



THE MAKERS OF  
**Armaflex®**

**SUBMITTAL**

**Description**

Mold resistant AP Armaflex SA Self-Adhering Sheet and Roll Insulation is a flexible, elastomeric thermal insulation, black in color.

- Sheets are supplied as flat sheets 36" x 48" (.915m x 1.22m), in nominal wall thicknesses of 1/4", 3/8", 1/2", 3/4", 1", 1-1/2" and 2" (6, 10, 13, 19, 25, 38, 50mm).
- Rolls are supplied in 48" (1.22m) wide continuous rolls in nominal wall thicknesses of 3/8", 1/2", 3/4", 1", 1-1/2" and 2" (10, 13, 19, 25, 38, 50mm). It is also available in 60" (1.53m) in 1" thicknesses.

The expanded closed-cell structure of Armaflex makes it an efficient insulation. It is manufactured without the use of CFC's, HFC's or HCFC's. It is also formaldehyde free, low VOCs, fiber free, dust free and resists mold and mildew. All AP Armaflex products are made with Microban® antimicrobial product protection for added defense against mold on the insulation.

**Factory Mutual Approvals**

AP Armaflex SA is approved through continuing supervision by Factory Mutual Approvals to consistently provide actual values on these key performance criteria for mechanical system insulation:

- Thermal Conductivity: 0.25 BTU-in/hr sq.ft. °F
- Water Vapor Transmission: 0.05 perm-inches
- Fire Rating: Will not contribute significantly to fire. (simulated end-use testing)

As tested by ASTM E 84, "Method of Test for Surface Burning Characteristics of Building Materials," AP Armaflex SA in thicknesses up to and including 1" (25mm) have a flame spread index of less than 25 and a smoke developed index of less than 50.

**Note:** Numerical flammability ratings alone may not define the performance of products under actual fire conditions. They are provided only for use in the selection of products to meet limits specified.

**AP/Armaflex Sheet and Roll Insulation meet the energy code requirements of International Energy Conservation Code (IECC) and ASHRAE for R-Value 4.2 at 1" wall thickness and R-Value 8 at 2" wall thickness.**

**Uses**

AP Armaflex SA is used to retard heat gain and control condensation drip from chilled water and refrigeration systems. It also efficiently reduces heat flow on hot systems. Flexible AP Armaflex SA Sheet and Roll Insulation is used for all applications that cannot be accomplished by AP Armaflex Pipe Insulation. It is particularly adaptable for insulating:

- ductwork
- large piping and fittings
- tanks
- vessels
- curved and irregular surfaces
- it is also suitable as a duct lining (see AP Armaflex SA Duct Liner)

For use on cold systems, AP Armaflex insulation



thicknesses have been calculated to control condensation on the insulation outer surface as shown in the table of thicknesses recommendations. The recommended temperature usage range for AP Armaflex SA Sheet Insulation is -297°F to +180°F (-183°C to +82°C).

AP Armaflex SA is acceptable in thicknesses through 1" for use in air plenums. Conforms to NFPA 90A and NFPA 90B requirements.

**Resistance To Moisture Vapor Flow**

The closed-cell structure of Armaflex Insulations prevent moisture from wicking and make it an effective insulation. Additional vapor-retarder protection may be necessary on very low-temperature surfaces or piping where the insulation is exposed to continually high humidity conditions.

**Application**

AP Armaflex SA Sheet Insulation is designed for installation above ground. In all cases, seams are to be sealed with Armaflex 520, 520 Black or, where low V.O.C. adhesive is required, Armaflex 520 BLV Adhesive. 520 Adhesives are contact adhesives; therefore, in all cases, both surfaces to be joined are coated with adhesive. Outdoors, a weather-resistant protective finish is to be applied. Armaflex WB Finish is recommended. External duct work should be pitched to allow rainwater to run off the insulation.

Armaflex insulation products must be installed according to "Installation of Armaflex Insulations" brochure. Proper installation is required to assure Armaflex insulation performance.

