BRB Products ArmaFlex BLS

BRB Products AP Armaflex Self-Seal Pipe Insulation User Manual

Model: ArmaFlex BLS
Product ID: B0DV2FBBP6

Introduction

AP Armaflex Self-Seal Pipe Insulation is designed for insulating plumbing, HVAC, and refrigeration lines. This foam tubing provides a solution for condensation control, energy efficiency, and pipe protection. Its closed-cell structure acts as a barrier against moisture, preventing condensation and reducing heat transfer.
This insulation helps prevent water damage and corrosion by stopping pipe sweating. It also contributes to energy savings by maintaining desired water temperatures, thereby reducing the energy consumption of HVAC systems and water heaters.
The product is fiber-free and non-particulating, holding GREENGUARD Gold Certification for indoor air quality. It is designed for durability, resisting tears, crushing, and degradation, and protects pipes from freezing temperatures and impacts.

Installation Instructions

Follow these steps for proper installation of AP Armaflex Self-Seal Pipe Insulation:

1. **Measure the Pipe:** Carefully measure the outer diameter (OD) of your pipe.
2. **Select Correct Size:** Refer to the pipe size guide below to select the corresponding insulation size. Ensure the insulation's inner diameter (ID) matches your pipe's outer diameter for a snug fit.
3. **Cut to Length:** Measure the length of the pipe section to be insulated and cut the Armaflex tube to the required length using a sharp utility knife.
4. **Prepare for Application:** The insulation features a factory-applied, pressure-sensitive adhesive Lap Seal. Gently separate the two halves of the insulation along the pre-cut seam.
5. **Position on Pipe:** Slip the insulation over the pipe. Ensure the seam is aligned properly.

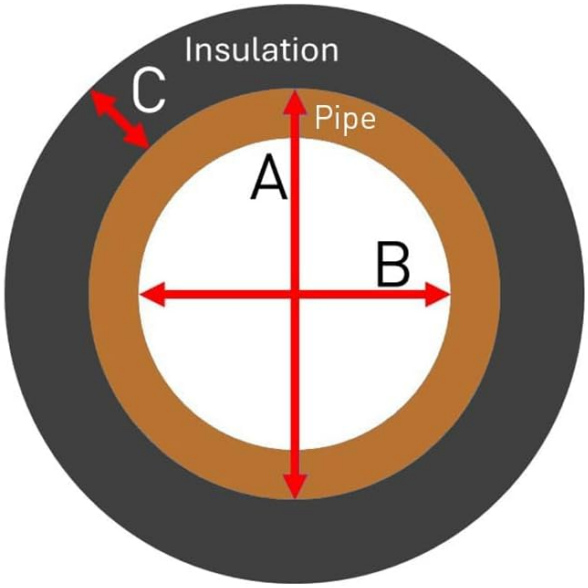
6. **Seal the Seam:** Peel the release liner from the adhesive strip. Press the seam firmly together along the entire length to create a secure seal. Ensure there are no gaps.
7. **Insulate Fittings and Valves:** For elbows, tees, and valves, use Armaflex sheets or pre-formed fittings (sold separately) to ensure complete insulation coverage.

PIPE SIZE GUIDE FOR VARIOUS PIPE DIAMETERS

Use our simple chart to help you find the right Armacell product for your pipe application.

	Fits Pipe Size **(B)**	
Armacell Insulation **(A)**	Copper/PEX/CPVC	Iron/PVC
1/4"	-	-
3/8"	1/4"	1/8"
1/2"	3/8"	1/4"
5/8"	1/2"	3/8"
3/4"	5/8"	-
7/8"	3/4"	1/2"
1-1/8"	1"	3/4"
1-3/8"	1-1/4"	1"
1-5/8"	1-1/2"	1-1/4"
1-1/2"	-	1-1/2"
2-1/8"	2"	-
2"	-	2"
2-5/8"	2-1/2"	-
2-1/2"	-	2-1/2"
3-1/8"	3"	-
3"	-	3"
3-5/8"	3-1/2"	-
4-1/8"	4"	3-1/2"
4"	-	4"
5"	-	5"
6"	-	6"
8"	-	8"
10"	-	10"

NOTE: See installation guide for proper installation instructions.
1. ID tolerances are typical values and may differ depending on the product and wall thickness.
2. Insulation ID is sized larger than the pipe OD to fit over copper pipe couplings. When properly installed, a gap between the insulation and pipe will not adversely effect the insulation performance.
WEB: www.armacell.com/en-us » Resources » Download Center



