



Material: Fe-1.5 % Cu-0.6 % C; iron: water atomized sintering: 1120 °C, 30 min, 90 % N₂ + 10 % H₂, 0.8 °C/s cooling rate, average carbon content 0.553 %
 heat treatment: -
 density: 6.95 g/cm³
 mech. properties: H = 131 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: 145.2 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:	145	150	155	160	170	200	240	MPa
Cycles to failure:	859.3	415.6	601.7	505.2	239.6	95.8	29.1	1000
	925.3	957.0	12577.2	902.9	1396.8	85.9	28.8	
	16770.5	547.6	557.0	614.4	901.8	173.2	27.0	
	15238.2	20262.7	25687.9	2318.9	290.0	104.5	19.5	
	2318.7	17137.1	222.7	21337.9	410.9	163.7	47.3	
	17377.0	2585.1	2113.8	524.8	1195.3	56.4	19.1	
	2720.4	17207.3	633.1	1219.8	619.5	185.4	47.4	
	13445.1	12870.5	21582.5	1246.7	184.3	71.1	32.7	
	13264.6	754.6	815.0	717.9	1119.7	232.9	37.4	
	822.2	678.7	394.3	11688.2	2327.5	224.0	27.5	