

MECHANICAL INSULATION

Product Selector

Quick reference guide for selecting fiber-free, mold-resistant mechanical insulation from the makers of ArmaFlex®.

www.armacell.us



 **armacell**[®]
MAKING A DIFFERENCE AROUND THE WORLD

All of Armacell's products are produced from flexible, fiber-free, elastomeric foam material which is low VOC and formaldehyde free. Each insulation option saves energy, is thermally efficient and moisture resistant by its nature. Our AP branded products are made with Microban[®] antimicrobial protection, are GREENGUARD Gold certified and suitable for use in the air plenum.

Because of its inherent durability and long life cycle, all of our products (when installed properly) should outlive fiberglass installations which are susceptible to moisture, damage and degradation over time. Most Armacell product installations will prove to be long lasting, boosting investment pay-back and sustainability over the life of the system.

Tube Products (Pipe Insulation)

Select the original fiber-free tubular foam insulation for preventing energy waste and water vapor transmission. Available in regular unslit tubes, self-seal or lap seal formats.



AP ArmaFlex[®] White and Black Tubes

Original flexible, closed cell elastomeric tubes in black and white



NH ArmaFlex[®] Tubes

Non-halogen tubes especially formulated for shipboard use



AP ArmaFlex[®] Black and White LapSeal

Self-sealing tube insulation with reinforced lap seal



UT Solaflex

300°F upper temperature insulation ideal for solar applications, hot gas piping and low pressure steam lines



ArmaFlex[®] Coil

Continuous coil pipe insulation designed for labor savings and to minimize waste



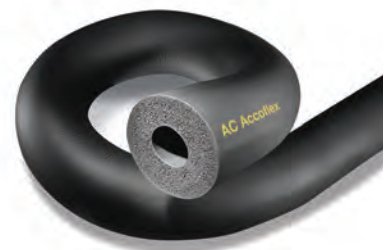
Imcoa[®], Tubolit[®], Tundra[®]

Economical polyethylene insulation for plumbing lines, in semi-slit and self-seal closure



ArmaFlex[®] Shield

Continuous coil pipe insulation with durable, protective coating



AC Accoflex[®]

Flexible pipe insulation with UV radiation protection for commercial and residential applications

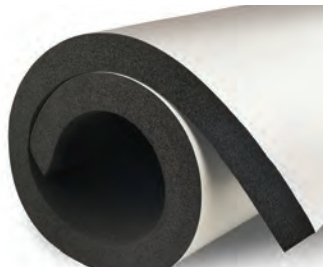
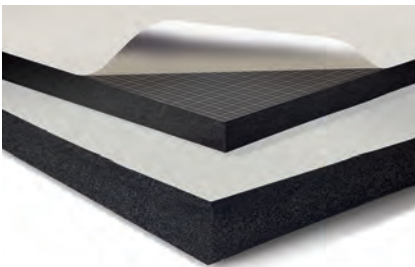
Sheet and Roll Products

Choose sheet and roll insulation for mechanical systems, chillers, larger surfaces, tanks and fittings. Available in regular and self-adhering for both interior and exterior applications.*



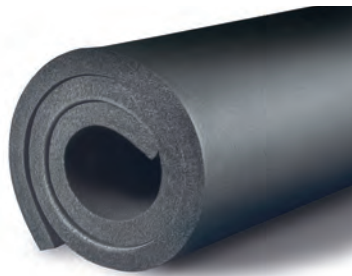
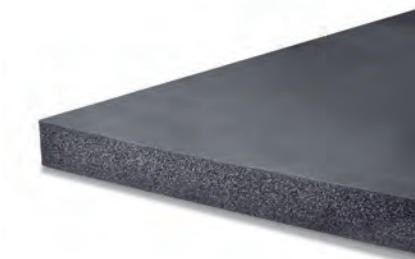
AP ArmaFlex® & AP ArmaFlex® FS

