



A.J. Oster Foils, Inc.  
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## CHEMICAL AND PHYSICAL PROPERTIES

Aluminum foil is a solid aluminum which is reduced in a rolling mill until it is very thin (gauges range approximately from .0002" to .0059"). Other metals are present only in small quantities in all aluminum foils.

### CHEMICAL COMPOSITION LIMITS OF ALUMINUM PURITY GRADES & ALLOYS

Elements in Per Cent, by Weight\*

Alloy Number	Silicon	Iron	Copper	Manganese	Magnesium	Chromium	Zinc	Titanium	Others		Aluminum (Minimum)
									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	Remainder
5052	0.450	Si + Fe	0.1	0.10	2.2 - 2.8	0.15-0.35	0.10	---	0.05	0.15	Remainder
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	Remainder

\*Values are maximum, unless shown as range

### CHARACTERISTICS OF ALUMINUM FOIL

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• Unaffected by sunlight</li> <li>• Shrink proof</li> <li>• Moisture proof</li> <li>• Impervious to gas &amp; solvents</li> <li>• Odorless</li> <li>• Chemical resistant</li> <li>• Opaque</li> </ul> | <ul style="list-style-type: none"> <li>• Hygienic</li> <li>• Non-toxic</li> <li>• Light in weight</li> <li>• Non-absorptive</li> <li>• Grease proof</li> <li>• Heat reflective</li> <li>• Non-magnetic</li> </ul> | <ul style="list-style-type: none"> <li>• Pliable</li> <li>• Corrosion resistant</li> <li>• Tasteless</li> <li>• Insect proof</li> <li>• Electrical conductive</li> <li>• Strong</li> <li>• Highly ductile</li> </ul> |
|--|---|--|

### CORE SPECIFICATIONS

Material	Inside Diameter	Outside Diameter	Wall Thickness	Pounds Inch Of Width
Aluminum	1-5/16"	1-1/2"	3/32"	0.037
Aluminum	3"	3-3/16"	3/32"	0.089
Fiber	1-5/16"	1-13/16"	1/4"	.025 approx.
Fiber	3"	3-1/2"	1/4"	.070 approx.
Fiber	6"	6-1/2"	1/4"	.125 approx.

# Standard Tolerances

**TABLE 1. UNMOUNTED FOIL - Minimum ultimate tensile properties**

SPECIFIED THICKNESS INCH	ALLOY AND TEMPER							
	1145 and 1235		1100		3003		5052	
	0	H19	0	H19	0	H19	0	H19
	ULTIMATE TENSILE STRENGTH, ksi							
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
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. COVERING AREA - Unmounted foil**

SPECIFIED THICKNESS INCH	COVERING AREA - Sq.In. per lb.			SPECIFIED THICKNESS INCH	COVERING AREA - Sq.In. per lb.		
	Nominal	Minimum	Maximum		Nominal	Minimum	Maximum
0.00017	60,300	54,300	66,300	0.00085	12,100	10,900	13,300
0.00020	51,300	46,200	56,400	0.00090	11,400	10,300	12,500
0.00025	41,000	36,900	45,100	0.00095	10,800	9,700	11,900
0.00030	34,200	30,800	37,600	0.00100	10,250	9,200	11,300
0.00035	29,300	26,400	32,200	0.00150	6,830	6,150	7,500
0.00040	25,600	23,000	28,200	0.00200	5,130	4,600	5,640
0.00045	22,800	20,500	25,100	0.00250	4,100	3,690	4,510
0.00050	20,500	18,400	22,600	0.00300	3,420	3,070	3,760
0.00055	18,600	16,700	20,500	0.00350	2,930	2,630	3,220
0.00060	17,100	15,400	18,800	0.00400	2,560	2,300	2,820
0.00065	15,800	14,200	17,400	0.00450	2,280	2,050	2,510
0.00070	14,600	13,100	16,100	0.00500	2,050	1,850	2,260
0.00075	13,700	12,300	15,100	0.00550	1,860	1,670	2,050
0.00080	12,800	11,500	14,100				

**TABLE 3. ROLL WIDTH**

SPECIFIED WIDTH INCHES	TOLERANCE - Inches Plus and Minus	
	Plain Foil	Colored, embossed and coated Foil
Up thru 12	1/64"	1/32"
Over 12	1/32"	1/32"

**TABLE 4. ROLL DIAMETER**

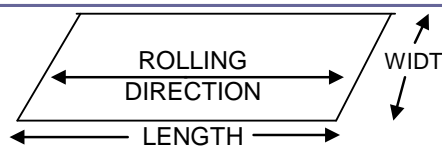
SPECIFIED OUTSIDE DIAMETER - Inches	TOLERANCE Inches Plus and Minus
All	1.00

**TABLE 5. CORES - Inside diameter**

SPECIFIED INSIDE DIAMETER Inches	TOLERANCE - Inches Plus and Minus	
	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 Inch	TOLERANCE - Inches Plus and Minus
	All



The diagram shows a parallelogram representing a flat sheet. A horizontal double-headed arrow is labeled 'ROLLING DIRECTION'. A longer horizontal double-headed arrow below it is labeled 'LENGTH'. A vertical double-headed arrow on the right side is labeled 'WIDTH'.