

DESCRIPTION

When water becomes entrapped between wraps of aluminum jacketing, aluminum sheet, or aluminum and another surface, the aluminum can be stained a chalky white color. This may pose problems for the insulation contractor or distributor, who may be surprised to find out that the high quality mill finish aluminum jacketing is no longer bright and shiny, but exhibits a white, chalky stain.

CAUSES

Obvious sources of waterstaining include rain, snow, and water which come into contact with the surface of the aluminum. A leaking tarp on a truck, or a leaking pipe or roof in a storage area may promote the occurrence of waterstaining. Moisture from condensation may also cause water staining when a change in air temperature causes water vapor in the air to condense on the surface of the aluminum. This type of condensation may occur when cold aluminum is brought into a warm plant. The higher the humidity, the smaller the temperature change needed to produce condensation.

PREVENTION

Waterstaining may occur while the aluminum is in transit to the warehouse or jobsite, or it may occur if the aluminum sheet or jacketing is stored improperly in a warehouse or at a jobsite.

- * When receiving material via truck, unload the aluminum in weather protected areas only. Examine the shipment of jacketing carefully for evidence of water contact with the packaging carton; this includes checking for dampness and watermarks on the cardboard carton.
- * Note any evidence of water contact on all copies of the receiving papers.
- * Remove the jacketing from the carton and fan dry the aluminum if wetness is discovered.
- * Inform the truck line of the problem immediately and file a freight claim with the carrier.

PROPER STORAGE

Proper storage procedures include checking to see if the aluminum jacketing or sheet feels cold. If cold, temporarily place the aluminum in a cool, dry storage area so that the temperature can be raised slowly to the temperature of the permanent storage area.

- * If the temperature difference between the storage and production areas is greater than 20°F (11°C), move only enough aluminum that can be immediately used.
- * Avoid storage areas where condensation from overhead pipes or roof leaks may affect stored aluminum. Store aluminum only in areas that are dry.
- * Avoid storage in areas where a sudden drop in temperature or increase in humidity may occur. Close warehouse doors during periods of large temperature swings between day and night, such as during spring and fall. Attempt to use the oldest stock first.
- * Keep all aluminum wrapped and secured against moisture until ready to use.

Following these standard precautionary practices will minimize or eliminate the possibility of waterstaining.

DESCRIPTION

ITW's Stainless Steel Roll Jacketing is manufactured from T-304 and T-316 prime grade Stainless Steels. These alloys comply with ASTM A-240, and are supplied with a regular dull finish for reduced glare. The yield strength is 30,000-45,000 PSI and the tensile strength is 75,000-110,000 PSI. These alloys are of a special soft-annealed temper, for ease in fabrication. T-304 is normally used in all except the most corrosive areas, where T-316 is recommended.

The 300 series Stainless Steels have a melt point of approximately 2500°F, providing optimum fire protection. Stainless Steel has a higher emittance value than Aluminum, and has physical properties superior to all other metal used as insulation protective jacketing. T-304 contains 18% chromium and 8% nickel. T-316 contains 16.5% chromium, 10% nickel and 2.2% molybdenum.

Stainless Steel is available in smooth, stucco embossed, or 3/16" corrugated roll jacketing, and deep corrugated sheets. Jacketing is recommended for insulated piping, tanks, and vessels less than 8 feet in diameter. Deep corrugated sheets are recommended for diameters greater than 8 feet. It is recommended that the roll jacketing be 3/16" corrugated for the following reasons: it is stronger than smooth, it reduces glare from external light sources, it eliminates "coil break" when applied over small size piping and does not show dents readily. In extremely corrosive environments, smooth jacketing is recommended to facilitate run-off.

RECOMMENDED USES

Chemical Plants and Refineries:

Urea units, fertilizer plants, caustic facilities, petrochemical plants and aluminum refineries.

Steel Mills:

Coke ovens, oxygen steel making furnaces, by-product plants, aromatic plants and steam distribution facilities.

Paper Mills:

Digester areas, white and black liquor tanks, bleach tanks, chemical pulping and waste treatment tanks.

Miscellaneous:

Areas of high incidence of abuse on bridges, walkways and service roads, areas of high fire incidence, food processing facilities, packing plants and freeze facilities.