Original fiber-free insulation for thermal applications



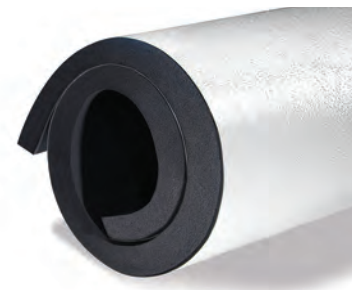
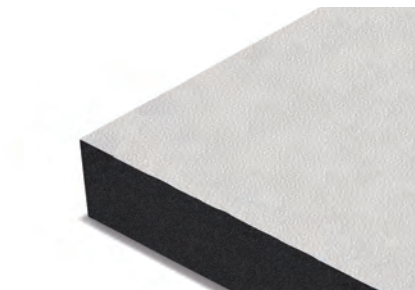
AP ArmaFlex® SA & AP ArmaFlex® FS SA

Fiber-free insulation for thermal applications in self-adhering format



NH ArmaFlex®

Nonhalogen sheet and roll insulation material especially formulated for shipboard use



ArmaTuff® & ArmaTuff® SA

Insulation with durable, white metal, factory-applied cladding made for exterior applications

Adhesives & Coatings



520 Adhesive & 520 Black

Recommended adhesive specially formulated for ArmaFlex insulation



520 BLV & Low VOC Spray Adhesive

Low VOC adhesive alternatives



WB Finish

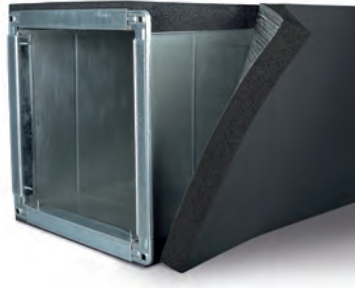
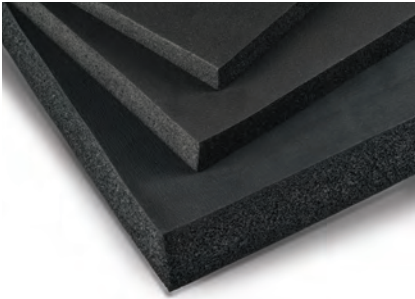
Latex-based, indoor/outdoor, UV-resistant coating for ArmaFlex insulation

* 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.

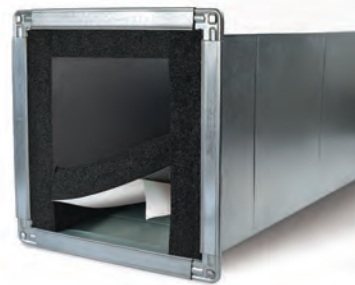
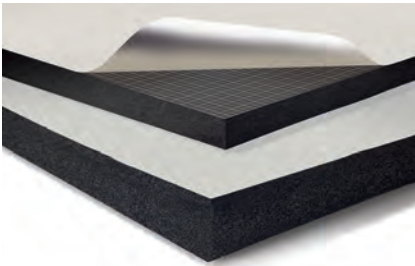
Duct Liner and Wrap

Ducts should be lined or wrapped with fiber-free elastomeric foam insulation to improve thermal efficiency, control condensation, absorb noise and protect indoor air quality.



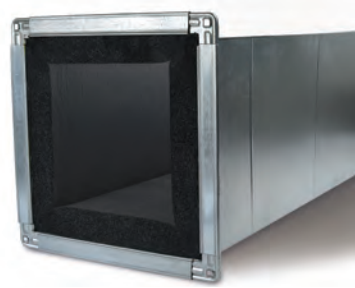
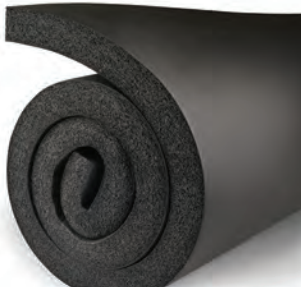
AP ArmaFlex® & AP ArmaFlex® I

The original fiber-free insulation for thermal and acoustical duct liner or wrap applications