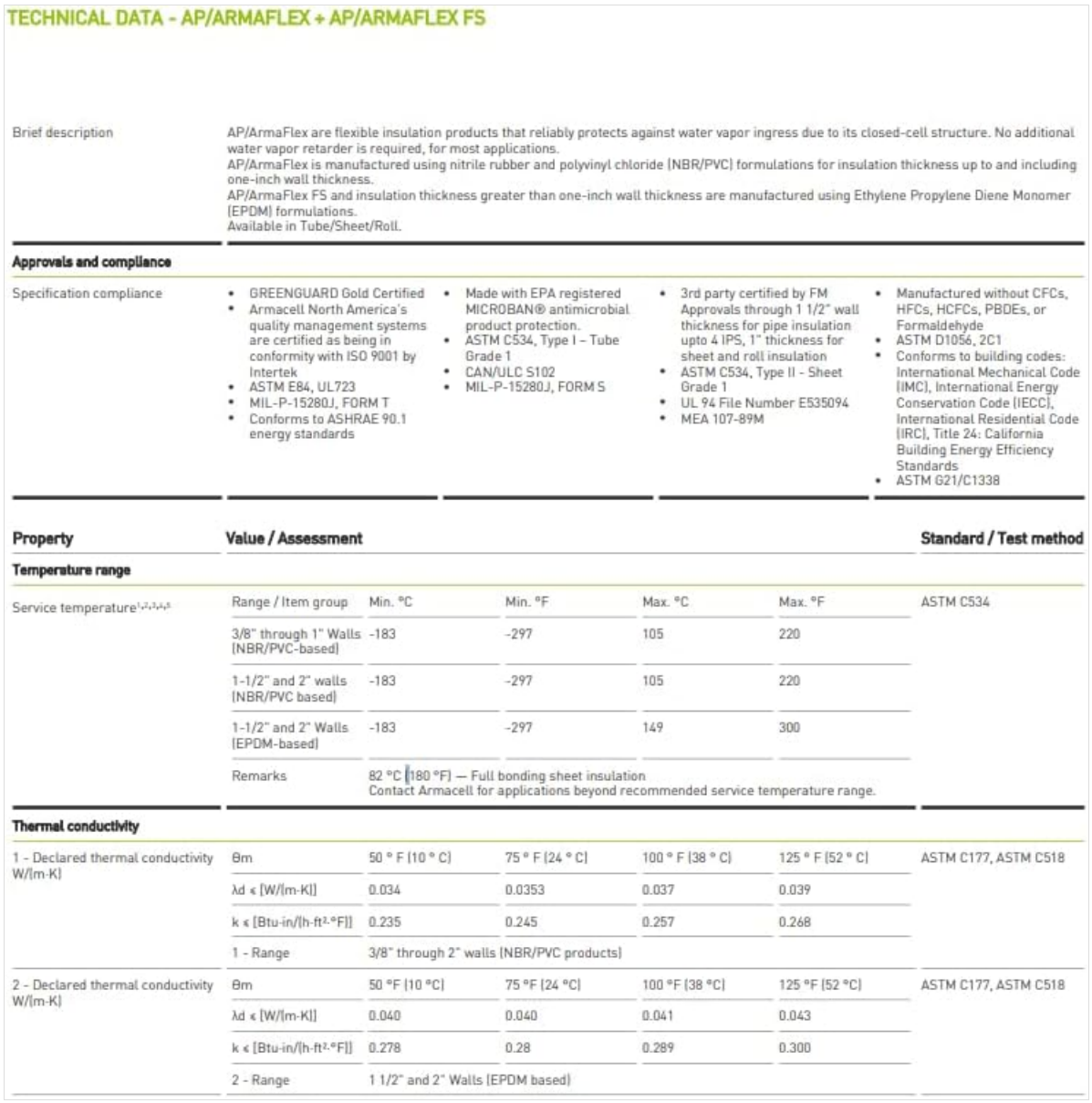
A: Armacell Insulation ID
B: Pipe Size
C: Armacell Insulation Thickness

Image: A section of black AP Armaflex pipe insulation being applied to a copper pipe, showing the self-seal lap being pressed into place.

Image: A close-up view of the AP Armaflex insulation showing the self-seal lap with the protective liner peeled back, ready for sealing.

Pipe Size Guide

Refer to this guide to ensure you select the correct insulation size for your pipe's outer diameter.



