



Material: Fe-1.5 % Cu-0.6 % C; iron: water atomized sintering: 1100 ≤ T ≤ 1138 °C, ca. 20 min, 95 % N₂ + 5 % H₂, 0.8 °C/s cooling rate, surface slightly carburized, average carbon content 0.588 %
 heat treatment: -
 density: 6.96 g/cm³
 mech. properties: H ≈ 151 HBW 2.5/62.5, R_{p0.2} = -, R_m = -
 smooth, K_t = 1.0; ISO 3928; surface as sintered

Specimen:

Loading mode: Plane bending; R = -1; two different types of machines with 50 Hz and 120 Hz

Limiting no. of cycles: 10⁷

Endurance limit: 173.9 MPa

Reference: A. Zafari, P. Beiss; Effect of Sintering Furnace on the Fatigue Strength of Fe-1.5Cu-0.6C; Adv. Powder Metall. & Particulate Mat.-2007, Proc. CD, part 5, p. 86-94; MPIF, Princeton, NJ, 2007

Stress amplitude:	170	175	180	185	200	240	MPa
Cycles to failure:	12320.300	12561.500	317.900	444.918	198.121	59.500	1000
	10000.000	10000.000	327.955	4966.400	265.700	35.300	
	11700.000	12529.300	562.178	579.430	189.300	88.362	
	410.150	591.221	2896.800	723.684	292.500	73.100	
	591.400	10197.600	10000.000	248.789	206.700	85.600	
	12180.101	1064.751	735.744	486.600	348.600	68.260	
	12450.300	10000.000	11419.717	541.513	578.600	30.800	
	316.600	768.675	308.920	12233.417	380.488	83.500	
	10000.000	985.835	617.400	715.400	155.200	38.327	
	1426.200	332.000	13343.900	12221.900	185.600	74.184	