

SAFETY IS OUR TOP PRIORITY

# ArmaFlex Ultra

ArmaFlex® Ultra with FlameDefense™ technology\*, is the first elastomeric insulation Classified by UL to UL 723 at 25/50.

**Tested. Proven. Certified.**

- // Plenum rated
- // Closed cell
- // Saves energy

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



\*Patent  
11,118,035

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

## ArmaFlex Ultra Pipe Insulation

### Description

Gray, flexible, closed-cell elastomeric thermal insulation in tubular form.

### Applications

Refrigeration lines, line sets, chilled water pipes, hot and cold water piping, HVAC systems, VRV and VRF systems, exposed ceilings, air plenums, commercial, mechanical, industrial, construction and OEM transportation and equipment.

### Approvals and Specification Compliance

ASTM E 84, UL 723 NFPA 90A, 90B Conforms to ASHRAE 90.1 and IECC energy code requirements.	ASTM C 534, Type II — Sheet Grade 1 ASTM C1338 Manufactured without CFCs, HFCs, HCFCs, PBDEs, or Formaldehyde.	All Armacell facilities in North America are ISO 9001 certified.
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### Ultra Tube Sizes

Wall Thickness (nominal)	1/2" and 1" (13 and 25 mm)
Inside Diameter, Tubular	1/2" to 1-3/8" ID in 1/2" walls; 1/2" to 6" IPS ID in 1" walls
Length of Sections, Tubular	6' (1.83 m)

### Typical Properties

Physical Properties	Through 1" Wall Thickness	Test Method
<b>Thermal Conductivity:</b> Btu • in/h • ft <sup>2</sup> • °F (W/mK)		
75°F Mean Temperature (24°C)	0.27 (0.039)	ASTM C 177 or C 518
100°F Mean Temperature (38°C)	0.28 (0.040)	ASTM C 177 or C 518
<b>Water Vapor Permeability:</b> Perm-in. [Kg/(s • m • Pa)]	0.05 perm-in (0.723 x 10 <sup>-13</sup> )	ASTM E 96, Procedure A
<b>Flame Spread and Smoke Developed Index</b>	25/50 rated	ASTM E 84 or UL 723 [UL Report # 39561]
<b>Water Absorption, % by Volume:</b>	0.2%	ASTM C 209 or ASTM 1763 Procedure B
<b>Mold Growth:</b>	Passed	ASTM C1338
<b>Fungi Resistance:</b>		
<b>Bacterial Resistance:</b>		
<b>Upper Use Limit:</b> ①	220°F (104°C)	ASTM C534
<b>Lower Use Limit:</b> ②	-297°F (-183°C) ③	ASTM C534

① ArmaFlex Ultra Pipe Insulation can withstand temperatures of 250°F (121°C) for 96 hour time periods when tested according to ASTM C 411. "Test Method for Surface Performance of High-Temperature Insulations." At this temperature, ArmaFlex Ultra 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).

② At temperatures below -20°F (-29°C), elastomeric insulation starts to become less flexible. However, this characteristic does not affect thermal efficiency or water vapor permeability of ArmaFlex Ultra insulation.

③ For applications between -40°F to -297°F (-40°C to -183°C), contact Armacell.

## ArmaFlex Ultra and ArmaFlex Ultra LapSeal\* Pipe Insulation - R VALUES

### 1/2" WALLS

Tube Item	Pipe Size	R Value
IPULT01212	3/8" Copper	3.0
IPULT05812	1/2" Copper	3.0
IPULT03412	5/8" Copper	3.0
IPULT07812	3/4" Copper	3.0
IPULT11812	1" Copper	3.0
IPULT13812	1-1/4" Copper	3.0

