

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 | | - | - | | (NF A 35-574-90) | (BS 1501 pt.3-90) | AISI |
| Grade | N° | | Werkstoff | N° | | | |
| X2CrNiMoN22-5-3 | 1.4462 | - | - | - | Z3 CND 22 - 05 AZ | 318 S 13 | - |

CHEMICAL COMPOSITION (CAST ANALYSIS) (%)

| C / max | Si / max | Mn / max | P / max | S / max | N | Cr | Mo | Ni |
|---------|----------|----------|---------|---------|-----------|-----------|----------|---------|
| 0,030 | 1,00 | 2,00 | 0,035 | 0,015 | 0,10÷0,22 | 21,0÷23,0 | 2,50÷3,5 | 4,5÷6,5 |

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

| Size max (mm) | Hardness HB max ^{**} | Rp _{0,2} (MPa) min | R _m (MPa)** | A ₅ (%) min** | KV (J) min | Resistance to intergranular corrosion | |
|---------------|-------------------------------|-----------------------------|------------------------|--------------------------|------------|---------------------------------------|-------------------------|
| | | | | | | in the delivery condition | in the welded condition |
| 100 | 270 | 450 | 650÷880 | 25 | 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 A₅ 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 | 650 | 850÷1150 | 12 | - |
| > 10 ≤ 16 | 650 | 850÷1100 | 12 | - |
| > 16 ≤ 40 | 450 | 650÷1000 | 15 | 100 |
| > 40 ≤ 63 | 450 | 650÷1000 | 15 | 100 |
| > 63 ≤ 100 | 450 | 650÷880 | 25 | 100 |

* Values valid only for size ≥5 mm

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 _m (MPa) max | Z (%) min | R _m (MPa) max | Z (%) min | R _m (MPa) max | Z (%) min | R _m (MPa) max | Z (%) min |
| ≥2 ≤ 5 | 880 | 55 | - | - | 950 | 55 | 1010 | 50 |
| > 5 ≤ 10 | 880 | 55 | 1020 | - | 900 | 55 | 970 | 50 |
| > 10 ≤ 25 | 880 | 55 | 1000 | - | 880 | 55 | - | - |

TEMPERATURE DI LAVORAZIONE CONSIGLIATE

| Operation | Hot forgings deformation | Solution annealing (water, air) |
|-----------|--------------------------|---------------------------------|
| °C | 900÷1200 | 1020÷1100 |

Mark Rodacciai

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