

STANDARD REFERENCE:

EN 10088-3: 2014 (Hot-rolled and bright products)

RODACCIAI REFERENCES AND COMPARABLE STANDARDS

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
EN 10088-3: 2005		(UNI 6900: 71)	(DIN 17440 - 85)		(NF A 35-574-90)	(BS 970 pt. 3 -91)	AISI
Grade	N°		Werkstoff	N°			
X20Cr13	1.4021	X 20 Cr 13	X20Cr13	1.4021	Z 20 C 13	420S29 - 420S37	420

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

C	Si / max	Mn / max	P / max	S / max	Cr
0,16÷0,25	1,00	1,50	0,040	0,030	12,0÷14,0

MECHANICAL PROPERTIES - Rough turned (1X) in the annealed condition

Size max (mm)	Heat treatment	Hardness HB max*	Rp 0,2 (MPa) min	Rm (MPa)	A5 (%) min	KV (J) min
100	Annealed (+A)	230	-	760 max	-	-
	Quenched + Tempered (+QT 700)	-	500	700÷850	13	25
	Quenched + Tempered (+QT 800)	-	600	800÷950	12	20

* only for guidance

MECHANICAL PROPERTIES - Cold drawn (2H, 2B) and ground bars (2G) in the solution annealed condition

Size max (mm)	Annealed		Quenched + Tempered				
	Rm (MPa) max	HB max*	Heat treatment	Rp 0,2 (MPa) min	Rm (MPa) max	A5 (%) min**	KV (J) min
≤ 10	910	290	Quenched + Tempered (+QT 700)	600	750÷1000	8	-
> 10 ≤ 16	910	290		550	750÷1000	8	-
> 16 ≤ 40	850	260		500	700÷950	10	25
> 40 ≤ 63	800	250		500	700÷900	12	25
> 63 ≤ 100	760	230		500	700÷850	13	25

* for reference only ** values valid only for size ≥ 5 mm

MECHANICAL PROPERTIES - Cold drawn wire and coils (2H)

Tensile strength levels	+C 500	+C 650	+C 800	+C900
Rm (MPa)	500÷700	650÷850	800÷1000	900÷1100

Note: the desired tensile strength level shall be evaluated depending on diameter required



MECHANICAL PROPERTIES - Cold drawn wire and coils in the solution annealed condition (2D)

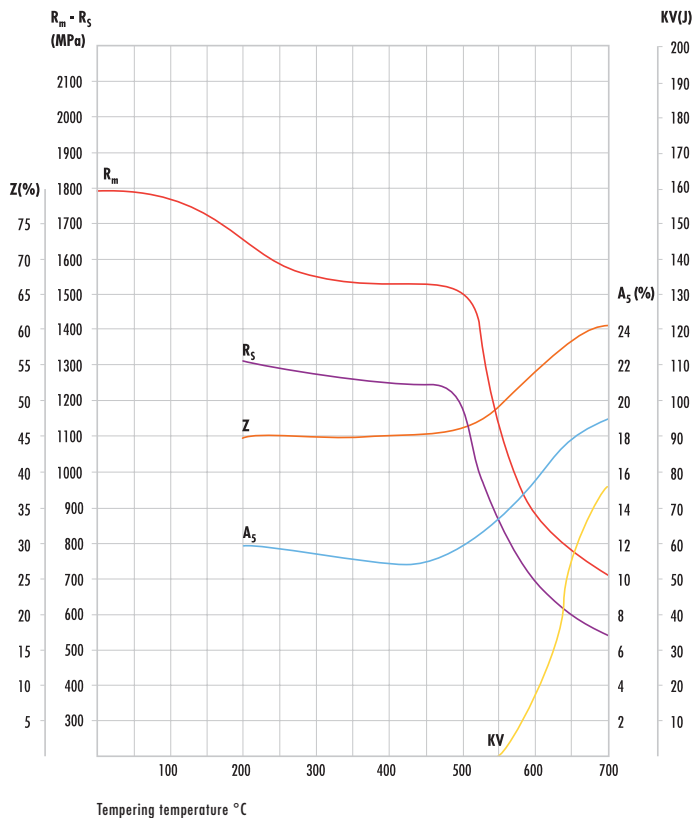
Size	0,50 ≤ d ≤ 1,00	1,00 ≤ d ≤ 3,00	3,00 ≤ d ≤ 5,00	5,00 ≤ d ≤ 16,00
Rm (MPa) max	1100	1050	1000	950
A (%) max	10	10	10	15

Note: If skin passed, Rm might be increased by up to 50 MPa

WORKING TEMPERATURES RECOMMENDED

Operation	Hot forgings deformation	Annealing (air)	Quenching in air or oil	Tempering (QT 700)	Tempering (QT 800)
°C	900÷1100	745÷825	950÷1050	600÷750	600÷700

TEMPERING CURVE



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Mark Rodacciai

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STAINLESS STEELS
MARTENSITIC

420A

