

**STANDARD REFERENCE:**

EN ISO 683-2: 2018 (Hot-rolled products) | EN 10277: 2018 (Bright products)

**RODACCIAI REFERENCES AND COMPARABLE STANDARDS**

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
EN 10083-3: 2006		(UNI 7845-78)	(DIN 17200-86)		(NF A 35-552-86)	(BS 970 pt.3-96)	ASTM A 29
Grade	N°		Werkstoff	N°			
30CrNiMo8	1.6580	-	30CrNiMo8	1.6580	30NCD8	-	4340

**CHEMICAL COMPOSITION (CAST ANALYSIS) (%)**

C	Si	Mn	P / max	S / max	Cr	Mo	Ni	Cu / max	Al
0,26÷0,34	0,10÷0,40	0,50÷0,80	0,025	0,035	1,80÷2,20	0,30÷0,50	1,80÷2,20	0,40	0,020÷0,050

**MECHANICAL PROPERTIES - AS ROLLED CONDITION**

Size mm	HB max to condition	Quenched and tempered (+QT)				
	Soft annealing (+A)	R <sub>p0,2</sub> (MPa) min	R <sub>m</sub> (MPa) min	A <sub>5</sub> (%) min	Z (%) min	KV (J) min
≤ 16	248	850	1030÷1230	12	40	-
> 16 ≤ 40	248	850	1030÷1230	12	40	30
> 40 ≤ 100	248	800	980÷1180	12	45	35
> 100 ≤ 160	248	800	980÷1180	12	50	45
> 160 ≤ 250	248	750	930÷1130	12	50	45

**MECHANICAL PROPERTIES OF BRIGHT STEEL**

Size mm	as Rolled+Turned (+A+SH)	Quenched+Tempered+Turned (+QT+SH)*			
	Hardness HB max	R <sub>p0,2</sub> (MPa) min	R <sub>m</sub> (MPa)	A <sub>5</sub> (%) min	KV (J) min
≥ 5 ≤ 10	-	-	-	-	-
> 10 ≤ 16	-	-	-	-	-
> 16 ≤ 40	248	850	1030÷1230	12	30
> 40 ≤ 63	248	800	980÷1180	12	35
> 63 ≤ 100	248	800	980÷1180	12	35

\*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	Normalizing	Quenching in oil or water	Tempering
°C	800÷1100	800÷900 → 650	850÷880	830÷860	550÷660

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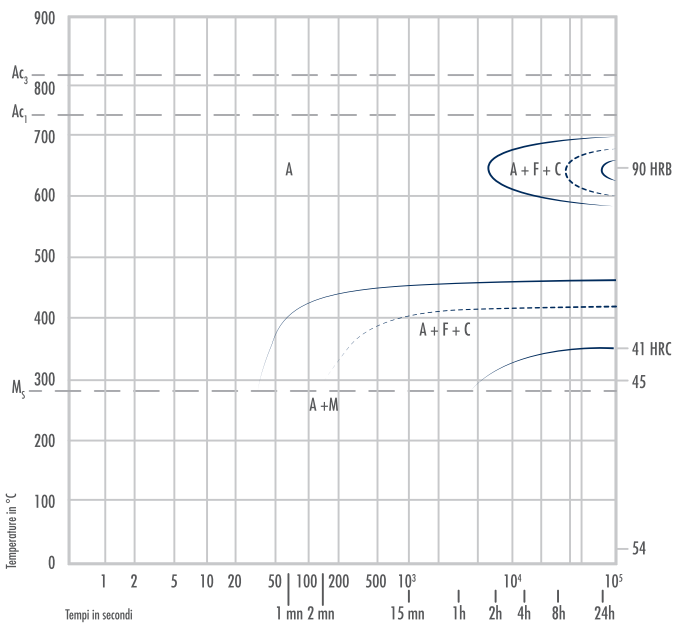
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**QUENCHING AND TEMPERING  
 ALLOYED**
**30CRNIMO8**

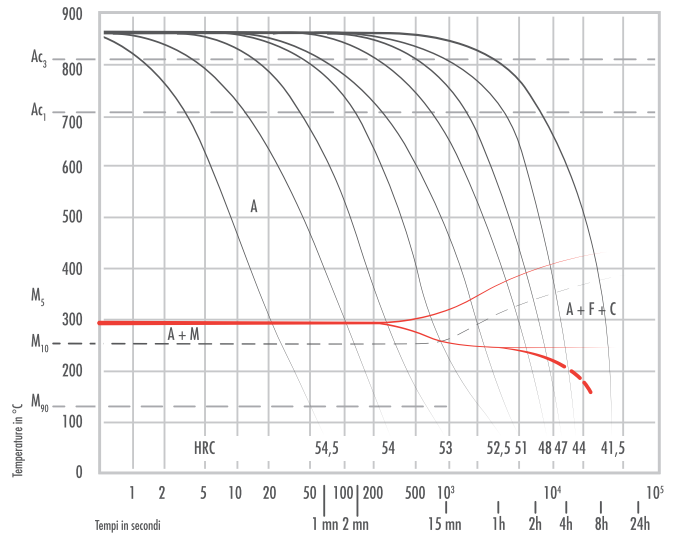

**HARDNESS LIMITS (JOMINY TEST)**

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	56	56	56	55	55	55	55	55	54	54	54	54	54	54
	Min	48	48	48	48	47	47	47	46	46	45	45	44	44	43	43
+HH	Max	56	56	56	56	55	55	55	55	55	54	54	54	54	54	54
	Min	51	51	51	51	50	50	50	49	49	48	48	47	47	47	47
+HL	Max	53	53	53	53	52	52	52	52	52	51	51	51	51	50	50
	Min	48	48	48	48	47	47	47	46	46	45	45	44	44	43	43

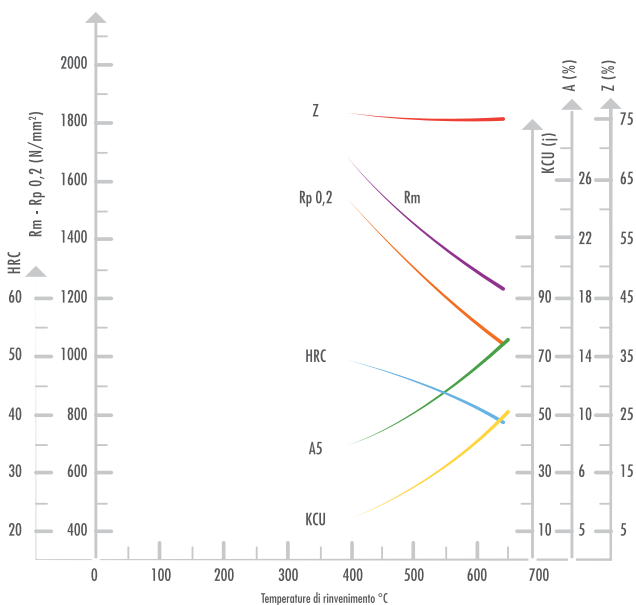
**TTT**



**CCT**



**TEMPERING CURVE**



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