ASTM B-210

Tubes are produced by drawing an extruded tube made from seamless hollow extruded tube (Pierced and extruded by the use of the die and mandrel method). All standard aluminum tube alloys and tempers are covered.
Alloy and temper designations are in compliance with the latest version of ANSI H35.1

Tolerances for the tubes we supply are shown in the tolerance tab (*https://alfiniti.com/wp-content/uploads/2022/11/STANDARD-TOLERANCES-Extruded-Tube.pdf*) and are in compliance with the latest revision of ANSI H35.2 and Aluminum Standards and Data.

A complete copy of this specification may be purchased at www.ASTM.org
A copy of ANSI H35.1 and H35.2 is available from the American National Standards Institute @ *www.ansi.org*
A copy of the Aluminums Standards and Date is available from the Aluminum Association at *www.aluminum.org*

Chemical Composition Limits

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Bi	Sn	Pb	Other Elements		Al, min
												Each	Total	
1060	0.25	0.35	0.05	0.03	0.03	. . .	0.05	0.03				0.03	. . .	99.60 min
1100	-0.95 Si + Fe		0.05–0.20	0.05	. . .	. . .	0.10	. . .				0.05	0.15	99.00 min
3003 Alclad 3003	0.6	0.7	0.05–0.20	1.0–1.5	. . .	. . .	0.10	. . .				0.05	0.15	rem
3102 Alclad 3102	0.40	0.7	0.10	0.05–0.40	. . .	. . .	0.30	0.10				0.05	0.15	rem
6061	0.40–0.8	0.7	0.15–0.40	0.15	0.8–1.2	0.04–0.35	0.25	0.15				0.05	0.15	rem
6063	0.20–0.6	0.35	0.10	0.10	0.45–0.9	0.10	0.10	0.10				0.05	0.15	rem

Tensile Property Limits (US Customary)

Temper	Specified Wall Thickness, in.	Tensile Strength, ksi		Yield Strength (0.2% offset), min, ksi	Elongation in 2 in. or 4× Diameter, min, %	
		min	max		Full-Section Specimen	Cut-Out Specimen
			Aluminum 1060			
O	0.014–0.500	8.5	13.5	2.5	. . .	. . .
H12		10.0	. . .	4.0	. . .	. . .
H14		12.0	. . .	10.0	. . .	. . .
H18		16.0	. . .	13.0	. . .	. . .
H113		8.5	. . .	2.5	. . .	. . .
			Aluminum 1100			
O	0.010–0.500	11.0	15.5	3.5	. . .	. . .
H12		14.0	. . .	11.0	. . .	. . .
H14		16.0	. . .	14.0	. . .	. . .
H16		19.0	. . .	17.0	. . .	. . .
H18		22.0	. . .	20.0	. . .	. . .
H113		11.0	. . .	3.5	. . .	. . .
			Alloy 2011			
T3	0.018–0.049	47.0	. . .	40.0	. . .	. . .
	0.050–0.500	47.0	. . .	40.0	10	8
T4511	0.018–0.049	44.0	. . .	25.0	. . .	. . .
	0.050–0.259	44.0	. . .	25.0	20	18
	0.260–0.500	44.0	. . .	25.0	20	20
T8	0.018–0.500	58.0	. . .	46.0	10	8

Tensile Property Limits (US Customary)

