

Material data

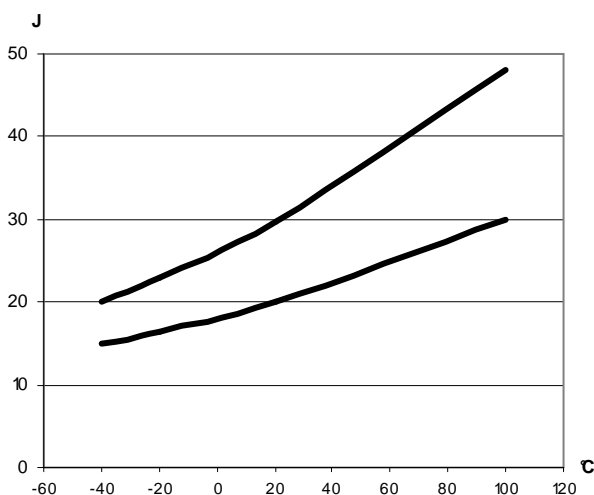
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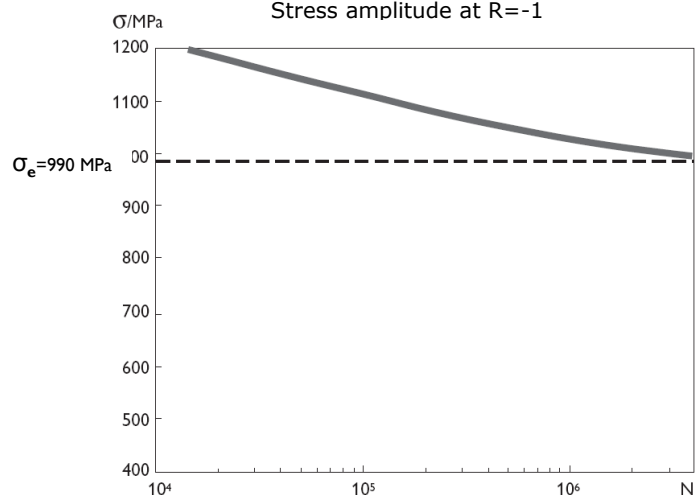
Hardened and tempered to 48–50 HRC, at 20°C (68°F)

| Physical properties | Metric | English |
|---|----------------------------|---------------------------------|
| Density | 7 800 kg/m ³ | 0.282 lbs/in ³ |
| Mechanical properties | | |
| Hardness | 48–50 HRC | 48–50 HRC |
| Hardness, MAX recommended | 53 HRC | 53 HRC |
| Ultimate tensile strength, R _m | 1650 N/mm ² | 239 300 psi |
| Yield strength, R _{p0,2} | 1420 N/mm ² | 205 900 psi |
| Elongation at break, A ₅ | 13 % | 13 % |
| Reduction of area, Z | 55 % | 55 % |
| Modulus of elasticity | 210 000 N/mm ² | 30.5x10 ⁶ psi |
| Poisson's ratio | 0,29 | 0.29 |
| Impact toughness, Charpy-V | 22 J | 16 ft lb |
| Shear modulus of elasticity | 80 000 N/mm ² | 1.16 x10 ⁶ psi |
| Thermal properties | | |
| Coefficient of thermal expansion, linear | 12,7 µm/m °C (20-200°C) | 7.0 µin/in °F (68-390°F) |
| Specific heat capacity | 460 J/kg °C | 0.11 BTU/lb-°F |
| Thermal conductivity | 31 W/m °C | 216 BTU in/h ft ² °F |

Transition curve 46-48 HRC



Wöhler curve 48 HRC
Stress amplitude at R=-1



Expected values valid for Round Bars up to Ø63.5 mm, longitudinal.