



Failed test-pieces



Unfailed run-outs

 σ -logN-Normalverteilung

HCF : lg N =

s

+

k

lg σ N_KLUF : σ_A

P = 10% :

lg N = 36.64427

+

-13.65254

lg σ

-

0.00

P = 50% :

lg N = 36.99707

+

-13.65254

lg σ

-

0.00

P = 90% :

lg N = 37.34986

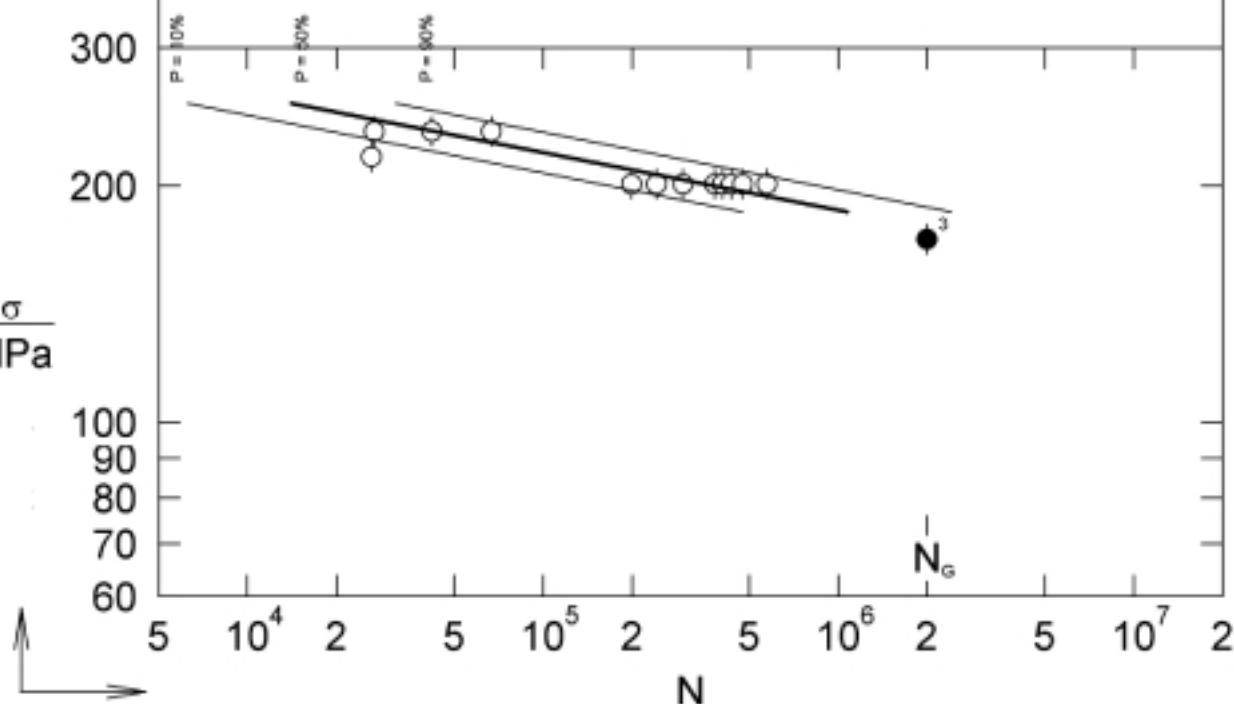
+

-13.65254

lg σ

-

0.00



Material:

Fe-1.5 % Cu-0.6 % C; iron: water atomised

carbon: not specified; sintering: 800 °C, 30 min, 70 % N₂ + 30 % H₂ plus 1120 °C, 30 min, 70 % N₂ + 30 % H₂ (DPDS)

heat treatment: -

density: 7.4 ± 0.05 g/cm³mech. properties: H = -; R_{p0.2} = -; R_m = 500 MPa

Specimen:

smooth, K_t = 1.0; ISO 3928; surface as sintered

Loading mode:

axial, R = -1; 25 Hz

Limiting no. of cycles:

2 · 10⁶

Endurance limit:

172 MPa

Reference:

C.M. Sonsino: Schwingfestigkeit von verschiedenen Sinterstählen und Bemessungskriterien für gesinterte Bauteile; LBF-Report No. FB-170; Fraunhofer-Institut für Betriebsfestigkeit, Darmstadt, 1984

Stress amplitude:

171

201

218

235

MPa

Cycles to failure:

2000.000

199,054

26,301

26,852

· 1000

2000.000

241,529

41,973

2000.000

297,831

66,984

382,798

405,481

434,480

475,302

574,077