TECHNICAL DATA - AP/ARMAFLEX + AP/ARMAFLEX FS

Brief description	AP/ArmaFlex are flexible insulation products that reliably protects against water vapor ingress due to its closed-cell structure. No additional water vapor retarder is required, for most applications. AP/ArmaFlex is manufactured using nitrile rubber and polyvinyl chloride (NBR/PVC) formulations for insulation thickness up to and including one-inch wall thickness. AP/ArmaFlex FS and insulation thickness greater than one-inch wall thickness are manufactured using Ethylene Propylene Diene Monomer (EPDM) formulations. Available in Tube/Sheet/Roll.

Approvals and compliance

Specification compliance	• GREENGUARD Gold Certified • Armacell North America's quality management systems are certified as being in conformity with ISO 9001 by Intertek • ASTM E84, UL723 • MIL-P-15280J, FORM T • Conforms to ASHRAE 90.1 energy standards	• Made with EPA registered MICROBAN® antimicrobial product protection. • ASTM C534, Type I – Tube Grade 1 • CAN/ULC S102 • MIL-P-15280J, FORM S	• 3rd party certified by FM Approvals through 1 1/2" wall thickness for pipe insulation upto 4 IPS, 1" thickness for sheet and roll insulation • ASTM C534, Type II - Sheet Grade 1 • UL 94 File Number E535094 • MEA 107-89M	• Manufactured without CFCs, HFCs, HCFCs, PBDEs, or Formaldehyde • ASTM D1056, 2C1 • Conforms to building codes: International Mechanical Code (IMC), International Energy Conservation Code (IECC), International Residential Code (IRC), Title 24: California Building Energy Efficiency Standards • ASTM G21/C1338

Property	Value / Assessment					Standard / Test method
Temperature range						
Service temperature[1,2,3,4,5]	Range / Item group	Min. °C	Min. °F	Max. °C	Max. °F	ASTM C534
	3/8" through 1" Walls (NBR/PVC-based)	-183	-297	105	220	
	1-1/2" and 2" walls (NBR/PVC based)	-183	-297	105	220	
	1-1/2" and 2" Walls (EPDM-based)	-183	-297	149	300	
	Remarks	82 °C (180 °F) — Full bonding sheet insulation Contact Armacell for applications beyond recommended service temperature range.				
Thermal conductivity						
1 - Declared thermal conductivity W/(m·K)	θm	50 °F (10 °C)	75 °F (24 °C)	100 °F (38 °C)	125 °F (52 °C)	ASTM C177, ASTM C518
	λd ≤ [W/(m·K)]	0.034	0.0353	0.037	0.039	
	k ≤ [Btu-in/(h·ft²·°F)]	0.235	0.245	0.257	0.268	
	1 - Range	3/8" through 2" walls (NBR/PVC products)				
2 - Declared thermal conductivity W/(m·K)	θm	50 °F (10 °C)	75 °F (24 °C)	100 °F (38 °C)	125 °F (52 °C)	ASTM C177, ASTM C518
	λd ≤ [W/(m·K)]	0.040	0.040	0.041	0.043	
	k ≤ [Btu-in/(h·ft²·°F)]	0.278	0.28	0.289	0.300	
	2 - Range	1 1/2" and 2" Walls (EPDM based)				

Image: A diagram illustrating how to measure pipe size (A: Armacell Insulation ID, B: Pipe Size, C: Armacell Insulation Thickness) alongside a table that lists Armacell Insulation sizes and corresponding Copper/PEX/CPVC and Iron/PVC pipe sizes.

Product Functionality and Benefits

Once installed, AP Armaflex insulation provides continuous thermal and moisture control for your piping systems.

- **Condensation Control:** The closed-cell foam structure effectively prevents surface condensation on cold water pipes, refrigeration lines, and HVAC systems. This mitigates moisture damage, rust, and mold growth.
- **Energy Efficiency:** By reducing heat loss on hot water pipes and preventing heat gain on cold lines, the insulation helps maintain desired fluid temperatures. This reduces the energy demand on water heaters and HVAC equipment, leading to lower energy consumption.
- **Pipe Protection:** The durable, flexible foam provides a protective layer against physical damage from impacts and abrasion. It also offers protection against freezing in cold conditions, safeguarding pipes from bursting.

Care and Maintenance

AP Armaflex pipe insulation is designed for years of maintenance-free performance. Regular inspection is recommended to ensure the integrity of the insulation, especially in areas prone to physical damage or extreme conditions.

