

STANDARD REFERENCE:

EN 10088-3: 2005 (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	R _m (MPa)	A ₅ (%) 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				
	R _m (MPa) max	HB max*	Heat treatment	Rp _{0.2} (MPa) min	R _m (MPa) max	A ₅ (%) min**	KV (J) min
≤ 10	910	290	Quenched + Tempered (+QT700)	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 R _m (MPa)	+C 500	+C 650	+C 800	+C900
	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)

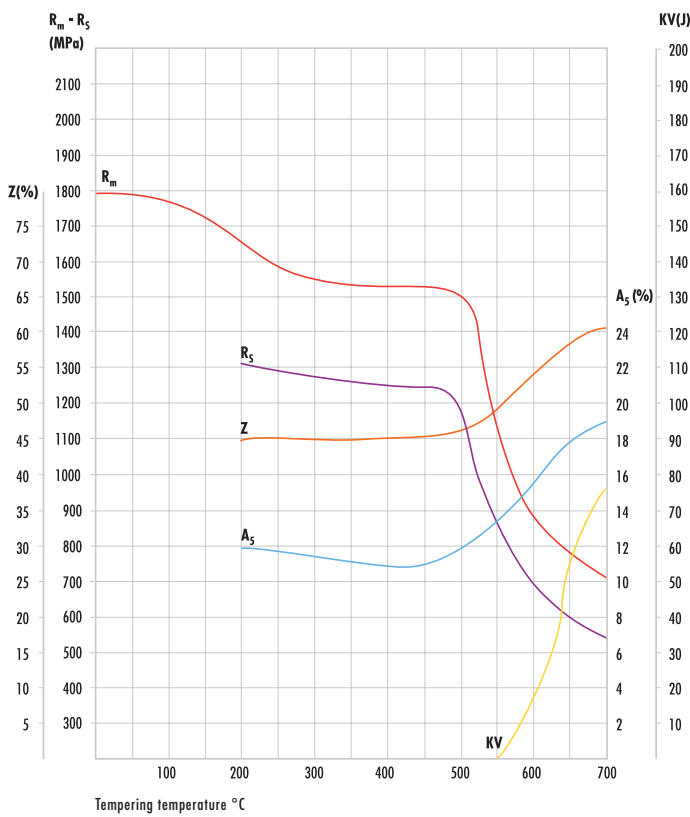
Size	0,50 ≤ d ≤ 1,00	1,00 ≤ d ≤ 3,00	3,00 ≤ d ≤ 5,00	5,00 ≤ d ≤ 16,00
R _m (MPa) max	1100	1050	1000	950
A (%) max	10	10	10	15

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

WORKING TEMPERATURES RECOMMENDED

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

TEMPERING CURVE



rev. 04/2013

STAINLESS STEELS
MARTENSITIC

Rodacciai name

420A

6203