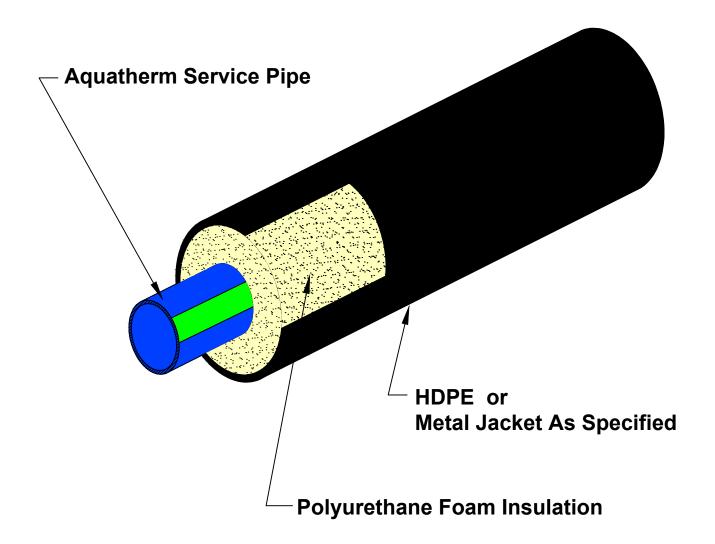
# TRICON AQUATHERM PIPE SYSTEM



# For Applications Up To 180° F Below And Above Ground

- □ Chilled Water
- □ Condenser Water
- □ Process Piping

- □ Heating Hot Water
- □ Domestic Hot & Cold Water





P.O. Box 361, Canastota, New York 13032
Tel: 315.697.8787 Fax: 315.697.8788

## TABLE 1

Pipe	Minimum	HDPE	HDPE
Size	Insulation	Jacket	Jacket
	Thickness	O.D.	Wall
1" (32mm)	1.26"	4.50"	.150"
1½" (50mm)	1.96"	4.50"	.150"
2" (63mm)	1.87"	6.63"	.200"
3" (90mm)	1.35"	6.63"	.200"
4" (125mm)	1.37"	8.00"	.150"
6" (160mm)	1.68"	10.00"	175"
8" (200mm)	2.11"	12.43"	.175"
10" (250mm)	1.94"	14.06"	.175"
12" (315mm)	1.56"	15.87"	.175"
14" (355mm)	1.73"	17.83"	.175"
16" (400mm)	1.83"	19.80"	.200"
18" (450mm)	2.03"	22.17"	.200"

### Service Pipe:

All service pipes shall be Aquatherm (PP-R) with a 10 year warranty and with the properties as listed below. Pipe fittings are manufactured from PP-R and fabricated to Standard Dimension Ration (SDR) wall thickness.

Fusiolen Polypropylene Random Resin ASTM F-2389-07 Polypropylene (PP-R) Pipe Ftgs. for Pressure Applications CSA B137.11 Performance, potable water & food processing to: NSF 14, 61, & 51 Poly-Pro Pipe & Ftgs. ICC ESR-1613 Water Dist. & Service IPC 2009 Sec. 605 Hydronic Piping IMC 2009 Chapter 12 Hydronic Piping & Plumbing IRC 2009 Chapter 21 & 26

### Insulation:

The insulation shall be a foamed in place closed cell polyurethane which completely fills the annular space between the carrier pipe and the exterior casing. The insulation shall conform to ASTM C-591 and have the following physical properties:

Minimum Density (lb. /cu. ft.) 2.0 ASTM D-1621 90-95 % Closed Cell ASTM D-2856 "K" Factor BTU/Hr. sq. ft. °F/in . . . . 16 ASTM C-177 Maximum operating temperature shall not exceed 180° F. insulation thickness shall be called out as appropriate for each application as shown in Table1.

### **Exterior Casing:**

The exterior casing shall be seamless, extruded High Density Polyethylene (H.D.P.E.) ASTM-1248, with the following physical properties:

Resin Type III, Grade P34 ASTM D-3350
Tensile Yield Strength 3300 psi ASTM D-638
Ultimate Elongation 850% (min) ASTM D-638
Tangent Flexural Modules 175,000 psi ASTM D-790
No polyethylene tape casings will be allowed.

