

C1729 is a new ASTM standard for aluminum jacketing
Title = “Standard Specification for Aluminum Jacketing for Insulation”

C1729 Lists the Physical Property and Other Requirements for Aluminum Jacketing

C1729 value to insulation industry:

- **Makes it easier for engineers to specify aluminum jacketing with the performance requirements they desire**
- **Assures compliance of aluminum jacketing to industry best practices**
- **Makes it easier for contractors, distributors, and metal jacketing manufacturers to know required properties of the aluminum jacketing**



Requirements in ASTM C1729

- Composition/Alloy must comply with ASTM B209
- Mechanical properties must comply with B209
- New physical property requirements specific to use as insulation jacketing
 - Covers straight pipe, elbows/fittings, and vessels/equipment
 - Required alloys and tempers are specified
 - ASTM E84 flame/smoke $\leq 25/50$
 - Pinholes in all moisture barriers ≤ 5 per 50 ft²
 - Requirements for Water Vapor Transmission Rate (WVTR) for moisture barrier films
 - Emittance targets depending on outer surface (bare, painted, film coated)
 - Thickness targets depending on NPS and insulation rigidity
 - Thickness tolerances depending on thickness
 - Dimensional targets and tolerances
 - Excellent workmanship with no visual defects

Classifications in C1729

C1729 has a complex classification system for aluminum jacketing based on:

- **Type** = Defines outer surface treatment (bare, painted, film coated)
- **Grade** = Aluminum alloy and temper
- **Class** = Type of moisture barrier used on inner surface



C1729 Classifications Recommended – ITW Aluminum Jacketing Products Comply With C1729

ITW Insulation Systems recommends the following classifications within C1729 based on application:

- **Standard Roll or Sheet Aluminum Jacketing**
(Bare surface, 3105/3003 alloy, H14 temper, 3 mil polysurlyn moisture barrier):
 - Type I, Grade 1, Class A, 0.016-0.024" thick
- **Standard Roll or Sheet Aluminum Jacketing for Extra Corrosive Environments**
(Painted surface, 3105/3003 alloy, H14 temper, 3 mil polysurlyn moisture barrier):
 - Type II, Grade 1, Class A, 0.016-0.024" thick
- **Heavy Duty Sheet or Roll Aluminum Jacketing for High Abuse Areas**
(Bare surface, 3105/3003 alloy, H12 temper, 3 mil polysurlyn moisture barrier):
 - Type I, Grade 2, Class A, ≥ 0.032 " thick
- **Standard Two-Piece Aluminum Elbows**
(Clear painted surface, 1100 alloy, 0 temper, painted moisture barrier):
 - Type III, Grade 3, Class D, 0.024" thick
- **Heavy Duty Two-Piece Aluminum Elbows**
(Bare surface, 1100 alloy, 0 temper, 3 mil polysurlyn moisture barrier):
 - Type I, Grade 3, Class A, 0.032" thick
- **Deep Corrugated Aluminum Sheet Jacketing**
(Bare or painted surface, 3105/3003 alloy, H14 or H12 temper, 3 mil polysurlyn moisture barrier):
 - Type I or II, Grade 1 or 2, Class A, 0.016-0.040" thick
- **Box Rib Aluminum Sheet Jacketing**
(Bare surface, 3004 or Alclad 3004 alloy, no moisture barrier):
 - Type I, Grade 4 or 5, Class E, 0.032-0.050" thick

C1729 Requirements for Straight Pipe Jacket Thickness

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)

Contact ITW Insulation Systems to review your spec or for help drafting the best language to specify metal jacketing in your specifications.