



## ENERGY SAVING SOLUTIONS

# AP ArmaFlex<sup>®</sup> AP ArmaFlex<sup>®</sup> FS Duct Liner and Wrap

The original, fiber-free, closed-cell thermal and acoustical duct insulation engineered to safeguard IAQ, attenuate HVAC noise, and reduce energy loss. AP ArmaFlex FS is PVC free.

- // Fiber-free, non-particulating, formaldehyde-free, free of PDBE flame retardants, and low VOC
- // Attenuates airborne noise to reduce background noise from HVAC systems
- // Meets ASHRAE 90.1, ASHRAE Standard 189.1, IECC 2012 and California Title 24 for increased energy efficiency
- // Designed to last the useful life of mechanical equipment

[www.armacell.us](http://www.armacell.us)



 **armacell**<sup>®</sup>  
AP ArmaFlex<sup>®</sup>

## TECHNICAL DATA – AP ArmaFlex® AND AP ArmaFlex® FS DUCT LINER AND WRAP

### Description

Black flexible closed-cell elastomeric thermal and acoustical duct insulation in sheet and roll form

### Specification Compliance

ASTM C 534, Type II — Sheet Grade 1 ASTM C 1534, Type I ASTM D 1056, 2C1 ASTM E 84, NFPA 255, UL723	ASTM G21/C1338 ASTM G22 CAN/ULC S1021 ① MEA 107-89M	MIL-P-15280J, FORM S NFPA 90A, 90B UL 181	UL 94 5V-A, V-0, File E55798 City of LA – RR 7642
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### Approvals, Certifications, Compliances

- GREENGUARD Gold Certified.
- Manufactured without CFCs, HFCs, HCFCs, PBDEs, or Formaldehyde.
- Made with EPA registered Microban® antimicrobial product protection.
- All Armacell facilities in North America are ISO 9001:2008 certified.

### Typical Properties

Specifications	Values		Test Method
	AP ArmaFlex Through 1" Duct Liner and Wrap	AP ArmaFlex FS 1-1/2 and 2" Duct Liner and Wrap	
<b>Thermal Conductivity:</b> Btu • in/h • ft <sup>2</sup> • °F (W/mK)			
75°F Mean Temperature [24°C]	0.245 [0.0353]	0.28 [0.040]	ASTM C 177 or C 518
90°F Mean Temperature [32°C]	0.254 [0.0366]	0.28 [0.040]	
<b>Water Vapor Permeability:</b> Perm-in. [Kg/[s • m • Pa]]	0.05 [0.725 x 10 <sup>-13</sup> ]	0.08 [1.16 x 10 <sup>-13</sup> ]	ASTM E 96, Procedure A
<b>Flame Spread and Smoke Developed Index:</b>	25/50 rated	25/50 rated	ASTM E 84 CAN/ULC S102 ① — AP through 1"
<b>Water Absorption, % by Volume:</b>	0.2 %	0.2 %	ASTM C 209 or ASTM C1763
<b>Mold Growth:</b>	Passed	Passed	UL181
<b>Fungi Resistance:</b>			ASTM G21/C1338
<b>Bacterial Resistance:</b>			ASTM G22
<b>Upper Use Limit:</b>	220°F [105°C] ②	300°F [149°C] ③	
<b>Lower Use Limit:</b> ④	-297°F [-183°C] ⑤	-297°F [-183°C] ⑤	
<b>Erosion Resistance</b>	Does not break away, flake off or show evidence of delamination at velocities of 10,000 ft/min		ASTM C 1071

① AP ArmaFlex meets CAN/ULC S102 through 1" thickness.

② AP ArmaFlex and AP ArmaFlex FS Black Duct Liner/Wraps withstand 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 Duct Liner/Wrap 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 220°F [105°C].

③ AP ArmaFlex FS is formulated with EPDM rubber giving it a higher upper use temperature than AP ArmaFlex.

④ At temperatures below -20°F [-29°C], elastomeric insulation starts to become less flexible. However, this characteristic does not affect thermal efficiency and resistance to water vapor permeability of ArmaFlex insulation.

⑤ For applications of -40°F to -297°F [-40°C to -183°C], contact Armacell.