POLY: =@A MOISTURE RETARDER

Polykro consists of a 3 mil thickness of a co-extrusion of polyethylene and DuPont's Surlyn, which is heat laminated to the metal jacketing. Due to its superior performance characteristics, it replaces the old standard 1 mil and 3 mil polykraft moisture retarders. **For cold rooftop and hot work cyclical applications, refer to Technical Information for recommendations.**

SUGGESTED SPECIFICATION

All insulation shall be weatherproofed with ITW's Stainless Steel jacketing. The jacketing is to be manufactured from T-304 (*T-316 option*) Stainless Steel with 3/16" corrugations (*or smooth option*) in .010 and .016" thickness (*.020 and .024 available*). All jacketing shall have an integrally bonded moisture retarder over the surface in contact with the insulation.

DESCRIPTION

ITW Pabco/Childers Aluminum Jacketing is the premier protective outer surface for mechanical insulation systems including pipe, vessels, and equipment. It protects the insulation and underlying pipe/vessel from physical damage, UV exposure, corrosive atmospheres, and water.

ITW Aluminum jacketing (also called cladding) is available in smooth, stucco embossed, and 3/16 corrugated (cross-crimped) finishes. For larger surfaces, box-rib and deep corrugated sheets are also available.

ITW Aluminum Jacketing has a bare outer surface and comes standard with a 3-mil thick polyfilm moisture barrier heat-laminated to the interior surface to help prevent corrosion of the jacketing and the underlying metal pipe, vessel, or equipment.

COMPOSITION

Commercially pure aluminum is relatively soft and less suited for use in this application. Its strength can be greatly improved by alloying with small percentages of one or more other elements such as manganese, silicon, copper, zinc, and magnesium. Additional strength can be achieved by cold working. ITW Insulation Systems carefully screens all potential aluminum coil suppliers to assure our products have the highest quality, are corrosion resistant, and comply with all relevant standards.

ITW Aluminum Jacketing is typically manufactured using alloys 3105 or 3003 which have very similar composition and performance and are considered interchangeable for use as insulation jacketing. ITW reserves the right to ship whichever alloy is in stock at the time of order placement. One of these two specific alloys or an alternative alloy can be specified by purchaser at time of order placement but this may affect minimum quantity, lead-time, and price.

Composition Differences in Aluminum Alloys (%)

Alloy	Cu	Mn	Mg	Zn
3105	≤ 0.3	0.3-0.8	0.2-0.8	≤ 0.4
3003	0.05-0.2	1-1.5	---	≤ 0.1

COMPLIANCE TO STANDARDS

All bare and polyfilm lined Aluminum Jacketing from ITW Insulation Systems complies with the requirements of ASTM C1729 (Aluminum Jacketing

Material Standard) which includes the strength and chemical composition requirements for compliance to ASTM B209 (Aluminum Alloy Standard).

RECOMMENDED USES

Aluminum Jacketing is recommended for use in all of the following insulation system applications:

- Standard outdoor use on all pipe, vertical tank insulation systems up to 8 ft outer diameter, and all horizontal tanks
- Indoor insulation system applications up to 8 ft outer diameter where increased damage resistance is desired

LIMITATIONS ON USE

Aluminum Jacketing is not appropriate for the following applications:

- For vertical tank insulation system applications where the outer diameter is larger than 8 ft, ITW deep corrugated aluminum sheets should be used
- Where increased emissivity is desired, painted aluminum jacketing should be considered
- For applications where a maximum resistance to fire is required, stainless steel jacketing should be used
- For applications where additional resistance to corrosion from the external environment is required, ITW painted aluminum jacketing may be used. Where maximum resistance to corrosion is required, ITW stainless steel jacketing (T304 or T316) should be used.

POLYFILM MOISTURE BARRIER

Polyfilm Moisture Barrier (PFMB) is an engineered three layer coextruded film of polyethylene and Surlyn* polymers with a total film thickness of 3 mils (76 µm) that is heat laminated in the factory to the interior surface of aluminum jacketing. ITW recommends the use of PFMB on all aluminum jacketing to help prevent pitting, crevice, and galvanic corrosion of the interior surface of the metal jacketing and the insulated pipe, tank, or equipment.

Due to its superior performance characteristics, PFMB replaces the old moisture barrier technology of 1 to 3 mil thick polykraft

RECOMMENDED THICKNESS

ITW recommends that the thickness of aluminum jacketing used vary based on the outer diameter of the insulation system per the requirements of ASTM C1729. This recommended thickness is shown in the table below.