AP ArmaFlex® SA & AP ArmaFlex® FS SA

Fiber-free insulation for thermal and acoustical duct liner or wrap applications in self-adhering format



AP Coilflex® Duct Liner

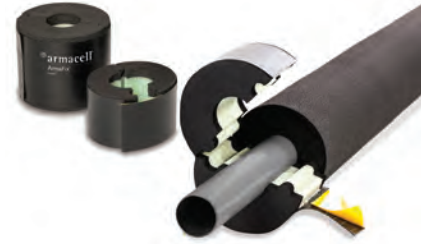
Conformable, fiber-free insulation for thermal and acoustical duct liner for automatic coil lines



AP Spiralflex®

Lightweight foam on a flexible backer especially engineered for use as a spiral duct liner

Accessories



Armafix® EcoLight Pipe Support

Insulated pipe support with self-adhesive closure



ArmaFlex® Pre-fabricated Fittings

Made to order fittings for T's, Elbows, P Traps and more



AP ArmaFlex® Insulation Tape

Pressure sensitive foam tape for insulating pipes and fittings



ArmaFlex® Black LapSeal Tape

Low profile tape for AP ArmaFlex Black LapSeal end seams

Iron / Copper Pipe Size Chart

Choose sheet and roll insulation for pipes larger than 10", mechanical systems, chillers, larger surfaces, tanks and fittings. Available in regular and self-adhering for both interior and exterior applications.

| Nominal Insulation ID | Fits Pipe Size | | | | Actual Insulation ID ^{1,2} | | | |
|-----------------------|------------------------------------|----------------------------|----------------|-----------------|-------------------------------------|-------------|-------------|-------------|
| | Copper Nom Size & ID (Types K,L,M) | Copper Nom Size & OD (ACR) | Iron / PVC IPS | DN ³ | Min ID (in) | Max ID (in) | Min ID (mm) | Max ID (mm) |
| 1/4" | - | 1/4" | - | | 0.293 | 0.355 | 7.4 | 9.0 |
| 3/8" | 1/4" | 3/8" | 1/8" | 6 | 0.420 | 0.500 | 10.7 | 12.7 |
| 1/2" | 3/8" | 1/2" | 1/4" | 8 | 0.560 | 0.640 | 14.2 | 16.3 |
| 5/8" | 1/2" | 5/8" | 3/8" | 10 | 0.710 | 0.790 | 18.0 | 20.1 |
| 3/4" | 5/8" | 3/4" | - | - | 0.810 | 0.910 | 20.6 | 23.1 |
| 7/8" | 3/4" | 7/8" | 1/2" | 15 | 0.940 | 1.050 | 23.9 | 26.7 |
| 1-1/8" | 1" | 1 1/8" | 3/4" | 20 | 1.200 | 1.310 | 30.5 | 33.3 |
| 1-3/8" | 1-1/4" | 1 3/8" | 1" | 25 | 1.450 | 1.570 | 36.8 | 39.9 |
| 1-5/8" | 1-1/2" | 1 5/8" | 1-1/4" | 32 | 1.710 | 1.830 | 43.4 | 46.5 |
| 1-1/2" | - | - | 1-1/2" | 40 | 1.970 | 2.090 | 50.0 | 53.1 |
| 2-1/8" | 2" | 2 1/8" | - | - | 2.220 | 2.340 | 56.4 | 59.4 |
| 2" | - | - | 2" | 50 | 2.580 | 2.780 | 65.5 | 70.6 |
| 2-5/8" | 2-1/2" | 2 5/8" | - | - | 2.720 | 2.880 | 69.1 | 73.2 |
| 2-1/2" | - | - | 2-1/2" | 65 | 3.080 | 3.280 | 78.2 | 83.3 |
| 3-1/8" | 3" | 3 1/8" | - | - | 3.230 | 3.390 | 82.0 | 86.1 |
| 3" | - | - | 3" | 80 | 3.700 | 3.900 | 94.0 | 99.1 |
| 3-5/8" | 3-1/2" | 3 5/8" | - | - | 3.740 | 3.880 | 95.0 | 98.6 |
| 4-1/8" | 4" | 4 1/8" | 3-1/2" | 90 | 4.250 | 4.420 | 108.0 | 112.3 |
| 4" | - | - | 4" | 100 | 4.750 | 4.950 | 120.7 | 125.7 |
| 5" | - | - | 5" | 125 | 5.810 | 6.010 | 147.6 | 152.7 |
| 6" | - | - | 6" | 150 | 6.880 | 7.080 | 174.8 | 179.8 |
| 8" | - | - | 8" | 200 | 8.880 | 9.080 | 225.6 | 230.6 |
| 10" | - | - | 10" | 250 | 11.005 | 11.205 | 279.5 | 284.6 |

