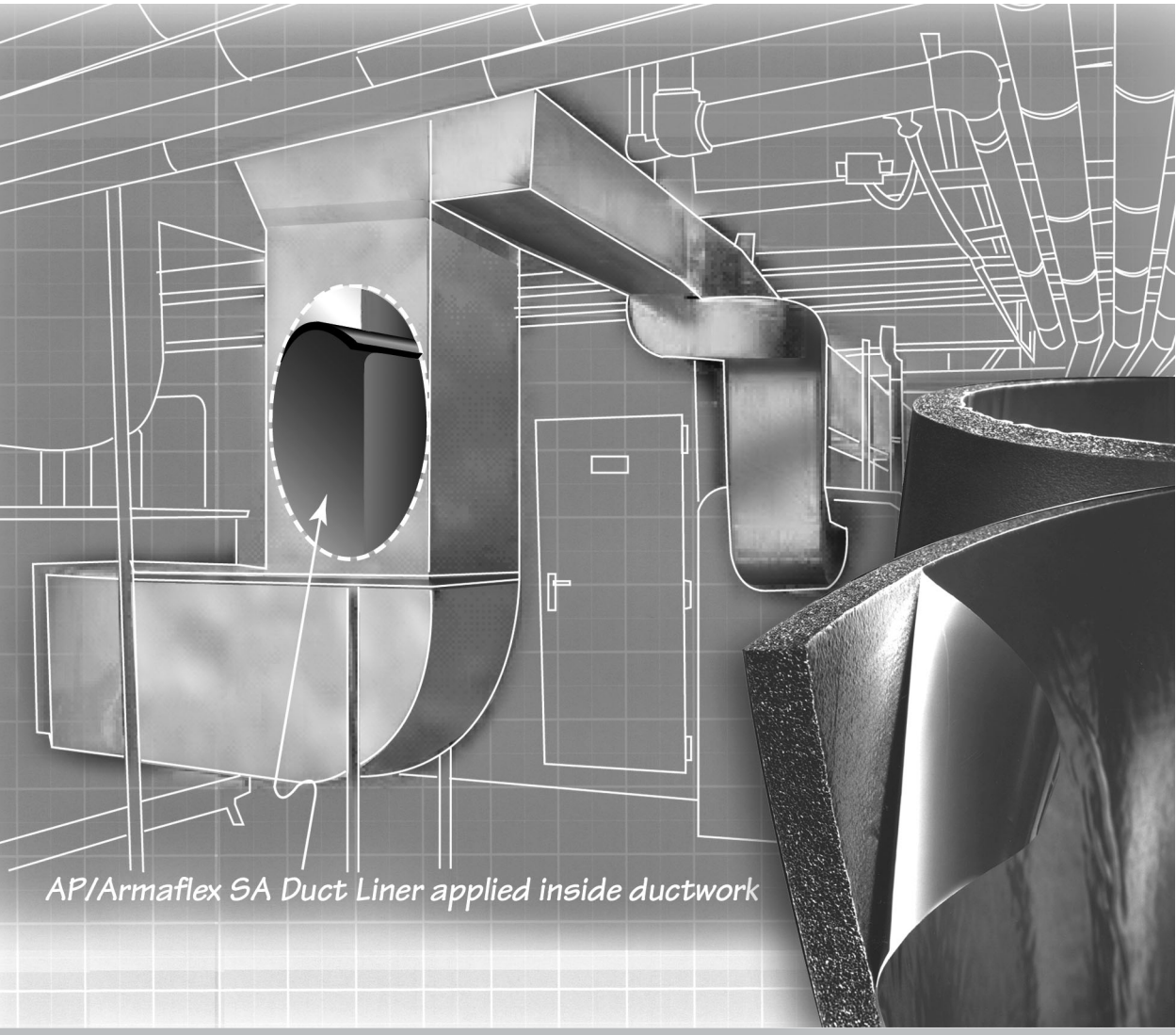




THE MAKERS OF
Armaflex®

SUBMITTAL



AP/Armaflex SA Duct Liner applied inside ductwork

AP/Armaflex®
SA DUCT LINER

CLEANER, QUIETER DUCT INSULATION

Closed-cell
to retard
fungal growth

Self-adhering
for easy
installation

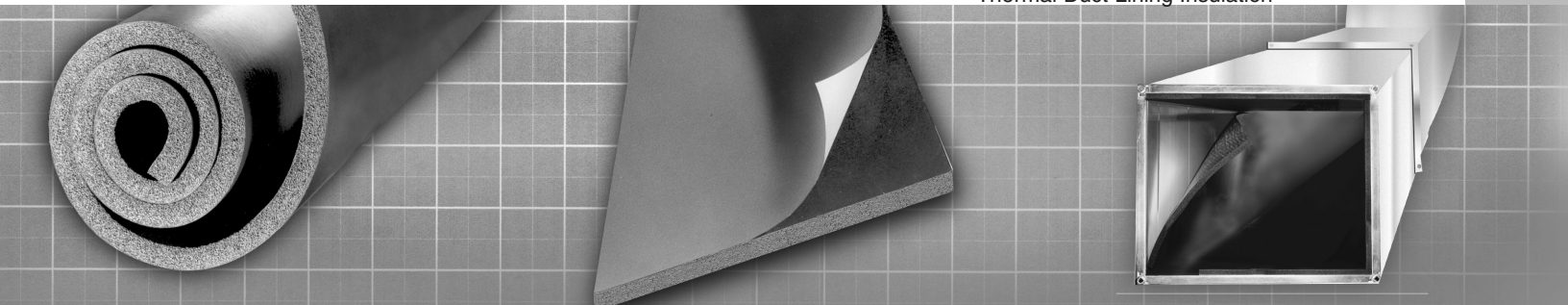
Smooth
surface,
less dirt

Meets
NFPA 90A and
NFPA 90B

U.S. Patent*
5971034



**"Thermal Duct Lining Insulation"



Choose AP Armaflex SA Duct Liner for Worry-Free Service

Patented AP Armaflex SA Duct Liner is a black flexible elastomeric thermal insulation with a self-adhering backing. Its closed-cell elastomeric foam structure helps reduce or eliminate conditions that lead to biological contamination and bioaerosols in commercial air systems. It is available in 48" and 60" widths, ideal for duct applications.

The surface of the insulation is:

- Smooth, so that dirt and debris that may enter the air stream tend not to accumulate
- Durable and erosion-resistant
- Cleanable and washable, providing a basis for continuing system hygiene.

Engineered to control condensation, AP Armaflex SA Duct Liner has an inherent vapor retarder.

- Requires no additional mastics or coatings
- Non-wicking
- Very low rate of water absorption
- Continues to prevent water infiltration even after incidental mechanical abuse

Efficient Installed Cost

- With its self-adhering backing, AP Armaflex SA Duct Liner is fast and easy to install
- Requires no mechanical fasteners in systems operating at 4,000 FPM (20.3m/second) or below
- For remediation projects, the total installed cost of AP Armaflex SA Duct Liner is competitive compared to traditional insulations installed according to manufacturers' recommendations

Meets Standards

AP Armaflex SA Duct Liner meets the requirements of NFPA 90A. AP Armaflex SA also meets the requirements of NFPA 90B for Duct Coverings and Linings, and UL 181. Conforms to ASTM C 1534 requirements. This product withstands temperatures of 250°F (121°C) when tested according to ASTM C 411.

AP/Armaflex Sheet and Roll Insulation meet the energy code requirements of International Energy Conservation Code (IECC) and ASHRAE for R-Value 4 at 1" wall thickness.

Factory Mutual System Approved

AP Armaflex SA Duct Liner is approved through continuing supervision by Factory Mutual Approvals to consistently provide actual values on these key criteria for mechanical systems performance:

Thermal conductivity: 0.27 or less BTU-in/hr • sq.ft. • °F

Water vapor transmission: 0.08 or less perm-inch

Fire rating: Will not contribute significantly to fire.