EMITTANCE

ITW Aluminum Jacketing has an outer surface emittance per ASTM C1371 and specified by ASTM C1729 of:

- Bare aluminum (oxidized in service) = 0.1

SURFACE FINISHES

Each of the three surface finishes available for ITW Aluminum Jacketing (smooth, stucco embossed, and 3/16" corrugated) has applications where it is recommended. All of these can be supplied with a painted exterior. For more information on this, consult the ITW data sheet on painted aluminum jacketing.

Smooth (Plain Mill) Finish

This is a very popular finish and is the "default" for the many end-users/specifiers who prefer the clean look of this finish. This finish sheds rain water the best. However, this smooth surface readily shows damage such as from hail or other physical abuse. It also shows the dirt more than the other finishes due to its smoothness. Lastly, it is highly reflective of sunlight and when located near roadways, some specifiers see this reflection as a possible safety hazard.

Stucco Embossed Finish

This is another popular finish used for aluminum jacketing. The stucco-like surface texture hides small imperfections and scratches caused by physical damage during or after installation. This finish also reduces reflectivity while still looking very professional. Lastly, the use of stucco embossed finish provides a small increase to the rigidity and strength of the aluminum jacketing.

3/16" Corrugated (Cross-Crimped) Finish

This finish consists of parallel grooves or crimps about 3/16" apart running in the length direction of the pipe. This finish also hides small damage and scratches to the jacketing and reduces sunlight reflection. In addition, the nature of this finish gives the aluminum jacket more ability to expand and contract to adapt to insulation movement caused by pipe or ambient temperature changes. Lastly, the rigidity and strength of 3/16" corrugated finish is substantially increased making it ideal for use as jacketing on large diameter pipe and vessels up to 8 ft diameter. This finish is available in a maximum thickness of 0.024 inches.

FLAMMABILITY

ITW Aluminum Jacketing with a 3 mil polysurlyn moisture barrier has been tested for flammability using the industry standard ASTM E84 test method. The results were:

ASTM E84 Flame Spread Index = 0
 ASTM E84 Smoke Developed Index = 5

(Tested with exterior metal surface exposed to the flame)

Outer Insulation Diameter (in)	Minimum Aluminum Jacket Thickness, inches (mm)	
	Rigid Insulation	Non-Rigid Insulation
≤ 8	0.016 (0.41)	0.016 (0.41)
Over 8 thru 11	0.016 (0.41)	0.020 (0.51)
Over 11 thru 24	0.016 (0.41)	0.024 (0.61)
Over 24 thru 36	0.020 (0.51)	0.032 (0.81)
>36	0.024 (0.61)	0.040 (1.01)

ALUMINUM STRAPPING

Aluminum Strapping is manufactured from high quality aluminum alloy conforming to ASTM B-209 designation. It is .020" in thickness to allow for maximum tensioning. Aluminum strapping is available in 1/2" and 3/4" widths. Aluminum strapping is to be used where maximum tension or severe corrosion resistance is not required.

STAINLESS STEEL STRAPPING

Stainless Steel Strapping is manufactured from T-304 stainless steel in a special soft annealed temper to facilitate handling. It is available in 1/2" and 3/4" widths and in .015" and .020" thickness. Blue painted 1/2" width, .020" thickness is available when a need exists to identify underlying asbestos free insulation. Stainless steel strapping offers the greatest strength and corrosion resistance. T-316 Stainless Steel available upon request.

ALUMINUM BUTT STRAP

ITW's Aluminum Butt Strap is used to seal circumferential joints of aluminum jacketing on insulated piping. It is manufactured from aluminum alloy conforming to ASTM B-209 designation. It is available in .020" thickness, 2" widths and 100' lengths.

STAINLESS STEEL BUTT STRAP

ITW's Stainless Steel Butt Strap is used to seal circumferential joints of stainless steel jacketing on insulated piping. It is manufactured from T-304 stainless steel and is available in .010" thickness, 2" width and 100' lengths.

EXPAND-R-STRAP

Expand-R-Strap has been discontinued. Mity-Springs are recommended as replacement.

ALUMINUM WING SEALS

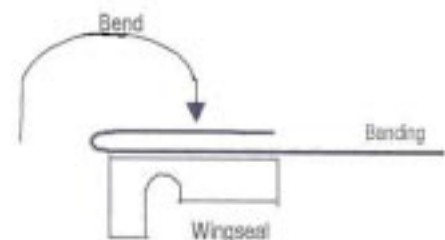
Aluminum Wing Seals are manufactured from heavy duty hard temper aluminum conforming to ASTM B-209 designation. These seals are .032" aluminum to allow for maximum tensioning and binding power. They are available in 1/2" and 3/4" widths.

