

STANDARD REFERENCE:
UNI EN 10083-2: 2006 (Hot-rolled products) | UNI EN 10277-5: 2008 (Bright products)
RODACCIAI REFERENCES AND COMPARABLE STANDARDS

	EUROPE		ITALY	GERMANY		FRANCE	UK	USA
	UNI EN 10083-2: 2006 UNI 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°			
34CrNiMo6	34CrNiMo6	1.6582	-	34CrNiMo6	1.6582	-	-	-

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

	Europe	C	Si / max	Mn	P / max	S / max	Cr	Mo	Ni
34CrNiMo6	34CrNiMo6	0,30÷0,38	0,40	0,50÷0,80	0,025	0,035	1,30÷1,70	0,15÷0,30	1,30÷1,70

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)	A ₅ (%) min	Z (%) min	KV (J) min
≤ 16		248	1000	1200÷1400	9	40	35
> 16 ≤ 40	where the shearability is of importance, this steel should be ordered in the "soft annealed" condition	248	900	1100÷1300	10	45	45
> 40 ≤ 100		248	800	1000÷1200	11	50	45
> 100 ≤ 160		248	700	900÷1100	12	55	45
> 160 ≤ 250		248	600	800÷950	13	55	45

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	-	-	-	-	770	1000÷1200	8	308
> 10 ≤ 16	-	-	-	-	750	1000÷1200	8	298
> 16 ≤ 40	248	900	1100÷1300	10	720	1000÷1200	9	293
> 40 ≤ 63	248	800	1000÷1200	11	650	1000÷1200	10	288
> 63 ≤ 100	248	800	1000÷1200	11	650	1000÷1200	10	288

*For reference only **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

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	58	58	58	58	57	57	57	57	57	57	57	57	57	57
	Min	50	50	50	50	49	48	48	48	48	47	47	47	46	45
+HH	Max	58	58	58	58	57	57	57	57	57	57	57	57	57	57
	Min	53	53	53	53	52	51	51	51	51	50	50	50	50	49
+HL	Max	55	55	55	55	54	54	54	54	54	54	54	54	53	53
	Min	50	50	50	50	49	48	48	48	48	47	47	47	46	45

WORKING TEMPERATURES RECOMMENDED

Operation	Hot forgings deformation	Isothermal annealing	Soft annealing	Quenching in oil	Tempering
°C	850÷1150	820÷860 → 650	640÷680	830÷860	550÷650