

Please note: For installing self adhering SA Armaflex sheets and rolls, refer to p.19.

this, press the adhesive joint

snap the cover inside out and

press the joint on the smooth

skin side. (The tee template is

a symmetrical half, but, in this

case, both halves are laid out

together to form the complete

outline of the fitting cover.)

on the rough side and then

### Installation:

### 4.b. Using Armaflex sheet insulation on pipes

### **Application to pipes**

- 1. Apply Armaflex Sheet Insulation on pipes larger than 5" IPS. Cut the sheet insulation to proper width, permitting it to fit loosely without stretching around the pipe. (See pgs 11-12.) The fabrication must be done at the job site, at the same ambient conditions as the application.
- 2. Brush-coat both surfaces of the lengthwise seam with 520 or 520 BLV Adhesive. Allow the adhesive to dry until tacky to the touch under slight pressure before joining surfaces. Wrap the sheet around the pipe, and seal the seam by pressing the surfaces firmly together. Join butt joints between individual sections using 520 or 520 BLV Adhesive. On horizontal pipes larger than 12" IPS, adhere insulation on lower one-third.

### **Application to fittings**

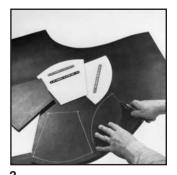
3. Fitting covers are easily made, using templates designed specially for screwed fittings 2", 2-1/2" and 3" and long-radius weld fittings from 3" to 10" IPS. (See size chart, pg 11.)

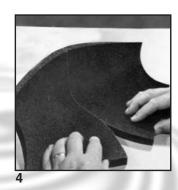
Note: Templates should be traced on stiff paper, sheet metal or hardboard and cut out to make reusable patterns.

4. Since each template for 45° and 90° ells is shown as a symmetrical half of the full fitting cover, the complete fitting cover is formed by adhering two halves together at the long outer arc. Coat both surfaces with 520 or 520 BLV Adhesive. Allow the adhesive to dry until dry to the touch but tacky under slight pressure before joining surfaces. Then seal the seam by pressing the surfaces firmly together throughout. To do











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### **Installation:**

5. Snap the formed cover in place over the fitting. Adhere the mating surfaces of the inner arc joint with 520 or 520 BLV Adhesive. Join the straight pipe covering to the fitting cover, making sure to coat both the pipe-section butt surface and the fitting-cover butt surface.

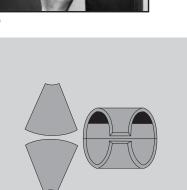
Note: On screwed fittings, select the proper template from section 4.b.1., page 11. Notice that the screwed fitting cover templates allow for the 1" minimum overlap on the straight pipe next to the fitting. Remember to cement this 1" overlap with 520 or 520 BLV Adhesive by forcing the brush between the two surfaces.

 Allow the adhesive to dry until dry to the touch but tacky under slight pressure before joining surfaces. Press surfaces firmly together to seal.

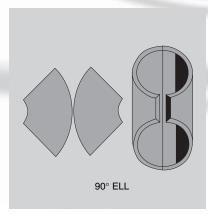
# Application to Victaulic Couplings

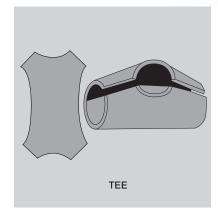
Make two donuts, and place on both sides of the Victaulic Coupling. Complete the fitting cover by gluing the circumferential strip of sheet insulation over the two donuts.



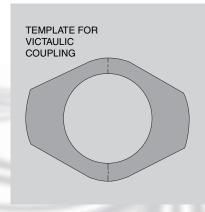


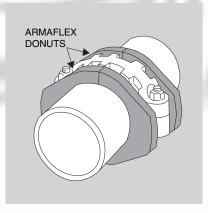
45° ELL

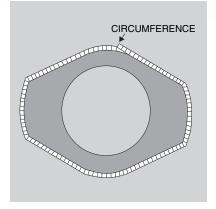












### 4.b.1 Templates are available for screwed and long-radius weld fittings

Templates for the Iron Pipe Sizes Shown Below in 3/8", 1/2" and 3/4" Armaflex:

	SCREWED								
Pipe Size	;	3/8"			1/2″	3/4"			
IPS	45°	90°	Т	45°	90°	Т	45°	90°	Т
2"	•	•	•	•	•	•	•	•	•
2-1/2"				•	•	•	•	•	•
3"				•	•	•	•	•	•

