

SOLUTIONS FOR ENERGY SAVINGS

# AP ArmaFlex<sup>®</sup>

## Black Lap Seal

The original flexible elastomeric pipe insulation with a lap seal for greater seam security and increased protection against condensation, mold and energy loss.

- // Durable, low-profile lap seal with wider release tab, stays closed and looks neat
- // Easy to install – an excellent choice for retrofit applications
- // 25/50 rated for use in air plenums
- // Fiber-free, formaldehyde-free, low VOC and non-particulating

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



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

## TECHNICAL DATA – AP ArmaFlex® BLACK LAPSEAL TUBE INSULATION

### Description

Black flexible closed-cell elastomeric thermal insulation in tubular form with a self-seal system reinforced with lap seal tape

### Applications

Insulation for piping associated with HVAC, VRV and VRF systems, chillers, hot and cold water, refrigeration

### Specification Compliance

|                              |               |                  |
|------------------------------|---------------|------------------|
| ASTM C 534, Type I – Grade 1 | UL 723        | ASTM G21/C1338   |
| ASTM E 84                    | NFPA 90A, 90B | ASTM G22         |
| NFPA 255                     | UL 181        | ASTM D 1056, 2C1 |

### Approvals, Certifications, Compliances

- 3rd party certified by FM Approvals through 1-1/2" wall 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.
- Plenum Rated

## Typical Properties

| Specifications                                          | Values                            |                                  | Test Method              |
|---------------------------------------------------------|-----------------------------------|----------------------------------|--------------------------|
|                                                         | 3/8" through 1" Wall              | 1-1/2" and 2" Walls              |                          |
| Thermal Conductivity: Btu • in/h • ft2 • °F (W/mK)      |                                   |                                  |                          |
| 75°F Mean Temperature [24°C]                            | 0.245 [0.0353]                    | 0.28 [0.040]                     | ASTM C 177 or C 518      |
| 90°F Mean Temperature [32°C]                            | 0.254 [0.0366]                    | 0.286 [0.041]                    |                          |
| Water Vapor Permeability:<br>Perm-in. [Kg/[s • m • Pa]] | 0.05 [0.725 x 10 <sup>-13</sup> ] | 0.08 [1.16 x 10 <sup>-13</sup> ] | ASTM E 96, Procedure A   |
| Flame Spread and Smoke<br>Developed Index:              | 25/50 rated                       | 25/50 rated                      | ASTM E 84                |
| Water Absorption, % by Volume:                          | 0.2 %                             | 0.2 %                            | ASTM C 209 or ASTM C1763 |
| Mold Growth:                                            | Passed                            | Passed                           | UL181                    |
| Fungi Resistance:                                       |                                   |                                  | ASTM G21/C1338           |
| Bacterial Resistance:                                   |                                   |                                  | ASTM G22                 |
| Upper Use Limit:                                        | 220°F [105°C]                     | 300°F [149°C]                    | ASTM C534                |
| Lower Use Limit: ①                                      | -297°F [-183°C] ②                 | -297°F [-183°C] ②                | ASTM C534                |

## Sizes

|                                  |                                    |
|----------------------------------|------------------------------------|
| Wall Thickness (nominal) Form    | 1/2", 1", 1-1/2" (13, 25, 38 mm)   |
| Inside Diameter, Tubular Form    | 3/8" ID to 6" ID (10 mm to 153 mm) |
| Length of Sections, Tubular Form | 6' (1.8 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 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.

② For applications of -40°F to -297°F [-40°C to -183°C], contact Armacell



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](http://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. Microban International, Ltd. makes neither direct nor implied health claims for the products containing Microban® antimicrobial product protection. Data, photomicrographs and information presented are based on standard laboratory tests and are provided for comparative purposes to substantiate antimicrobial activity for non-public health uses. Microban is a registered trademark of Microban International, Ltd.

AP ArmaFlex BLACK LAPSEAL TUBE INSULATION - R VALUES

3/8 " Walls

|            |               |     |
|------------|---------------|-----|
| IPBST05838 | 1/2" Copper   | 2.6 |
| IPBST03438 | 5/8" Copper   | 2.4 |
| IPBST07838 | 3/4" Copper   | 2.4 |
| IPBST11838 | 1" Copper     | 2.3 |
| IPBST13838 | 1-1/4" Copper | 2.2 |
| IPBST15838 | 1-1/2" Copper | 2.5 |
| IPBST11038 | 1-1/2" IPS    | 2.4 |
| IPBST21838 | 2" Copper     | 2.4 |

1/2 " WALLS

|            |               |     |
|------------|---------------|-----|
| IPBST03812 | 1/4" Copper   | 3.3 |
| IPBST01212 | 3/8" Copper   | 3.3 |
| IPBST05812 | 1/2" Copper   | 3.4 |
| IPBST03412 | 5/8" Copper   | 3.3 |
| IPBST07812 | 3/4" Copper   | 3.3 |
| IPBST11812 | 1" Copper     | 3.3 |
| IPBST13812 | 1-1/4" Copper | 3.2 |
| IPBST15812 | 1-1/2" Copper | 3.2 |
| IPBST11012 | 1-1/2" IPS    | 3.1 |
| IPBST21812 | 2" Copper     | 3.2 |
| IPBST20012 | 2" IPS        | 3.2 |
| IPBST25812 | 2-1/2" Copper | 3.2 |
| IPBST21012 | 2-1/2" IPS    | 3.2 |
| IPBST31812 | 3" Copper     | 3.2 |
| IPBST30012 | 3" IPS        | 3.1 |
| IPBST35812 | 3-1/2" Copper | 3.1 |
| IPBST41812 | 4" Copper     | 3.1 |
| IPBST40012 | 4" IPS        | 3.0 |