STAINLESS STEEL WING SEALS

Stainless Steel Wing Seals are manufactured from heavy duty T-304 annealed stainless steel. These seals are .032" in thickness to allow for maximum tensioning and binding power. They are available in 1/2", and 3/4" widths. T-316 available upon request. *(See Stainless Steel Closed Seals for diameters of 8' or more)*

STAINLESS STEEL CLOSED SEALS

Stainless Steel Closed Seals are manufactured from heavy duty .024" T-304 hard temper stainless steel. They are available in 1/2" x 7/8" and 3/4" x 7/8" sizes. Closed seals are recommended in lieu of wing seals for use with strapping on tanks and/or vessels with diameters of 8' or more and when applying tensioning springs, since a much stronger closure results from the use of closed seals.





DESCRIPTION - EXPANSION SPRINGS

ITW Pabco/Childers CHIL-SPRINGS® are 4" Type 302 stainless steel flat expansion springs used to secure insulation over small diameter insulated piping, tanks, vessels, and equipment subject to expansion and contraction. They can be used with any common width of strapping up to 3/4".

APPLICATION

ITW Pabco/Childers CHIL-SPRING expansion springs are simply attached to strapping with stainless steel wing seals. The strapping is slipped through the seal and then through the spaced opening at either end of the CHIL-SPRING. The strapping is then bent back and the wings of the seal are flattened. Strapping is then extended completely around the insulated object, or to the next spring, and the same routine is repeated until the entire circumference has been encircled.

Maximum expansion of the 4" spring should not exceed 2-1/2" beyond its original length; it is recommended that each spring be stretched 1/2" upon installation. This allows an additional 2" expansion capability per spring.

The number and size of CHIL-SPRING expansion springs to be used should have an expansion capability of at least twice that of the expected expansion of the object. Extreme care should be taken to assure that stresses are evenly distributed around the insulation.

DESCRIPTION - COMPRESSION SPRINGS

ITW Pabco/Childers MITY-SPRING compression springs are assembled from components of Type 302 and 304 stainless steel. They are used with strapping to accommodate expansion and contraction of large diameter insulated and jacketed piping, tanks, vessels, and equipment. Standard MITY-SPRING compression springs provide 80 lbs./inch of compression, and can be used with strapping widths up to 3/4". When excessively high winds are a factor, or compression exceeds 80 lbs./inch, SUPER MITY-SPRINGS with 300 lbs./inch of compression and mounting plates for 1-1/4" strapping widths are available.

APPLICATION

3/4" X .020" stainless steel strapping is slipped through and back over the slots on one end of the flat bottom of the spring. Strapping is secured with a 3/4" closed seal. Strapping is extended around the object, or to the next spring, and the routine is repeated until the entire circumference has been encircled. (*Secure the SUPER MITY-SPRING with 1-1/4" X .020" strapping, and 1-1/4" closed seals.*)

To accommodate expected expansion of the object, the number of MITY-SPRING compression springs to be installed is based on a maximum compression of 1-1/2" per MITY-SPRING or SUPER MITY-SPRING. Install one MITY-SPRING compression spring for every 25' of strapping. When tensioning the strapping, compress each spring unit a total of 1/2" (1/4" for each half of the spring unit). Extreme care should be taken to assure that spring compression and strapping stresses are evenly distributed around the object.

DESCRIPTION

ITW Insulation Systems Multi-Fit Aluminum Elbow Covers are made in two precision formed matching halves to cover and weatherproof insulated 90° pipe elbows. These elbow covers were formerly known as Childers Ribbed Unifers-Ells.

Each ITW Multi-Fit Aluminum Elbow Cover is designed to fit over 90° insulation elbows with a specific outer diameter regardless of the pipe size, use of long or short radius pipe elbows, or insulation thickness. The thirteen sizes of ITW Multi-Fit Aluminum Elbow Covers will fit 111 combinations of NPS and insulation thickness up to a nominal outer insulation diameter of 12.75 inches.

Like ITW Aluminum Jacketing, Multi-Fit Aluminum Elbow Covers are a premier protective outer surface for mechanical insulation systems on pipe and are an excellent performing and critical accessory to complement the aluminum jacketing. ITW Multi-Fit Aluminum Elbow Covers protect the insulation and underlying pipe from physical damage, UV exposure, corrosive atmospheres, and water and reduce the labor necessary to install the metal jacketing system.

