

SAFD - Hoeganaes intern Fig 1 Diohte 7,1.osv

Fe-2 % Cu-0.8 % C (0.77 % C)* Material:

> iron: water atomised copper: < 150 µm,*

sintering*: 1120 °C, 30 min, 90 % N2 + 10 % H2

heat treatment: 0.8 °C/s cooling rate* density: 7.1 g/cm3 (7.11 g/cm3)*

mech. properties*: H = 204 HV 10; Rpd.2 = 474 MPa; Rm = 639 MPa

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

plane bending, R = -1; 28 Hz* Loading mode:

 $2 \cdot 10^{6}$ Limiting no. of cycles:

Specimen:

Reference:

219 MPa (211 MPa)* Endurance limit:

> Höganäs AB; internal investigation 2003/93; part of this curve is also published in U. Engström, O. Bergman: Fatigue Strength of High Performance PM Materials; Automotive Fatigue Design & Applications, p. 40-48; MPIF, Princeton, NJ, 2003; and in O. Bergman, A. Bergmark: Influence of Microstructure on the Fatigue Performance of PM Steels;

Adv. Powder Metall. & Particulate Mat. - 2003; Proc. CD, Part 7, p. 270-278; MPIF, Princeton, NJ, 2003

* from plublished references

Stress amplitude:	207	208	210	218	219	220	228	230	240	250	269	271	299	302	MPa
Cycles to failure:	2760.578	2004.472	2317.3959	12.011	2742.553	619,441	297.852	339.625	259,418	204.6441	110,408	87.096	34.514	42.658	- 1000
		3184.198				814.704		485.289							
						756.833		568,955							
						2000.000									
						2339.255									