



ENGINEERED FOR DURABILITY

ArmaFlex Shield Tube/Coil

Pre-jacketed flexible insulation with a tough moisture- and UV-resistant coating that stands up to extreme elements in outdoor applications.

- // Protection against thermal losses, condensation, and moisture ingress
- // Durable outer jacket resists damage due to sunlight, installation, and physical abuse
- // No field-applied protective coating or additional jacketing required

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ArmaFlex[®]

TECHNICAL DATA - ARMAFLEX SHIELD TUBE/COIL

Brief description	ArmaFlex Shield consists of an ArmaFlex insulation core with a flexible, factory-applied polymeric protective covering designed to prevent damage to the insulation from sunlight, installation, and physical abuse. Available in continuous lengths or 6 foot lengths.
Product range	Wall thickness: 1/2" (13 mm) in ID sizes of 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1 1/8" (6, 10, 13, 16, 19, 22, 28 mm): Lengths: 1/4" = 155', 3/8" = 115', 1/2" = 105', 5/8" = 95', 3/4" = 85', 7/8" = 75', 1 1/8" = 55' Wall thickness: 3/4" (19 mm) in ID sizes of 3/8", 1/2", 5/8", 3/4", 7/8", 1 1/8" (6, 10, 13, 16, 19, 22, 28 mm): Lengths: 3/8" = 80', 1/2" = 70', 5/8" = 60', 3/4" = 40', 7/8" = 40', 1 1/8" = 35' Wall thickness: 1" (25 mm) in ID sizes of 1/4", 3/8", 1/2", 5/8", 3/4", 7/8" (6, 10, 13, 16, 19, 22 mm): Lengths: 1/2" = 40', 5/8" = 35', 3/4" = 30', 7/8" = 25'
Installation	ArmaFlex Shield can be slit easily with a sharp, non-serrated knife and installed over a pipe. Longitudinal and end seams must be sealed with ArmaFlex 520 adhesive.

Approvals and compliance

Specification compliance	<ul style="list-style-type: none"> All Armacell facilities in North America are ISO 9001 certified. Conforms to International Residential Code (IRC) 	<ul style="list-style-type: none"> ASTM C534, Type I – Tube Grade 1 Title 24 California Building Energy Efficiency Standards 	<ul style="list-style-type: none"> Conforms to ASHRAE 90.1 energy standards Conforms to International Energy Conservation Code (IECC) 	<ul style="list-style-type: none"> Conforms to International Mechanical Code (IMC)
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Property	Value / Assessment				Standard / Test method
Temperature range					
Service temperature ^{1,2,3}	Min. °C	Min. °F ¹	Max. °C	Max. °F	ASTM C534
	-183	-297	82	220	
Thermal conductivity					
Declared thermal conductivity	θm	75 °F		100 °F	
	λd ≤ [W/(m·K)]	0.036		0.037	
	k ≤ [Btu-in/(h-ft ² -°F)]	0.25		0.257	
R-Value for tubes ⁴	ID / Wall thickness	1/2" (13mm)	3/4" (19mm)	1" (25mm)	
	1/4" (6 mm)	3.8	6.4	---	
	3/8" (10 mm)	3.3	5.9	---	
	1/2" (13 mm)	3.3	5.5	7.2	
	5/8" (16 mm)	3.3	5.5	7.2	
	3/4" (19 mm)	3.3	5.5	7.0	
	7/8" (22 mm)	3.3	5.4	7.0	
	1-1/8" (29 mm)	3.3	5.4	---	

Fire Performance and Approvals

Surface spread of flame	Flame Spread Index less than 25 Smoke Developed Index less than 50 25/50 Rated	ASTM E84 and UL 723, CAN ULC S102.2 ⁵
Hot surface performance	Pass at 250 °F	ASTM C411 ⁶

UL standards

UL 94 5VA	Pass at 1/4" (6 mm) thickness and above	UL94 5VA
UL 94 HF-1	Pass at 1/4" (6 mm) thickness and above	UL 94 HF-1
UL 94 V-0	Pass at 1/4" (6 mm) thickness and above	UL94 V-0

Property	Value / Assessment	Standard / Test method
Resistance to water vapour		
Water vapour permeability	0.03 Perm-in (0.435×10^{-13}) Kg/(s m Pa)	ASTM E96, procedure A, Meets Class 1 rating
Resistance to water		
Water absorption	0.2%	
Weather and UV resistance		
UV resistance ⁷	Excellent: no deterioration	ASTM G154 ⁸
Resistance to ozone	Good	ASTM D1149
Outdoor use	ArmaFlex Shield meets the requirements of the International Energy Conservation Code (IECC) for the protection of insulation installed outdoors. Its durable, outer covering resists damage due to sunlight and other outdoor hazards including line trimmers used for lawn maintenance. 5-year limited warranty. No field applied protective coating or additional jacketing required.	

¹At -40 °F (-40 °C), the insulation becomes brittle. This hardening characteristic does not affect thermal efficiency or water vapour permeability.

²For temperatures below -40 °F(-40 °C), please contact our Customer Service Centre.

³ArmaFlex Shield insulation can withstand temperatures as high as 250 °F (121 °C) when tested according to ASTM C411.

⁴Please refer to Technical Bulletin #1.

⁵CAN/ULC S102.2 up to and including 3/4" thickness.

⁶Per NFPA 90A and NFPA 90B requirements.

⁷ArmaFlex Shield meets the UV resistance requirements of ASTM C1775 which describes requirements for insulation protective jacketing used outdoors.

⁸Tested for 5000 hours.

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ABOUT ARMACELL

As the inventor of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal 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 more than 3,300 employees and 27 production plants in 19 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for acoustic and lightweight applications, recycled PET products, next-generation aerogel technology and passive fire protection systems.

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