



**AP/Armaflex®**  
**SHEET & ROLL**

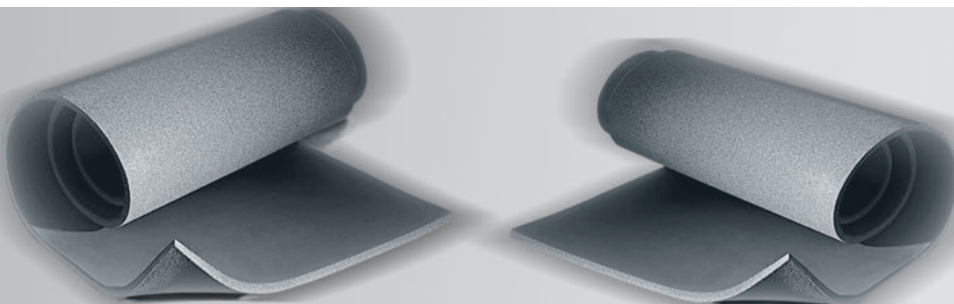
## BIG-TIME PERFORMANCE

The original  
elastomeric  
sheet & roll

Ideal for  
larger pipes,  
tanks, vessels

Flexible for  
curves and  
fitting covers

Genuine  
AP/Armaflex  
performance



**Factory  
Mutual  
System**  
Approved



AIR CONDITIONING



REFRIGERATION



PLUMBING



HEATING

### Description

AP Armaflex Sheet and Roll Insulation is a flexible, elastomeric thermal insulation, black in color. It is furnished with a smooth skin on one side which forms the outer exposed insulation surface. The expanded closed-cell structure of Armaflex makes it an efficient insulation.

- AP Armaflex Sheet is supplied in flat sheets 36" x 48" (.915m x 1.220m), in thicknesses of 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1-1/2", and 2" (3, 6, 10, 13, 19, 25, 38, and 50mm).
- AP Armaflex Roll is supplied in 48" wide (1.220m) continuous rolls in 3/8", 1/2", 3/4", 1", 1-1/2" and 2" (10, 13, 19, 25, 38 and 50mm).

### Factory Mutual Approved System

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

Thermal Conductivity: 0.27 BTU-in/hr. ft<sup>2</sup> °F

Water Vapor Transmission: 0.08 perm-inch

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 for Building Materials and CAN/ULC S-102, AP Armaflex Sheet Insulation in thicknesses of 1" (25mm) has a flame-spread rating of 25 or less and a smoke-developed rating of 50 or less.

**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.

### Uses

Flexible AP Armaflex 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
- all types of fitting covers

The recommended temperature usage range for AP Armaflex Sheet is -70°F to +220°F (-57°C to +105°C) according to method of application. With full adhesive coverage attachment, the surface to which it is applied may operate to a limit of 180°F (82°C). When used for pipe insulation with adhesive adhering seams and joints only, AP Armaflex Sheet can be applied to lines that will operate to a limit of 220°F (105°C).

For use on cold pipes, AP Armaflex thicknesses have been calculated to control condensation on the insulation outer surface, as shown in the table of thickness recommendations.

AP Armaflex Sheet and Roll Insulation 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 effectively retards the flow of moisture vapor, and Armaflex is considered a low-transmittance vapor retarder. For many applications, Armaflex needs no supplementary protection.

Additional vapor-retarder protection may be necessary for Armaflex when installed on very low-temperature surfaces or piping or where exposed to continually high humidity conditions.

### Application

AP Armaflex Sheet is installed using Armaflex 520 Adhesive. For application to large, flat or curved metal surfaces such as ducts, very large pipes, tanks, and vessels, full adhesive coverage attachment is used. For application as pipe insulation and fitting covers, only the seams and joints are adhered with adhesive. 520 Adhesive is a contact adhesive; therefore, in all cases, both surfaces to be joined are coated with adhesive.

AP Armaflex Sheet is designed for installation above ground. Outdoors, a weather-resistant protective finish is to be applied. WB Armaflex Finish is recommended.

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 meets:

ASTM C 534, Type II Sheet Grade 1

ASTM E 84

NFPA 255

UL 723

CAN/ULC S-102

UL 94 5V-A, V-0, File E 55798

NFPA 90A, 90B

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

CGSB CAN 2-51.40-M80

ASTM C 1534

## Physical Data

### Physical Properties

### Test Method

Thermal conductivity, Btu • in./h • ft <sup>2</sup> • °F (W/m•K) 75°F mean temp (24°C) 90°F mean temp (32°C)	0.27 (0.039) 0.276 (0.040)	ASTM C 177 or C 518
Water vapor permeability, perm-in. [Kg/(s•m•Pa)]	0.08 (1.16 x 10 <sup>-13</sup> )	ASTM E 96 Procedure A
Water absorption, % by volume	0.2%	ASTM C 209
Flame and smoke ratings through 1" (25mm)	25/50	ASTM E 84
Ozone resistance	GOOD	
Upper use limit, °F (°C) (See note 1)	180/220 (82/105)	
Lower use limit, °F (°C) (See note 2)	-70 (-57°C)*	
Sizes — Sheet Width and length Thickness	36" x 48" (.915m x 1.22m) 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1-1/2" & 2" (3, 6, 10, 13, 19, 25, 38 & 50mm)	
Sizes — Roll Thickness x Length	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 5.4m)	
Density, typical range (See Note 3)	3.0 to 6.0 lbs./ft <sup>3</sup>	ASTM D 1622 D 1667

### Notes

① When AP Armaflex Sheet is installed by adhering butt joints and seams only, the upper temperature limit is 220°F (105°C) using 520 Adhesive. AP Armaflex Sheet adhered with complete adhesive coverage on flat or curved metal surfaces may be applied to surfaces that will operate as high as 180°F (82°C) using 520 Adhesive.

② At -20°F (-29°C), flexible AP Armaflex Insulation becomes hard and, as temperatures drop below -20°F (-29°C), will be increasingly brittle; however, this hardening characteristic does not affect thermal efficiency and resistance to water vapor permeability.

③ Reference ONLY

\* For applications of -40°F to -70°F (-40°C to -57°C), contact Armacell.

Performance approved through continuing supervision by Factory Mutual Research Corporation.

## Thickness Recommendations

### For Controlling Outer Insulation Surface Condensation

	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.	3/8" (10mm)	3/4" (19mm)	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.	1/8" (3mm)	1/4" (6mm)	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.	1" (25mm)	1-1/2" (38mm)	2" (50mm)



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