3/4 " WALLS

|            |               |     |
|------------|---------------|-----|
| IPBST03834 | 1/4" Copper   | 5.9 |
| IPBST01234 | 3/8" Copper   | 5.5 |
| IPBST05834 | 1/2" Copper   | 5.6 |
| IPBST03434 | 5/8" Copper   | 5.5 |
| IPBST07834 | 3/4" Copper   | 5.4 |
| IPBST11834 | 1" Copper     | 5.4 |
| IPBST13834 | 1-1/4" Copper | 5.3 |
| IPBST15834 | 1-1/2" Copper | 5.1 |
| IPBST11034 | 1 1/2" IPS    | 4.9 |
| IPBST21834 | 2" Copper     | 4.8 |
| IPBST20034 | 2" IPS        | 5.2 |
| IPBST25834 | 2-1/2" Copper | 4.7 |
| IPBST21034 | 2-1/2" IPS    | 5.0 |
| IPBST31834 | 3 " Copper    | 4.6 |
| IPBST30034 | 3" IPS        | 4.9 |
| IPBST35834 | 3-1/2" Copper | 4.5 |
| IPBST41834 | 4" Copper     | 4.5 |
| IPBST40034 | 4" IPS        | 4.8 |

1" WALLS

|            |               |     |
|------------|---------------|-----|
| IPBST03810 | 1/4" Copper   | 7.3 |
| IPBST01210 | 3/8" Copper   | 7.2 |
| IPBST05810 | 1/2" Copper   | 7.2 |
| IPBST03410 | 5/8" Copper   | 7.0 |
| IPBST07810 | 3/4" Copper   | 7.0 |
| IPBST11810 | 1" Copper     | 7.2 |
| IPBST13810 | 1-1/4" Copper | 7.2 |
| IPBST15810 | 1-1/2" Copper | 7.2 |
| IPBST11010 | 1-1/2" IPS    | 6.9 |
| IPBST21810 | 2" Copper     | 6.8 |
| IPBST20010 | 2" IPS        | 7.1 |
| IPBST25810 | 2-1/2" Copper | 6.5 |
| IPBST21010 | 2-1/2" IPS    | 6.8 |
| IPBST31810 | 3" Copper     | 6.3 |
| IPBST30010 | 3" IPS        | 6.6 |
| IPBST35810 | 3-1/2" Copper | 6.2 |
| IPBST41810 | 4" Copper     | 6.1 |
| IPBST40010 | 4" IPS        | 6.4 |
| IPBST50010 | 5 " IPS       | 6.2 |
| IPBST40010 | 6 " IPS       | 6.1 |

1-1/2" WALLS

|            |               |      |
|------------|---------------|------|
| IPBST03815 | 1/4" Copper   | 13.7 |
| IPBST01215 | 3/8" Copper   | 12.7 |
| IPBST05815 | 1/2" Copper   | 12.0 |
| IPBST03415 | 5/8" Copper   | 11.3 |
| IPBST07815 | 3/4" Copper   | 10.8 |
| IPBST11815 | 1" Copper     | 10.1 |
| IPBST13815 | 1-1/4" Copper | 9.6  |
| IPBST15815 | 1-1/2" Copper | 9.2  |
| IPBST11015 | 1-1/2" IPS    | 8.7  |
| IPBST21815 | 2" Copper     | 8.6  |
| IPBST20015 | 2" IPS        | 8.8  |
| IPBST25815 | 2-1/2" Copper | 8.2  |
| IPBST21015 | 2-1/2" IPS    | 8.4  |
| IPBST31815 | 3" Copper     | 7.9  |
| IPBST30015 | 3" IPS        | 8.1  |
| IPBST35815 | 3-1/2" Copper | 7.7  |
| IPBST41815 | 4" Copper     | 7.5  |
| IPBST40015 | 4" IPS        | 7.8  |
| IPBST50015 | 5" IPS        | 7.5  |
| IPBST60015 | 6" IPS        | 7.3  |

2" WALLS

|            |               |      |
|------------|---------------|------|
| IPBST03820 | 1/4" Copper   | 19.7 |
| IPBST01220 | 3/8" Copper   | 18.2 |
| IPBST05820 | 1/2" Copper   | 17.2 |
| IPBST03420 | 5/8" Copper   | 16.2 |
| IPBST07820 | 3/4" Copper   | 15.5 |
| IPBST11820 | 1" Copper     | 14.5 |
| IPBST13820 | 1-1/4" Copper | 13.7 |
| IPBST15820 | 1-1/2" Copper | 13.1 |
| IPBST11020 | 1-1/2" IPS    | 12.4 |
| IPBST21820 | 2" Copper     | 12.2 |
| IPBST20020 | 2" IPS        | 12.3 |
| IPBST25820 | 2-1/2" Copper | 11.6 |
| IPBST21020 | 2-1/2" IPS    | 11.7 |
| IPBST31820 | 3" Copper     | 11.1 |
| IPBST30020 | 3" IPS        | 11.2 |
| IPBST35820 | 3-1/2" Copper | 10.7 |
| IPBST41820 | 4" Copper     | 10.5 |
| IPBST40020 | 4" IPS        | 10.7 |
| IPBST50020 | 5" IPS        | 10.2 |
| IPBST60020 | 6" IPS        | 9.9  |

\* 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.

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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AP ArmaFlex | Black LapSeal Tube TDS | 112018 | NA| EN-A | 020

## 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 26 production plants in 17 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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