



# K-FLEX Clad<sup>®</sup> Jacketing

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Jacketing Systems for Mechanical Insulation



**K-FLEX USA**  
INNOVATION IN INSULATION



# K-FLEX USA

INNOVATION IN INSULATION

## ABOUT K-FLEX USA



Youngville, NC Headquarters



**K-FLEX USA IS A LEADING MANUFACTURER** of closed cell flexible elastomeric foam insulation products for mechanical piping, air handling units and vessels.

Designed for ease of installation and reliable performance, K-FLEX products provide excellent thermal and acoustical performance, including inherent resistance to moisture intrusion.

K-FLEX USA prides itself on being responsive to the market, providing dependable service to customers throughout North America, bringing an innovative approach to product offerings, and having products that are 3rd party tested and certified.

In April 2012, K-FLEX USA was awarded with ISO 9001:2008 certification by FM Approvals. The independent certification demonstrates the company's commitment to quality.

K-FLEX products have proven performance in the Plumbing, HVAC/R, Commercial/Industrial, Marine, Oil & Gas, Acoustic and OEM Markets.

As a member of the IK Insulation Group, K-Flex USA delivers state-of-the-art levels of technical knowledge and customer support to the global mechanical insulation market.



### COMPANY HISTORY

**1965**  
Rubatex was formed.

**1989**  
L'Isolante K-FLEX was formed.

**1975**  
Halstead was formed and INSUL-TUBE® became a well-known product brand.

**1999**  
Rubatex acquires Halstead to form RBX Industries.

**2001**  
Nomaco Insulation and L'Isolante K-FLEX join to form Nomaco K-FLEX (NKF).



**2004**  
NKF acquires RBX's mechanical insulation business.



**2002**  
NKF enters into a Sales and Marketing Agreement with RBX Industries.



**2008**  
Jan. 10, 2008  
L'Isolante K-FLEX redeems Nomaco shares in NKF and goes to market as K-FLEX USA.



### K-FLEX USA BENEFITS

- Designed for lasting performance
- Easy-to-Use Products
- Responsive to market
- Industry & Product expertise
- 3rd Party Certified Products
- Broad Product Range
- Systems Approach
- Factory-applied PSA & Cladding to Insulation
- Full line of accessories (tapes, adhesives, etc)



### GLOBAL PRESENCE

L'ISOLANTE K-FLEX:

- 12 production facilities worldwide
- Commercial distribution in 43 countries
- Headquartered in Italy

# K-FLEX CLAD® JACKETING PRODUCTS

**K-FLEX Clad® Jacketing products** are unique to the insulation market, offering many advantages over traditional coating or jacketing systems. The product is manufactured under controlled conditions using automated equipment to exacting tolerances. The product line offers several products, each offering features and benefits for specific applications. All Clad® Jacketing products offer features such as: flexible, dent resistant, easy to fabricate and install, low cost and long lasting performance. The K-FLEX Clad® Jacketing line is an extension of, and complement to, K-FLEX's flexible closed cell foam elastomeric insulation products. K-FLEX Clad® Jacketing is available factory-applied to K-FLEX insulation (tube, sheet or roll form) or sold separately with or without PSA (adhesive). Matching accessory sealing / edge tapes, contact adhesives and plastic fastening rivets complete the product line. K-FLEX Clad® Jacketing is available in 3 grades:

- Clad® AL  
3-ply (PVC/aluminum foil/mylar film)  
12 mils  
Color – silver  
48" wide x 75' long roll (with or without PSA)
- Clad® WT  
3-ply (PVC/aluminum foil/mylar film)  
12 mils  
Color – white  
48" wide x 75' long roll (with or without PSA)
- Clad® IN **PATENT PENDING**  
Single-ply Polymeric (CPE)  
45 mils  
Color – gray (pictured to right)  
39" wide x 75' long roll



K-FLEX Clad® Jacketing products are designed to offer an alternative to traditional PVC or Metal (Aluminum or Stainless Steel) jacketing. They offer the following advantages over traditional jacketing:

- Easy to install – fabricates with a knife / glued seams (*reference K-FLEX Installation Manual for detailed instructions*)
- Can be applied to interior and exterior ductwork (rectangular/round), pipes (straight runs, bends, intersections), and vessels
- Flexible
- Dent resistant
- Low perm – moisture resistant
- Moisture tight seams
- UV resistant
- Cost effective
- Can be factory-applied to insulation (tubes or sheets)