- **Inspection:** Periodically check for any signs of damage, such as tears, punctures, or gaps in the sealed seams.
- **Cleaning:** If cleaning is necessary, wipe the surface with a damp cloth. Avoid harsh chemicals or abrasive cleaners.
- **Outdoor Applications:** For pipes exposed to direct, intense sunlight, a protective coating like Armacell's Armafinish is recommended to maximize the insulation's lifespan and UV resistance.

Troubleshooting

If you observe issues with your insulated pipes, consider the following:

- **Condensation on Insulated Pipes:**
  - **Check for Gaps:** Ensure all seams are fully sealed and there are no gaps where moisture can penetrate or air can circulate.
  - **Verify Fit:** Confirm that the insulation size matches the pipe's outer diameter. Loose-fitting insulation can reduce effectiveness.
  - **Insulate Fittings:** Ensure all fittings, valves, and joints are also properly insulated. Uninsulated components can be points of condensation.
- **Insulation Damage:**
  - **Physical Damage:** Inspect for tears or punctures. Small damages can be repaired with Armaflex adhesive or tape. Larger damaged sections may require replacement.
  - **UV Degradation (Outdoor):** If insulation exposed to direct sunlight shows signs of degradation, consider applying a UV protective coating.

Product Specifications

Property	Value / Assessment
Model Number	ArmaFlex BLS
Material	Rubber Pipe Insulation (Elastomeric Foam)
Color	Black
Wall Thickness	1 inch (Nominal)
Inner Diameter (ID)	1/2 inch (for this specific variant)

Length per Tube	6 linear feet
Package Quantity	5 tubes (Total 30 linear feet)
Temperature Range	-297°F to 220°F (for 3/8" through 1" walls NBR/PVC products)
Thermal Conductivity (k-value)	0.235 Btu·in/(h·ft²·°F) at 75°F (24°C) for 1" wall thickness
Water Vapor Permeability	0.05 perm-inch (0.725 x 10^{-11} kg/s m Pa) for NBR/PVC products
Water Absorption	0.2% by volume
Density	3 to 6 pounds per cubic foot (48 to 96 kilograms per cubic meter)
Fire Performance	Self-extinguishing, does not drip, does not spread flames (UL 94)
Certifications	GREENGUARD Gold Certified, UL Listed (UL 94)

Technical Data Sheet Excerpt

Property	Value / Assessment							Standard / Test method
R-Value for tubes[4,7]	ID / Wall thickness	3/8" (10mm)	1/2" (13mm)	3/4" (19mm)	1" (25mm)	1-1/2" (38mm)	2" (50mm)	
	1/4" (6 mm)	2.8	3.8	6.4	8.3			
	3/8" (10 mm)	2.8	3.3	5.9	7.3	13.7	19.7	
	1/2" (13 mm)	2.6	3.3	5.5	7.2	12.7	18.2	
	5/8" (16 mm)	2.6	3.4	5.6	7.2	12.0	17.2	
	3/4" (19 mm)	2.4	3.3	5.5	7.0	11.3	16.2	
	7/8" (22 mm)	2.4	3.3	5.4	7.0	10.8	15.5	
	1-1/8" (29 mm)	2.3	3.3	5.4	7.2	10.1	14.5	
	1-3/8" (35 mm)	2.2	3.2	5.3	7.2	9.6	13.7	
	1-5/8" (41 mm)	2.5	3.2	5.1	7.2	9.2	13.1	
	1-1/2" IPS (48 mm)	2.4	3.1	4.9	6.9	8.7	12.4	
	2-1/8" (54 mm)	2.4	3.2	4.8	6.8	8.6	12.2	
	2" IPS (60 mm)	2.4	3.2	5.2	7.1	8.8	12.3	
	2-5/8" (67 mm)	2.4	3.2	4.7	6.5	8.2	11.6	
	2-1/2" IPS (73 mm)	2.4	3.2	5.0	6.8	8.4	11.7	
	3-1/8" (79 mm)	2.4	3.2	4.6	6.3	7.9	11.1	
	3" IPS (89 mm)	2.3	3.1	4.9	6.6	8.1	11.2	
	3-5/8" (92 mm)		3.1	4.5	6.2	7.7	10.7	
	4-1/8" (105 mm)		3.1	4.5	6.1	7.5	10.5	
	4" IPS (114 mm)		3.0	4.8	6.4	7.8	10.7	
	5" IPS (141 mm)		3.0	4.7	6.2	7.5	10.2	
	6" IPS (168 mm)		3.0	4.6	6.1	7.3	9.9	
	8" IPS (219 mm)		2.9	4.5	5.9	7.0	9.5	
	10" IPS (273 mm)				5.8	6.8	9.2	
R-Value for sheets and rolls[4,7]	Wall thickness			R-value				
	1/4" (6mm)			1.0				
	3/8" (10mm)			1.5				
	1/2" (13mm)			2.1				
	3/4" (19mm)			3.1				
	1" (25mm)			4.2				
	1-1/2" (38mm)			6				
	2" (50mm)			8				
Fire Performance and Approvals								
Surface burning characteristics	Flame Spread Index less than 25; Smoke Developed Index less than 50. AP/ArmaFlex tube insulation all thicknesses AP/ArmaFlex FS sheet and roll insulation through 2" thickness AP/ArmaFlex sheet and roll insulation through 1" thickness (AP/ArmaFlex sheet and roll insulation 1 1/2" and 2" thickness NOT 25/50 RATED)							ASTM E84 and UL 723, CAN ULC S102[8]