GAUGE, COMPOSITION, FINISH, MOISTURE BARRIER, EXTERIOR PAINT, EMITTANCE, FLAMMABILITY, & PACKING

ITW Multi-Fit Aluminum Elbow Covers are made from 0.024 inch thick 1100 aluminum alloy with a smooth (mill) surface finish, have a painted moisture barrier, come standard with a clear painted exterior surface with an emittance of 0.5, have a very low flammability, and are packed with 15 elbow sets (30 elbow halves) per carton. For details on these features, please consult the ITW data sheet on standard Aluminum Elbow Covers.

FIT, SIZE SELECTION, & INSTALLATION

The table to the right shows the nominal outer insulation diameter each ITW Multi-Fit Aluminum Elbow Cover is designed to fit. For detailed information on selecting ITW Multi-Fit Aluminum Elbow Covers for various combinations of NPS and insulation thickness, consult the ITW Fitting Selection Guide. For details on installation, see the ITW data sheet on Aluminum Elbow Sizes and Installation and the diagram on the next page.



ITW Multi-Fit Aluminum Elbow Covers are designed to yield a 5/8" overlap at the heel and throat joints when used over insulation that complies with the target diameters in ASTM C585 and C450. If the insulation outer diameter deviates significantly from that specified in these standards, the overlap size may change and the fit may be compromised.

RECOMMENDED USES

ITW Multi-Fit Aluminum Elbow Covers are recommended for use when a reduced number of possible elbow sizes are desired and aluminum jacketing is used on the associated straight sections of pipe.

Multi-Fit Size Chart

Nominal Outer Insulation Diameter (inches)	ITW Multi-Fit Elbow Number
2.875	3
3.5	3-1/2
4.0	4
4.5	4-1/2
5.0	5
5.563	5-1/2
6.625	6
7.625	7
8.625	8
9.625	9
10.75	10
11.75	11
12.75	12

LIMITATIONS ON USE

ITW Multi-Fit Aluminum Elbow Covers are not appropriate for the following applications:

- For applications where a maximum resistance to fire is required, ITW stainless steel elbow covers should be used
- Where maximum resistance to corrosion is required, ITW stainless steel elbow covers should be used

COMPLIANCE TO STANDARDS

All Multi-Fit Aluminum Elbow Covers from ITW Insulation Systems comply with the applicable requirements of ASTM C1729 (Aluminum Jacketing Material Standard), Type III, Grade 3, Class D, which includes the strength and chemical composition requirements for compliance to ASTM B209 (Aluminum Alloy Standard).

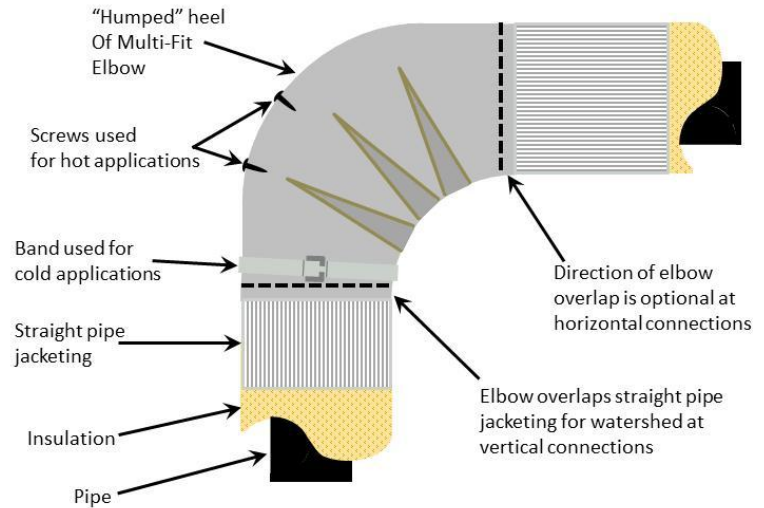
EXTERIOR COLORS

The standard exterior color for ITW Multi-Fit Aluminum Elbow Covers is a clear paint which reveals the natural aluminum color. ITW Multi-Fit Aluminum Elbow Covers are also available via special order with a white or gray painted exterior surface to match the colors of our standard painted aluminum jacketing or other colors.

SEALING OF JOINTS

For best insulation system performance and resistance to water infiltration, ITW recommends that all joints in Multi-Fit Aluminum Elbow Covers be sealed with an appropriate joint sealant. This should be applied between the overlapping pieces of metal in the joint and not as a caulking bead on the exterior lip of the joint.

