

K-FLEX CLAD® IN

Closed cell elastomeric insulation
Adhered to a Polymeric Sheet



DESCRIPTION

K-FLEX Clad® IN, available in both tubular and sheet form, is a composite product of closed cell elastomeric insulation adhered to a gray polymeric sheet.

K-FLEX Clad® IN is fiber-free, non-porous CFC- and HCFC-free. These characteristics allow it to comply with *Health, Safety and Environmental requirements*. It provides salt water and impact resistance, as well as UV protection, making it an excellent choice for severe outdoor conditions.

K-FLEX Clad® IN is available in 3-foot length tubes up to 1-1/2" wall thickness. Sheet product is available in 36" x 48" sheets or 36" wide rolls up to 2" thickness. K-FLEX Clad® IN is available with K-FLEX® LS or with K-FLEX ECO™ insulation. See separate data sheet for K-FLEX ECO™ physical properties. Full line of accessory products (tape and adhesives) are available.

The polymeric sheet cladding provides a secondary moisture vapor barrier to the inherently moisture resistant closed cell foam core.

APPLICATIONS

K-FLEX Clad® IN is an ideal choice for industrial plants, offshore platforms, FPSO's, LNG Terminals and for the shipbuilding industry. It is well-suited for extreme temperature applications due to the ability of the outer polymeric covering to expand and contract with rapid temperature cycles. K-FLEX Clad® IN - ECO meets IMO requirements for shipbuilding and off-shore platforms.

K-FLEX Clad® IN has a low thermal conductivity, a high water vapor diffusion resistance factor, and practically eliminates the problem of under insulation corrosion. It is easy to install and combines excellent performance with low maintenance requirements. The clad-

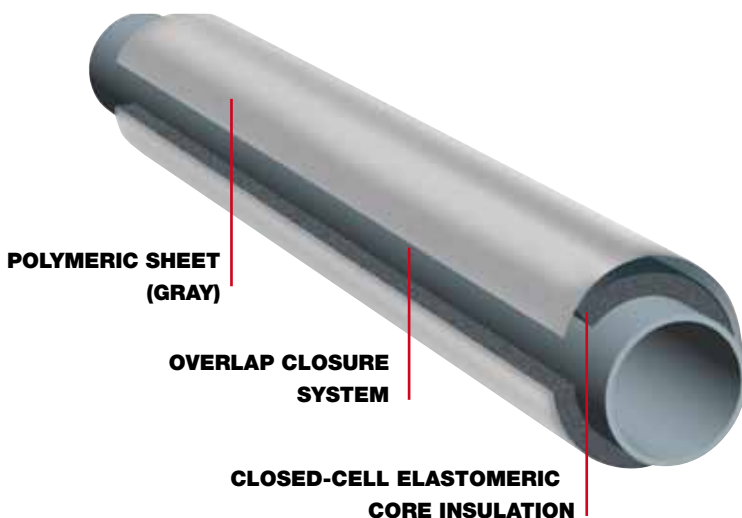
ding is flexible enough to protect against damage from traffic (does not dent like traditional metal jackets) and allows for easy maintenance.

K-FLEX Clad® IN with elastomeric insulation core can be used over a wide range of temperatures from -297°F to +220°F (-182°C to +104°C). K-FLEX Clad® IN - ECO (halogen-free) should be used as the core insulation on stainless steel applications above 100°F. The temperature range for K-FLEX Clad® IN - ECO is -297°F to +300°F (-182°C to +150°C). The temperature range for K-FLEX Clad® IN sheet is -70°F to 200°F.

INSTALLATION

A unique overlap closure system, which eliminates through seams on longitudinal seams, ensures against moisture penetration. No special tools and fewer materials are necessary at the job site, allowing for quick installation.

K-FLEX® 320 Contact Adhesive is an aggressive adhesive specially formulated for the clad jacket and insulation core system and is recommended for longitudinal, butt and overlap seams.



FOR SPECIFIC INSTALLATION INSTRUCTIONS
SEE K-FLEX CLAD® INSTALLATION GUIDE

SPECIFICATION COMPLIANCE

- ASTM C 534 Type 1 (Tubing), Grade 1
- USDA Compliant
- RoHS Compliant
- ASTM E84 1-1/2" 25/350-tested according to UL 723 and NFPA 255 Complies with requirements of CAN/ULC S102-M88
- Meets IMO requirements for shipbuilding and off-shore platforms (K-FLEX Clad® IN - ECO)



K-FLEX CLAD® IN PRODUCT DATA

Available in factory-applied tube or sheet



PHYSICAL PROPERTIES OF K-FLEX CLAD® IN POLYMERIC SHEET

ATTRIBUTES	K-FLEX CLAD® IN	TEST METHODS
MATERIAL TYPE	CHLOROSULFONATED POLYETHYLENE	
THICKNESS	0.30"	
REACTION TO FIRE	25/350	ASTM E 84
WATER VAPOR DIFFUSION	0.001 PERM-IN	ASTM E 96
WEATHER, UV RESISTANCE	EXCELLENT	ASTM G 53
CORROSION RISK	THE SYSTEM PROVIDES PROTECTION FOR CORROSION UNDER INSULATION	
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
TENSILE ELONGATION	>100%	BS 903 A2
COLOR	GRAY	

PHYSICAL PROPERTIES OF ELASTOMERIC CORE MATERIAL (STANDARD)

TEMPERATURE RANGE	-297°F TO +220°F (-182°C TO + 104°C) (-70°F TO +200°F (-57°C TO + 93°C) SHEET)	ASTM C 411
COLOR	BLACK	
THERMAL CONDUCTIVITY 75°F MEAN TEMP	0.25 BTU-IN/HR-FT ² -°F	ASTM C 177, ASTM C 518
WATER VAPOR PERMEABILITY	<0.06 PERM-IN	ASTM E 96
WATER ABSORPTION %	<0.2 BY VOLUME	ASTM C 209
RESISTANCE TO OIL & GREASES	GOOD	
DENSITY	3 LBS. PCF TO 4 LBS. PCF	ASTM D 1622, ASTM D 3575
RESISTANCE TO U.V. & WEATHER	GOOD	
ODOR	NEGLECTIBLE	
OZONE RESISTANCE	GOOD	ASTM D1171
% CLOSED CELLS	>90	
DIMENSIONAL STABILITY	<4.0 @ 220°F	ASTM C 534
FLAME SPREAD (UP TO 2" THICKNESS) (TUBES ONLY OFFERED UP TO 1-1/2")	NOT GREATER THAN 25	ASTM E 84
SMOKE DEVELOPED (UP TO 2" THICKNESS) (TUBES ONLY OFFERED UP TO 1-1/2")	NOT GREATER THAN 50	ASTM E 84

PHYSICAL PROPERTIES OF COMPOSITE SYSTEM

REACTION TO FIRE	25/350	ASTM E 84, BS 476 PART 7 CL. 1, IMO RES. A653 (16), LLOYDS REGISTER
NORMAL CLIMATIC CONDITION (24 WEEKS)	NON-CORROSIVE, NO BREAKAGE/BLISTERING	ASTM G7