

F-08C2/FC-0208

Density: 6.84 g/cm³

Material: Iron powder + mixed additions of 2% Cu, 0.90% graphite and 0.75% lubricant.

Treatment: Die Compact, Sinter at 1120°C, Austenitise at 845°C for 30 min, Oil quench at 60°C, Temper at 175°C for 60 min

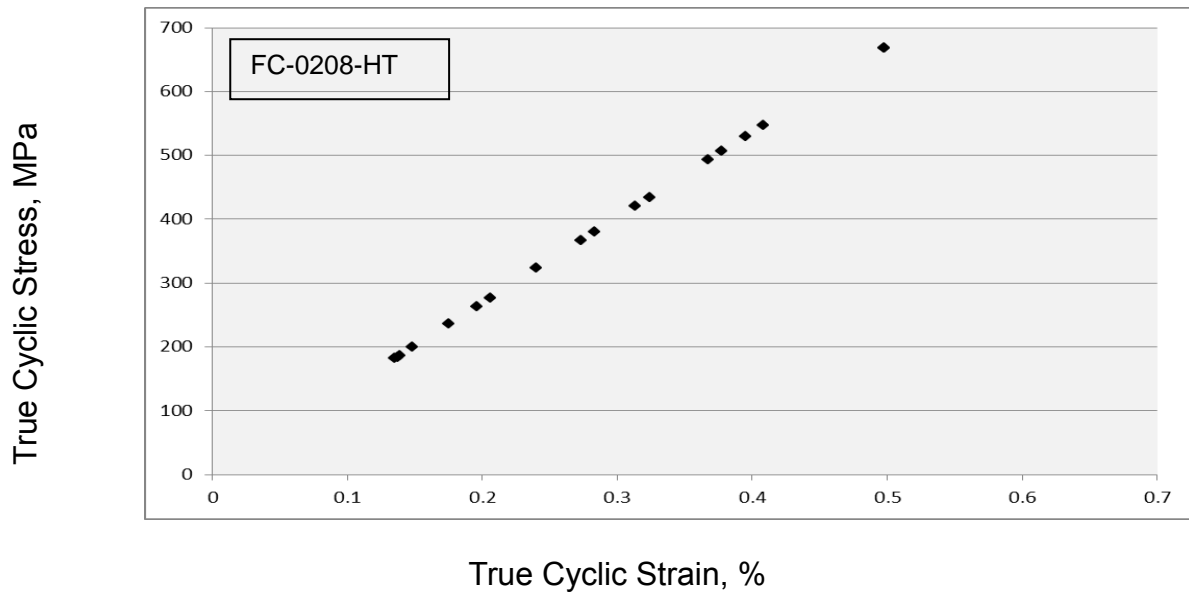
Table – Strain and Stress Amplitudes vs. Reversals to Failure

FC-0208-HT - Density 6.84 g/cm³

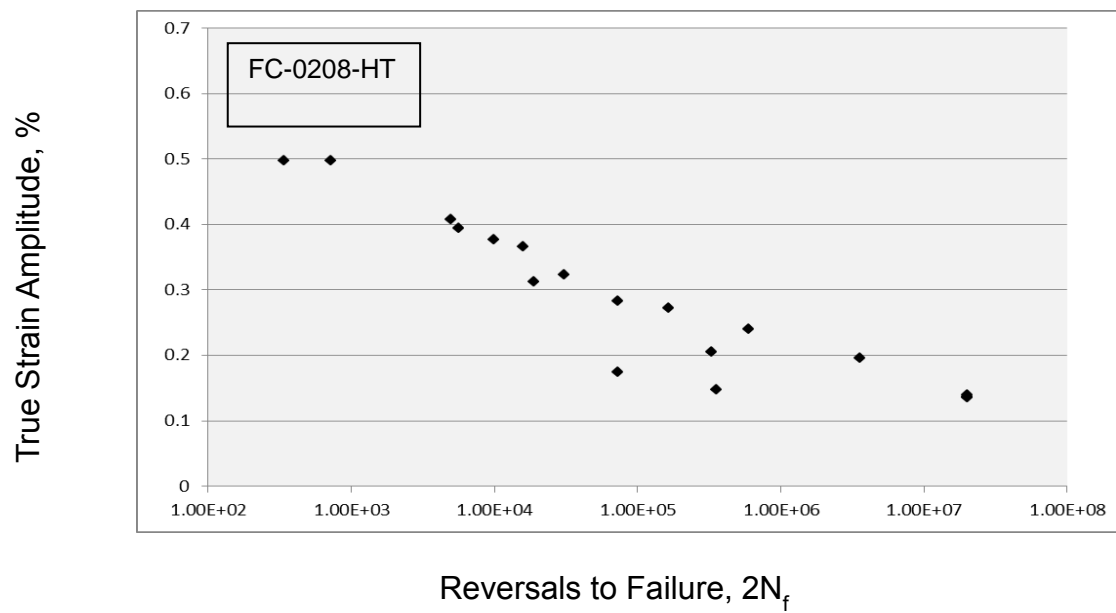
Sp. #	Stress Amplitude (MPa)	Strain Amplitude	Life (2Nf)	Hardness (HRC)	Notes
1	275.77	0.206	329054		
2	261.88	0.196	3545270		
3	234.48	0.175	72300	45.17*	
4	198.33	0.148	356830		
5	185.87	0.139	20000000		Runout
6	181.14	0.135	20000000		Runout
7	183.01	0.137	20000000	44.5*	Runout
8	379.41	0.283	73110		
9	433.37	0.324	30850		
10	491.84	0.367	15838		
11	528.87	0.395	5670		
4B	546.11	0.408	5000		
5B	505.32	0.377	9952		
6B	418.89	0.313	18778	44.17*	
12	365.92	0.273	164800		
13	321.92	0.24	591642		
14	666.83	0.498	338		
15	666.83	0.498	720		

* Hardness obtained from average of three tests

True Cyclic Stress-Strain Curve



Constant amplitude Strain-Life Curve



Cyclic Properties

FC-0208-HT - Density 6.84 g/cm³

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)	2589
Fatigue strength exponent, b	-0.18
Fatigue ductility coefficient, ϵ'_f	No plastic deformation
Fatigue ductility exponent, c	No plastic deformation