (MPa) min	R _m (MPa)	A ₅ (%) min	Hardness HB max
≥ 5 ≤ 10	-	-	-	-	700	900÷1100	8	280
> 10 ≤ 16	-	-	-	-	700	900÷1100	8	270
> 16 ≤ 40	220	635	830÷1030	12	620	830÷1030	9	265
> 40 ≤ 63	220	520	740÷880	13	550	740÷880	10	260
> 63 ≤ 100	220	520	740÷880	13	480	740÷880	11	260

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

WORKING TEMPERATURES RECOMMENDED

Operation	Hot forgings deformation	Isothermal annealing	Soft annealing	Quenching in water or oil	Tempering
°C	850÷1150	840÷880 → 650	680÷720	850÷870	550÷650

rev. 10/2018

Mark Rodacciai

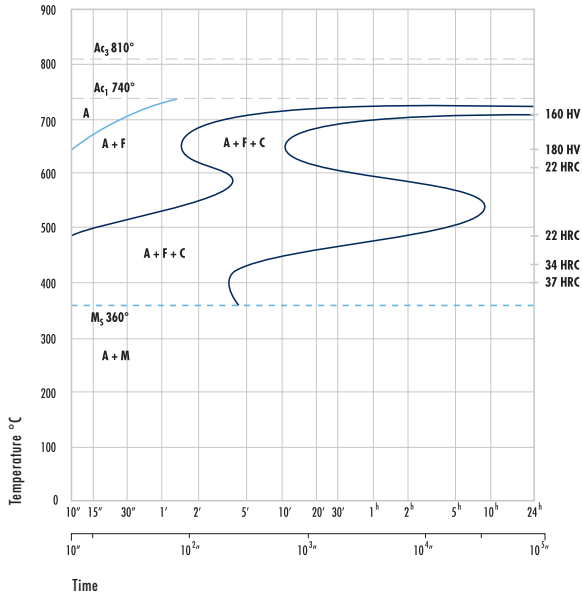
Download APP

**QUENCHING AND TEMPERING
 ALLOYED**
RKO

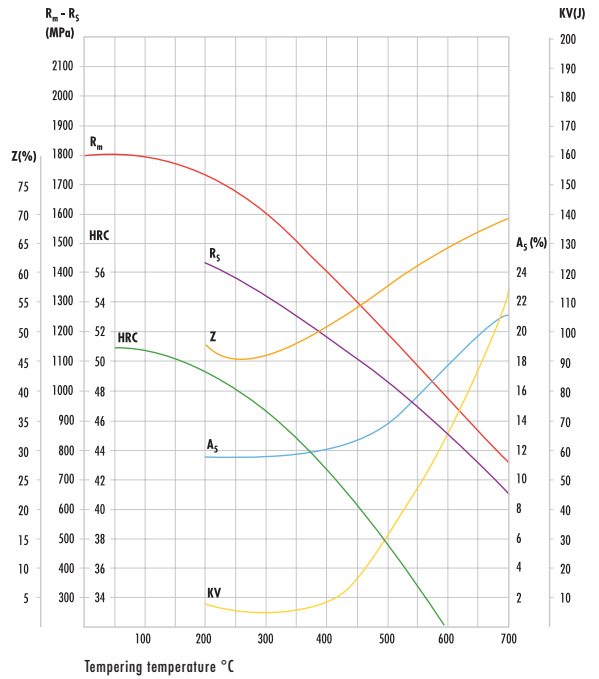

HARDNESS LIMITS (JOMINY TEST)

Limits of range		Hardness HRC at a distance from quenched end of test pieces (mm)														
		1,5	3	5	7	9	11	13	15	20	25	30	35	40	45	50
+H	Max	56	55	53	51	49	47	45	42	39	37	35	33	32	31	31
	Min	46	45	42	38	35	30	28	26	24	23	21	20	-	-	-

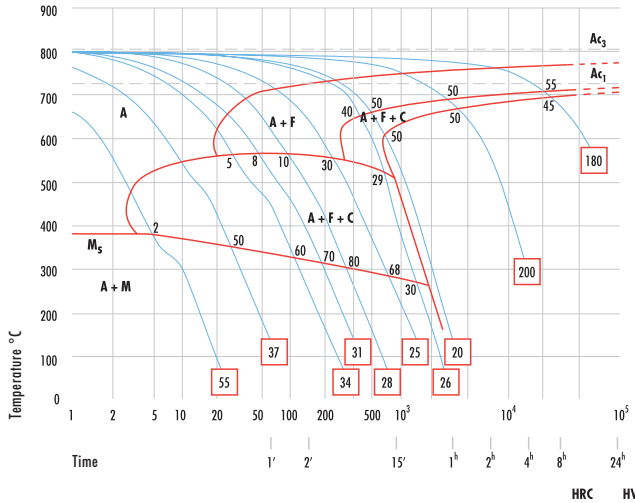
TTT



TEMPERING CURVE



CCT



rev. 10/2018

Mark Rodacciai

Download APP

**QUENCHING AND TEMPERING
ALLOYED**

RKO