Installed ITW Multi-Fit Aluminum Elbow Cover



ITW Multi-Fit Aluminum Elbow Size Selection Guide for Both Long and Short Radius Elbows

NPS	Insulation Thickness (inches)									
	1	1-1/2	2	2-1/2	3	3-1/2	4	4-1/2	5	
1/2	3	4	5	6	7	8	9	10	11	
3/4	3	4	5	6	7	8	9	10	11	
1	3-1/2	4-1/2	5-1/2	6	7	8	9	10	11	
1-1/4	3-1/2	5	5-1/2	6	7	8	9	10	11	
1-1/2	4	5	6	7	8	9	10	11	12	
2	4-1/2	5-1/2	6	7	8	9	10	11	12	
2-1/2	5	6	7	8	9	10	11	12		
3	5-1/2	6	7	8	9	10	11	12		
3-1/2	6	7	8	9	10	11	12			
4	6	7	8	9	10	11	12			
4-1/2	7	8	9	10	11	12				
5	7	8	9	10	11	12				
6	8	9	10	11	12					
7	9	10	11	12						
8	10	11	12							
9	11	12								
10	12									

Sizes in grey are not available in ITW Multi-Fit Aluminum Elbow Covers. For these sizes, use either standard ITW aluminum elbow covers where available in the required size or mitered (gore) elbows will have to be constructed by the insulation contractor.

DESCRIPTION

ITW Aluminum Deep Corrugated Sheets are available in two different nominal corrugation profiles, with bare or painted exterior surface, and in smooth or stucco embossed surface finishes. The corrugation profiles are engineered to provide strength and stiffness superior to that of standard aluminum jacketing. The dimensions of the two corrugation profiles are shown in the diagram to the right.

Aluminum Deep Corrugated Sheets are a premier protective outer surface for mechanical insulation systems on flat surfaces, equipment, towers, vessels, and vertical cylindrical tanks with an outer diameter larger than 8 ft. ITW Aluminum Deep Corrugated Sheets protect the insulation and underlying surface from physical damage, UV exposure, corrosive atmospheres, and water.

COMPOSITION

ITW Aluminum Deep Corrugated Sheets are typically manufactured using alloys 3105 or 3003 which have very similar composition and performance and are considered interchangeable for use as insulation jacketing. For more information on these aluminum alloys, see the ITW Aluminum Roll Jacketing data sheet. ITW reserves the right to ship whichever alloy is in stock at the time of order placement. One of these two specific alloys or an alternative alloy can be specified by purchaser at time of order placement but this may affect minimum quantity, lead-time, and price.

DIMENSIONS

Standard dimensions for ITW Deep Corrugated Sheets are:

Width = nominal 33 inches¹

Length = 8, 10, and 12 feet²

Number of Peaks / Nominal Coverage³

1-1/4" Sheet = 25 (26 in Canada) / 31-3/4"

2-1/2" Sheet = 12 (13 in Canada) / 30-1/2"

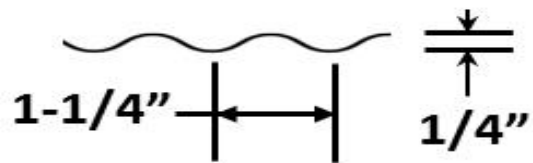
¹The actual width will vary slightly from the nominal width based on gauge and other manufacturing variables.

²Custom lengths from 4 to 12 ft can be specified by purchaser at time of order placement with no effect on minimum quantity or lead-time.

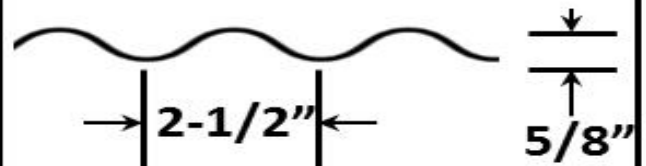
³Coverage is the effective horizontal distance covered by each sheet and is less than the sheet width because of the need to overlap neighboring sheets by a minimum of one corrugation. Note that coverage is nominal and will vary based on gauge, and other manufacturing variables.



1-1/4" Deep Corrugated



2-1/2" Deep Corrugated



COMPLIANCE TO STANDARDS

All bare and painted Aluminum Deep Corrugated Sheets from ITW Insulation Systems comply with the requirements of ASTM C1729 (Aluminum Jacketing Material Standard) which includes the strength and chemical composition requirements for compliance to ASTM B209 (Aluminum Alloy Standard).

