TUBE AND PIPE
TECHNICAL DATA

1100

ALFINITI

ALLOY DESCRIPTION

Purest of the aluminum alloys. This alloy is typically used in applications requiring maximum ductility or conductivity and minimal strength requirements

TYPICAL MECHANICAL PROPERTIES

Temper	Tensile (.0625" Dia. Specimen)					Hardness	Shear		Fatigue		Modulus	
	Ultimate		Yield		Elongation /4D	Brinnell 500kg 10 mm	Ultimate Shearing Strength		Endurance Limit - R.R. Moore Type		Modulus of Elasticity	
	KSI	MPa	KSI	MPa	%		KSI	MPa	KSI	MPa	KSI x 10^3	Gpa
O	13	90	5	35	35	23	9	60	5	35	10.0	69
H14	18	125	17	115	9	32	11	75	7	50	10.0	69
H18	24	155	22	150	5	44	13	90	9	60	10.0	69

COMPARATIVE CHARACTERISTICS

Temper	Corrosion Resistance		Cold Workability[3]	Machinability[3]	Anodize Response[3]	Brazeability[4]	Weldability[4]			Formability
	General[1]	Stress[2]					Gas	Arc	Spot	
O	A	A	A	E	A	A	A	A	B	A
H14	A	A	A	D	A	A	A	A	A	A
H18	A	A	C	D	A	A	A	A	A	A

1 Ratings A through E are relative ratings in decreasing order of merit, based on exposures to sodium chloride solution by intermittent spraying or immersion. Alloys with A and B ratings can be used in industrial and seacoast atmospheres without protection. Alloys with C, D and E ratings generally should be protected at least on faying surfaces.

2 Stress-corrosion cracking ratings are based on service experience and laboratory tests of specimens exposed to the 3.5% sodium chloride alternate immersion test.

A= No known instance of failure in service or in laboratory tests.
B= No known instance of failure in service; limited failures in laboratory tests of short transverse specimens.
C= Service failures with sustained tension stress acting in short transverse direction relative to grain structure; limited failures in laboratory tests of long transverse specimens.
D= Limited service failures with sustained longitudinal or long transverse.

3 Ratings A through D for Workability (cold), A through E for Machinability and A through C for Anodize Response, are relative ratings in decreasing order of merit.

4 Ratings A through D for Weldability and Brazeability are relative ratings defined as follows:

A= Generally weldable by all commercial procedures and methods.
B= Weldable with special techniques or for specific applications that justify preliminary trials or testing to develop welding procedure and weld performance.
C= Limited weldability because of crack sensitivity or loss in resistance to corrosion and mechanical properties.
D= No commonly used welding methods have been developed.

APPLICABLE SPECIFICATIONS

Cold Drawn	Extruded
ASTM B210	ASTM B221
AMS-T-700/1	ASTM B241
AMS 4062	

CHEMICAL COMPOSITION LIMITS

									Others	
Weight %	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total
Minimum	..	..	0.05	-	..	..	..	..	..	..
Maximum	.95 Fe plus Si		0.20	0.05	..	..	0.10	..	0.05	0.15

TYPICAL PHYSICAL PROPERTIES

Characteristic			English	Metric
Nominal Density (68 °F/20 °C) *English: lbs./in.^{3} Metric: g/cm^3*			0.099	2.71
Melting Range			1190 °F - 1215 °F	640 °C – 655 °C
Coefficient of Thermal Expansion *English: micro in./in.-°F Metric: micro m/m - °K*	Linear 68 °F-212 °F 20 °C-100 °C		13.1	23.6
Thermal Conductivity (68 °F/20 °C) *English: BTU-in/ft2hr°F Metric: W/m x K*		O	1540	222
Electrical Conductivity (68 °F/20 °C) *English: %IACS @ 68°F Metric: MS/M @ 20°C*	Equal Volume	O Temper	59	34
		H18	57	33
	Equal Weight	O Temper	194	113
		H18	187	108