	WELD											
Pipe Size	3/8"		3/8" 1/2"		÷	3/4"		1″				
IPS	45°	90°	Т	45°	90°	Т	45°	90°	Т	45°	90°	Т
3″				•	•	•	•	•	•	•	•	•
3-1/2"				•	•	•	•	•	•	•	•	•
4"				•	•	•	•	•	•	•	•	•
5″				•	•	•	•	•	•	•	•	•
6"				•	•	•	•	•	•	•	•	•
8″				•	•	•	•	•	•	•	•	•
10″				•	•	•	•	•	•	•	•	•

,	VICTAULIC COUPLINGS								
Pipe Size	3/8"	1/2"	3/4"	1"					
3/4"	•	•	•						
1"	•	•	•						
1-1/4"	•	•	•						
1-1/2"	•	•	•						
2"	•	•	•						
2-1/2"	•	•	•						
3″		•	•	•					
3-1/2"		•	•	•					
4"		•	•	•					
5″		•	•	•					
6″		•	•	•					
8″		•	•	•					
10"		•	•	•					
12″		•	•	•					

There are twelve template sheets—order from Armacell. Templates for Victaulic Couplings and standard grooved end fittings are also available.

### **Template** number and description

No. AT Set A Screwed 45° Elbows

- 3/8"—1/2"—3/4" Walls
- 2", 2-1/2", 3" IPS

No. AT Set B Screwed 90° Elbows

- 3/8"—1/2"—3/4" Walls 2", 2-1/2", 3" IPS

No. AT Set C Screwed Tees

- 3/8"—1/2"—3/4" Walls
- 2", 2-1/2", 3" IPS

No. AT Set D

Weld 45° Long-Radius Elbows

- 1/2" Wall
- 3" IPS thru 10" IPS

No. AT Set E

- Weld 45° Long-Radius Elbows
- 3/4" Wall
- 3" IPS thru 10" IPS

No. AT Set F

Weld 90° Long-Radius Elbows

- 1/2" Wall
- 3" IPS thru 10" IPS

No. AT Set G

Weld 90° Long-Radius Elbows

- 3/4" Wall
- 3" IPS thru 10" IPS

No. AT Set H

- Weld Tees
- 1/2" Wall ■ 3" IPS thru 10" IPS

No. AT Set I

- Weld Tees
- 3/4" Wall
- 3" IPS thru 10" IPS

No. AT Set J Weld Tees

- 1" Wall
- 3" IPS thru 10" IPS

No. AT Set K

Weld 45° Long-Radius Elbows

- 1" Wall
- 3" IPS thru 10" IPS

No. AT Set L

Weld 90° Long-Radius Elbows

- 1" Wall
- 3" IPS thru 10" IPS

#### 4.b.2. yields of ...

#### ... AP ARMAFLEX SHEET AS PIPE INSULATION

Pipe Size	Insula- tion Thick- ness	Insulation Width " (Pipe Circum.)	Sheet Length	LF Sheet	Drop- Off
3" IPS	1/2 3/4 1	13-1/2 14-5/8 15-5/8	36 36 36	9 9 9	7-1/2 4-1/8 1-1/8
3-1/2" IPS	1/2 3/4 1	15-1/8 16-1/8 17-1/8	36 48 48	9 8 8	2-5/8 3-3/4 1-3/4
4" IPS	1/2 3/4 1	16-5/8 17-3/4 18-3/4	48 48 36	8 8 6	2-3/4 1/2 10-1/2
5" IPS	1/2 3/4 1 1-1/2	20 21-1/8 22-1/8 25-3/8	36 36 36 48	6 6 6 4	8 5-3/4 3-3/4 10-5/8
6" IPS	1/2 3/4 1 1-1/2	23-3/8 24-1/2 25-3/8 28-1/2	36 48 48 48	6 4 4 4	1-1/4 11-1/2 10-5/8 7-1/2
8" IPS	1/2 3/4 1 1-1/2	29-5/8 30-3/4 31-3/4 34-7/8	48 48 48 48	4 4 4 4	6-3/8 5-1/4 4-1/4 1-1/8
10" IPS	1/2 3/4 1 1-1/2	36-1/4 37-3/8 38-3/8 41-1/2	36 36 36 36	3 3 3 3	11-3/4 10-5/8 9-5/8 6-1/2
12" IPS	1/2 3/4 1	42-5/8 43-5/8 44-5/8	36 36 36	3 3 3	5-3/8 4-3/8 3-3/8
14" IPS	1/2 3/4	46-1/2 47-5/8	36 36	3 3	1-1/2 3/8

For jobsite application sizing. Not intended for shop prefabrication.

