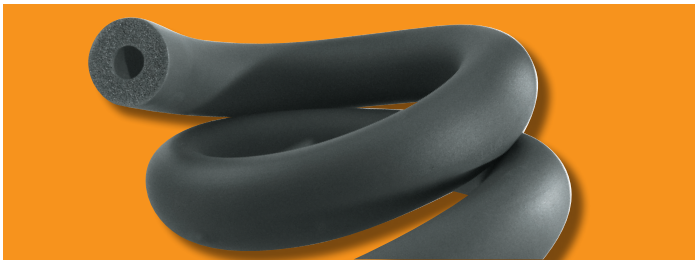
K-FLEX® HT

CLOSED-CELL, FLEXIBLE, ELASTOMERIC FOAM INSULATION EPDM BASED



DESCRIPTION

K-FLEX HT is an EPDM-based closed-cell, flexible elastomeric foam insulation. It is environmentally-friendly as it is free of CFCs, HFCs, HCFCs, PBDEs, formaldehyde and fibers. An EPA-registered antimicrobial agent is incorporated into the product providing additional protection against mold, fungal and bacterial growth. The product is made in K-FLEX USA's ISO 9001:2008-certified manufacturing facility in North Carolina.

AVAILABILITY

K-FLEX HT is black in color and is available in 1/2", 3/4", 1" and 1-1/2" wall thickness in non-slit, 6' length tube form in diameter sizes ranging from 1/4" I.D. to 4-1/2" (ID range is subject to variation depending on wall thickness) and roll (4' wide) and sheet (3"x4") form. NOTE: some sizes are special order

APPLICATION

K-FLEX HT is recommended for applications with service temperatures ranging from -297°F (-183°C) to +300°F (+149°C). For applications below -70°F (-57°C), contact K-FLEX technical support. The product is used to retard heat gain/loss and prevent condensation or frost formation on pipes and vessels subject to extreme process temperatures and temperature cycling, including solar, low pressure steam and industrial processes, among others. It can be used with heat tracing tapes. K-Flex HT exhibits excellent low temperature (-70°F) flexibility, making it a good choice for flex-hose applications that may be exposed to low temperatures.

OUTDOOR APPLICATION

K-FLEX HT Insulation is made from a UV-resistant EPDM elastomeric blend. For most UV exposure applications, no additional coating is needed for product performance. However, appropriate coating or jacketing should be used for optimum performance and prolonged protection against UV, weathering and mechanical abuse and to comply with code requirements. Contact K-FLEX technical support for additional information.

UNDERGROUND APPLICATIONS

K-FLEX HT is acceptable for use in buried applications using the same installation principles as above ground applications. For lines above the water table, use a clean fill such as sand (3"-5" layer) to protect the insulation before backfilling. For optimum performance, the lines should be encased in a conduit to protect them from problems associated with ground water intrusion and compaction. If a conduit is not used, the insulation thickness should be increased by one thickness size to compensate for compaction.

INSTALLATIONS

K-FLEX HT is flexible (even at low temperatures), durable (non-fracturing and skin is resistant to tearing from handling and environment), safe to handle (non-dusting and non-abrasive), and lightweight for an efficient installation.
K-FLEX recommends that insulation is installed on non-operational systems with clean, dry surfaces in ambient conditions between 40°F and 100°F.
Properly sized insulation tubing can be slid over piping (tubing should be pushed, not pulled) or, when applied to existing lines, can be slit lengthwise (using a sharp, non-serrated knife) and fitted into place. All seams, butt joints, termination points and open ends should be sealed with K-FLEX 420 Adhesive, making sure both surfaces to be joined are coated. Longitudinal seams should face downward and vapor stops should be installed as needed. Properly sized insulation sheets can be installed onto large OD round surfaces or flat surfaces. For round surfaces (piping or ductwork), the sheet should be wrapped (without stretching the insulation) around the pipe and sealed at the longitudinal seam with K-FLEX 420 Adhesive. For ductwork and equipment, 100% coverage should be used, making sure to coat both surfaces. Compression joints should be used on all butt edges. Fittings (elbows, tees, p-traps) and special parts (flanges, valves, etc.) can be field-fabricated from insulation tubes and sheets. ASTM C1710, Installation Guide for Flexible Closed Cell Foams, and the K-FLEX Installation Manual should be used as comprehensive installation guides. Factory fabricated fittingsare also avilable for many applications.

RESISTANCE TO MOISTURE VAPOR FLOW

The expanded closed-cell structure and unique formulation inherently resists moisture vapor intrusion. For most indoor applications, K-FLEX HT needs no additional protection. Additional vapor barrier protection may be necessary when installed on cold surfaces that are exposed to continuous high humidity.

