FLC-4608

Density: 6.95 g/cm^3

Material: Prealloyed Steel (0.55% Mo, 0.20% Mn, 1.9% Ni, balance Fe) + mixed additions of 2% Cu, 0.90% graphite and 0.60% lubricant

Treatment: Die Compact, Sinter at 1120^{o}C, Sinter harden (cooling rate 2^{o}C/sec), Temper at 204^{o}C for 1 hour,

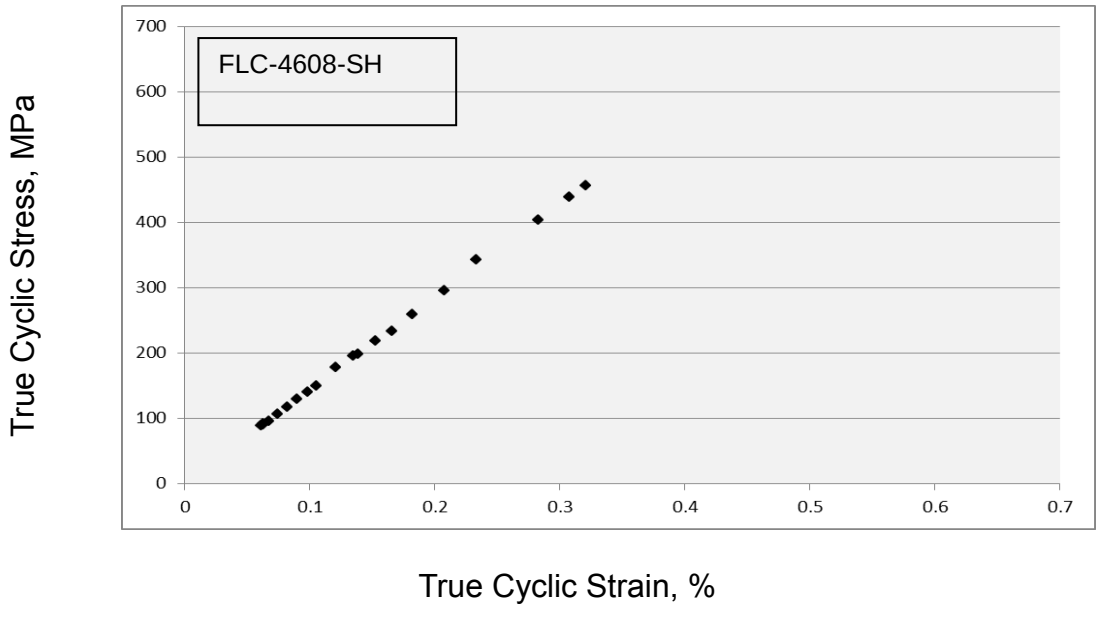
Table – Strain and Stress Amplitudes vs. Reversals to Failure

FLC-4608 - Density 6.95 g/cm^3

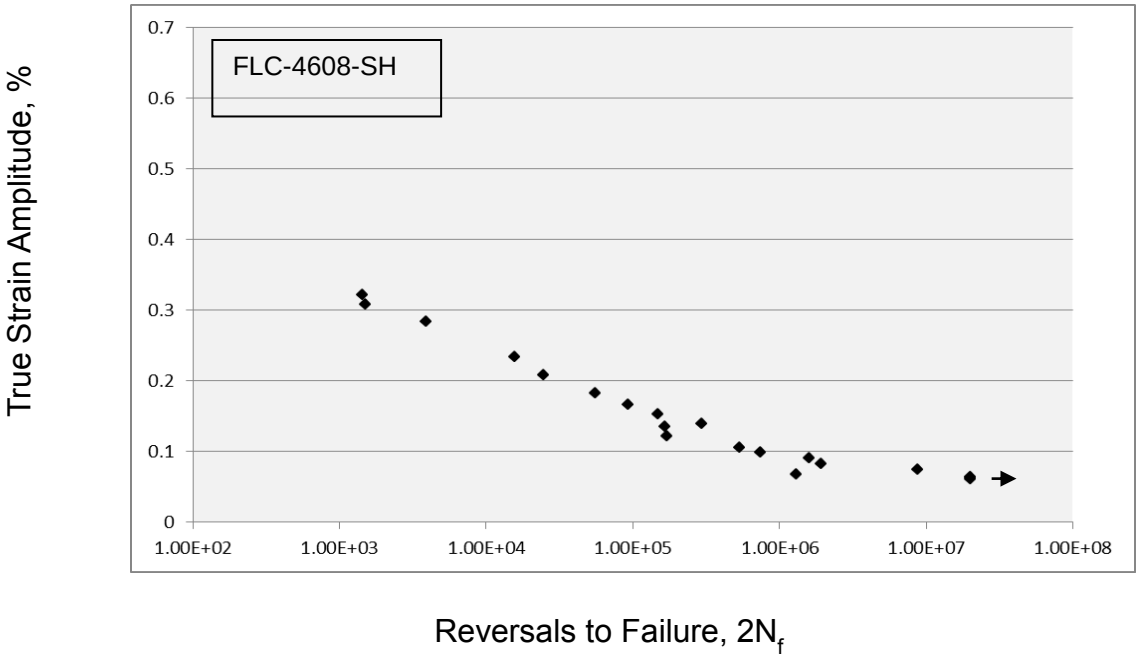
Sp. #	Stress Amplitude (MPa)	Strain Amplitude	Life (2Nf)	Hardness (HRC)	Notes
1	341.53	0.233	15574		
2	232.11	0.166	92986		
3	194.94	0.135	164648		
4	177.23	0.121	171680		
5	148.97	0.105	536106		
6	139.82	0.098	741486	38*	
7	127.99	0.09	1588770		
8	116.86	0.082	1921522	37*	
9	105.66	0.074	8756526		
10	95.08	0.067	1294094		
11	89.03	0.063	20000000		Runout
12	89.94	0.063	20000000		Runout
13	87.48	0.061	20000000		Runout
13B	437.38	0.308	1510	37*	
12B	455.34	0.321	1432		
11B	294.92	0.208	24680		
14	257.44	0.182	55056		
15	217.59	0.153	147364		
16	197.54	0.139	295416		
17	401.94	0.283	3868		

** Hardness obtained from average of three tests*

True Cyclic Stress-Strain Curve



Constant amplitude Strain-Life Curve



Cyclic Properties

FLC-4608 - Density 6.95 g/cm^3

Cyclic Yield Strength, (0.2% offset) = K' $(0.002)^{n'}$ (MPa)	No plastic deformation
Cyclic strength coefficient, K' (MPa)	No plastic deformation
Cyclic strain hardening exponent, n'	No plastic deformation
Fatigue strength coefficient, σ'_f (MPa)	1946
Fatigue strength exponent, b	-0.193
Fatigue ductility coefficient, ε'_f	No plastic deformation
Fatigue ductility exponent, c	No plastic deformation