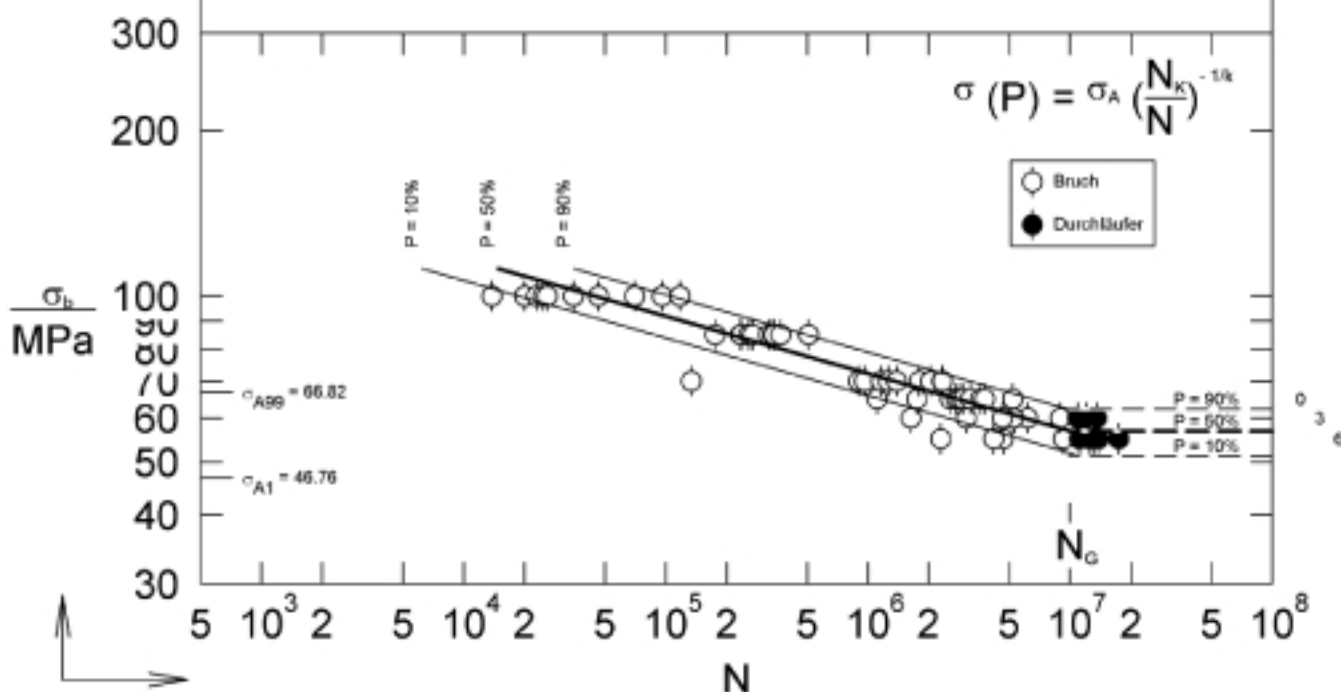


○ Failed test-pieces ● Unfailed run-outs

σ -logN-Normalverteilung	HCF: lg N =	a	+	k	lg σ	N _K	LLF: σ_A
P = 10% :	lg N =	23.42654	+	-9.57597	lg σ	11310270	51.26
P = 50% : (Perlscheur)	lg N =	23.80087	+	-9.57597	lg σ	10049122	56.79
P = 90% :	lg N =	24.17520	+	-9.57597	lg σ	9779951	62.31



Material: Fe-1.5 % Cu-0.6 % C; iron: water atomized Hoeganaes Ancorsteel 1000 BMN, copper: Hymod, carbon: graphite UF4
sintering: ca. 1120 °C, ca. 20 min, 95 % N₂ + 5 % H₂, 0.8 °C/s cooling rate
heat treatment: -
density: 5.91 g/cm³
mech. properties: H = 93 HBW 2.5/62.5, R_{p0.2} = -, R_m = -
Specimen: notched, K_t = 1.8; ISO 3928; surface as sintered
Loading mode: Plane bending; R = -1 ; two different types of machines with 50 Hz and 120 Hz
Limiting no. of cycles: 10⁷
Endurance limit: 56.8 MPa
Reference: A. Zafari, P. Beiss, Fatigue Strength of Iron-Copper-Carbon PM steels ,PM Auto 2008, Proc. CD, Isfahan, 2008

Stress amplitude:	55	60	65	70	85	100	MPa
Cycles to failure:	9222.248	3063.400	5202.722	1261.500	323.557	70.334	· 1000
	13077.936	5263.200	2543.500	133.600	509.199	96.069	
	13762.800	6171.929	1743.900	963.000	369.000	117.600	
	2282.600	13536.593	2732.000	2314.755	235.900	20.000	
	17406.051	11976.872	3769.400	2331.342	258.000	22.900	
	11139.985	8921.500	3606.200	900.242	175.362	34.800	
	4671.800	5245.400	2844.241	1799.042	234.600	46.400	
	12991.500	4642.800	2967.387	1163.002	267.700	24.700	
	4193.700	10885.600	1107.500	2035.900	342.500	13.800	
	12433.691	1636.200	3207.600	1384.300	337.152	25.900	