US Patent 5971034 - "Thermal Duct Lining Insulation" for lining variable air volume boxes, air handling units, and ducts for heat ventilation and air conditioning.

Left—A technician begins removal of an old, deteriorating fiberglass duct liner from an air handling unit.

Right—Another technician completes installation of AP Armaflex SA Duct Liner elastomeric insulation in the same unit.



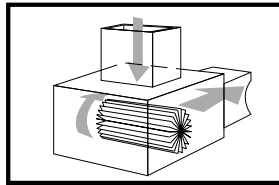


AP/Armaflex SA Duct Liner

Patented* for Air Systems that Require an Alternative Duct Liner

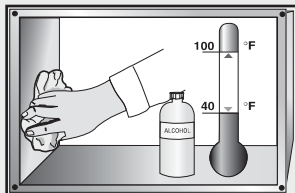
25/50-rated through 1" thickness

Features	Benefits
<ul style="list-style-type: none"> • Nonwicking; 0.2% water absorption 	<ul style="list-style-type: none"> • Reduced water presence in system and insulation
<ul style="list-style-type: none"> • Smooth surface that reduces dirt and debris accumulation 	<ul style="list-style-type: none"> • Inhibits amplification of biological contaminants • Basis for continuing system hygiene
<ul style="list-style-type: none"> • Elastomeric material 	<ul style="list-style-type: none"> • Resistant to incidental damage • No special tools; no dust mask required during fabrication and installation
<ul style="list-style-type: none"> • Closed-cell structure 	<ul style="list-style-type: none"> • Nondusting • Longer life • Won't contribute to air quality problems
<ul style="list-style-type: none"> • Inherent vapor retarder 	<ul style="list-style-type: none"> • Requires no mastics • Competitive total installed cost
<ul style="list-style-type: none"> • Self-adhering backing 	<ul style="list-style-type: none"> • Easy to install • No solvent vapors (with compression joints)

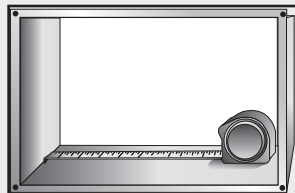


*U.S. Patent 5971034

Installation



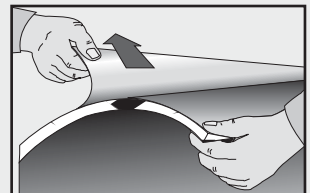
The temperature of the air and of the insulation should be between 40°F (4°C) and 100°F (38°C) at the time of installation.



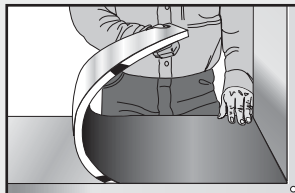
Surface to be covered must be clean and free of any loose materials such as rust. Prepare surface by cleaning with appropriate cleaner. Measure.



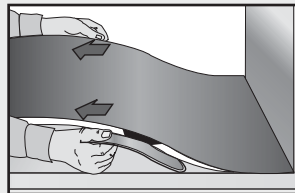
Cut with sharp knife.



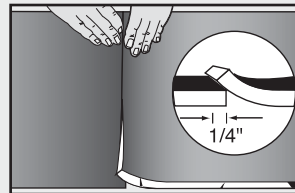
Peel back enough release liner to start.



Square off sheet along an edge or corner. Press the sheet to the surface taking care not to trap any air.



Reach behind the Armaflex sheet and peel liner back while pressing the sheet to the surface. Remove the entire liner piece.



Press firmly. Butt joints require the use of compression joints to prevent the possible opening of seams.

Note:
Must be installed according to "Installation of Armaflex Insulations" publication.

