

K-FLEX® K-FIT®

CLOSED CELL FLEXIBLE ELASTOMERIC FOAM INSULATION FACTORY-APPLIED DOUBLESEAL CLOSURE SYSTEM



DESCRIPTION

K-FIT® fittings are factory-fabricated fittings made from NBR/PVC-based closed cell, flexible elastomeric foam insulation. They are produced under controlled conditions using an automated process to ensure uniformity, good fit and watertight seams. They are environmentally friendly as they are 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. They are UL GREENGUARD® Gold Certified for low VOC emissions. The products are made in K-FLEX® USA's ISO 9001:2008-certified manufacturing facility in North Carolina.

AVAILABILITY

K-FIT® fittings are available in elbow (45s and 90s) and tees in wall thicknesses of 1/2" up to 2" with diameter sizes ranging from 3/8" I.D. to 6" IPS. (ID range is subject to variation depending on wall thickness). K-Fit p-traps are available in wall thicknesses of 1/2" up to 1-1/2" with diameter sizes ranging from 5/8" I.D. to 2-1/8" I.D.

APPLICATION

K-FIT® fittings are recommended for applications with service temperatures ranging from -297°F (-182°C) to +220°F (+104°C). For applications below -40°F (-40°C), contact K-FLEX® technical support. The products are used to retard heat gain and prevent condensation or frost formation on below ambient applications, including refrigerant, cold water plumbing, chilled water, and industrial process lines, among others. They can be used with heat tracing tapes. They also retard heat loss from medium hot systems, including hot water plumbing, liquid heating, dual temperature, and solar thermal piping, among others.

OUTDOOR APPLICATION

K-FIT® fittings are made from a UV-resistant elastomeric blend. For severe UV exposure

(rooftop applications) or for optimum performance, K-FLEX® 374 Protective Coating, approved jacketing or K-FLEX® CLAD® is recommended.

INSTALLATIONS

K-FIT® fittings are 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. For best installation results, fittings should be installed prior to straight run insulation. Properly sized fittings can be installed by slitting the fitting (using a sharp, non-serrated knife) and applying contact adhesive to the longitudinal seam of both surfaces. Once the adhesive becomes tacky, the fitting can be placed over the pipe and pressure applied to the seam. Straight pipe insulation can then be installed with butt joints adhered to those of the fitting. All seams, butt joints, termination points and open ends should be sealed with an approved contact adhesive, making sure both surfaces to be joined are coated.

ASTM C1710, Installation Guide for Flexible Closed Cell Foams, and the K-FLEX® Installation Manual should be used as comprehensive installation guides.

K-FIT® P-Traps are specifically designed to fit Mueller Industries Suction Line P-Traps. K-FLEX® USA will not warrant the fit of its K-FIT® P-Trap for any other manufacturer's suction line P-Trap.

RESISTANCE TO MOISTURE VAPOR FLOW

The expanded closed cell structure and unique formulation inherently resists moisture vapor intrusion. For most indoor applications, K-FIT® 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-FIT® in wall thicknesses of 2" (50 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.

Technical Data referenced in this document pertains to K-FIT® fittings made from K-FLEX® NBR/PVC-based black elastomeric insulation. For technical information for K-FIT® White and K-FIT® ECO, please see respective product sheets as availability, technical properties, specification compliance, and installation recommendations are subject to change.

SPECIFICATION COMPLIANCE

- ▶ ASTM C534 Type 1, Grade 1
- ▶ ASTM D1056-00-2B1
- ▶ New York City MEA 186-86-M Vol. V
- ▶ USDA Compliant
- ▶ CFIA Compliant
- ▶ RoHS Compliant
- ▶ ASTM E84 25/50-rated (to 2") - tested to UL 723, NFPA 255 and CAN/ULC S102-03
- ▶ NFPA No. 101 Class A Rating
- ▶ NFPA 90A, 90B
- ▶ Meets requirements of California ECB Title 24
- ▶ UL GREENGUARD® Gold Certified
- ▶ Meets energy code requirements of ASHRAE 90.1 and 189.1

The K-FLEX® USA website contains the most recent version of all K-FLEX® USA literature. Please refer to the website for current versions of K-FLEX® USA literature at www.kflexusa.com

