

HAYNES® 214® alloy

Creep and Rupture Properties

Solution Annealed Sheet

Temperature		Creep	Approximate Initial Stress to Produce Specified Creep in							
			10 h		100 h		1,000 h		10,000 h	
°F	°C	%	ksi	MPa	ksi	MPa	ksi	MPa	ksi	MPa
1200	649	0.5	-	-	-	-	46	317	-	-
		1	-	-	-	-	53	365	-	-
		R	-	-	-	-	57	393	37	255
1300	704	0.5	-	-	45	310	30	207	-	-
		1	-	-	49	338	32	221	-	-
		R	-	-	51	352	33	228	21*	145*
1400	760	0.5	38	262	26	179	17.5	121	11.2*	77*
		1	42	290	29	200	18.8	130	11.7	81
		R	50	345	33	228	19.8	137	12.3	85
1500	816	0.5	23	159	15	103	8.9	61	-	-
		1	27	186	16.5	114	9.9	68	-	-
		R	32	221	20	138	11.5	79	7.0	48
1600	871	0.5	12.7	88	7.5	52	4.5	31	-	-
		1	15.2	105	8.7	60	4.9	34	-	-
		R	21*	145*	11.8	81	6.3	43	3.4	23
1700	927	0.5	6.5	45	3.7	26	2.1	14	-	-
		1	7.5	52	4.2	29	2.4	17	-	-
		R	9.8	68	5.6	39	3.1	21	1.8*	12*
1800	982	0.5	1.9	13	1.2	8.3	0.75*	5.2*	-	-
		1	2.2	15	1.3	9.0	0.83*	5.7*	-	-
		R	4.8	33	2.7	19	1.7	12	1.0	6.9
1900	1038	0.5	1.2	8.3	0.74*	5.1*	0.48*	3.3*	-	-
		1	1.4	10	0.88	6.1	0.55*	3.8*	-	-
		R	3.3*	23*	2.0	14	1.2	8.3	0.76	5.2
2000	1093	0.5	0.75	5.2	0.55	3.8	0.32	2.2	-	-
		1	0.95	6.6	0.63	4.3	0.43	3.0	-	-
		R	2.2*	15*	1.5	10	0.94	6.5	0.61	4.2
2100	1149	0.5	0.53	3.7	0.35	2.4	-	-	-	-
		1	0.64	4.4	0.42	2.9	0.27	1.9	-	-
		R	1.6*	11*	1.1	7.6	0.69	4.8	0.44	3.0
2200	1204	0.5	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-
		R	1.1*	7.6*	0.76	5.2	0.49	3.4	-	-

*Significant extrapolation

Solution Annealed Plate

Temperature		Creep	Approximate Initial Stress to Produce Specified Creep in							
			10 h		100 h		1,000 h		10,000 h	
°F	°C	%	ksi	MPa	ksi	MPa	ksi	MPa	ksi	MPa
1400	760	0.5	41*	283*	29	200	21	145	14*	97*
		1	44*	303*	32	221	23	159	14.5*	100*
		R	55*	379*	38	262	24	165	15.0	103
1500	816	0.5	26	179	19	131	12.8	88	7.8*	54*
		1	28	193	20.5	141	13.8	95	8.4*	58*
		R	35	241	23	159	15.0	103	9.0*	62*
1600	871	0.5	17*	117*	11.2	77	6.2	43	3.3	23
		1	20*	138*	12.2	84	6.7	46	3.7	26
		R	24*	165*	15.0	103	8.5	59	4.6	32
1700	927	0.5	8.5	59	4.9	34	2.6	18	1.4	10
		1	9.7	67	5.3	37	2.9	20	1.6	11
		R	11.5	79	7.1	49	4.2	29	2.4	17
1800	982	0.5	2.0	14	1.3	9.0	0.85	5.9	-	-
		1	2.2	15	1.5	10	1.00	6.9	0.68*	4.7*
		R	3.9	27	2.9	20	1.8	12	1.1	7.6
1900	1038	0.5	1.2	8.3	0.77	5.3	0.50	3.4	-	-
		1	1.4	10	0.91	6.3	0.60	4.1	0.39	2.7
		R	2.9	20	1.9	13	1.2	8.3	0.8	5.5
2000	1093	0.5	0.77	5.3	0.48	3.3	0.29	2.0	-	-
		1	0.93	6.4	0.62	4.3	0.41	2.8	0.20*	1.4*
		R	2.1*	14*	1.4	9.7	0.90	6.2	0.60	4.1
2100	1149	0.5	0.47	3.2	0.27*	1.9*	-	-	-	-
		1	0.60*	4.1*	0.35	2.4	-	-	-	-
		R	1.6*	11*	1.0	6.9	0.68	4.7	0.44	3.0
2200	1204	0.5	0.35	2.4	0.19*	1.3*	-	-	-	-
		1	0.45*	3.1*	0.26	1.8	-	-	-	-
		R	1.1*	7.6*	0.77	5.3	0.5	3.4	0.33	2.3

*Significant extrapolation

Comparative Stress-Rupture Strengths, 1800°F (980°C)/10,000 Hours

