

ALUMINUM DEEP CORRUGATED SHEETS

ALUMINUM METAL JACKETING/CLADDING

DESCRIPTION

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

COMPOSITION

JM 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 JM Aluminum Roll Jacketing data sheet. JM 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

Deep Corrugated Sheets Standard Dimensions

Width: nominal 33" ¹

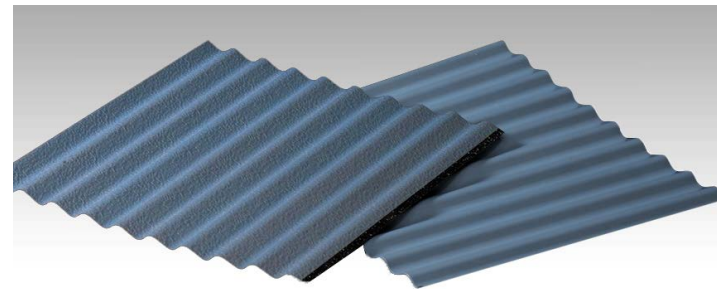
Length: 8', 10', and 12' ²

Number of Peaks / Nominal Coverage³

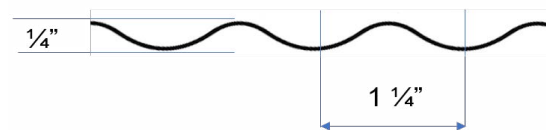
1 ¼" Sheet = 25 (26 in Canada) / 31 ¼"

2 ½" Sheet = 12 (13 in Canada) / 30 ½"

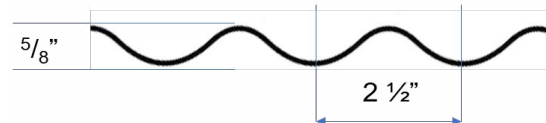
1. The actual width will vary slightly from the nominal width based on gauge and other manufacturing variables.
2. Custom lengths from 4 to 12 ft can be specified by purchaser at time of order placement with no effect on minimum quantity or lead-time.
3. Coverage is the effective horizontal distance 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 ¼" Deep Corrugated Sheet



2 ½" Deep Corrugated Sheet



COMPLIANCE TO STANDARDS

All bare and painted Aluminum Deep Corrugated Sheets from JM 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

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

2 ½" deep corrugated sheet is best suited for thicker gauges. JM recommends that 2 ½" profile deep corrugated sheet be used with a minimum thickness/gauge of 0.024".

POLYFILM MOISTURE BARRIER

PJM's 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. JM 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.

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RECOMMENDED USES

JM 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 JM 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

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

- For large flat surfaces such as boiler walls and precipitators, JM 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, JM Stainless Steel Deep Corrugated Sheets should be used

SURFACE FINISHES

JM Deep Corrugated Sheets are available in smooth or stucco embossed finish. For more information on these finishes see the JM Aluminum Roll Jacketing data sheet. JM Deep Corrugated Sheets are available with a painted outer surface. For more information on this see the JM Painted Aluminum Roll Jacketing data sheet.

EMITTANCE OF DEEP CORRUGATED

JM 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

JM 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. JM 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 & INSTALLATION

When ordering replacement JM Deep Corrugated Sheets for an existing installation consult the JM Deep Corrugated Sheet Fit and Measurements data sheet or your JM 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).

JOINT SEALING

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

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Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of the product listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you for current information.

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