# AP/Armaflex®
# AP/Armaflex® FS

## Sheet & Roll Insulation

Fiber Free

The original, fiber-free, flexible elastomeric pipe, valve and duct insulation for reliable protection against condensation, mold and energy loss. AP Armaflex FS is PVC free.

- Fiber-free, formaldehyde-free, low VOC and non-particulating formulation protects indoor air quality
- Closed-cell structure provides excellent condensation control
- Built-in vapor barrier eliminates need for additional vapor retarder
- Microban® antimicrobial product protection inhibits the growth of mold and mildew in the insulation
- 25/50 rated for use in air plenums up to 1" thickness in AP Armaflex and 1-1/2" and 2" thickness in AP Armaflex FS
- Thickness up to 2" with R-value up to R-8

armacell®

GREENGUARD GOLD
PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

FM APPROVED

U.S. GREEN BUILDING COUNCIL MEMBER

PROTECTION THAT LIVES ON MICROBAN

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.*

# Technical Data: AP Armaflex® and AP Armaflex® FS Sheet and Roll Insulation

**Description:**

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

**Specifications Compliance:**

| | | | |
|---|---|---|---|
| ASTM C 534, Type II — Sheet Grade 1<br>ASTM C 1534<br>ASTM D 1056, 2B1 | ASTM E 84, NFPA 255, UL723<br>ASTM G21/C1338<br>ASTM G22<br>CAN/ULC S102 ① | MEA 107-89M<br>MIL-P-15280J, FORM S ②<br>MIL-C-3133C (MIL STD 670B) Grade SBE 3 ② | NFPA 90A, 90B<br>UL 181<br>UL 94 5V-A, V-0, File E55798<br>City of LA – RR 7642 |

**Approvals, Certifications, Compliances:**

- 3rd party certified by FM Approvals through 1" thickness.
- 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" | AP Armaflex FS 1-1/2" & 2" | AP Armaflex 1-1/2" & 2" | |
| **Thermal Conductivity:** Btu • in./h • ft² • °F (W/mK) | | | | |
| 75°F Mean Temperature (24°C)<br>90°F Mean Temperature (32°C) | 0.245 (0.0353)<br>0.254 (0.0366) | 0.28 (0.040)<br>0.286 (0.041) | 0.25 (0.036)<br>0.256 (0.037) | ASTM C 177 or C 518 |
| **Water Vapor Permeability:** Perm-in. [Kg/(s • m • Pa)] | 0.05 (0.725 x $10^{-13}$) | 0.08 (1.16 x $10^{-13}$) | 0.05 (0.725 x $10^{-13}$) | ASTM E 96, Procedure A |
| **Flame Spread and Smoke Developed Index:** | 25/50 rated | 25/50 rated | Does not pass | ASTM E 84<br>CAN/ULC S102 ① |
| **Water Absorption, % by Volume:** | 0.2% | 0.2% | 0.2% | ASTM C 209 |
| **Mold Growth:**<br>**Fungi Resistance:**<br>**Bacterial Resistance:** | Passed | Passed | Passed | UL181<br>ASTM G21/C1338<br>ASTM G22 |
| **Upper Use Limit:** | 220°F (105°C) ③ | 300°F (149°C) ④ | 220°F (105°C) ③ | ASTM C534 |
| **Lower Use Limit:** ⑤ | -297°F (-183°C) ⑥ | -297°F (-183°C) ⑥ | -297°F (-183°C) ⑥ | ASTM C534 |
| **Ozone Resistance:** | GOOD | GOOD | GOOD | Ozone Chamber Test |

| R-Value: | R-1.6 | R-2.1 | R-3.1 | R-4.2 | R-6 | R-8 |
|---|---|---|---|---|---|---|
| Thickness: | 3/8" | 1/2" | 3/4" | 1" | 1-1/2" | 2" |

**Sizes:**

| | | |
|---|---|---|
| **Sheet:** | Width x Length<br>Thickness (nominal) | 36" x 48" (.915 m x1.22 m)<br>1/8", 1/4", 3/8", 1/2", 3/4", 1", 1-1/2" & 2" (3, 6,10, 13, 19, 25, 38 & 50 mm) |
| **Roll:** | Width | 48" wide (1.22 m) |
| | Thickness (nominal) x Length | 3/8" x 100' (10 mm x 30.5 m)<br>1/2" x 70' (13 mm x 21.4 m)<br>3/4" x 50' (19 mm x 15.2 m)<br>1" x 35' (25 mm x 10.7 m)<br>1-1/2" x 25' (38 mm x 7.6 m)<br>2" x 18' (50 mm x 5.4 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. |

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

② AP Armaflex meets MIL-P-15280J, FORM S and MIL-C-3133C (MIL STD 670B) Grade SBE through 1" thickness.

③ AP Armaflex and AP Armaflex FS Sheet and Roll Insulation 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 Sheet and Roll 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).

④ AP Armaflex FS is formulated with EPDM rubber giving it a higher upper use temperature than AP Armaflex.

⑤ 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.

⑥ For applications of -40°F to -297°F (-40°C to -183°C), contact Armacell.

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