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.

3. DN, diametre nominal, is equivalent to NPS sizes in metric dimensions.

NOTE: See installation guide for proper installation instructions.

WEB: www.armacell.us > Knowledge Center > Document Downloads > Mechanical Insulation > Installation Manuals



HOW CAN WE HELP?

We have a global network of experts to better serve you. We can support you with installation, technical questions and specification assistance.

- Call our Customer Services team on 800 866 5638, 8 a.m. to 4:30 p.m. EST
- Email us at: info.us@armacell.com
- Visit www.armacell.us and request an Engineer Lunch and Learn

PRODUCT APPLICATIONS

| Common Applications | REFRIGERATION, HOT & COLD LINES, CHILLED WATER | HVAC | INTERIOR DUCT SYSTEMS | EXTERIOR DUCT SYSTEMS |
|-----------------------------|--|--|---|--|
| Product Requirements | <ul style="list-style-type: none"> • Microban antimicrobial protection • Condensation control | <ul style="list-style-type: none"> • 25/50 rating • Tough, durable • AP Products: Microban antimicrobial protection • Condensation control | <ul style="list-style-type: none"> • Moisture resistant • 25/50 rating • Noise blocking • Condensation control • Microban antimicrobial protection • Condensation control | <ul style="list-style-type: none"> • Outdoors • Maintenance-free • UV-resistant |
| Recommended Product | <ul style="list-style-type: none"> • AP ArmaFlex • AP ArmaFlex W • AP ArmaFlex White LapSeal • AP ArmaFlex Black LapSeal • ArmaFlex Coil (no added antimicrobial) | <ul style="list-style-type: none"> • AP ArmaFlex • AC Accoflex • AP ArmaFlex Black LapSeal • AP Spiralflex • ArmaFlex Coil (no added antimicrobial) | <ul style="list-style-type: none"> • AP ArmaFlex and FS Duct Liner/Wrap • AP ArmaFlex SA Self-Adhering and FSSA Duct Liner/Wrap • AP Coilflex • AP Spiralflex | <ul style="list-style-type: none"> • ArmaTuff and ArmaTuff SA • AP ArmaFlex (with WB Finish) |

ARMACELL PRODUCT SPECIFICATIONS

| Specifications | Test Method | AP ArmaFlex Tubes, AP ArmaFlex White LapSeal, AP ArmaFlex Black LapSeal | AP ArmaFlex Sheet, Rolls, Duct Liner/Wrap, AP Coilflex, AP Spiralflex | AC Accoflex Tubes |
|---|------------------------------|---|---|----------------------------------|
| Thermal Conductivity, Btu • in./h • ft² • °F (W/mK) 75°F mean temperature [24°C] 90°F mean temperature [32°C] | ASTM C 177 or C 518 | 0.245 [0.0353] 0.254 [0.0366] | 0.245 [0.0353] 0.254 [0.0366] | 0.27 [0.039] 0.276 [0.040] |
| Water Vapor Permeability, Perm-inch. [Kg/(s•m•Pa)] | ASTM E 96, Procedure A | 0.05 [0.725 x 10 ⁻¹³] | 0.05 [0.725 x 10 ⁻¹³] (AP ArmaFlex) | 0.08 [1.16 x 10 ⁻¹³] |
| Flame Spread and Smoke Developed Index | ASTM E 84 UL94 | 25/50 V-0, 5VA (AP ArmaFlex) | 25/50 | 25/50 |
| Microban Antimicrobial Protection | — | Yes | Yes | No |
| Water Absorption, % by Volume | ASTM C 209 or ASTM C 1763 | 0.2 | 0.2 | 0.2 |
| Upper Use Limit | — | 220°F (105°C) | 180°F (82°C) | 220°F (105°C) |
| Lower Use Limit ① | — | -297°F (-183°C) | -297°F (-183°C) | -297°F (-183°C) |
| Ultraviolet (UV) Resistance | ASTM G90 | — | — | Good |
| Third Party Certification | Factory Mutual Approvals | Yes (AP ArmaFlex) | Yes | — |
| GREENGUARD Gold | — | Yes | Yes | — |
| Specification Compliance | — | ASTM C534 | ASTM C534 | ASTM C534 |

