

STANDARD REFERENCE:

EN ISO 683-4: 2018 (Hot-rolled products) | EN 10277: 2018 (Bright products)

RODACCIAI REFERENCES AND COMPARABLE STANDARDS

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
EN 10087: 1998 EN 10277-3: 2008		(UNI 4838-80)	(DIN 1651-88)		(NF A 35-562-86)	(BS 970 pt.3-91)	ASTM A 29
Grade	N°		Werkstoff	N°			
10SPb20	1.0722	CF 10 SPb 20	10 SPb 20	1.0722	13 MF 4 + Pb	-	(11L09)

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

C	Si / max	Mn	P / max	S	Pb
0,07÷0,13	0,40	0,70÷1,10	0,060	0,15÷0,25	0,20÷0,35

MECHANICAL PROPERTIES OF BRIGHT STEEL

Size mm	as Rolled and/or as Rolled + Turned (+SH)		Cold Drawn (+C)		
	Hardness HB max	R _m (MPa)	R _{p0,2} (MPa) min	R _m (MPa)	A ₅ (%) min
≥5 ≤10	-	-	410	520÷780	7
>10 ≤16	-	-	390	490÷740	8
>16 ≤40	156	360÷530	360	460÷720	9
>40 ≤63	156	360÷530	295	410÷660	10
>63 ≤100	146	350÷490	235	380÷630	11

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	Carburizing temperature	Core-hardening temperature	Case-hardening temperature	Tempering
°C	950÷1250	890÷920	650÷700	880÷980	890÷910	780÷820	150÷200



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FREE-CUTTING STEELS
 CASE-HARDENING

10SPB20
