HASTELLOY® W alloy

Tensile Properties

Bar (AMS 5755):

Test Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation
°F	°C	ksi	MPa	ksi	MPa	%
RT	RT	75.5	520	139.8	965	51.0
1000	538	54.0	370	120.8	835	52.5
1200	649	52.9	365	103.5	715	27.0
1400	760	55.5	385	88.5	610	20.3
1600	871	48.8	335	60.5	415	31.8
1800	982	23.6	165	32.4	225	47.5
2000	1093	10.6	73	17.4	120	79.0

RT=Room Temperature

Typical All-Weld Metal Tensile Properties

Gas Tungsten

Condition	Test Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation	Reduction of Area
	°F	°C	ksi	MPa	ksi	MPa	%	%
As-Welded	RT	RT	80	550	120	830	35	27
	1600	871	40	275	43	295	45	53
Aged 1000 h 1200°F (650°C)	RT	RT	115	795	160	1105	14	16
	-	-	-	-	-	-	-	-
Aged 1000 h 1400°F (760°C)	1400	760	64	440	84	580	27	38
	-	-	-	-	-	-	-	-

Gas Metal

Condition	Test Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation	Reduction of Area
	°F	°C	ksi	MPa	ksi	MPa	%	%
As-Welded	RT	RT	80	550	127	875	38	32
	1600	871	42	290	45	310	41	42
Aged 1000 h 1200°F (650°C)	RT	RT	110	760	153	1055	15	16
	-	-	-	-	-	-	-	-
Aged 1000 h 1400°F (760°C)	1400	760	58	400	82	565	30	47
	-	-	-	-	-	-	-	-

Shielded Metal

Condition	Test Temperature		0.2% Offset Yield Strength		Ultimate Tensile Strength		Elongation	Reduction of Area
	°F	°C	ksi	MPa	ksi	MPa	%	%
As-Welded	RT	RT	76	525	110	760	25	22
	1600	871	36	250	38	260	14	15

Aged 1000 h	RT	RT	108	745	128	885	8	8
1200°F (650°C)	-	-	-	-	-	-	-	-
Aged 1000 h	1400	760	57	395	77	530	11	14
1400°F (760°C)	-	-	-	-	-	-	-	-

Transverse Tensile Properties for 1/2 incn (12.7mm) Plate Weldments (GTAW) Using Alloy W Filler*

Base Materials	Test Temperature		0.2% Offset		Ultimate Tensile		Elongation	Reduction of Area
-	°F	°C	ksi	MPa	ksi	MPa	%	%
X	RT	RT	58	400	113	780	52	55
	1600	871	33	230	42	290	39	65
188	RT	RT	73	505	128	885	201	301
	1600	871	51	350	58	400	361	601
MULTIMET®	RT	RT	62	425	116	800	49	65
	1600	871	32	220	42	290	28	42
625	RT	RT	69	475	119	820	63	63
	1600	871	35	240	44	305	58	91
718	RT	RT	68	470	125	860	231	311
	-	-	-	-	-	-	-	-
304 SS	RT	RT	48	330	90	620	62	69
	-	-	-	-	-	-	-	-
Carbon Steel	RT	RT	60	415	72	495	14	50
	-	-	-	-	-	-	-	-
188/ MULTIMET®	RT	RT	66	455	117	805	35	64
	1600	871	34	235	47	325	19	19
625/ 718	RT	RT	62	425	131	905	432	422
	1600	871	39	270	48	330	51	95
304 SS/ Carbon Steel	RT	RT	51	350	71	490	17	51
	-	-	-	-	-	-	-	-

*Failures in base metal unless otherwise indicated

[1]Failures in weld [2]Failures in weld and base metal

All values are averages of 2-4 tests