

**STANDARD REFERENCE:**

EN 10088-3: 2005 (Hot-rolled and bright products) | EN 10263-5: 2001 (Wire rods, bars and wire for cold heading products)  
 EN 10272: 2007 (Stainless steel bars for pressure purposes) P.E.D. 97/23/EC

**RODACCIAI REFERENCES AND COMPARABLE STANDARDS**

EUROPE		ITALY	GERMANY		FRANCE	UK	USA
EN 10088-3: 2005 EN 10272: 2007 EN 10263-5: 2001		(UNI 6900: 71)	(DIN 17440 - 85)		(NF A 35-574-90)	(BS 970 pt.3-91)	AISI
Grade	N°		Werkstoff	N°			
X6CrNiTi18-10	1.4541	X 6 CrNiTi 18 11	X6CrNiTi18-10	1.4541	Z6 CNT 18 - 10	321S31	-

**CHEMICAL COMPOSITION (CAST ANALYSIS) (%)**

C / max	Si / max	Mn / max	P / max	S / max	Cr	Ni	Ti
0,08	1,00	2,00	0,045	0,030	17,0÷19,0	9,0÷12,0	5xC=0,70

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

Size max (mm)	Hardness HB max***	Rp <sub>0,2</sub> (MPa) min	Rp <sub>0,1</sub> (MPa) min*	R <sub>m</sub> (MPa)**	A <sub>5</sub> (%) min**	KV (J) min	Resistance to intergranular corrosion	
							in the delivery condition	in the welded condition
100	215	190	225	500÷700	40	100	YES	YES

\* Only for guidance \*\* The maximum HB values may be raised by 100HB or the tensile strength value may be raised by 200 MPa and the minimum A% value may be lowered to 20% for bars of ≤35 mm

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

Size max (mm)	Rp <sub>0,2</sub> (MPa) min	R <sub>m</sub> (MPa)	A <sub>5</sub> (%) min*	KV (J) min
≤ 10	400	600÷950	25	-
> 10 ≤ 16	380	580÷950	25	-
> 16 ≤ 40	190	500÷850	30	100
> 40 ≤ 63	190	500÷850	30	100
> 63 ≤ 100	190	500÷700	40	100

\* Values valid only for size ≥5 mm

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

Tensile strength levels R <sub>m</sub> (MPa)	+C 600	+C 700	+C 800	+C 900	+C 1000	+C 1100	+C 1200	+C 1400	+C 1600
	600÷800	700÷900	800÷1000	900÷1100	1000÷1250	1100÷1350	1200÷1450	1400÷1700	1600÷1900

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	0,10 ≤ d ≤ 0,20	0,20 ≤ d ≤ 0,50	0,50 ≤ d ≤ 1,00	1,00 ≤ d ≤ 3,00	3,00 ≤ d ≤ 5,00	5,00 ≤ d ≤ 16,00
R <sub>m</sub> (MPa) max	1050	1000	950	900	850	800
A (%) max	20	30	30	30	35	35

Note: If skin passed, R<sub>m</sub> might be increased by up to 50 MPa

**MECHANICAL PROPERTIES - Bars, wire and coils for cold heading**

Size mm	as Treated (+AT) o Peeled (+AT+PE)		Cold Drawn (+AT +C)		Cold Drawn + Solution annealed (+AT +C +AT)		Cold Drawn + Solution annealed + Skin passed(+AT +C +AT +LC)	
	R <sub>m</sub> (MPa) max	Z (%) min	R <sub>m</sub> (MPa) max	Z (%) min	R <sub>m</sub> (MPa) max	Z (%) min	R <sub>m</sub> (MPa) max	Z (%) min
≥2 ≤5	-	-	-	-	720	65	770	60
> 5 ≤10	680	65	850	-	680	65	730	60
> 10 ≤25	680	65	810	-	680	65	-	-
> 25 ≤50	680	65	-	-	-	-	-	-

**WORKING TEMPERATURES RECOMMENDED**

Operation	Hot forgings deformation	Solution annealing (water, air)
°C	900÷1200	1000÷1100

