HASTELLOY® HYBRID-BC1® alloy

Tensile Data

Form	Thickness	Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation
	in/mm	°F	°C	ksi	MPa	ksi	MPa	%
Sheet, Cold Rolled & Solution-Annealed	0.125/3.2	RT	RT	58.7	405	122.0	841	61.6
		200	93	52.2	360	117.6	811	66.1
		300	149	48.3	333	114.4	789	64.5
		400	204	45.0	310	110.6	763	63.3
		500	260	42.4	292	109.4	754	67.9
		600	316	41.1	283	108.0	745	68.5
		700	371	40.0	276	108.3	747	76.9
		800	427	40.6	280	112.8	778	75.3
Plate, Hot Rolled & Solution-Annealed	0.75/19.1	RT	RT	52.5	362	117.4	809	70.5
		200	93	47.4	327	112.9	778	74.8
		300	149	42.7	294	108.7	749	74.8
		400	204	38.8	268	104.8	723	74.6
		500	260	35.7	246	102.4	706	74.7
		600	316	35.6	245	100.4	692	71.1
		700	371	34.8	240	99.8	688	74.0
		800	427	32.7	225	99.0	683	76.3
Bar, Hot Rolled & Solution-Annealed	1.0/25.4	RT	RT	55.9	385	120.6	832	63.0
		200	93	50.4	347	115.8	798	73.6
		300	149	45.1	311	111.5	769	72.8
		400	204	41.9	289	107.8	743	72.1
		500	260	39.6	273	105.2	725	72.7
		600	316	37.1	256	103.5	714	72.0
		700	371	36.6	252	103.3	712	72.0
		800	427	37.2	256	102.3	705	74.1

RT= Room Temperature

Tensile Data for Weldments

• Transverse samples from welded plates of thickness 12.7 mm (0.5 in).
• Welding products made from same heat of HYBRID-BC1® alloy.

Welding Process	Consumable Diameter	Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation
-	in/mm	°F	°C	ksi	MPa	ksi	MPa	%
Gas Tungsten Arc GTAW (TIG)	0.125/3.2	RT	RT	69.4	478	122.0	841	40.9
		200	93	60.7	419	114.4	789	37.0
		300	149	58.0	400	109.7	756	40.1
		400	204	56.7	391	104.8	723	36.2
		500	260	51.4	354	103.9	716	40.2

		600	316	50.9	351	100.9	696	39.0
		700	371	47.0	324	99.3	685	41.3
		800	427	51.5	355	100.3	692	41.1
Synergic Gas MetalArc GMAW (MIG)	0.75/19.1	RT	RT	72.6	501	121.1	835	37.2
		200	93	66.4	458	115.3	795	39.7
		300	149	63.5	438	109.7	756	37.6
		400	204	58.3	402	104.3	719	39.3
		500	260	59.2	408	98.8	681	33.7
		600	316	59.9	413	102.8	709	42.5
		700	371	58.7	405	99.7	687	37.2
		800	427	60.3	416	99.2	684	38.8
Shielded Metal Arc(SMAW)	1.0/25.4	RT	RT	75.0	517	121.5	838	30.2
		200	93	67.2	463	114.3	788	28.6
		300	149	57.0	393	108.8	750	32.0
		400	204	58.8	405	103.7	715	30.1
		500	260	60.2	415	103.3	712	32.3
		600	316	57.5	396	101.4	699	31.2
		700	371	54.7	377	97.4	672	31.3
		800	427	54.6	376	97.6	673	30.8

All Weld Tensile Metal Data

• Bar Samples of Diameter 12.7 mm (0.5 in) from GMAW (MIG) Cruciforms

Welding Process	Consumable Diameter	Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation
-	in/mm	°F	°C	ksi	MPa	ksi	MPa	%
Synergic Gas MetalArc GMAW (MIG)	0.045/1.1	RT	RT	73.8	509	110.8	764	47.7
		200	93	68.9	475	104.8	723	46.1
		300	149	64.8	447	101.6	701	50.8
		400	204	62.3	430	96.8	667	47.2
		500	260	62.6	432	93.8	647	46.0
		600	316	61.2	422	94.4	651	51.3
		700	371	59.8	412	91.6	632	49.5
		800	427	58.8	405	88.9	613	50.9