FLAME AND SMOKE RATING

K-FLEX HT in wall thicknesses of 1" (25 mm) and below has a flame spread rating of 25 or less and a smoke development rating of 50 or less as tested to ASTM E84, "Surface Burning Characteristics of Building Materials". It is acceptable for duct/plenum applications, meeting the requirements of NFPA 90A/B.

Numerical flammability ratings alone may not define the performance of products under actual fire conditions. They are provided only for use in the selection of products to meet limits specified when compared to a known standard.

SPECIFICATION COMPLIANCE

- ASTM C534 Type I-Tubular, Grade 2 Type II-Sheet, Grade 2
- ASTM E84 25/50-rated (to 1") - tested to UL 723, NFPA 255 and CAN/ULC S102-03
- NFPA No. 101 Class A Rating
- NFPA 90A, 90B up to 1"
- UL94 V0, 5VA, HF-1 (File E300774)

Made in USA

Contains a Protective Antimicrobial Agent

IK INSULATION GROUP K-FLEX

TECHNICAL DATA ▸

PHYSICAL PROPERTIES	K-FLEX HT	TEST METHODS
Main Composition	Flame-retarded EPDM-based elastomeric foam	
Thermal Conductivity (Btu-in/hr-Ft²-°F)	75°F (24°C) Mean Temp = 0.263	ASTM C177
Density	3-6 lb/ft³	ASTM D1667
Operating Temperature Range	-297°F* (-183°C) to +300°F (+149°C)	ASTM C534
Water Vapor Permeability (Dry Cup)	0.1 perm-in	ASTM E96
Flame Spread / Smoke Development (up to 1" thickness)	<25/50	ASTM E84
Dimensional Stability	<7% Linear Shrinkage	ASTM C534
Chemical/Solvent/Oil/Grease Resistance	Fair	Compatibility Data Available on Request
Flexibility	Pass: Cold Crack Test at -65°F (-54°C)	ASTM D1056
Corrosion Risk	pH neutral	DIN 1988
Leachable Chlorides	<30 ppm	EN 13468
UV[1]	Pass: No change after 2000 exposure hours	EN 13859-1 (UV Radiation Artificial Aging)
Hot surface performance @ 250°F (121°C)	Pass	ASTM C411

*For applications below -40°F (-40°C), contact K-FLEX technical support.
[1] Outdoor applications should be protected with an approved K-FLEX coating or cladding.

THICKNESS RECOMMENDATIONS						
	To Prevent Condensation		For Energy Conservation (ASHRAE 90.1-2010)			
SERVICE TEMPERATURE	50°F (10°C)	-20°F (-29°C)	105°F - 139°F (40°C - 59°C)	140°F - 199°F (60°C - 92°C)	200°F - 249°F (93°C - 125°C)	250°F - 350°F (126°C - 175°C)
1/4" ID to 1-1/2" IPS	3/8"	1"	1"	1-1/2"	2-1/2"	4"
1-1/2" IPS to 4" IPS	3/8"	1"	1-1/2"	2"	2-1/2"	4-1/2"
4" ID to 6" IPS	1/2"	1-1/2"	1-1/2"	2"	3"	4-1/2"

Thickness listed for the specified ranges will prevent condensation on indoor piping under the defined design conditions. Normal: 85°F and 70% R.H. Thickness recommendations above 1" can be sleeved to achieve thickness desired.
Contact K-FLEX technical support for additional information.

SHEET "R" VALUES				
1/2"	3/4"	1"	1-1/2"	2"
1.9	2.9	3.8	5.7	7.6

PIPE "R" VALUES (ALL SIZES ARE NOMINAL)				
NOMINAL INSULATION I.D.	1/2" WALL	3/4" WALL	1" WALL	1-1/2" WALL
1/4"	3.7	5.6	8.9	15.2
3/8"	3.3	5.1	8.0	13.7
1/2"	3.1	5.0	7.4	12.6
5/8"	3.1	5.1	7.0	11.9
3/4"	2.9	5.0	7.0	11.3
7/8"	3.0	5.1	6.7	10.8
1-1/8"	2.9	5.1	6.6	10.1
1-3/8"	2.9	4.9	6.8	9.6
1-5/8"	2.9	4.8	6.6	9.2
1-1/2" IPS	2.8	4.6	6.3	8.3
2-1/8"	2.8	4.5	6.2	8.6
2" IPS	2.7	4.5	6.1	8.4
2-1/2" IPS	2.8	4.3	6.4	8.0
2-5/8"	2.9	4.4	5.9	8.2
3-1/8"	2.8	4.3	5.8	7.9
3" IPS	3.0	4.3	5.7	7.8
3-5/8"	3.0	4.3	5.7	7.7

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