## STANDARD REFERENCE:

**EN 10088-3: 2005** (Hot-rolled and bright products)

## RODACCIAI REFERENCES AND COMPARABLE STANDARDS

| EUROPE | | ITALY | GERMANY | | FRANCE | UK | USA |
|---|---|---|---|---|---|---|---|
| UNI 10088-3: 2005 | | (UNI 6900: 71) | (DIN 17440-85) | | (NF A 35-574-90) | (BS 970 pt.3 -91) | AISI |
| Grade | N° | | Werkstoff | N° | | | |
| X8CrNiS18-9 | 1.4305 | X 10 CrNiS 18 09 | X8CrNiS18-09 | 1.4305 | Z8 CNF 18 - 09 | 303S31 | 303 |

## CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

| C / max | Si / max | Mn / max | P / max | S | N/ max | Cr | Cu / max | Ni |
|---|---|---|---|---|---|---|---|---|
| 0,10 | 1,00 | 2,00 | 0,045 | 0,15÷0,35 | 0,11 | 17,0÷19,0 | 1,00 | 8,0÷10,0 |

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

| Size max (mm) | Durezza HB max* ** | $Rp_{0,2}$ (MPa) min | $Rp_{0,1}$ (MPa) min* | $R_m$ (MPa)** | $A_5$ (%) min** | Resistance to intergranular corrosion | |
|---|---|---|---|---|---|---|---|
| | | | | | | in the delivery condition | in the welded condition |
| 100 | 230 | 190 | 225 | 500÷750 | 35 | NO | NO |

* Only for guidance ** The maximum HB values may be raised by 100HB or the tensile strenght 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) | $Rp_{0,2}$ (MPa) min | $R_m$ (MPa) | $A_5$ (%) min* | KV (J) min |
|---|---|---|---|---|
| ≤ 10 | 400 | 600÷950 | 15 | - |
| > 10 ≤ 16 | 400 | 600÷950 | 15 | - |
| > 16 ≤ 40 | 190 | 500÷850 | 20 | 100 |
| > 40 ≤ 63 | 190 | 500÷850 | 20 | 100 |
| > 63 ≤ 100 | 190 | 500÷750 | 35 | 100 |

* Values valid only for size ≥5 mm

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

| Tensile strength levels | +C 600 | +C 700 | +C 800 | +C900 | +C 1000 | +C 1100 | +C 1200 | +C 1400 | +C 1600 |
|---|---|---|---|---|---|---|---|---|---|
| Rm (MPa) | 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 |
|---|---|---|---|---|---|---|
| Rm (MPa) max | 1050 | 1000 | 950 | 900 | 850 | 800 |
| A (%) max | 20 | 30 | 30 | 30 | 35 | 35 |

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

## WORKING TEMPERATURES RECOMMENDED

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

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