

INSUL-SHEET® with PSA

Sheet Insulation Flexible Closed Cell Insulation

Designed for the HVAC/R Industry



DESCRIPTION

INSUL-SHEET® with Self Seal Pressure Sensitive Adhesive (PSA) Insulation is an environmentally friendly, CFC-free, flexible elastomeric thermal insulation. It is black in color, marked in gold ink, and supplied as flat sheets (36" x 48") in standard thicknesses (1/8" thru 2") in increments of 1/8" (except 7/8"). It is supplied skin one side with a specially formulated scrim reinforced acrylic adhesive and tear resistant release liner on the opposite side. INSUL-SHEET® with PSA is also available in rolls, with a standard roll width of 48". INSUL-SHEET® with PSA is non-porous, non-fibrous and resists mold growth.

Features of PSA: tear and moisture resistant polyolefin easy release liner, reinforced fiberglass scrim prevents stretching insulation & scrim reinforced improves peel strength.

APPLICATIONS

INSUL-SHEET® with PSA is used to retard heat gain and prevent condensation or frost formation on cold equipment or ducts. It also effectively retards heat loss when used on hot or cold equipment or ducts. INSUL-SHEET® with PSA is recommended

for applications ranging from -40°F to 200°F (-40°C to 93°C). INSUL-SHEET® with PSA speeds up installation time and reduces the amount of solvent based contact adhesives required thus making it ideal for retrofit applications. The scrim reinforcement reduces the tendency to stretch the sheet insulation during installation as well as improving the peel strength of the material. INSUL-SHEET® with PSA can be used as both duct liner and duct wrap.

INSUL-SHEET® with PSA thickness has been calculated to control condensation on cold surfaces.

Refer to the table on the reverse side for specific recommendations.

INSTALLATION

INSUL-SHEET® with PSA Insulation is applied to clean, dry ductwork and equipment by simply peeling the release liner away and applying uniform pressure to the sheet. Compression joints with adhesive applied should be used on all butt edges.

INSUL-SHEET® with PSA is also available with an aluminum composite facing for outdoor applications or preapplied color coating for indoor applications where aesthetics are important. Contact Nomaco K-Flex for specific installation instructions. INSUL-SHEET® with PSA is acceptable for use in duct or plenum applications, meeting the requirements of NFPA 90A.

OUTDOOR APPLICATIONS

For optimum performance, outdoor applications require 374 UV Protective Coating or other recommended protective coating, cladding or jacketing. For best appearance, two coats are recommended. *For more detailed information refer to the Application Guide.*

RESISTANCE TO MOISTURE VAPOR FLOW

The closed-cell structure and unique formulation of INSUL-SHEET® with PSA effectively retards the flow of moisture vapor, and is considered a low transmittance vapor retarder. For most applications, INSUL-SHEET® with PSA needs no additional protection.

Additional vapor barrier protection may be necessary for INSUL-SHEET® with PSA when installed on low temperature surfaces that are exposed to continuous high humidity.

SPECIFICATION COMPLIANCE

ASTM C 534 Type 2 (Sheet)

ASTM D 1056-00-2C1

ASTM C 1534-02

(Duct Liner Specification)

New York City MEA 186-86-M Vol. IV

USDA Requirements

Flammability: UL 94-5V Flammability

Classification (Recognition No. E147665)

ASTM E 84

Foam Core: 25/50 at 1" and below

PSA: 0/10

Meets requirements of NFPA 90A

Sect. 2.3.3 for Supplementary Materials for Air Distribution Systems

Meets requirements of UL 181 sections 11.0 and 16.0 (Mold Growth/Air Erosion)

Meets requirements of ASTM C-411 (Test Method for Hot Surface Performance of High Temperature Thermal Insulation)

INSUL-SHEET® with PSA Sheet Insulation

PRODUCT DATA

Foam Core Closed Cell Insulation		INSUL-SHEET® with PSA Insulation	Test Methods
Physical Properties			
Thermal Conductivity (K)	90°F (32°C) Mean Temp	.270 (.039)	ASTM C 177
BTU -in/hr - Ft² - °F (W/mK)	75°F (24°C) Mean Temp	.265 (.038)	ASTM C 177
	50°F (10°C) Mean Temp	.260 (.037)	ASTM C 177
Operating Temperature Range	Upper	200°F (104°C)	
Flexible to -40°F (-40°C)	Lower	-40°F (-57°C)	
Water Vapor Permeability Dry Cup. Perm-In		.10	ASTM E 96
Water Absorption %		.02 by volume	ASTM C 209
Ozone Resistance		Pass	ASTM D 1171
Chemical/ Solvent Resistance		Good ¹	
Mildew Resistance/Air Erosion		Pass	UL 181

¹ Outdoor applications should be protected with an approved coating/cladding.

Sound Absorption Co-efficients at Frequency

ASTM E-795 Tpe A Mounting/Sabins/Sq. Ft.

Thickness	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	NRC
1/4"	0.00	0.03	0.05	0.10	0.25	0.45	0.10
1/2" (12mm)	0.03	0.04	0.08	0.15	0.40	0.25	0.20
1" (25mm)	0.10	0.15	0.45	0.30	0.40	0.33	0.35

Thickness Recommendations* - To Control Condensation

Sheet Size	Ducts - Tanks - Vessels - Equipment - Metal - Surface Temperature							
	50°F	10°C	35°F	2°C	0°F	-18°C	-20°F	-29°C
Normal Conditions (Max 85°F, 29°C - 70% R.H.)	1/2"	13 mm	3/4"	19 mm	1-1/4"	32 mm**	1-1/2"	38 mm**
Mild Conditions (Max 80°F, 26°C - 50% R.H.)	1/8"	3mm	1/4"	6 mm	1/2"	13 mm	3/4"	19 mm
Severe Conditions (Max 90°F, 32°C - 80% RH)	3/4"	19 mm	1-1/4"	32 mm**	1-3/4"	44 mm**	2"	50 mm**

**Multiple Layers

*INSUL-SHEET® with PSA in thickness noted within the specified temperature ranges will prevent condensation on indoor piping under design conditions defined below. **Thickness recommendations above 1" can be layered to achieve thickness.**

Normal: Maximum severity of indoor conditions seldom exceed 85°F (29°C) and 70% R.H. in United States.

Mild: Typical conditions are most air-conditioned spaces and arid climates.

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.

INSUL-SHEET® with PSA "R" Values per square foot

R Value 3/8"	R Value 1/2"	R Value 3/4"	R Value 1"	R Value 1 1/2"
1.5	1.9	2.9	4	5.7

*All sizes are nominal.

Note: "R" factors were calculated using a K factor of .264 (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, comformability, plasticizer resistance 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. Scrim: Fiberglass support (6 g/m ²). Liner: PE release liner, (75 microns) moisutre and tear resistant, easy release.



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