

Material data

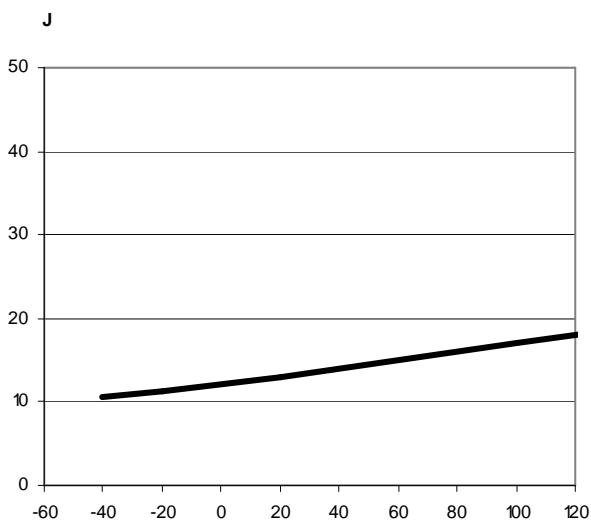
UDDEHOLM COMPONENT BUSINESS

UDDEHOLM UNIMAX

Hardened and tempered to 54–56 HRC, at 20°C (68°F)

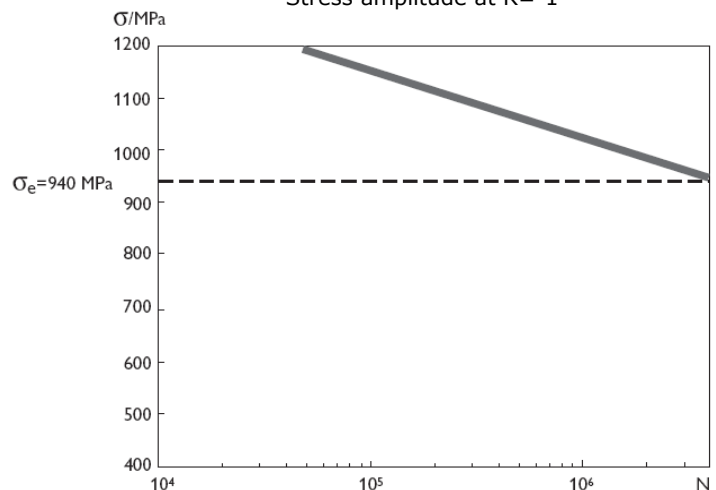
Physical properties	Metric	English
Density	7 800 kg/m ³	0.282 lbs/in ³
Mechanical properties		
Hardness	54–56 HRC	54–56 HRC
Hardness, MAX recommended	58 HRC	58 HRC
Ultimate tensile strength, R _m	2100 N/mm ²	304 600 psi
Yield strength, R _{p0,2}	1600 N/mm ²	232 000 psi
Elongation at break, A ₅	10 %	10 %
Reduction of area, Z	40 %	40 %
Modulus of elasticity	210 000 N/mm ²	30.5x10 ⁶ psi
Poisson's ratio	0,29	0.29
Impact toughness, Charpy-V	13 J	9.6 ft lb
Shear modulus of elasticity	80 000 N/mm ²	1.16 x10 ⁶ psi
Thermal properties		
Coefficient of thermal expansion, linear	11,5 µm/m °C (20-200°C)	6.4 µin/in °F (68-390°F)
Specific heat capacity	460 J/kg °C	0.11 BTU/lb-°F
Thermal conductivity	25 W/m °C	173 BTU in/h ft ² °F

Transition curve 56 HRC



Wöhler curve 56 HRC

Stress amplitude at R=-1



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