### 1" WALLS

Tube Item	Pipe Size	R Value
IPULT01210	3/8" Copper	6.5
IPULT05810	1/2" Copper	6.6
IPULT03410	5/8" Copper	6.3
IPULT07810	3/4" Copper	6.4
IPULT11810	1" Copper	6.5
IPULT13810	1-1/4" Copper	6.5
IPULT15810	1-1/2" Copper	6.5
IPULT11010	1 1/2" IPS	6.2
IPULT21810	2" Copper	6.1
IPULT20010	2" IPS	6.5
IPULT25810	2-1/2" Copper	5.9
IPULT21010	2-1/2" IPS	6.2
IPULT31810	3" Copper	5.7
IPULT30010	3" IPS	5.9
IPULT35810	3-1/2" Copper	5.6
IPULT41810	4" Copper	5.5
IPULT40010	4" IPS	5.8
IPULT50010	5" IPS	5.6
IPULT60010	6" IPS	5.5

These specifications are based on the measurement methods employed by Armacell. Other methods may not result in the same values and cannot be used to determine if the product is within the given tolerance.



ArmaFlex Ultra is the first elastomeric insulation UL Classified as to UL 723 at 25/50 only. R39561.

# ArmaFlex Ultra Sheet/Roll and ArmaFlex Ultra Self Adhering (SA) Sheet/Roll

## Description

Gray flexible closed-cell elastomeric thermal insulation in sheet and roll form in both regular and self-adhering options.

## Applications

Refrigeration lines, line sets, chilled water pipes, hot and cold water piping, HVAC systems, VRV and VRF systems, exposed ceilings, air plenums, commercial, mechanical, industrial, construction and OEM transportation and equipment.

## Approvals and Specification Compliance

ASTM E 84, UL 723 NFPA 90A, 90B Conforms to ASHRAE 90.1 and IECC energy code requirements.	ASTM C 534, Type II — Sheet Grade 1 ASTM C1338 Manufactured without CFCs, HFCs, HCFCs, PBDEs, or Formaldehyde.	All Armacell facilities in North America are ISO 9001 certified.
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## Typical Properties

Physical Properties	Values	Test Method
<b>Thermal Conductivity:</b> Btu • in/h • ft <sup>2</sup> • °F (W/mK)		
75°F Mean Temperature (24°C)	0.27 (0.039)	ASTM C 177 or C 518
100°F Mean Temperature (38°C)	0.28 (0.040)	
<b>Water Vapor Permeability:</b> Perm-in. [Kg/[s • m • Pa]]	0.05 perm-in (0.723 x 10 <sup>-13</sup> )	ASTM E 96, Procedure A
<b>Flame Spread and Smoke Developed Index:</b>	25/50 rated	ASTM E 84 or UL 723 (UL Report # 39561)
<b>Water Absorption, % by Volume:</b>	0.2 %	ASTM C 209 or ASTM C1763
<b>Mold Growth:</b>	Passed	ASTM C1338
<b>Fungi Resistance:</b>		
<b>Bacterial Resistance:</b>		
<b>Upper Use Limit:</b> ①	220°F (105°C)	ASTM C534
<b>Lower Use Limit:</b> ②	-297°F (-183°C) ③	ASTM C534

① ArmaFlex Ultra Sheet and Roll Insulation can withstand temperatures of 250°F (121°C) for 96 hour time periods when tested according to ASTM C 411. "Test Method for Surface Performance of High-Temperature Insulations." At this temperature, ArmaFlex Ultra 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).

② 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 Ultra insulation.

③ For applications between -40°F to -297°F (-40°C to -183°C), contact Armacell.

## Sheet and Roll R-Values

	R-2	R-4
Thickness	1/2" [13 mm]	1" [25 mm]

## Sound Absorption Coefficients Frequency

	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	NRC	SAA
Thickness Nom. 1" [25 mm]	0.09	0.05	0.15	0.47	0.39	0.29	0.25	0.28

## Sizes

Sheet: Width x Length	36" x 48" [915 m x 1.22 m]
Thickness (nominal)	1/2" and 1" [13 and 25 mm]
Roll: Width	48" wide [1.22 m]
Thickness (nominal) x Length	1" x 35' [25 mm x 10.7 m] 1/2" x 70' [13 mm x 21.4 m]

## Outdoor Use

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.



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## 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 23 production plants in 15 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.

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