## K-FLEX® ADHESIVES and TAPES

K-FLEX Clad® Jacketing products can be purchased in rolls with (AL/WT only) or without a PSA adhesive. For applications where the jacketing is going to be attached 100% to the surface / substrate that it is covering, it is recommended that the product be purchased with a factory-applied PSA. The factory-applied PSA is an aggressive acrylic adhesive with an easy to release, tear-resistant poly release liner. For applications where the jacketing is purchased without PSA (only the longitudinal seam is sealed), K-FLEX offers several solvent-based contact adhesives for securing the seam. In addition, plastic rivets are available for use with K-Flex Clad® AL or WT. Matching Clad® tapes for sealing butt joints, longitudinal seams and edge covering are available for use with K-Flex Clad® AL or WT. The aggressive butyl adhesive supplied on the tape offers excellent bond strength and low temperature flexibility. K-Flex Clad® IN strips (without PSA) are available for use as butt strips or edge covering - using K-FLEX 420 contact adhesive to secure.



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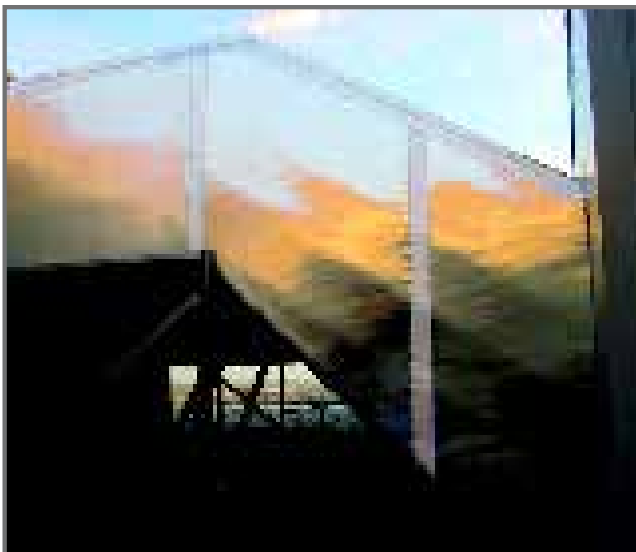
## K-FLEX CLAD® AL JACKETING

K-FLEX Clad AL Jacketing is ideal for outdoor (roof top) applications as a replacement for aluminum jacketing. It is suitable for covering insulation products used in plumbing (hot/cold water), HVAC (air conditioning / chilled water / ducts) and refrigeration applications. Manufacturing plants such as food processing, pharmaceutical facilities, film processing, or electronics where piping or tanks are located outdoors and require insulation and jacketing would be excellent choices for Clad AL Jacketing.

The cladding provides weather and abuse resistance, as well as protection from UV rays. The smooth shiny surface is easy to clean, dust free, resistant to acids, alkali, salts, oil, fats, and aliphatic hydrocarbons and is highly impermeable to gases and moisture (0.001 Perm when tested according to ASTM E 96). Clad AL Jacketing does not dent like traditional metal jackets, has excellent appearance and is easy to maintain and repair if necessary. Clad AL Jacketing has a high emissivity (.80) that makes it ideal for jacketing over insulation

on low temperature lines. Clad AL Jacketing combines the advantages of aluminum jacketing (UV, moisture and abuse resistance) with those of PVC jacketing (dent resistance, easier installation, and moisture tight seams: 0.003 perms when tested to ASTM E96).

ATTRIBUTES	K-FLEX CLAD AL	TEST METHODS
Thickness	0.012"	
Reaction to Fire	25/450	ASTM E 84
Water Vapor Permeance	0.001 perms	ASTM E 96
Weather, UV Resistance	Excellent	ASTM G 53
Corrosion Risk	Provides protection for corrosion under insulation (CUI)	
Salt Spray Resistance	Excellent	BS 903 F12
Wear Resistance	Excellent	BS 903 A2
Ozone Resistance	Excellent	BS 903 A43, ASTM D1171
Chemical Resistance	Excellent	Acids, Alcohols, Alkalies, Oils
Puncture Ø 3.0 mm	100 N	prEN 14 477
Emissivity	0.80	ASTM C 1371
Tensile Strength	90 lbs per ft	ASTM D 828
Burst Strength	203 psi	ASTM D 774
Dimensional Stability (length change)	-1%	ASTM D 1204
Color	Silver	



# K-FLEX CLAD® WT JACKETING

K-FLEX Clad WT Jacketing is ideal for outdoor (roof-top) and indoor applications (25/50 rated for fire and smoke when tested to ASTM E 84) including supermarkets, food processing plants, pharmaceutical facilities, film processing centers, electronics facilities and other clean room applications. When applied to K-Flex closed cell elastomeric insulation, the Clad WT Insulation System is NSF approved for use in food prep or washdown areas. It is suitable for covering insulation products

used in plumbing (hot/cold water), HVAC (air conditioning / chilled water / ducts) and refrigeration applications.

