

STANDARD REFERENCE:

EN ISO 683-3: 2018 (Hot-rolled) | EN 10277: 2018 (Bright products)

RODACCIAI REFERENCES AND COMPARABLE STANDARDS

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
UNI EN 10084: 2008 UNI EN 10277-4: 2008		(UNI 7846-78)	(DIN 17210-84)		(NF A 35-551-86)	(BS 970 pt.1 -96)	ASTM A 29
Grade	N°		Werkstoff	N°			
17NiCrMo6-4	1.6566	18NiCrMo5	-	-	18 NCD 6	815M17	-
17NiCrMoS6-4	1.6569						

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

EUROPA	C	Si	Mn	P / max	S	Cr	Mo	Ni	Cu / max	Al	Pb
17NiCrMo6-4					≤ 0,035						-
17NiCrMoS6-4	0,14÷0,20	0,15÷0,40	0,60÷0,90	0,025	0,020÷0,040	0,80÷1,10	0,15÷0,25	1,20÷1,60	0,40	0,020÷0,050	-
17NiCrMoS6-4Pb					0,020÷0,040						0,15÷0,30

Note: 17NiCrMoS6-4 - 1.6569 not yet listed in ISO 683-3: 2016

MECHANICAL PROPERTIES - AS ROLLED CONDITION - Hardness (HB) in the condition

Treated to improve sheraibility (+S)	Annealed to maximum hardness requirements (+A)	Treated to hardness range (+TH)		Treated to ferrite-pearlite structure and hardness range (+FP)	
≤ 255	≤ 229	≥ 179	≤ 229	≥ 149	≤ 201

For size <5 mm the mechanical properties may be agreed at the time of enquiry and order

MECHANICAL PROPERTIES - BRIGHT PRODUCT CONDITION

Size mm	+A* Turned (+A+SH)	+A* Cold drawn (+A+C)	FP** Turned (+FP+SH)	FP** Cold drawn (+FP+C)
	Hardness HB max	Hardness HB max	Hardness HB	Hardness HB
≥ 5 ≤ 10	-	275	-	-
> 10 ≤ 16	-	265	-	-
> 16 ≤ 40	229	260	149÷201	149÷250
> 40 ≤ 63	229	255	149÷201	149÷245
> 63 ≤ 100	229	255	149÷201	149÷245

*+A = annealed to maximum hardness requirement

**+FP = treated to ferrite-perlite structure and hardness range

For size <5 mm the mechanical properties may be agreed at the time of enquiry and order

WORKING TEMPERATURES RECOMMENDED

Operation	Hot forgings deformation	Carburizing temperature	Core quenching temperature	Case quenching temperature	Tempering
°C	900÷1150	880÷980	830÷870	780÷820	150÷200

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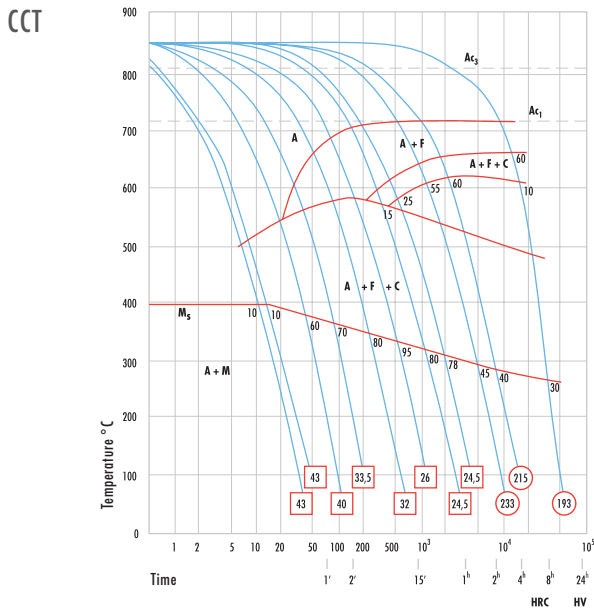
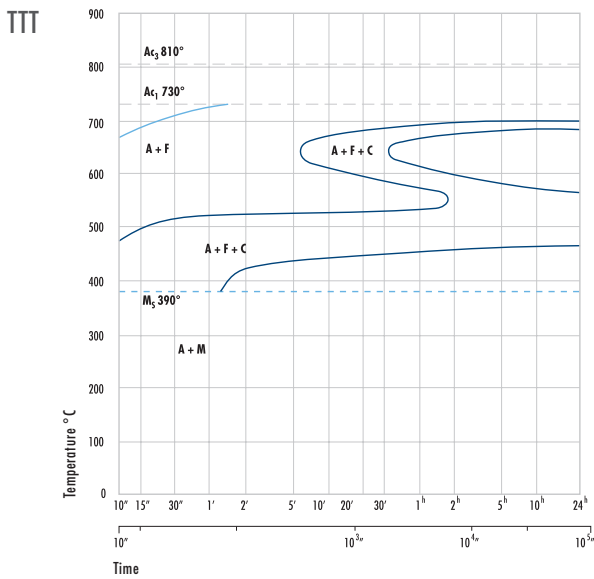
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CASE-HARDENING STEELS
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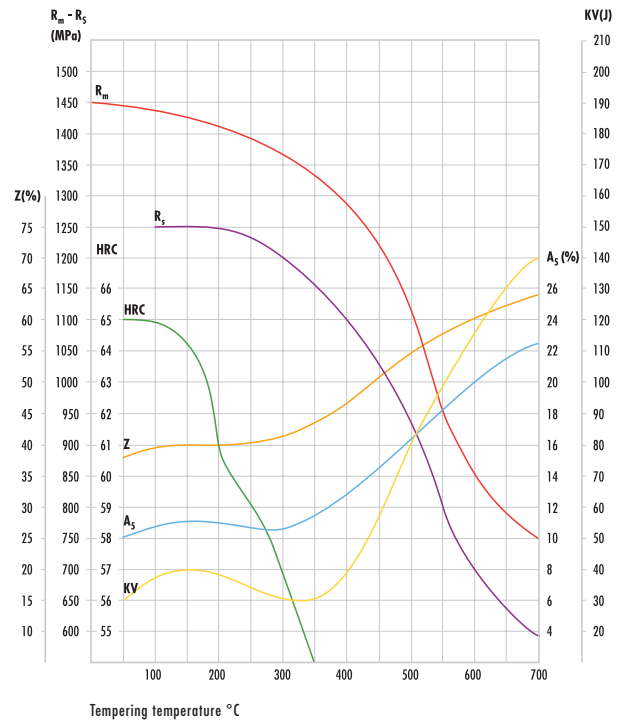
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HARDNESS LIMITS (JOMINY TEST)

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	
+H	Max	48	48	47	46	45	44	42	41	38	36	35	34	33
	Min	40	40	37	34	30	28	27	26	24	23	22	21	-
+HH	Max	48	48	47	46	45	44	42	41	38	36	35	34	33
	Min	43	43	40	38	35	33	32	31	29	27	26	25	24
+HL	Max	45	45	44	42	40	39	37	36	33	32	31	30	29
	Min	40	40	37	34	30	28	27	26	24	23	22	21	-



TEMPERING CURVE



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