FLC-4208

Density: 6.94 g/cm^3

Material: Prealloyed Steel (0.60% Mo, 0.30% Mn, 0.45% 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,

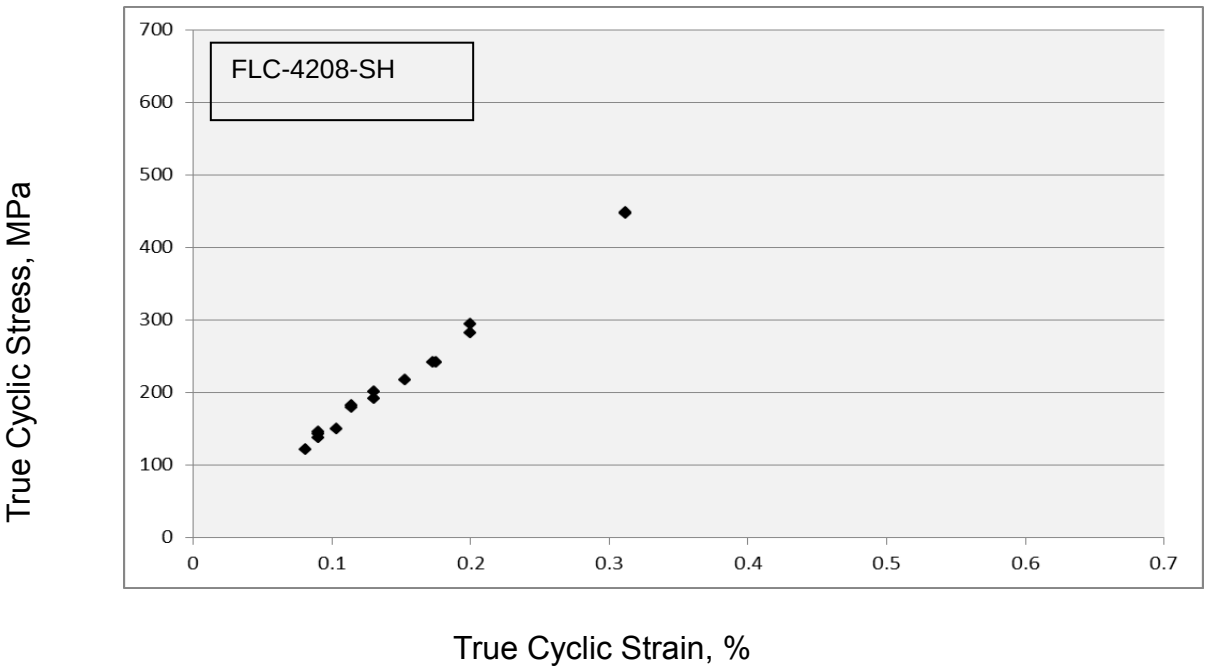
Table – Strain and Stress Amplitudes vs. Reversals to Failure

FLC-4208 - Density 6.94 g/cm^3

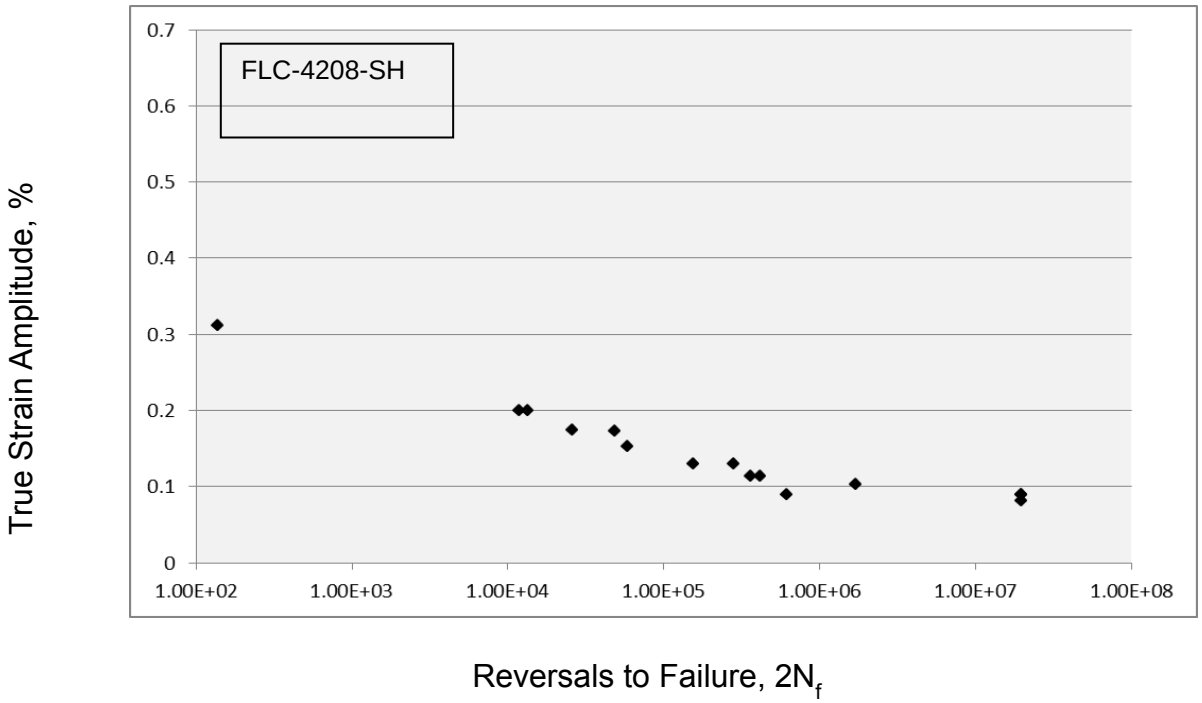
Sp. #	Stress Amplitude (MPa)	Strain Amplitude	Life (2Nf)	Hardness (HRC)	Notes
1	447.47	0.312	140		
2	445.2	0.312	2		
3	292.56	0.2	13660		
4	281.32	0.2	11926	35.2*	
5	240.06	0.173	48962		
6	240.61	0.175	26390		
7	215.91	0.153	59368		
8	180.73	0.114	420360		
9	148.73	0.103	1725904	37.5*	
10	144.65	0.09	20000000	36.7*	Runout
11	142.45	0.09	20000000		Runout
12	135.78	0.09	627502		
13	120.19	0.081	20000000		Runout
13B	201.99	0.25	8650		
11B	201.99	0.25	10280		
14	199.56	0.13	158012		
15	190.81	0.13	286302		
10B	205.11	0.25	13258		

** Hardness obtained from average of three tests*

True Cyclic Stress-Strain Curve



Constant amplitude Strain-Life Curve



Cyclic Properties

FLC-4208 - Density 6.94 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)	2552
Fatigue strength exponent, b	-0.217
Fatigue ductility coefficient, ε'_f	No plastic deformation
Fatigue ductility exponent, c	No plastic deformation