Yield of Armaflex Sheet (36" x 48") when used on various pipe sizes.

All dimensions are in inches.

48-INCH-WIDE AP ARMAELEX BOLLS

Yields of ...

4.c. measuring ...

48-INCH-WIDE AP ARMAFLEX ROLLS AS PIPE INSULATION						
Pipe Size	NSULATION THICKNESS	NSULATION (Pipe STH	APPROX. POL	PCS./POLL (4-Fi, Lemon	LF/ROLL (Ft.)	
3" IPS	1/2 3/4 1	13-1/2 14-5/8 15-5/8	70 50 35	62 41 26	248 164 104	
3-1/2" IPS	1/2 3/4 1	15-1/8 16-1/8 17-1/8	70 50 35	55 37 24	220 148 96	
4" IPS	1/2 3/4 1	16-5/8 17-3/4 18-3/4	70 50 35	50 33 22	200 132 88	
5″ IPS	1/2 3/4 1 1-1/2	20 21-1/8 22-1/8 25-3/8	70 50 35 25	42 28 18 11	168 112 72 44	
6" IPS	1/2 3/4 1 1-1/2	23-3/8 24-1/2 25-3/8 28-1/2	70 50 35 25	35 24 16 10	140 96 64 40	
8" IPS	1/2 3/4 1 1-1/2	29-5/8 30-3/4 31-3/4 34-7/8	70 50 35 25	28 19 13 8	112 76 52 32	
10" IPS	1/2 3/4 1 1-1/2	36-1/4 37-3/8 38-3/8 41-1/2	70 50 35 25	23 16 10 7	92 64 40 28	
12" IPS	1/2 3/4 1 1-1/2	42-5/8 43-5/8 44-5/8 47-3/4	70 50 35 25	19 13 9 6	76 52 36 24	
14" IPS	1/2 3/4 1 1-1/2	46-1/2 47-5/8 48-1/2 51-3/4	70 50 35 25	18 12 8 5	72 48 32 20	
16" IPS	1/2 3/4 1 1-1/2	52-3/4 53-3/4 54-3/4 58	70 50 35 25	15 11 7 5	60 44 28 20	
18" IPS	1/2 3/4 1 1-1/2	59-1/8 60 61 64-1/4	70 50 35 25	14 10 6 4	56 40 24 16	
20" IPS	1/2 3/4 1 1-1/2	65-3/8 66-3/8 67-3/8 70-1/2	70 50 35 25	12 9 6 4	48 36 24 16	
1		1				

# ... AP ARMAFLEX SHEET FOR WELDED 90° ELBOW FITTINGS

			Throat Meas.		Half Circumference Plus Throat Mea		
Pipe			F	R <sub>1</sub>	R <sub>2</sub>		
Size	Pipe	Sheet	Short	Long	Short	Long	
OD "	OD "	Thickness	Radius	Radius	Radius	Radius	
3	3-1/2	1/2	1-1/4	2-3/4	8	9-1/2	
3	3-1/2	3/4	1-1/4	2-3/4	8-1/2	10	
3	3-1/2	1	1-1/4	2-3/4	9	10-1/2	
3-1/2	4	1/2	1-1/2	3-1/4	9	10-3/4	
3-1/2	4	3/4	1-1/2	3-1/4	9-1/2	11-1/4	
3-1/2	4	1	1-1/2	3-1/4	10	11-3/4	
4	4-1/2	1/2	1-3/4	3-3/4	10-1/8	12-1/8	
4	4-1/2	3/4	1-3/4	3-3/4	10-5/8	12-5/8	
4	4-1/2	1	1-3/4	3-3/4	11-1/8	13-1/8	
5	5-9/16	1/2	2-1/4	4-3/4	12-1/4	14-3/4	
5	5-9/16	3/4	2-1/4	4-3/4	12-3/4	15-1/4	
5	5-9/16	1	2-1/4	4-3/4	13-1/4	15-3/4	
6	6-5/8	1/2	2-3/4	5-5/8	14-1/2	17-1/4	
6	6-5/8	3/4	2-3/4	5-5/8	15	17-3/4	
6	6-5/8	1	2-3/4	5-5/8	15-1/2	18-1/4	
8	8-5/8	1/2	3-3/4	7-5/8	18-1/2	22-3/8	
8	8-5/8	3/4	3-3/4	7-5/8	19	23	
8	8-5/8	1	3-3/4	7-5/8	19-1/2	23-3/8	
10	10-3/4	1/2	4-5/8	9-5/8	22-3/4	27-3/4	
10	10-3/4	3/4	4-5/8	9-5/8	23-1/4	28-1/4	
10	10-3/4	1	4-5/8	9-5/8	23-3/4	28-3/4	
12	12-3/4	1/2	5-5/8	11-5/8	26-7/8	32-7/8	
12	12-3/4	3/4	5-5/8	11-5/8	27-3/8	33-3/8	
12	12-3/4	1	5-5/8	11-5/8	27-7/8	33-7/8	
14	14	1/2	7	14	30-1/4	37-1/4	
14	14	3/4	7	14	30-3/4	37-3/4	
14	14	1	7	14	31-1/4	38-1/4	
16	16	1/2	8	16	34-3/8	42-3/8	
16	16	3/4	8	16	34-7/8	42-7/8	
16	16	1	8	16	35-3/8	43-3/8	
18	18	1/2	9	18	38-1/2	47-1/2	
18	18	3/4	9	18	39	48	
18	18	1	9	18	39-1/2	48-1/2	
20	20	1/2	10	20	42-5/8	52-5/8	
20	20	3/4	10	20	43-1/8	53-1/8	
20	20	1	10	20	43-5/8	53-5/8	
24	24	1/2	12	24	51	63	
24	24	3/4	12	24	51-1/2	63-1/2	
24	24	1	12	24	52	64	