Temper	Specified Wall Thickness, in.	Tensile Strength, ksi		Yield Strength (0.2% offset), min, ksi	Elongation in 2 in. or 4× Diameter, min, %	
		min	max		Full-Section Specimen	Cut-Out Specimen
Alloy 3003						
O	0.010–0.024	14.0	19.0	5.0	. . .	. . .
	0.025–0.049	14.0	19.0	5.0	30	20
	0.050–0.259	14.0	19.0	5.0	35	25
	0.260–0.500	14.0	19.0	5.0	. . .	30
H12	0.010–0.500	17.0	. . .	12.0	. . .	. . .
H14	0.010–0.024	20.0	. . .	17.0	3	. . .
	0.025–0.049	20.0	. . .	17.0	5	3
	0.050–0.259	20.0	. . .	17.0	8	4
	0.260–0.500	20.0	. . .	17.0	. . .	. . .
H16	0.010–0.024	24.0	. . .	21.0	. . .	. . .
	0.025–0.049	24.0	. . .	21.0	3	2
	0.050–0.259	24.0	. . .	21.0	5	4
	0.260–0.500	24.0	. . .	21.0	. . .	. . .
H18	0.010–0.024	27.0	. . .	24.0	2	. . .
	0.025–0.049	27.0	. . .	24.0	3	2
	0.050–0.259	27.0	. . .	24.0	5	3
	0.260–0.500	27.0	. . .	24.0	. . .	. . .
H113	0.010–0.500	14.0	. . .	5.0	. . .	. . .

Tensile Property Limits (US Customary)

Temper	Specified Wall Thickness, in.	Tensile Strength, ksi		Yield Strength (0.2% offset), min, ksi	Elongation in 2 in. or 4× Diameter, min, %	
		min	max		Full-Section Specimen	Cut-Out Specimen
Alloy Alclad 3003						
O	0.010–0.024	13.0	19.0	4.5	. . .	. . .
	0.025–0.049	13.0	19.0	4.5	30	20
	0.050–0.259	13.0	19.0	4.5	35	25
	0.260–0.500	13.0	19.0	4.5	. . .	30
H14	0.010–0.024	19.0	. . .	16.0	. . .	. . .
	0.025–0.049	19.0	. . .	16.0	5	3
	0.050–0.259	19.0	. . .	16.0	8	4
	0.260–0.500	19.0	. . .	16.0	. . .	. . .
H18	0.010–0.500	26.0	. . .	23.0	. . .	. . .
H113	0.010–0.500	13.0	. . .	4.5	. . .	. . .

Tensile Property Limits (US Customary)

Temper	Specified Wall Thickness, in.	Tensile Strength, ksi		Yield Strength (0.2% offset), min, ksi	Elongation in 2 in. or 4× Diameter, min, %	
		min	max		Full-Section Specimen	Cut-Out Specimen
O	0.018–0.049	12.0	17.0	4.0	30	20
	0.050–0.065	12.0	17.0	4.0	35	25
Alloy Alclad 3102						
O	0.018–0.049	10.0	17.0	3.5	30	20
	0.050–0.065	10.0	17.0	3.5	35	25
Alloy 6061						
O	0.018–0.500	. . .	22.0	14.0 max	15	15
T4	0.025–0.049	30.0	. . .	16.0	16	14
	0.050–0.259	30.0	. . .	16.0	18	16
	0.260–0.500	30.0	. . .	16.0	20	18
T42	0.025–0.049	30.0	. . .	14.0	16	14
	0.050–0.259	30.0	. . .	14.0	18	16
	0.260–0.500	30.0	. . .	14.0	20	18
T6, T62	0.025–0.049	42.0	. . .	35.0	10	8
	0.050–0.259	42.0	. . .	35.0	12	10
	0.260–0.500	42.0	. . .	35.0	14	12
T8	0.035–0.350	45.0	. . .	40.0	8	. . .
Alloy 6063						
O	0.018–0.500	. . .	19.0	. . .	. . .	. . .
T4, T42	0.025–0.049	22.0	. . .	10.0	16	14
	0.050–0.259	22.0	. . .	10.0	18	16
	0.260–0.500	22.0	. . .	10.0	20	18
T6, T62	0.025–0.049	33.0	. . .	28.0	12	8
	0.050–0.259	33.0	. . .	28.0	14	10
	0.260–0.500	33.0	. . .	28.0	16	12
T83	0.025–0.259	33.0	. . .	30.0	5	. . .
T831	0.025–0.259	28.0	. . .	25.0	5	. . .
T832	0.025–0.049	41.0	. . .	36.0	8	5
	0.050–0.259	40.0	. . .	35.0	8	5