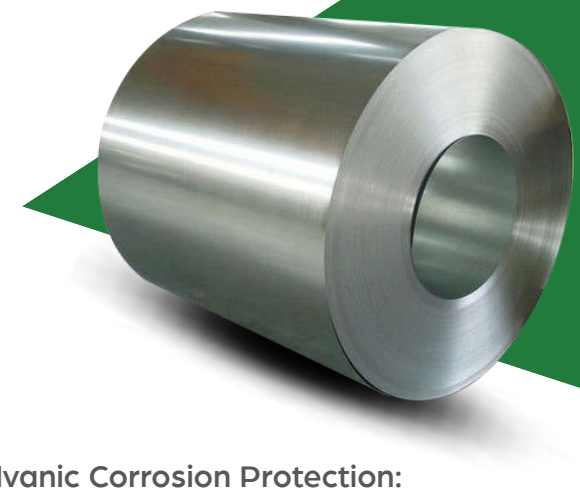
# ALUMINUM JACKETING (CLADDING)



## Description

Aluminum Jacketing is manufactured from aluminum alloy 3003 or 1050 in compliance with ASTM B209. These alloys offer exceptional formability, corrosion resistance, toughness and mechanical properties to resist mechanical or thermal stresses in service. Aluminum jacketing is widely used for insulation, construction, roofing, industrial cladding, profiling, ducting and many other applications. In addition to above alloys, we can also offer Aluminum 1050 and 1060 based on availability. Emissivity (Ɛ) of bare oxidized aluminum alloy is 0.15 – 0.25.
ROCKAL Cladding is an Aluminum jacket with a factory applied heat laminated moisture barrier on the underside. The moisture barrier is a coextruded film which uses in a three layers composition to ensure the elimination of pin-holes, imparting excellent moisture resistance property to the film. The barrier isolates the jacketing material from underlying layers of insulation, avoiding any metal-to-metal contact to prevent corrosion. Total thickness of the film is 3 mil (75 µm). ROCKAL Cladding jacketing is ASTM C1729 Class A compliant.

## Application

**Primary Uses:**
Suitable for industrial conditions existing in refineries, power plants, chemical plants, commercial Buildings and for most general purposes.

**Corrosion Protection:**
Where the corrosive environment is MOR severe, it may be necessary to go to the clad grades of aluminum Or, preferably to the acrylic coated jacket. These have specific applications in paper mills, chlorine plants, Seashore installations and power plants.

**Galvanic Corrosion Protection:**
Factory applied moisture barriers which offer additional protection from galvanic corrosion and there are Different types which adhered to the jacketing over 100% of the metal surface.

Polyethylene consists of virgin kraft paper coated on one side with a polyethylene film. Thickness 0.025 mm. Epoxy consists of a linted Epoxy coating is specified for aluminum jacketing in areas where poly kraft moisture barriers are not acceptable and yet barrier against corrosion is necessary.

## Key Features

- Moisture Barrier
- Anti- Corrosion
- Toughness
- Thermal Stresses Resistance
- Mechanical Stresses Resistance

# Technical Specification

**Chemical Composition of Alum. Alloy (%):**

| Alloy | 1050 | Temper H14 3003 |
|---|---|---|
| Si | 0.25 | 0.60 |
| Fe | 0.40 | 0.70 |
| Cu | 0.05 | 0.05 – 0.20 |
| Mn | 0.05 | 1 – 1.50 |
| Mg | 0.05 | – |
| Zn | 0.07 | 0.10 |
| Ti | 0.05 | – |
| Al | 99.3 | remainder |
| V | 0.05 | – |
| Other | 0.03 | 0.05 |

**Physical Properties:**

| | |
|---|---|
| Density | 2.71 Kg/m$^3$ |
| Melting Point | 650°C |
| Distortion Temperature | 165 °F (740°C) |
| Modules of elasticity | 71 GPa |
| Electrical resistivity | 0.282 x 10–6 Ω.m |
| Thermal conductivity | 222 W/m.K |
| Thermal expansion | 24 x 10–6 /K |

**Mechanical Properties:**

| | |
|---|---|
| Tensile Strength | 19 – 25 ksi (131 – 172 MPa) |
| Yield strength (0.2% offset) | ≥ 16 ksi (110 MPa) |
| Elongation | ≥ 3% |

# Available Supply

**Rolls:**
Thickness 0.25 up to 1.0mm X Width 1.0 m.

**Sheets:**
Thickness from 0.25 up to 1.0mm X Width 1.0 m. X Length 2 m.

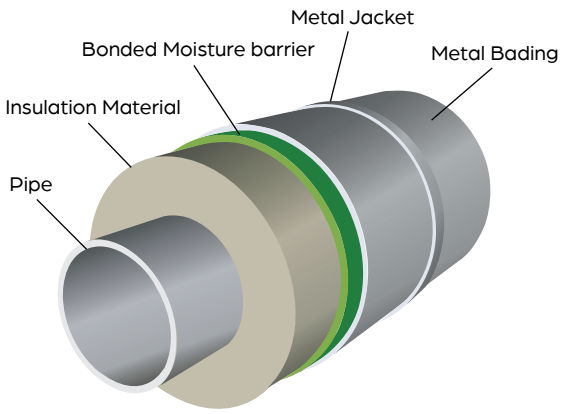
**Prefabricated System:**
- Prefabricated cylindrical tube with male –female edges.
- Prefabricated segmented bends and T with male female edges.
- Prefabricated and removable made up of two pieces for valve and flange cover with trunk lock.

# Corrugated Sheets

**Roofs:**
Type Icon or Crimped.

**Pipes:**
Plain or circumferentially corrugated which provides much greater Compressive strength Thant other types, as well as its superior Water proofing characteristics on horizontal piping and vessels.

**Deep Corrugated Sheets:**
Longitudinally waved for insulated towers, vessels, tanks and Equipment with outside diameters of 2.5 m and over.




**Note:**
To prevent the moisture barrier from overhanging on the edges, approximately 6mm from the edges of the metal is left unlaminated. This does not affect the performance of the system as the jacketing overlaps 50mm at circumferential and longitudinal joints.