The cladding provides weather and abuse resistance, as well as protection from UV rays. The smooth white surface is easy to clean, dust free, resistant to acids, alkali, salts, oil, fats, and aliphatic hydrocarbons and is highly impermeable to gases and moisture (0.001 Perm when tested according to ASTM E 96). Clad WT Jacketing

does not dent like traditional metal jackets, has excellent appearance and is easy to maintain and repair if necessary. With a gauge of .012", it has excellent puncture resistance. Clad WT Jacketing has a high emissivity (.80) that makes it ideal for jacketing over insulation on low temperature lines. The white jacketing offers the toughness and aesthetics of PVC with extremely low permeance, UV resistance and moisture tight seams: 0.003 perms when tested to ASTM E96.

ATTRIBUTES	K-FLEX CLAD WT	TEST METHODS
Thickness	0.012"	
Reaction to Fire	25/50	ASTM E 84
Water Vapor Permeance	0.001 perms	ASTM E 96
Weather, UV Resistance	Excellent	ASTM G 53
Corrosion Risk	Provides protection for corrosion under insulation (CUI)	
Salt Spray Resistance	Excellent	BS 903 F12
Wear Resistance	Excellent	BS 903 A2
Ozone Resistance	Excellent	BS 903 A43, ASTM D1171
Chemical Resistance	Excellent	Acids, Alcohols, Alkalies, Oils
Puncture ø 3.0 mm	100 N	prEN 14 477
Emissivity	0.80	ASTM C 1371
Tensile Strength	90 lbs per ft	ASTM D 828
Burst Strength	231 psi	ASTM D 774
Dimensional Stability (length change)	-1%	ASTM D 1204
Color	White	





## K-FLEX CLAD® IN JACKETING PATENT PENDING

K-FLEX Clad IN Jacketing is ideal for outdoor / industrial / marine applications exposed to wide temperature cycling, including industrial plants, operating mills (pulp / paper), off shore platforms, FPSOs, LNG terminals, storage tanks and shipping vessels.

K-FLEX Clad IN Jacketing is a patent pending, flexible non-metallic, polymeric (CPE) protective jacketing suitable as a covering for all insulation types. It is well-suited for extreme temperature cycling

applications due to the ability of the polymeric covering to expand and contract with rapid temperature swings.

It provides excellent resistance against UV, high humidity, salt spray, weather, acids, oils, chemicals, impact, mechanical abuse and moisture vapor intrusion. Clad IN Jacketing has a high water vapor diffusion resistance (0.08 Perm when tested according to ASTM E 96) and helps minimize the problem of under insulation corrosion. It is easy to install and combines excellent

performance with easy maintenance. The cladding is flexible enough to protect against damage from foot traffic (does not dent like traditional metal jackets) and maintains moisture proof seams. The 0.045" gauge offers excellent puncture resistance. The seams can be sealed with solvent-based contact adhesive. Clad IN Jacketing is available in gray which has a high emissivity (.90) that is ideal for insulation over low temperature lines.

ATTRIBUTES	K-FLEX CLAD IN	TEST METHODS
Material Type	Chlorinated Polyethylene (CPE)	
Color	Gray	
Thickness	.045" (1.2 mm)	
Water Vapor Permeance	0.08 perms	ASTM E 96
Specific Weight	1.8 +/- 0.1 g/cc	
Hardness	>=80 shA	ISO 7619, ASTM D 2240
Tensile Strength	>=6.9 MPa	ISO 37 (Typical value 7.5 MPa)
Elastic Modulus	>=60 MPa	ISO 37 (Typical value 70 MPa)
Modulus 10%	>1.5 MPa	ISO 37
Elongation to Break	>100%	ISO 37 (Typical values: elongation @ 70%, elongation to break 300%)
Peel Adhesion	>50 Kpa	ISO 2411
Shear Strength	>20 N/25mm	ISO 34-1
Ozone Resistance	Extremely Good	ASTM D 1171 (72hr 50ppm 20%, no oxidation)
UV Resistance	Extremely Good	ASTM G 7-97 (2 years of exposure in New River, AZ: no pitting, no cracking, no blistering)
Salt Spray Resistance	Extremely Good	ISO 3768, ASTM B 117-73 (480 hrs: no color shade, no scaling, no blistering)
Aging Resistance	Extremely Good	ISO 4982 (after 360 hr, 72 MJ, elongation to break and modulus conform to specification)
Oil Resistance	Extremely Good	ISO 1817 (after 72 hr immersion in oil IRM 903, elongation to break and modulus conform to specification)
Chemical Resistance (Acids, Alcohols, etc)	Extremely Good	
Impact Resistance	Extremely Good	EN12691; 1Kg, 20mm, 600mm
High Surface Temperature Limit (continuous)	175°F (80°C)	temperature of ambient air & insulation surface
Cold Temperature Flexibility (for installation)	-4°F (-20°C)	ISO 812:2006
Emissivity	0.90	
Corrosion Risk (CUI)	Helps minimize corrosion under insulation	
Combustibility	Pass	BS 476 pt 6 / BS 476 pt 7 / NF 92501
Fire Requirements for Building Construction	15/250 (Class A)	ASTM E 84
Fire Requirements for Shipbuilding	Pass	IMO 61/67 part 2&5
Approvals and Supervisions	CE marine approval Type approvals	CSI ABS / DNV / Lloyds Register / Norsok Standard R-004 ed 3 (par. 5.9 non-metallic jacket)



