



Material: Fe-1.5 % Cu carbonitrided; iron: water atomised

sintering: 1120 °C, 30 min, 70 % N<sub>2</sub> + 30 % H<sub>2</sub>

heat treatment: 920 °C, 3.5 h, endogas with 0.17 % CO<sub>2</sub> + NH<sub>3</sub>; oil 60 °C;

no tempering mentioned; case depth: 0.4 - 1mm

density: 7.1 ± 0.05 g/cm<sup>3</sup>

mech. properties: H = 582 HV10; R<sub>p0.2</sub> = -; R<sub>m</sub> = 770 MPa

Specimen: smooth, K<sub>t</sub> = 1.0; ISO 3928; surface as sintered

Loading mode: plane bending, R = -1; 25 Hz

Limiting no. of cycles: 2 · 10<sup>6</sup>

Endurance limit: 477 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:  | 469      | 493      | 523     | 574     | MPa    |
|--------------------|----------|----------|---------|---------|--------|
| Cycles to failure: | 2000.000 | 2000.000 | 545,720 | 121,051 | - 1000 |
|                    |          |          | 617,974 | 125,884 |        |
|                    |          |          | 644,125 | 212,799 |        |
|                    |          |          | 785,181 | 259,998 |        |
|                    |          |          |         | 299,896 |        |