

HAYNES[®] 718 alloy

Creep and Stress-Rupture Strengths

HAYNES[®] 718 Sheet, Age-Hardened*

Temperature		Creep	Approximate Initial Stress to Produce Specified Creep in					
			10h		100h		1,000h	
°F	°C	%	ksi	MPa	ksi	MPa	ksi	MPa
1000	538	0.5	157	1083	146	1007	132	910
		1	160	1103	150	1034	138	952
		R	--	--	165	1138	144	993
1100	593	0.5	140	965	126	869	108	745
		1	143	986	130	896	112	772
		R	150	1034	134	924	115	793
1200	649	0.5	121	834	101	696	75	517
		1	124	855	103	710	78	538
		R	130	896	105	724	87	600
1300	704	0.5	95	655	64	441	35	241
		1	98	676	67	462	41	283
		R	106	731	76	524	46	317
1400	760	0.5	54	372	24	165	3.8	26
		1	60	414	28	193	5.1	35
		R	70	483	37	255	17	117

*Samples were age hardened by treating at 1325°F (718°C)/8h/FC to 1150°F (621°C)/8h/AC

Comparison of Stress to Produce 1% Creep in 1000 Hours in Sheet

At temperatures below 1200°F (649°C), HAYNES[®] 718 alloy has creep strength that is superior to most other age-hardenable, wrought nickel-base superalloys. However, starting at temperatures around 1200°F (649°C) and higher, gamma-prime strengthened alloys such as HAYNES[®] 282[®] alloy, HAYNES[®] Waspaloy alloy, and HAYNES[®] 263 alloy provide higher strength.