① 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 insulation. For applications of -40°F to -297°F (-40°C to -183°C) contact Armacell.

| | MECHANICAL SYSTEMS, CHILLERS | SOLAR OR HIGH TEMPERATURE (300°F) | RESIDENTIAL PLUMBING | MARINE & OFFSHORE | LINE SET |
|--|---|--|---|---|--|
| | <ul style="list-style-type: none"> • Thermally efficient • 25/50 rating • Sheet & roll forms • Easy to cut and fabricate • Microban antimicrobial protection | <ul style="list-style-type: none"> • Thermally efficient • High temperature range for solar collectors or hot water piping • Mold resistant | <ul style="list-style-type: none"> • Economical • 25/50 rating • Noise blocking | <ul style="list-style-type: none"> • Non-halogen | <ul style="list-style-type: none"> • Condensation control • Continuous lengths |
| | <ul style="list-style-type: none"> • AP ArmaFlex • AP ArmaFlex Sheet and Rolls • AP ArmaFlex Black LapSeal | <ul style="list-style-type: none"> • UT Solaflex | <ul style="list-style-type: none"> • Imcoa • Imcoa SS • Tubolit • Tubolit SS • Tundra • Tundra SS | <ul style="list-style-type: none"> • NH ArmaFlex | <ul style="list-style-type: none"> • ArmaFlex Shield • ArmaFlex Coil |

| | NH ArmaFlex | UT Solaflex | ArmaTuff | Imcoa Tubolit Tundra | ArmaFlex Shield |
|--|---|----------------------------------|--|----------------------------------|-----------------------------------|
| | 0.27 (0.039) 0.276 (0.040) | 0.28 (0.046) 0.286 (0.041) | 0.25 (0.036) 0.256 (0.037) | 0.27 (0.039) | 0.25 (0.036) |
| | 0.05 [0.725 x 10 ⁻¹³] | 0.08 [1.16 x 10 ⁻¹³] | 0.05 [0.725 x 10 ⁻¹³] 0.00 Laminate | 0.02 [0.29 x 10 ⁻¹³] | 0.03 [0.435 x 10 ⁻¹³] |
| | Meets EB 4013, SOLAS, USN test. Toxicity-free V-0 | 25/50 V-0 | (for exterior application) | 25/50 HBF | 25/50 |
| | No | No | Yes | No | No |
| | 0.2 | 0.2 | 0.2 0.0 Laminate | 0.2 | 0.2 |
| | 250°F (120°C) | 300°F (150°C) | 180°F (82°C) | 200°F (93°C) | 220°F (82°C) |
| | -297°F (-183°C) | -297°F (-183°C) | -297°F (-183°C) | -200°F (-129°C) | -297°F (-128°C) |
| | — | Good | Excellent | — | Excellent |
| | Yes | — | — | — | — |
| | Yes | Yes | Yes | Yes | — |
| | ASTM C534 | ASTM C534 | ASTM C534 | ASTM C1427 | ASTM C534 |



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.

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.*

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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ABOUT ARMACELL

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 3,100 employees and 24 production plants in 16 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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