HAYNES® 214® alloy

Tensile Properties

Cold-Rolled and Solution Annealed Sheet, 0.078 to 0.125 Inches (2.0 to 3.2 mm) Thick*

Test Temperature		Yield Strength at 0.2% Offset		Ultimate Tensile Strength		Elongation
°F	°C	ksi	MPa	ksi	MPa	%
RT	RT	83.6	577	141.4	975	37.3
1200	649	77.9	537	109.6	756	22.2
1400	760	72.3	498	88.2	608	20.4
1600	871	40.5	279	49.5	341	49.4
1800	982	6.0	41	9.8	68	144.8
1900	1038	3.9	27	7.3	51	153.1
2000	1093	3.0	20	5.5	38	157.1
2100	1149	2.0	14	4.0	28	159.3
2200	1204	1.4	10	3.2	22	134.6

RT= Room Temperature

Hot-Rolled and Solution Annealed Plate, 0.500 Inches (12.7 mm) Thick*

Test Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation
°F	°C	ksi	MPa	ksi	MPa	%
RT	RT	82.2	565	138.9	960	42.8
1000	538	71.5	495	120.0	825	47.8
1200	649	75.9	252	114.9	790	33.0
1400	760	73.6	505	94.4	670	23.1
1600	871	50.4	345	66.4	460	33.6
1800	982	8.4	58	16.7	115	86.4
2000	1093	4.2	29	9.0	62	88.6
2100	1149	2.1	14	6.6	46	99.4
2200	1204	1.4	10	5.0	34	91.5

RT = Room Temperature

*Elevated temperature tensile tests for plate were performed with a strain rate that is no longer standard. These results were from tests with a strain rate of 0.005 in./in./minute through yield and a crosshead speed of 0.5 in./minute for every inch of reduced test section from yield through failure. The current standard is to use a strain rate of 0.005 in./in./minute though yield and a crosshead speed of 0.05 in./minute for every inch of reduced test section from yield through failure.

Welded Tensile Tests

	Test Temperature		0.2% Yield Strength		Ultimate Tensile Strength		Elongation
	°F	°C	ksi	MPa	ksi	MPa	%

Transverse Specimens with GTAW Welds	RT	RT	81.0	558	124.0	855	22.0
	1000	538	70.0	483	99.0	683	13.0
	1200	649	79	545	97	669	10
	1400	760	77	531	83	572	5
	1500	816	66	455	70	483	5
	1600	871	46	317	50	345	5
	1800	982	10	69	11	76	35
	2000	1093	4	28	5	34	29
All Weld Metal Specimens	RT	RT	85	586	118	814	33
	1400	760	81	558	85	586	4
	1500	816	68	469	70	483	4
	1600	871	N/A	N/A	51	352	1
	1800	982	N/A	N/A	12	83	24