

STANDARD REFERENCE:

EN ISO 683-1: 2018 (Hot-rolled products) | EN 10277: 2018 (Bright products)

RODACCIAI REFERENCES AND COMPARABLE STANDARDS

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
EN 10083-1: 1998		(UNI 7845-78)	(DIN 17200-86)		(NF A 35-552-86)	(BS 970 pt.3-96)	ASTM A 29
Grade	N°		Werkstoff	N°			
C30E	1.1178	C30	Ck 30	1.1178	XC 32	080A30	1030
C30R	1.1179		Cm 30	1.1179			

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

EUROPE	C	Si	Mn	P / max	S	Cr / max	Mo / max	Ni / max	Cu / max	Al
C30E	0,27÷0,34	0,10÷0,40	0,50÷0,80	0,025	≤ 0,035	0,40	0,10	0,40	0,30	-
C30R					0,020÷0,040					0,020÷0,050

MECHANICAL PROPERTIES - AS ROLLED CONDITION

Size mm	HB max to condition		Quenched and tempered (+QT)					Normalized (+N)		
	Treated to improve shearability (+S)	Soft annealing (+A)	Rp _{0,2} (MPa) min	R _m (MPa) min	A ₅ (%) min	Z (%) min	KV (J) min	Rp _{0,2} (MPa) min	R _m (MPa) min	A ₅ (%) min
≤ 16	it can be sheared without heat treatment	-	400	600÷750	18	-	30	280	510	20
> 16 ≤ 40		-	350	550÷700	20	45	30	250	480	21
> 40 ≤ 100		-	300*	500÷650*	21	30	30	250	480	21
> 100 ≤ 160		-	-	-	-	-	-	230	460	21
> 160 ≤ 250		-	-	-	-	-	-	230	460	21

* Values valid for diameter up to 63 mm or thickness up to 35 mm

MECHANICAL PROPERTIES - BRIGHT PRODUCTS CONDITION

Size mm	Rolled+Turned (+SH)		Quenched+Tempered+Turned (+QT +SH)*				Quenched+Tempered+Cold Drawn (+QT +C)			Cold Drawn (+C)		
	Hardness HB	R _m (MPa)	Rp _{0,2} (MPa) min	R _m (MPa)	A ₅ (%) min	KV (J) min	Rp _{0,2} (MPa) min	R _m (MPa)	A ₅ (%) min	Rp _{0,2} (MPa) min	R _m (MPa)	A ₅ (%) min
≥ 5 ≤ 10	-	-	-	-	-	-	565	750÷900	9	455	610÷910	6
> 10 ≤ 16	-	-	-	-	-	-	510	680÷850	9	420	570÷870	7
> 16 ≤ 40	145÷198	480÷680	350	550÷750	20	40	460	640÷800	10	345	550÷850	8
> 40 ≤ 63	145÷198	480÷680	300	500÷650	20	40	390	550÷690	11	300	520÷820	9
> 63 ≤ 100	145÷198	480÷680	300	500÷650	20	40	310	500÷650	12	250	480÷780	9

 *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	Normalizing	Soft annealing	Quenching in water	Tempering
°C	850÷1150	870÷910	650÷700	850÷890	550÷660

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QUENCHING AND TEMPERING
 NOT ALLOYED

KV30 - R30S