Made in USA



Contains a Protective Antimicrobial Agent



K-FLEX® K-FIT® ▶ TECHNICAL DATA

Physical properties ▼	K-FIT® ▼	Test methods ▼
Main Composition	Flame-retarded NBR/PVC-based elastomeric foam	
Thermal Conductivity (K) Btu-in/hr-Ft ² -°F (W/mk)	90°F (32°C) Mean Temp = 0.258 (0.0372) 75°F (24°C) Mean Temp = 0.245 (0.0353) 32°F (0°C) Mean Temp = 0.235 (0.0339)	ASTM C177
Density	3-6 lb/ft ³	ASTM D1667
Operating Temperature Range	-297°F* (-183°C) to +220°F (104°C)	ASTM C534
Water Vapor Permeability (Dry Cup)	<0.01 perm-in	ASTM E96
Water Absorption (Volume Change)	0%	ASTM C209
Flame Spread / Smoke Development (up to 2" wall)	<25/50	ASTM E84
Flammability	Self-Extinguishing	ASTM D635
Dimensional Stability	<7% Linear Shrinkage	ASTM C534
Hot Surface Performance (250°F for 96 hours)	No Cracking or Delamination	ASTM C411
Ozone Resistance	Pass	ASTM D1171
Odor Emissions	No Objectionable Odor	ASTM C1304
Chemical/Solvent/Oil/Grease Resistance	Good	Compatibility Data Available on Request
Flexibility	Excellent Pass: Cold Crack Test at -40°F (-40°C)	ASTM C534 ASTM D1056
Mildew Growth Resistance/Air Erosion	Pass	UL 181, ASTM G21
Corrosion Risk	pH neutral: 6.6±0.04	DIN 1988
Leachable Chlorides	<0.05% water-soluble chloride ions	DIN 1988
UV / Weather Resistance ¹	Pass	QUV Chamber Test
Sound Transmission Class (1")	13	ASTM E90

Technical Data based on K-FLEX® black NBR/PVC-based elastomeric insulation. For technical information for K-FIT® White and K-FIT® ECO, please see respective product sheets.

*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.

K-FLEX® K-FIT® ▶ THICKNESS RECOMMENDATIONS - TO PREVENT CONDENSATION

SERVICE TEMPERATURE	50°F (10°C)			35°F (2°C)			0°F (-18°C)			-20°F (-29°C)		
Pipe Size ▼	Mild ▼	Normal ▼	Severe ▼	Mild ▼	Normal ▼	Severe ▼	Mild ▼	Normal ▼	Severe ▼	Mild ▼	Normal ▼	Severe ▼
3/8" ID to 1-1/8" ID	3/8"	3/8"	3/4"	3/8"	1/2"	3/4"	1/2"	3/4"	1-1/2"	1/2"	1"	1-1/2"
1-3/8" ID to 3" IPS	3/8"	3/8"	3/4"	3/8"	3/4"	1"	1/2"	1"	1-1/2"	3/4"	1-1/2"	1-1/2"
4" IPS to 6" IPS	1/2"	1/2"	3/4"	1/2"	3/4"	1"	3/4"	1"	2"	3/4"	1-1/2"	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. Mild: Most air conditioned spaces and arid climates: 80°F and 50% R.H. Severe: Areas where excessive moisture is introduced or in poorly ventilated areas where the temperature may be depressed below the ambient: 90°F and 80% R.H. Contact K-FLEX® technical support for additional information.

K-FLEX® K-FIT® ▶ PIPE "R" VALUES PER SQUARE FOOT (ALL SIZES ARE NOMINAL)

Nominal insulation I.D. ▼	1/2" WALL ▼	3/4" WALL ▼	1" WALL ▼	1-1/2" WALL ▼	2" WALL ▼
3/8"	3.6	5.6	8.5	14.6	20.4
1/2"	3.4	5.4	7.9	13.5	18.9
5/8"	3.3	5.4	7.5	12.8	17.8
3/4"	3.1	5.4	7.5	12.4	16.8
7/8"	3.2	5.4	7.2	11.6	16.1
1-1/8"	3.1	5.5	7.1	10.8	15.8
1-3/8"	3.2	5.3	7.3	10.2	14.9
1-5/8"	3.1	5.1	7.1	9.8	14.6
1-1/2" IPS	2.6	4.4	6.2	8.9	13.8
2-1/8"	3.0	4.9	6.6	9.2	13.6
2" IPS	2.9	4.8	6.5	9.0	13.3
2-1/2" IPS	3.0	4.6	6.3	8.6	12.6
2-5/8"	3.1	4.7	6.4	8.8	12.9
3-1/8"	3.0	4.6	6.2	8.5	12.4
3" IPS	3.2	4.6	6.1	8.3	12.2
3-5/8"	3.2	4.6	6.1	8.3	12.1
4-1/8"	3.1	4.6	6.0	8.1	11.7
4" IPS	3.2	4.6	5.5	8.0	11.6
5" IPS	3.0	4.5	5.7	7.7	11.1
6" IPS	3.0	4.4	5.6	7.5	10.9

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