wieland

Aluminum Foil

Description

Aluminum foil is a solid aluminum which is reduced in a rolling mill until it is very thin (gauges range approximately from 0.00035" to 0.0059"). Small quantities of other metals are present in all aluminum foils.

Chemical composition

Alloy #	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others		Al
									Each	Total	
1199	0.006	0.006	0.006	--	0.006	--	0.006	--	0.002	0.01	99.99
1188	0.060	0.060	0.005	0.01	0.01	--	0.010	0.01	0.01	--	99.88
1180	0.090	0.090	0.01	--	--	--	--	0.02	0.02	--	99.80
1145	0.550	Si + Fe	0.05	0.05	--	--	--	--	0.03	--	99.45
1100	1.000	Si + Fe	0.2	0.05	--	--	0.10	--	0.05	0.15	99.00
3003	0.600	0.7	0.2	1.0-1.5	--	--	0.10	--	0.05	0.15	Rem.
5052	0.450	Si + Fe	0.1	0.10	2.2-2.8	0.15-0.35	0.10	--	0.05	0.15	Rem.
6061	1.40-0.8	0.7	0.15-0.40	0.15	0.8-1.5	0.04-0.35	0.25	0.15	0.05	0.15	Rem.

*Elements in percent, by weight. Maximum, unless range is indicated.

Characteristics

- Chemical resistant
- Corrosion resistant
- Electrical conductive
- Grease proof
- Heat reflective
- Highly ductile
- Hygienic
- Impervious to gas & solvent
- Insect proof
- Lightweight
- Moisture proof
- Non-absorptive
- Non-magnetic
- Non-toxic
- Odorless
- Opaque
- Pliable
- Shrink proof
- Strong
- Tasteless
- Unaffected by sunlight

Core specifications

Material	Inside diameter	Outside diameter	Wall thickness
Aluminum	1-5/16"	1-1/2"	3/32"
Aluminum	3"	3-3/16"	3/32"
Fiber	1-5/16"	1-13/16"	1/4"
Fiber	3"	3-1/2"	1/4"
Fiber	6"	6-1/2"	1/4"

Standard tolerances

Table 1. Unmounted foil - minimum ultimate tensile properties

Specified thickness	Alloy & temper							
	1145 and 1235		1100		3003		5052	
	0	H19	0	H19	0	H19	0	H19
	Ultimate tensile strength, ksi							
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
0.0007"-0.0015"	14.0	20.0	15.5	24.0	19.0	27.5	31.0	43.0
0.0016"-0.0025"	14.0	20.0	15.5	24.0	19.0	27.5	31.0	42.0
0.0026"-0.0040"	14.0	20.0	15.5	24.0	19.0	27.5	31.0	41.0
0.0041"-0.0059"	14.0	20.0	15.5	24.0	19.0	27.5	31.0	36.0

Table 2. Unmounted foil - covering area

Specified thickness	Covering area - Sq. in. per lb.		
	Nominal	Minimum	Maxiumum
0.00017"	60,300	54,300	66,300
0.00020"	51,300	46,200	53,400
0.00025"	41,000	36,900	45,100
0.00030"	34,200	30,800	37,600
0.00035"	29,300	26,400	32,200
0.00040"	25,600	23,000	28,200
0.00045"	22,800	20,500	25,100
0.00050"	20,500	18,400	22,600
0.00055"	18,600	16,700	20,500
0.00060"	17,100	15,400	18,800
0.00065"	15,800	14,200	17,400
0.00070"	14,600	13,100	16,100
0.00075"	13,700	12,300	15,100
0.00080"	12,800	11,500	14,100

Specified thickness	Covering area - Sq. in. per lb.		
	Nominal	Minimum	Maxiumum
0.00850"	12,100	10,900	13,300
0.00090"	11,400	10,300	12,500
0.00095"	10,800	9,700	11,900
0.00100"	10,250	9,200	11,300
0.00150"	6,830	6,150	7,500
0.00200"	5,130	4,600	5,640
0.00250"	4,100	3,690	4,510
0.00300"	3,420	3,070	3,760
0.00350"	2,930	2,630	3,220
0.00400"	2,560	2,300	2,820
0.00450"	2,280	2,050	2,510
0.00500"	2,050	1,850	2,260
0.00550"	1,860	1,670	2,050

Table 3. Roll width

Specified width	Tolerance +/-	
	Plain foil	Colored, embossed and coated foil
Up thru 12"	1/64"	1/32"
Over 12"	1/32"	1/32"

Table 4. Roll diameter

Specified outside diameter	Tolerance +/-
All	1.00"

Table 5. Cores - inside diameter

Specified inside diameter	Tolerance +/-	
	Fiber cores	Metal cores
1"-5/16"	1/32"	0.012"
3.000"	1/32"	0.015"

Table 6. Flat sheets - length & widths

Specified length or width	Tolerance +/-
	
All	1/32"