

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

	EUROPE		ITALY	GERMANY		FRANCE	UK	USA
	UNI EN 10083-2: 2006 UNI EN 10277-2: 2008		(UNI 7845-78)	(DIN 17200-86)		(NF A 35-552-86)	(BS 970 pt.3-96)	ASTM A 29
	Grade	N°		Werkstoff	N°			
R55	C55E	1.1203	C55	Ck 55	1.1203	XC 55	-	1055
	C55	1.0535		Cm 55	1.1209			

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

	Europe	C	Si / max	Mn	P / max	S	Cr / max	Mo / max	Ni / max
R55	C55E	0,52÷0,60	0,40	0,60÷0,90	0,035	≤ 0,035	0,40	0,10	0,40
	C55					0,020÷0,040			

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)	A ₅ (%) min	Z (%) min	KV (J) min	Rp _{0,2} (MPa) min	R _m (MPa)	A ₅ (%) min
≤ 16	255	229	550	800÷950	12	30	-	370	680	11
> 16 ≤ 40	255	229	490	750÷900	14	35	-	330	640	12
> 40 ≤ 100	255	229	420	700÷850	15	40	-	330	640	12
> 100 ≤ 160	255	229	-	-	-	-	-	300	620	12
> 160 ≤ 250	255	229	-	-	-	-	-	300	620	12

MECHANICAL PROPERTIES - BRIGHT PRODUCTS CONDITION

Name		Size mm	Mechanical properties				
			As Rolled + as Rolled + Turned (+SH)		Cold Drawn(+C)		
Steel name	Steel number		Hardness HBW	R _m (MPa)	Rp _{0,2} (MPa) min	R _m (MPa)	A (%) min
C55	1.0535	≥ 5 ≤ 10	-	-	590	770÷1100	5
		> 10 ≤ 16	-	-	520	730÷1080	6
		> 16 ≤ 40	181÷269	610÷910	440	690÷1050	7
		> 40 ≤ 63	181÷269	610÷910	390	650÷1030	8
		> 63 ≤ 100	181÷269	610÷910	-	-	-

HARDNESS LIMITS (JOMINY TEST)

Limits of range	Hardness HRC at a distance from quenched end of test pieces (mm)v															
	1	2	3	4	5	6	7	8	9	10	11	13	15	20	25	30
+H Max	65	64	63	62	60	57	52	45	37	36	35	34	33	32	30	29
Min	58	55	47	37	33	32	31	30	29	28	27	26	25	24	22	20

WORKING TEMPERATURES RECOMMENDED

Operation	Hot forgings deformation	Normalizing	Soft annealing	Quenching in oil	Tempering
°C	850÷1150	825÷865	650÷700	805÷845	550÷660