Description

AP Armaflex SA Duct Liner is a patented flexible elastomeric thermal insulation, black in color, supplied in self-adhering sheets 36" x 48", and in rolls 48" and 60" in width, in nominal wall thicknesses of 3/8", 1/2", 3/4", and 1" (10mm, 13mm, 19mm, and 25mm). The expanded closed-cell structure prevents moisture from wicking and Armaflex makes it an efficient insulation. It is manufactured without the use of CFC's, HFC's or HCFC's. It is also formaldehyde free, low VOCs, fiber free, dust free and resists mold and mildew.

Uses

AP Armaflex SA Duct Liner is used in air handlers, VAV units, ducts, and other air system components requiring condensation control and moisture and damage resistance. It meets the requirements of NFPA 90A, NFPA 90B for Duct Coverings and Linings, and UL 181.

Installation

All metal surfaces should be clean, dry and free of oil, grease and cleaner residue. Alcohol and non-residue containing water-based cleaners are recommended for preparation of metal surfaces.

All portions of duct or unit should be completely covered with AP Armaflex SA Insulation. Cut all pieces to assure tight compression joints. Side pieces support top pieces.

When air stream velocities exceed 4,000 FPM (20.3m/second), metal nosing should be applied to every leading

Physical Data

Physical Properties

Test Method

Thermal Conductivity BTU-in/hr • sq.ft • °F (W/mK) 75°F mean temperature (24°C) 90°F mean temperature (32°C)	0.27 (0.039) 0.276 (0.040)	ASTM C 177 or C 518
Water Vapor Permeability Perm-inch [Kg/(s m Pa)]	0.08 [1.16 x 10 ⁻¹³]	ASTM E 96 Procedure A
Flame spread and Smoke Developed index ^① Through 1" (25 mm)	25/50	ASTM E 84 CAN ULC S-102
Mold growth Fungi resistance Bacterial resistance	UL181 ASTM G21/C1338 ASTM G22	Meets requirements Meets requirements Meets requirements
Water Absorption, % by volume	0.2%	ASTM C 209
Upper Use Limit ^②	180°F (82°C)	
Lower Use Limit ^③	-297°F (-183°C)	
Erosion Resistance	Does not break away, flake off or show evidence of delamination at velocities of 6,000 ft/min	ASTM C 1071
Corrosiveness	Noncorrosive	ASTM C 665
Odor Emissions	No objectionable odors	ASTM C 665
Density, typical range ^④	3.0 -- 6.0 lbs/ft	ASTM D 1622 ASTM D 1667

Notes

- ① AP/Armaflex SA Duct Liner has a flame spread index of less than 25 and a smoke developed index of less than 50 for all thicknesses up to and including 1" (25mm) when tested according to ASTM E 84 and CAN ULC S-102. 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.
- ② Withstands temperature of 250°F (121°C) when tested according to ASTM C 411. "Test Method for Surface Performance of High-Temperature Insulations". At this temperature, AP/Armaflex SA Duct Liner insulation shows no evidence of flaming, glowing, smoldering, delamination, melting or insulation collapse. Although this insulation will withstand high temperatures, continuous use temperature should be limited to 180°F (82°C)
- ③ At -20°F (-29°C) flexible Armaflex insulation becomes hard and as temperatures drop below -20°F (-29°C), will be increasingly brittle; however, this hardening characteristic does not affect thermal efficiency or water vapor permeability.
- ④ Reference Only

Performance approved through continuing supervision by Factory Mutual Approval.

Sound Absorption Coefficients at Frequency

Thickness	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	NRC [†]
Nom. 3/4" (19mm)	0.04	0.07	0.16	0.69	0.18	0.25	0.30
Nom. 1" (25 mm)	0.00	0.08	0.32	0.55	0.23	0.21	0.30

[†]ASTM C 423 with ASTM E 795 Type "A" Mounting

Sound Transmission Class (STC)

Thickness	STC Class
Nom. 1/2" (13 mm)	25
Nom. 1" (25 mm)	25

Test Method ASTM E90

Sizes

Sheet Width/Length	36" x 48"
Roll Width	48" and 60" *
Wall Thickness	Up to 1"

*1" only



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