Image: Excerpt from the AP Armaflex technical data sheet, detailing brief description, approvals, compliance, temperature range, and thermal conductivity values.

Property	Value / Assessment				Standard / Test method
FM approved	Up to 1-1/2" insulation thickness for tubes and up to 1" insulation thickness for sheets				FM 4924[9]
UL standards					
UL94 5VA[10]	Pass at 6 mm (1/4") and thicker for AP/ArmaFlex Pass at 7.5 mm (0.30") and thicker for AP/ArmaFlex FS				
UL94 V-0[10]	Pass at 6 mm (1/4") and thicker for AP/ArmaFlex Pass at 13 mm (1/2") and thicker for AP/ArmaFlex FS.				
UL94 V-1[10]	Pass at 7.5 mm (0.30") and thicker for AP/ArmaFlex FS				
Fire performance					
Practical fire behavior	Self-extinguishing, does not drip, does not spread flames.				UL 94
Resistance to water vapour					
Water vapor permeability	0.05 perm-inch (0.725 x 10^{-13})Kg/(s m Pa) for NBR/PVC products 0.08 perm-inch (1.16 x 10^{-13})Kg/(s m Pa) for EPDM products				ASTM E96, procedure A
Resistance to water					
Water absorption	0.2% by volume				ASTM C209, ASTM C1763
Physical attributes					
Density	3 to 6 pounds per cubic feet (48 to 96 kilograms per cubic meter)				ASTM D1667
Acoustic performance					
Sound absorption average	Thickness (mm)	25	38	50	ASTM C423[11]
	Thickness (inches)	1	1.5	2	
	SAA	0.38	0.49	0.51	
Health and environment					
Mold growth	Passed				UL 181
Fungal growth	Passed				ASTM C1338, ASTM G21

[1] At temperatures below -20°F (-29°C), elastomeric insulation starts to become less flexible. However, this does not affect the performance of AP/ArmaFlex in terms of thermal efficiency and resistance to water vapour permeability.
[2] For temperatures below -40 °F(-40 °C), please contact our Customer Service Center.
[3] AP/ArmaFlex insulation can withstand temperatures as high as 250 °F (121 °C) when tested according to ASTM C411 - Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
[4] 1 1/2" and 2" AP/ArmaFlex tubes are formulated with EPDM rubber giving them a higher upper temperature than AP/ArmaFlex tubes less than 1 1/2" wall thickness.
[5] Recommended exposure limit to 30 minute period at 350 °F (175 °C) over a 24 hours operation for EPDM based products.
[6] These specifications are based on the measurements 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.
[7] Please see technical bulletin #1 for more details.
[8] CAN/ULC S102 up to 1" thickness.
[9] AP ArmaFlex Pipe Insulation is FM Approved for ID sizes up to and including 4 IPS
[10] UL file number E535094
[11] Type A Mounting

Image: Second excerpt from the AP Armaflex technical data sheet, detailing R-values, fire performance, resistance to water vapor, water absorption, physical attributes, and acoustic performance.

Warranty and Support

Specific warranty information for this product is not provided in the available documentation. For details regarding product warranty or technical support, please contact BRB Products directly.
You may also refer to the official Armacell website for general product information and resources, as AP Armaflex is a product line from Armacell.