# COMPARISON: JACKETING OPTIONS

ATTRIBUTES	K-FLEX CLAD (AL/WT/IN)	COATINGS	PVC	METAL	FLEXIBLE MULTI-PLY
Flexible	x	x			x
UV Resistant	x	x	x	x	x
Mechanical Abuse Protection	x		x	x	x
Dent Resistant	x	x	x		x
No Caulking of Seams	x				
Water Resistant	x		x	x	x
Moisture Vapor Resistance	x	x	x	x	x
Limited Maintenance Required	x		x	x	x
Easy Removal / Repair	x				x
Jacket Thickness (inches)	.012 (WT/AL), .045 (IN)	.002	.016	.016	varies
Mold Resistant	x			x	
Easy-to-Clean	x		x		
High Emissivity (>0.80) for best condensation control	x				
Available in white & aluminum (color)	x				
Total System Approach	x				
Glued Seams	x	x	x		x
Available with Matching Fittings	x		x	x	
Available with Matching Tape for Seams & Edges	x			x	x



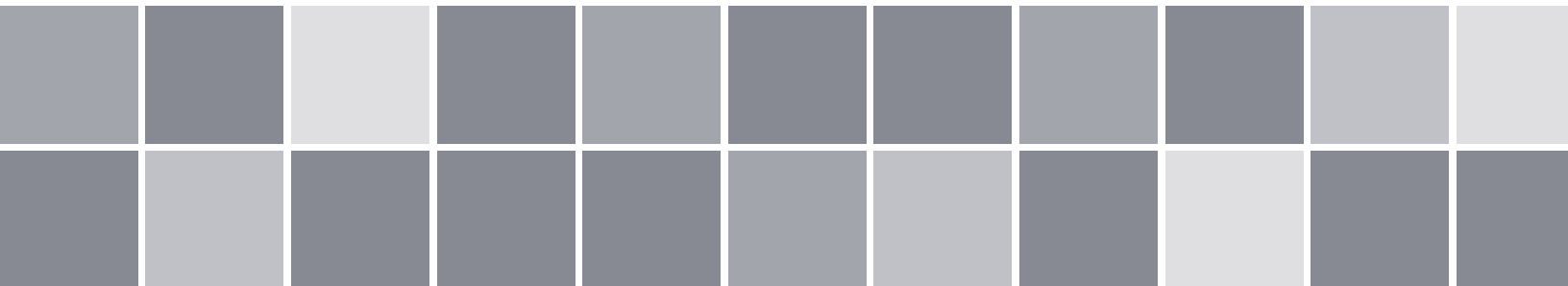
# COMPARISON: JACKETING FACTORY-APPLIED TO INSULATION

ATTRIBUTES	K-FLEX CLAD (AL/WT/IN)	COATINGS	PVC	METAL	FLEXIBLE MULTI-PLY
Factory-Applied: 1-piece construction	x				
Adhered 100% to Insulation	x	x			x
Overlap Seam	x		x		x
Factory-applied (tubes)	x				
Factory-applied (sheets)	x				
GREENGUARD (low VOC)	x (AL, WT)				
NSF Approved	x (WT)				
Uniform Appearance (no ripples/air bubbles/streaks)	x		x	x	
Faster Installation (1-step)	x				





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ISO 9001 Certified

[www.kflexusa.com](http://www.kflexusa.com)  
tel. 800-765-6475  
100 K-flex Way  
Youngsville, NC 27596

KFAP-0007-0418