THICKNESS

ITW Aluminum Deep Corrugated Sheets are available in standard thicknesses of 0.016", 0.020", 0.024", 0.032" and 0.040 inches.

2-1/2" deep corrugated sheet is best suited for thicker gauges. ITW recommends that 2-1/2" profile deep corrugated sheet be used with a minimum thickness/gauge of 0.024".

POLYFILM MOISTURE BARRIER

ITW Aluminum Deep Corrugated Sheets come standard with a Polyfilm Moisture Barrier (PFMB) on the interior surface. PFMB is an engineered three layer coextruded film of polyethylene and Surlyn* polymers with a total film thickness of 3 mils (76 µm) that is heat laminated in the factory to the interior surface of aluminum jacketing. ITW recommends the use of PFMB on all aluminum jacketing to help prevent pitting, crevice, and galvanic corrosion of the interior surface of the metal jacketing and the insulated pipe, tank, or equipment.

Due to its superior performance characteristics, PFMB replaces the old moisture barrier technology of 1 to 3 mil thick polykraft.

RECOMMENDED USES

ITW Aluminum Deep Corrugated Sheets are recommended for use over the insulation on flat surfaces, equipment, towers, vessels, and vertical cylindrical tanks with an outer diameter larger than 8 ft. Examples of where ITW Deep Corrugated Sheets are the preferred jacketing are distillation columns, tank farms, fractionation units, cokers, chemical storage tanks, breechings, large ducts, wastewater and sewage storage tanks and large vertical ammonia storage tanks.

LIMITATIONS ON USE

ITW Aluminum Deep Corrugated Sheets are not appropriate for the following applications:

- For large flat surfaces such as boiler walls and precipitators, ITW Box Rib Sheets are recommended
- Horizontal cylindrical tanks because water can pool in the corrugation valleys on the top leading to possible jacket corrosion and funneling of water under the metal jacketing on the tank heads
- For applications requiring deep corrugated sheet where a maximum resistance to fire or where maximum resistance to corrosion is required, ITW Stainless Steel Deep Corrugated Sheets should be used

SURFACE FINISH

ITW Deep Corrugated Sheets are available in smooth or stucco embossed finish. For more information on these

finishes see the ITW Aluminum Roll Jacketing data sheet. ITW Deep Corrugated Sheets are available with a painted outer surface. For more information on this see the ITW Painted Aluminum Roll Jacketing data sheet.

EMITTANCE OF DEEP CORRUGATED

ITW Aluminum Deep Corrugated Sheet has a surface emittance as measured by ASTM C1371 of:

- Bare aluminum = 0.1 (oxidized in service)
- Painted, all colors except clear = 0.8
- Painted with clear coating = 0.5

FLAMMABILITY

ITW Aluminum Jacketing with a 3 mil polyfilm moisture barrier has been tested for flammability using the industry standard ASTM E84 test method. The results are shown below. ITW would expect Deep Corrugated Sheet to have equivalent flammability performance since it is the same material just produced with a corrugated profile.

ASTM E84 Flame Spread Index = 0

ASTM E84 Smoke Developed Index = 5

(Tested with exterior metal surface exposed to the flame)

