

# K-FLEX DUCT® LINER GRAY

Flexible closed cell sheet insulation  
Supplied with or without PSA  
Designed for lining in air handling systems



## DESCRIPTION

K-FLEX Duct® Liner Gray is a CFC- and HCFC-free, close cell, flexible elastomeric thermal and acoustical insulation. It is gray in color and supplied in rolls up to 60" wide from 1/2" to 2" thickness\*. It is supplied either as S2S (Skin 2 Sides) or with a factory-applied scrim-reinforced acrylic adhesive on the opposite side.\*\*

K-FLEX Duct® Liner Gray is non-porous, fiber-free and resists mold growth. An EPA-registered antimicrobial agent is incorporated into the product providing additional protection against mold, fungal and bacterial growth. K-FLEX Duct® Liner Gray is GREENGUARD® certified as a low VOC material, meeting the requirements for the "Children & Schools" and "Indoor Air Quality" classifications.

Features of PSA\*\*: tear- and moisture-resistant polyolefin easy release liner; continuous reinforcing scrim that prevents stretching of insulation and improves peel strength.

## APPLICATIONS

K-FLEX Duct® Liner Gray is used to retard heat gain / loss and prevent condensation or frost formation on equipment or ducts. K-FLEX Duct® Liner Gray is recommended for applications ranging from -297°F to 220°F (-183°C to 104°C) (-70°F to 200°F (-57°C to 93°C) with PSA).

K-FLEX Duct® Liner Gray can be used as duct and air handling equipment liner, and is R-8 at 2" thickness. R-values designate the thermal resistance value of a material. K-FLEX Duct® Liner Gray with PSA\*\* reduces installation time and

minimizes the amount of solvent-based contact adhesives required, making it ideal for new and retrofit applications. The scrim reinforcement reduces the tendency to stretch the sheet insulation during installation and improves the peel strength of the material.

Thickness recommendations for K-FLEX Duct® Liner Gray have been calculated to control condensation on cold surfaces. Refer to the table on the last page for specific recommendations.

Ideal Applications include air handling systems in schools, hospitals, hotels, public buildings and clean/processing rooms.

## INSTALLATION

K-FLEX Duct® Liner Gray Insulation should be applied to clean, dry ductwork and equipment. Adhesive should be applied to all compression joints and used on all butt edges. Apply mechanical fasteners in accordance with *SMACNA guidelines*.

When air stream velocities exceed 4,000 FPM (20.3m/second), metal nosing is recommended to be applied to every leading edge. Nosing may be formed, channeled or zee-attached on duct by screws, rivets or welds.

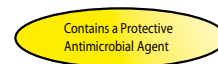
K-FLEX Duct® Liner Gray is acceptable for use in duct or plenum applications, meeting the requirements of NFPA 90A and 90B.

## RESISTANCE TO MOISTURE VAPOR FLOW

The closed cell structure and unique formulation of K-FLEX Duct® Liner Gray effectively retards the flow of moisture vapor, and is considered a low transmittance vapor retarder. For most applications, K-FLEX Duct® Liner Gray needs no additional protection.

## SPECIFICATION COMPLIANCE

- ASTM C534 Type 2 (Sheet), Grade 1
- ASTM C1534
- ASTM D1056-00-2C1
- ASTM C423/E795 NRC=0.50 at 1" thickness
- New York City MEA 186-86-M Vol. V
- USDA Compliant
- RoHS Compliant
- UL 94-5V Flammability Classification (Recognition No. E300774)
- ASTM E84: 25/50 at 2" and below
- Meets requirements of NFPA 90A Sect. 2.3.3 for Supplementary Materials for Air Distribution Systems up to 2" thickness
- Meets requirements of UL 181 Sections 11.0 and 16.0 (Mold Growth/Air Erosion)
- Meets requirements of ASTM C411 (Test Method for Hot Surface Performance of High Temperature Thermal Insulation)
- GREENGUARD certified under the "Children & Schools" and "Indoor Air Quality" classifications



