

DESCRIPTION

ITW Thermoclad® Plus Aluminum Deep Corrugated Sheets are available in two different nominal corrugation profiles and in smooth or stucco embossed surface finishes. The corrugation profiles are engineered to provide strength and stiffness superior to that of standard Thermoclad Plus aluminum roll jacketing. The available corrugation profile dimensions are shown in the diagram to the right.

Thermoclad Plus 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 Thermoclad Plus Aluminum Deep Corrugated Sheets protect the insulation and underlying surface from physical damage, UV exposure, corrosive atmospheres, and water.

COMPOSITION

ITW Thermoclad Plus Aluminum Deep Corrugated Sheets have the same composition as Thermoclad Plus Aluminum Roll Jacketing. They typically use aluminum alloy 3105 or 3003, have a heat-cured polyester enamel paint 0.6 mils thick opaque white on the interior surface and 0.4 mils thick un-tinted clear on the exterior surface, and have a light blue Polyfilm Moisture Barrier (PFMB) on top of the interior surface paint. For more information on this composition and its benefits, see the ITW Thermoclad Plus Aluminum Roll Jacketing data sheet.

DIMENSIONS

Standard dimensions for ITW Deep Corrugated Sheets are:

Width = nominal 33 inches¹

Length = 4 to 14 feet²

Number of Peaks / Nominal Coverage³

1-1/4" Sheet = 26 peaks / 31-3/4"

2-1/2" Sheet = 13 peaks / 30-1/2"

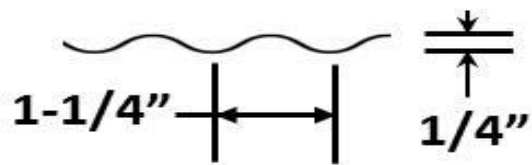
¹The actual width will vary slightly from the nominal width based on gauge and other manufacturing variables.

²Custom lengths from 4 to 14 ft can be specified by purchaser at time of order placement with no effect on minimum quantity or lead-time.

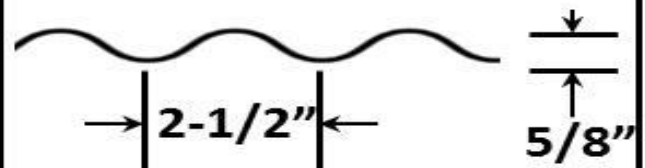
³Coverage is the effective horizontal distance covered by each sheet and is less than the sheet width because of the need to overlap neighboring sheets by a minimum of one corrugation. Note that coverage is nominal and will vary based on gauge, and other manufacturing variables.



1-1/4" Deep Corrugated



2-1/2" Deep Corrugated



COMPLIANCE TO STANDARDS

All Thermoclad Plus Aluminum Deep Corrugated Sheets from ITW Insulation Systems comply with the applicable requirements of ASTM C1729 (Aluminum Jacketing Material Standard) Type III, Grade 1 or 2 (depending on thickness), Class A which includes the strength and chemical composition requirements for compliance to ASTM B209 (Aluminum Alloy Standard).

THICKNESS

ITW Thermoclad Plus 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 ThermoClad Plus Aluminum Deep Corrugated Sheets come standard with a Polyfilm Moisture Barrier (PFMB) on the interior surface. PFMB is an engineered multi-layer 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 the ThermoClad Plus 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 ThermoClad Plus 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 ThermoClad Plus Aluminum 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 ThermoClad Plus 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 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 ThermoClad Plus Aluminum 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.

EMITTANCE OF DEEP CORRUGATED

ITW ThermoClad Plus Aluminum Deep Corrugated Sheet has a surface emittance as measured by ASTM C1371 of 0.5 which is significantly higher than the 0.1 emittance of bare aluminum.

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 not expect ThermoClad Plus Aluminum Deep Corrugated Sheet to have a significantly different flammability performance.

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 ThermoClad Plus Aluminum 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 ThermoClad Plus Aluminum Deep Corrugated Sheet are not typically sealed. If 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.