FIT AND INSTALLATION

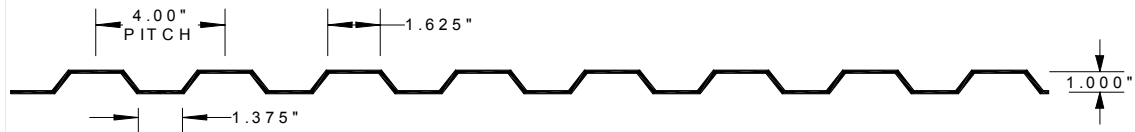
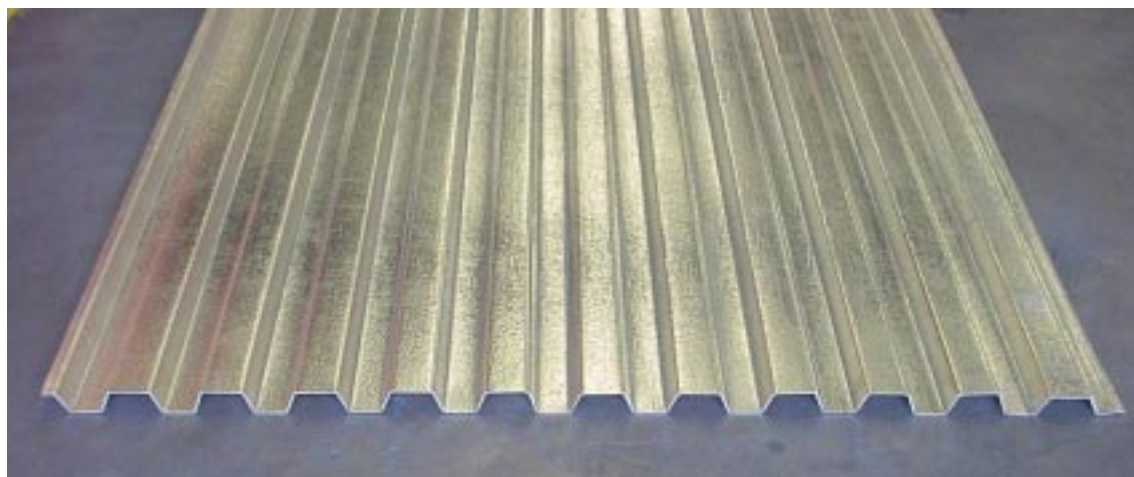
When ordering replacement ITW Deep Corrugated Sheets for an existing installation consult the ITW Deep Corrugated Sheet Fit and Measurements data sheet or your ITW sales representative for the information required to best assure fit.

Installation procedures for deep corrugated sheet are available in the National Commercial and Industrial Insulation Standards published by the Midwest Insulation Contractors Association (MICA Manual).

SEALING OF JOINTS

The joints between neighboring pieces of deep corrugated sheet are not typically sealed. In the specifier wants a more water tight seal, the vertically oriented overlap joint between deep corrugated pieces horizontally adjacent to one another can be sealed with an appropriate joint sealant. This should be applied between the overlapping pieces of metal in the joint and not as a caulking bead on the exterior lip of the joint.

ITW INSULATION SYSTEMS 4" BOX RIB SHEETS



DESCRIPTION

ITW's 4 X 1 Box Rib is designed with 1" high ribs on 4" centers, engineered for maximum structural stiffness. Stucco embossed is standard, for appearance. Aluminum thicknesses available are .032", .040", and .050". Box Rib is stocked in *Alcad. Non-clad is available, but may extend lead time.

* Alcad is aluminum which is produced by metallurgically bonding 7072 aluminum alloy to both sides of an 3004 alloy core. The resulting aluminum composition provides superior corrosion resistance.

FLASHING FLAT SHEETS

available in ALCLAD and NON CLAD
in .032, .040, and .050.

Finish: Stucco Embossed
Alloy: 3004 - 7072 Alclad
Widths: 45-5/8" (44" Coverage)
Lengths Stocked: 8', 10', 12'
in .032 and .040
custom order lengths also available
.050 available upon request

**Available in 38-1/2 and 27-1/2
widths, upon request**

**Inquire for Non-clad and Stainless
Steel - available upon request.**



DESCRIPTION

ITW Pabco/Childers Metals 2-Pc Aluminum Tee covers are designed to weatherproof and protect insulated tees found along pipelines. They are pressed in two matching halves from .024" thick aluminum, which has a moisture retarder coating applied to the underside for resistance to electrolytic degradation. 2-Pc. Tee's can be used for butt weld, socket weld, and screwed pipe tees, from 1/2" through 6" Iron Pipe Size and 1" through 3-1/2" of insulation. When ordering, it is necessary to specify Iron Pipe Size and insulation thickness (see the price sheet for actual size availability).

ADVANTAGES

ITW Pabco/Childers Metals 2-Pc. Tee covers are applied faster than any other type of tee cover because they are pressed to form two matching halves. Insulation does not need to be routed or rasped at the throat. Necessary adjustments made during application are minimized or eliminated. 2-Pc. Tee covers have two less seams which require caulking, to allow greater resistance to water penetration. The result is a much faster application, which reduces installed cost. 2-Pc. Tee covers conform to ASTM designation C-450 method of fabrication to assure close and correct fitting products. Factory fabrication eliminates material waste, and saves time and labor.

SUGGESTED SPECIFICATIONS

All insulated tees having a nominal Iron Pipe Size of 1/2" through 6" (maximum 10" O.D. including insulation) shall be protected with ITW Pabco/Childers Metals 2-Pc. Aluminum Pressed Tee covers. The tee covers shall be installed in accordance with ITW's latest published recommendations.