**FOAM CORE CLOSED CELL INSULATION**

PHYSICAL PROPERTIES	K-FLEX DUCT® LINER GRAY	TEST METHODS	PHYSICAL PROPERTIES	K-FLEX DUCT® LINER GRAY	TEST METHODS
Temperature Range Sheets	-297°F to + 220°F -70°F to + 200°F (with PSA)	ASTM C 411	Density	3 pcf to 6 pcf	ASTM D 1622, ASTM D 3575
Color	Gray				
Thermal Conductivity (75°F mean)	0.25 BTU-in/hr-ft <sup>2</sup> -°F	ASTM C 177	Odor	Negligible	
Water vapor permeability	<0.06 perm-in	ASTM E 96	% closed cells	>90	
Flexibility	Excellent		Mold resistance	Pass	ASTM C 1338, UL 181 / ASTM G 21
Water absorption %	<0.20	ASTM C 209	Air Erosion	Pass 10,000 fpm	UL 181
Ozone resistance	Good	ASTM D 1171	Resistance to oil & greases	Good	

1 Where UV sterilizing equipment is used within the air handling system, protect K-FLEX Duct® Liner Gray with K-FLEX® 374 Protective Coating. Refer to K-FLEX® 374 technical data sheet for more information.

Note: One glued seam per roll; mfg option.  
1/2" supplied Skin-Two-Side or Skin-One-Side; mfg option.

**SOUND ABSORPTION COEFFICIENTS AT FREQUENCY**

ASTM C423 / E795 Type A Mounting/Sabins/Sq. Ft.

Thickness	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	NRC
1/2" (12mm)	0.01	0.03	0.06	0.13	0.33	0.23	0.15
3/4" (19mm)	0.13	0.13	0.80	0.41	0.58	0.57	0.50
<b>1" (25mm)</b>	<b>0.12</b>	<b>0.25</b>	<b>0.97</b>	<b>0.32</b>	<b>0.52</b>	<b>0.48</b>	<b>0.50</b>
2" (50mm)	0.23	0.84	0.32	0.60	0.39	0.31	0.55

**THICKNESS RECOMMENDATIONS\* - TO CONTROL CONDENSATION**

OUTSIDE TEMPERATURE

SURFACE TEMPERATURE

	50°F	10°C	35°F	2°C	0°F	-18°C	-20°F	-29°C
MILD CONDITIONS (MAX 80°F, 26°C - 50% R.H.)	1/8"	3 MM	1/4"	6 MM	1/2"	13 MM	3/4"	19 MM
NORMAL CONDITIONS (MAX 85°F, 29°C - 70% R.H.)	1/2"	13 MM	3/4"	19 MM	1"	25 MM	1-1/4"	32 MM
SEVERE CONDITIONS (MAX 90°F, 32°C - 80% R.H.)	3/4"	19 MM	1"	25 MM	1-3/4"	44 MM	2"	51 MM

\*K-FLEX Duct® Liner Gray in thickness noted within the specified temperature ranges will prevent condensation under design conditions defined below. K-FLEX Duct® Liner Gray is not available in all thicknesses listed.

Mild: Typical conditions are most air-conditioned spaces and arid climates.  
Normal: Maximum severity of indoor conditions seldom exceed 85°F (29°C) and 70% R.H. in United States.  
Severe: Generally found in areas where excessive moisture is introduced or in poorly ventilated areas where the temperature may be depressed below the ambient. Under conditions of high humidity, additional thickness of insulation may be required.  
NOTE: Thickness recommendations calculated using 0.2575 K-factor (0.25 plus 3% test error allowance)

**SHEET "R" VALUES**

R Value	R Value	R Value	R Value	R Value
1/2"	3/4"	1"	1-1/2"	2"
2.0	3.0	4.2	6.0	8.0

All sizes are nominal.

Note: "R" values were calculated using a K factor of 0.2575 (0.25 plus 3% test error allowance at 75°F, 24°C mean temp.) and nominal thickness in each case. Lower operating temperatures will result in improved R values. Contact Technical Services for specific recommendations.



**PRESSURE SENSITIVE ADHESIVE PROPERTIES (PSA)**

- Description: Transfer tape designed for high temperatures (250°F), high performance applications where high tack, conformability, and a thin bond layer are required.
- Construction: Adhesive: High coat weight modified crosslinked acrylic typified by a high initial tack, plasticizer resistance and high shear strength, resistant to solvents, chemicals, UV light and moisture.  
Liner: PE release liner, (75 microns) moisture and tear resistant, easy release.