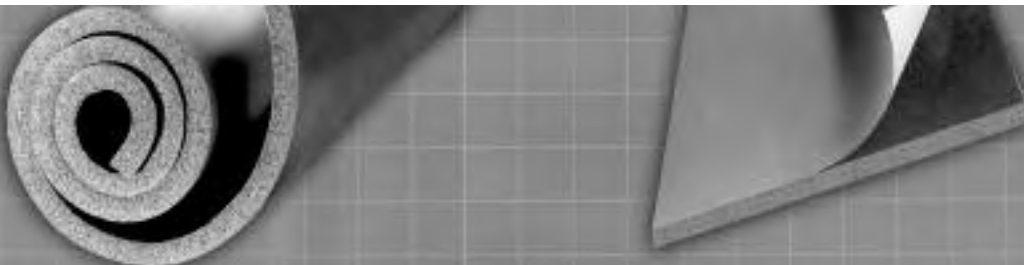
**Specification Compliance**

AP Armaflex SA developed to meet:  
 ASTM C 534, Type II -- Sheet, Grade 1  
 ASTM C 1534  
 ASTM E 84, NFPA 255, UL 723  
 CAN/ULC-S102  
 NFPA 90A, 90B  
 UL 181  
 ASTM G21/C1338  
 ASTM G22  
 ASTM D 1056, 2B1  
 MIL-P-15280J, FORM S  
 MIL-C-3133C (MIL STD 670B), Grade SBE 3  
 MEA 107-89-M  
 City of Los Angeles - RR 7642  
 Meets requirements of ASTM C 411 @ 250°F (121°C)-Test Method for Hot Surface Performance of High-Temperature Insulations.

**AP/Armaflex® SA (SELF-ADHERING) SHEET & ROLL**



ALL ARMACELL FACILITIES IN NORTH AMERICA ARE ISO 9001:2000 CERTIFIED.



## Physical Data

### Physical Properties

### Test Method

Thermal conductivity, Btu • in./h • ft <sup>2</sup> • °F (W/mK) 75°F mean temp (24°C) 90°F mean temp (32°C)	0.25 (0.036) 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 <sup>-19</sup> )	ASTM E 96 Procedure A
Flame spread and smoke developed index through 1" (25mm)	25/50	ASTM E 84 CAN/ULC S102
Mold growth Fungi resistance Bacterial resistance	UL181 ASTM G21/C1338 ASTM G22	Meets requirements Meets requirements Meets requirements
Water absorption, % by volume	0.2	ASTM C 209
Upper use limit	180°F (82°C)	—
Lower use limit <sup>①</sup>	-297°F (-183°C)*	—
Ozone resistance	GOOD	—
Sizes— Sheet Width and length Thickness (nominal)	36" x 48" (.915m x 1.22m) 1/4", 3/8", 1/2", 3/4", 1", 1-1/2" and 2" (6, 10, 13, 19, 25, 38, 50mm)	—
Sizes— Roll Width Thickness (nominal) x Length	48" (1.22m) and 60" (1.53m)* 3/8" x 100' (10mm x 30.5m) 1/2" x 70' (13mm x 21.4m) 3/4" x 50' (19mm x 15.2m) 1" x 35' (25mm x 10.7m)* 1-1/2" x 25' (38mm x 7.6m) 2" x 18' (50mm x 5.5m)	—
Density, typical range <sup>②</sup>	3.0 - 6.0 lbs./ft. <sup>3</sup>	ASTM D 1622 or D 1667

### Notes

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

② Reference only.

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

\* In one inch thickness

Performance approved through continuing supervision by Factory Mutual Approvals.

### Thickness Recommendations

#### For Controlling Outer Insulation Surface Condensation

(Based upon available manufactured thicknesses and not intended to supersede any state or local building codes.)

	Ducts— Tanks— Vessels— Equipment Metal Surface Temperature		
	50°F (10°C)	35°F (2°C)	0°F (-18°C)
BASED ON <b>NORMAL</b> DESIGN CONDITIONS AP Armaflex in the thicknesses noted and within the specified temperature ranges will control outer insulation surface condensation indoors under <b>normal</b> design conditions, a maximum severity of <b>85°F (29°C) and 70% RH</b> . Armacell research and field experience indicate that indoor conditions anywhere in the United States seldom exceed this degree of severity.	Nom. 3/8" (10mm)	Nom. 3/4" (19mm)	Nom. 1-1/2" (38mm)
BASED ON <b>MILD</b> DESIGN CONDITIONS AP Armaflex in the thicknesses noted and within the specified temperature ranges will control outer insulation surface condensation indoors under <b>mild</b> design conditions, a maximum severity of <b>80°F (27°C) and 50% RH</b> . Typical of these conditions are most air-conditioned spaces and arid climates.	Nom. 1/8" (3mm)	Nom. 1/4" (6mm)	Nom. 1/2" (13mm)
BASED ON <b>SEVERE</b> DESIGN CONDITIONS AP Armaflex in the thicknesses noted and within the specified temperature ranges will control outer insulation surface condensation indoors under <b>severe</b> design conditions, a maximum severity of <b>90°F (32°C) and 80% RH</b> . Typical of these conditions are indoor areas in which excessive moisture is introduced or in poorly ventilated confined areas where the temperature may be depressed below ambient.	Nom. 1" (25mm)	Nom. 1-1/2" (38mm)	Nom. 2" (50mm)
For <b>VERY SEVERE</b> DESIGN CONDITIONS which Armacell would consider temperatures above <b>90°F (32°C)</b> and/or above <b>80% RH</b> .	Consult Armacell for recommended insulation thickness	Consult Armacell for recommended insulation thickness	Consult Armacell for recommended insulation thickness

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