70

50

35

5

40

28

20

12

77-7/8

78-7/8

79-7/8

83-1/8

24" IPS

1/2

3/4

1-1/2

 $<sup>\</sup>ensuremath{^{\star}}\xspace For jobsite application sizing. Not intended for shop fabrication.$ 



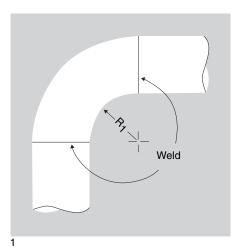
**Please note:** For installing self adhering SA Armaflex sheets and rolls, refer to p.19.

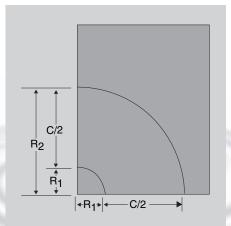
# **Installation:**

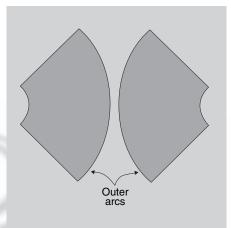
# 4.c. Armaflex sheet on 90° elbows

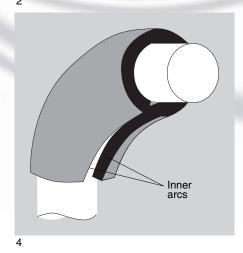
- 1. Check the type ell (long or short radius) and size.
- 2. Take throat measurement from chart (R1). Swing an arc from one corner of the Armaflex sheet, using this measurement. Take half circumference plus throat measurement from chart (R2). Using the same corner of the sheet from which the arc R1 was drawn, now swing an arc, using the measurement R2.
- 3. Cut out on arcs R1 and R2, and use as a pattern for the second half of the elbow cover. Adhere outer arcs of the two halves with Armaflex 520 or 520 BLV Adhesive. As arcs are adhered, the cover will "dish" upward. After seam is squeezed together on one side, "dish" the cover the opposite direction, and squeeze the other side of seam.

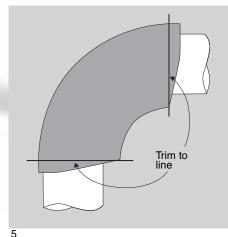
- 4. Put cover around elbow fitting, and adhere inner arcs.
- 5. Trim ends of fitting cover square to meet the straight pipe insulation. Place metal band or metal strap around fitting cover, and scribe a straight line. Then trim with a sharp knife.











#### 4.d. Armaflex sheet on flanged valve fitting covers

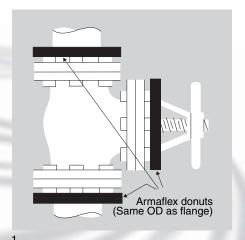
These instructions are meant to serve as a guide for insulating flanged valves with Armaflex. Because of the variety in shape and design of flanged valves, some modifications to these instructions may be necessary.

