

HAYNES[®] 188 alloy

Fabrication Characteristics

Heat Treatment

HAYNES[®] 188 alloy is normally solution heat treated in the range of 2125-2175°F for a time to commensurate with section thickness. Annealing during fabrication can be performed at even lower temperatures, but a final, subsequent solution heat treatment is needed to produce optimum properties and structure.

Effect of Cold Reduction Upon Room-Temperature Properties*

Cold Reduction	Subsequent Temperature	0.2% Yield Strength		Ultimate Tensile Strength		Elongation	Hardness
		ksi	MPa	ksi	MPa		
%	-						
0	NONE	66.9	460	137.2	945	54.2	98.1 HRB
10		105.9	730	151.5	1045	45.1	32.1 HRC
20		132.9	915	165.9	1145	28.3	37.1 HRC
30		167.0	1150	195.1	1345	13.4	41.2 HRC
40		176.8	1220	214.9	1480	9.8	43.5 HRC
10	1950°F (1065°C) For 5 min.	91.2	630	148.5	1025	41.4	29.7 HRC
20		87.8	605	153.3	1055	41.0	27.8 HRC
30		84.2	580	158.3	1090	41.3	29.6 HRC
40		90.8	625	162.7	1120	39.8	31.1 HRC
10	2050°F (1120°C) For 5 min.	64.7	445	143.0	985	50.1	21.9 HRC
20		71.4	490	149.0	1025	47.2	24.5 HRC
30		80.3	555	155.2	1070	43.7	27.6 HRC
40		86.9	600	159.0	1095	43.2	29.5 HRC
10	2150°F (1175°C) For 5 min.	61.9	425	139.6	965	55.3	95.6 HRB
20		64.9	445	141.3	975	53.3	97.1 HRB
30		66.5	460	142.8	985	51.8	98.5 HRB
40		64.1	440	141.5	975	55.5	97.2 HRB

*Based upon rolling reduction taken upon 0.125 in. (3.2 mm) thick sheet. Duplicate tests.

HRB = Hardness Rockwell "B"

HRC = Hardness Rockwell "C"