

Material:

Specimen:

Fe-2 % Cu-0.5 % C

iron: water atomised copper: < 150 µm,*

carbon: UF4 (Kropfmühl)*; sintering*: 1120 °C, 30 min, 90 % N2 + 10 % H2

heat treatment: density: 7.1 g/cm³ mech. properties: -

smooth, Kt = 1.0; ISO 3928; chamfered*; surface as sintered

Loading mode: plane bending, R = -1;

Limiting no. of cycles: 2 - 10⁶ Endurance limit 194 MPa

Reference: Höganäs AB; internal investigation 2003/93

*assumed from data sheet Fe-2 % Cu-0.8 % C, density 7.1 g/cm3

Stress amplitude: 179 188 189 190 191 198 199 200 201 210 221 251 MPa

Cycles to failure: 2000.000 959.401 2317.395 2760.578 626.614 666.807 529.663 299.916 597.035 377.572 359.749 49.204 - 1000

2339.255 3206.269 2000.000

2742.553