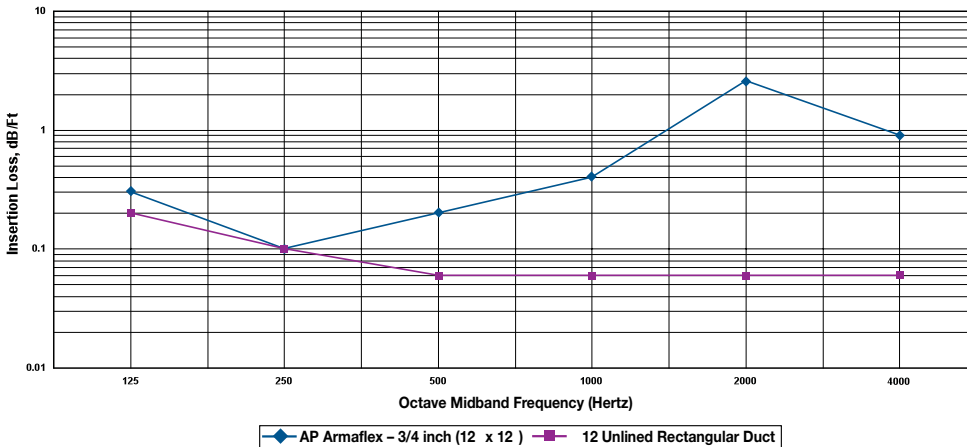
## TECHNICAL DATA – AP ArmaFlex® AND AP ArmaFlex® FS DUCT LINER AND WRAP

R-Value	R-2.1		R-4.2		R-6		R-8	
Thickness:	1/2"		1"		1-1/2"		2"	
<b>Sound Absorption Coefficients Frequency</b>	<b>125Hz</b>	<b>250Hz</b>	<b>500Hz</b>	<b>1000Hz</b>	<b>2000Hz</b>	<b>4000Hz</b>	<b>NRC</b>	<b>SAA</b>
Thickness Nom. 1" (25 mm)	0.01	0.13	0.39	0.69	0.29	0.26	0.40	0.38
Thickness Nom. 1-1/2" (38 mm)	0.07	0.26	0.92	0.31	0.49	0.53	0.50	0.49
Thickness Nom. 2" (50 mm)	0.14	0.62	0.44	0.43	0.51	0.45	0.50	0.51
<b>Sizes</b>								
Sheet: Width x Length	36" x 48" (.915 m x 1.22 m)							
Roll Width	48" (1.22 m) [all thicknesses] 56-1/4" (1.42 m), 59" (1.49 m), 60" (1.5 mm) [1/2", 1", and 1-1/2" thick] [13, 25, 38 mm]							
Thickness	AP ArmaFlex Duct Liner and Wrap: 1/2", and 1" [13, 25 mm] AP ArmaFlex FS Duct Liner and Wrap: 1-1/2" and 2" [38, 51 mm]							
<b>Outdoor Use</b>								
Painting with WB Finish or other protective jacketing is required to prevent damage to the insulation in exterior applications and to comply with the insulation protection sections of the International Energy Conservation Code (IECC) and ASHRAE 90.1.								

### Sound Transmission Class (STC)

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

### Acoustics: Insertion Loss



GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg).

Microban antimicrobial product protection is limited to the product itself and is not designed to protect the users of these products from disease causing microorganisms, or as a substitute for normal cleaning and hygiene practices. Microban International, Ltd. makes neither direct nor implied health claims for the products containing Microban® antimicrobial product protection. Data, photomicrographs and information presented are based on standard laboratory tests and are provided for comparative purposes to substantiate antimicrobial activity for non-public health uses. Microban is a registered trademark of Microban International, Ltd.

All data and technical information are based on results achieved under typical application conditions. It is the customer's responsibility to verify if the product is suitable for the intended application. The responsibility for professional and correct installation and compliance with relevant building regulations lies with the customer. By ordering/receiving product you accept the **Armacell General Terms and Conditions of Sale** applicable in the region. Please request a copy if you have not received these.

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AP ArmaFlex and AP ArmaFlex FS | Duct Liner and Wrap TDS | 112018 | NA | EN-A | 019

## ABOUT ARMACELL

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As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. With 3,000 employees and 26 production plants in 17 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for high-tech and lightweight applications and next generation aerogel blanket technology.

For more information, please visit:  
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