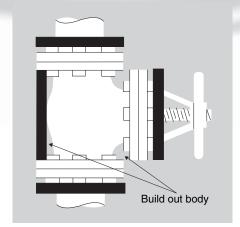
- 1. Cut Armaflex donuts the same diameter as the flanges, and install at pipe/flange and valve stem areas.
- 2. Use scrap strips of Armaflex Sheet to build the body of the valve out until it is the same dimension as the OD of the flanges. Adhere the Armaflex strips directly to the valve body, using 520 or 520 BLV Adhesive.
- 3. Use a strip of Armaflex Sheet to wrap around the flange to measure the circumference or length of the Armaflex Sheet needed for the valve body.
- 4. Cut Armaflex Sheet for the valve body.
- A. This length is determined as shown in Figure 3.
- B. This length is obtained by measuring the distance between the outer edges of the Armaflex donuts which are located at the flanges.
- C. To fit around the valve throat, a semicircle is cut from each end of the Armaflex Sheet. The diameter of semicircle is determined by the measure-

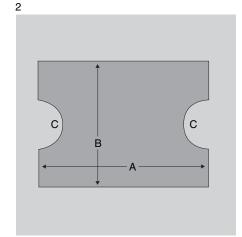
- ment across the throat of the valve at a point under the flange where the stem enters.
- 5. The Armaflex Sheet, cut out as shown in Figure 4. is installed around the valve body and the joint adhered with 520 Adhesive.

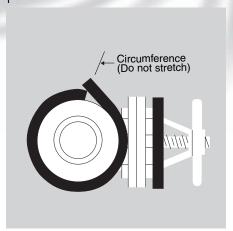
At this time, the Armaflex donuts at the ends of the fitting should be sealed to the fitting body insulation with 520 Adhesive.

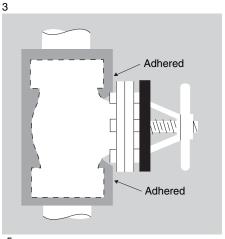
This is accomplished by running the adhesive brush between the outer circumference of the Armaflex donut and the inside of the ends of the body insulation (a wet ioint).











6. The last piece of insulation needed will insulate the bonnet area. This is shown in Figure 6 and is made as shown in

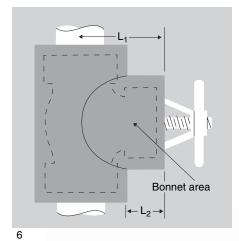
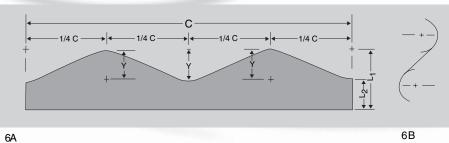


Figure 6A. The measurements for Figure 6A are determined as follows:

- C—The overall length is determined by wrapping a strip of Armaflex Sheet around the bonnet flange (do not stretch) and marking where the ends meet.
- L1—This distance is obtained by measuring from the outer surface of the Armaflex donut to the approximate middle of the valve body insulation.
- L2—This distance is obtained by measuring from the outer surface of the Armaflex donut to the closest surface of the valve body insulation.
- Y—is the difference between L1 and L2.

The bonnet insulation of Armaflex Sheet is cut to the size of C x L1. This is then marked to show L2 and marked in quarters as shown in Figure 6A. Next the scalloped edge of the insulation is determined by swinging an arc from each point marked + in Figure 6A. The radius of the arc is equal to Y. These arcs are connected with straight lines to give a smooth scalloped edge (see Figure 6B). The scalloped edge of the insulation must be undercut (beveled) to correctly meet the body insulation.

The bonnet insulation may now be installed using 520 or 520 BLV Adhesive to bond the two ends, to adhere the bonnet insulation to the body insulation and to adhere the bonnet insulation around the Armaflex donut. This should complete the flange valve fitting.



**Please note:** For installing self adhering SA Armaflex sheets and rolls, refer to p.19.

## **Installation:**

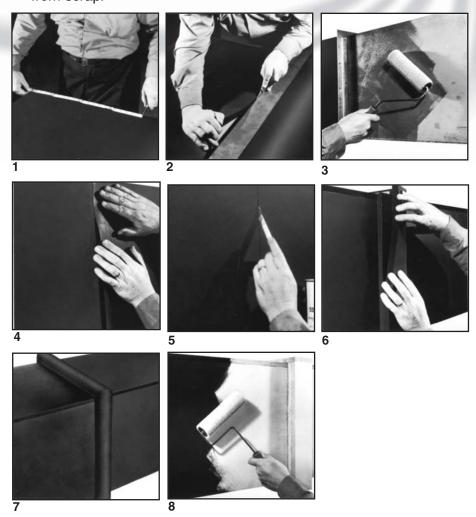
# Armaflex sheet on metal ductwork

The preferred method for square and rectangular ducts is to cut and fit the sheets, using full coverage of Armaflex 520 or 520 BLV Adhesive to adhere the insulation.

- 1. Measure—Sheets should be sized with the following application sequence in mind. Cut the bottom piece first, making it the same width as the duct. Then cut the two side pieces, so that they extend down over the edges of the bottom insulation; keep top edges flush with the top of the duct. The top insulation should be sized so that it extends over the side insulations. The fabrication must be done at the job site, at the same ambient conditions as the application.
- Cut—A sharp knife and a straightedge are the only tools required. Armaflex Sheet cuts cleanly.
- 3. Apply Adhesive—First brushor roller-coat 520 or 520 BLV Adhesive on the metal duct surface. Then coat the back side of the Armaflex Sheet, leaving a 1/2"-wide uncoated border at butt-edge seams. Allow the adhesive to dry to the touch but still tacky under slight pressure before joining surfaces.
- Bond—Position the sheet so that it overlaps the edges of previously installed sheet or sheets by 1/8". Hold the sheet

- in this position, and spot-adhere it in the center. Compress the butt edges into place for a tight joint with adjoining sheets. Then bond the remainder of the sheet by pressing it firmly into place. A small hand roller will help apply pressure.
- Adhere Joints—Spread the joint, and with a small brush, apply 520 or 520 BLV Adhesive to both butt edges. Do not flood joint with adhesive. Align carefully for good appearance, and apply pressure to joint.
- Standing Seams—These can be insulated with strips of Armaflex Sheet, generally cut from scrap.

- 7. Alternate Method—Standing seams can also be insulated with half sections of Armaflex Pipe Insulation, corresponding in thickness to the sheet used on the duct surface. Ends should be miter-cut to insure tight fit when bonded.
- 8. Apply WB Armaflex Finish—
  Two coats of WB Armaflex
  Finish, a white water-based
  latex enamel coating, are all
  that is required to provide a
  protective finish for outdoor
  installations. WB Armaflex
  Finish can be brush- or rollerapplied.





**Please note:** For installing self adhering SA Armaflex sheets and rolls, refer to p.19.

Flexible ArmaTuff Plus, ArmaTuff White or ArmaTuff Silver can be used for all exterior applications. They are practical also for use on exterior ducts, tanks, vessels, large pipes and fittings. The material provides a durable, tough and maintenance-free surface. The material is resistant to UV, ozone, acid rain and most industrial pollutants. No painting is required.

The recommended temperature usage range for ArmaTuff is -70°F to 180°F (-57°C to 82°C). The closed cell structure of ArmaTuff insulation effectively retards the flow of water vapor, and it is considered a low transmittance vapor retarder. ArmaTuff does not require additional vapor retarder. The white surface reflects heat to reduce energy load.

ArmaTuff is installed using Armaflex 520 or 520 BLV adhesive or with pre-applied pressure sensitive adhesive (PSA). For application to large, flat or curved metal surfaces such as ducts. vessels, very large pipes or tanks, full Armaflex 520 or 520 BLV adhesive coverage or product with PSA is used. The seams must be installed in compression and sealed with Armaflex 520 or 520 BLV Adhesive. Cover the seam with 4" and exposed edges with 4" or 6" ArmaTuff Seal Tape. Armaflex 520 or 520 BLV adhesive is a contact adhesive: therefore it must be applied to both surfaces, allowed to get tacky, and the surfaces are joined with pressure.

ArmaTuff is designed for installation in above ground applications. Armaflex insulation products must be installed according to Installation of Armaflex Insulations brochure. Proper installation is required to assure Armaflex insulation performance.

#### Applying Non-Self Adhering ArmaTuff Sheets



 Always prepare surface by cleaning with denatured alcohol.



 Position carefully and apply ArmaTuff. Contact adhesive bonds instantly.



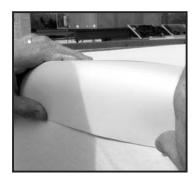
 Insulate sides first. Apply thin, uniform coat of Armaflex 520 or 520 BLV Adhesive.



Apply ArmaTuff to top surface, overlapping the side pieces.



Roll thin coat of 520 or 520 BLV Adhesive to insulation.



6. Seal and protect exposed edges and seams with ArmaTuff Seal Tape.