### Above Grade Metal Casing

Casing to be a minimum (.0315") Spiral Lockseam <u>Aluminum</u> with the following properties: ASTM B-209/Alloy 3003/Temper H14 or

Spiral Lockseam <u>Galvanized</u> with the following properties: ASTM A-527/G-60 Coating

Spiral Lockseam Stainless Steel with the following properties ASTM A-167

### Sub-Assemblies:

All fittings shall be Aquatherm, factory insulated and fusion welded to the service pipe and sealed to the outer jacket. Field installed fittings are insulated and sealed with a Tricon supplied insulation kit.

### **Field Joints:**

After heat fusion welding/ and hydrostatic testing of the carrier pipe, HDPE jacketed straight field joints shall be insulated with polyurethane foam half-shells to the thickness specified and sealed water tight with a heat-shrink sleeve.

Metal jacketed straight field joints shall be insulated with polyurethane foam half shells to the thickness specified and sealed water tight with a wrap around draw-band bolted tight to the metal casing.

### Installation:

# No Piping shall be installed in standing water. Trenches shall be maintained dry until final field closure is complete.

The installing contractor shall handle the piping system in accordance with the directions furnished by the manufacturer and as approved by the architect and engineer. The carrier piping shall be hydrostatically tested to 1-1/2 times the operating pressure, or as specified in the contract documents. The test shall be maintained for a minimum time of 1 hour. **EXERCISE DUE CARE WHEN INSTALLING AND TESTING THE PIPING SYSTEM** 

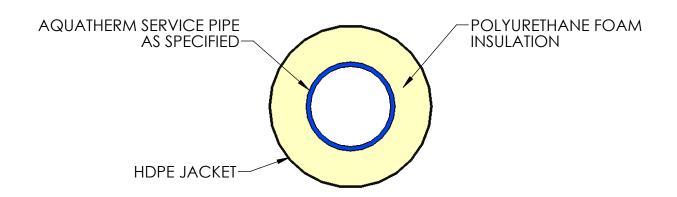
### Backfill:

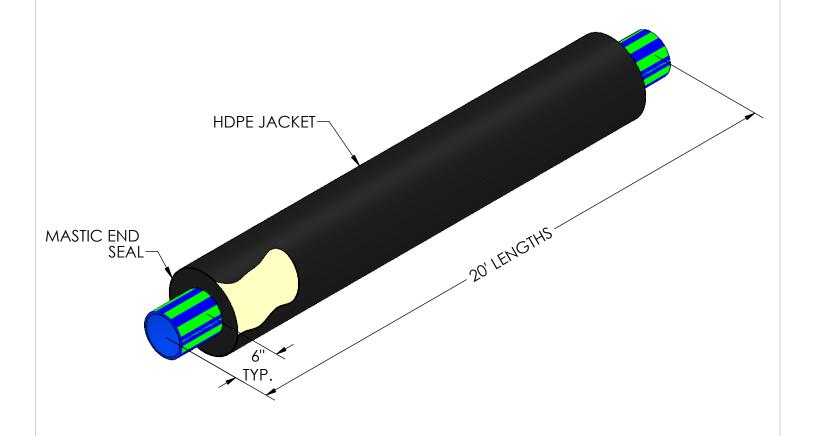
A 6-inch layer of sand or fine gravel, less than ½" in diameter, shall be placed and tamped in the trench to provide uniform bedding for the **Aquatherm** system. Once the system is in place, the trenches shall be carefully backfilled with similar material and hand tamped in 6" layers until a minimum of 12" above the top of the preinsulated pipe has been achieved. The remainder of the backfill shall be void of rocks, frozen earth and foreign material. The trench shall be compacted to comply with H-20 Highway loading.

### **System Options:**

- Contact your Tricon representative for available sizes and system options.
- Optional HDPE casings include DR 32.5
- \* Optional metal casings include Galvanized, Aluminum
- \* or Stainless Steel.
- \* Heat Tracing

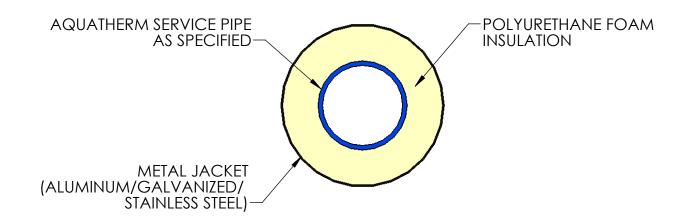
Tricon Piping Systems, Inc. Tel: 315-697-8787
P.O. Box 361 Fax: 315-697-8788
Canastota, NY 13032 www.triconpiping.com

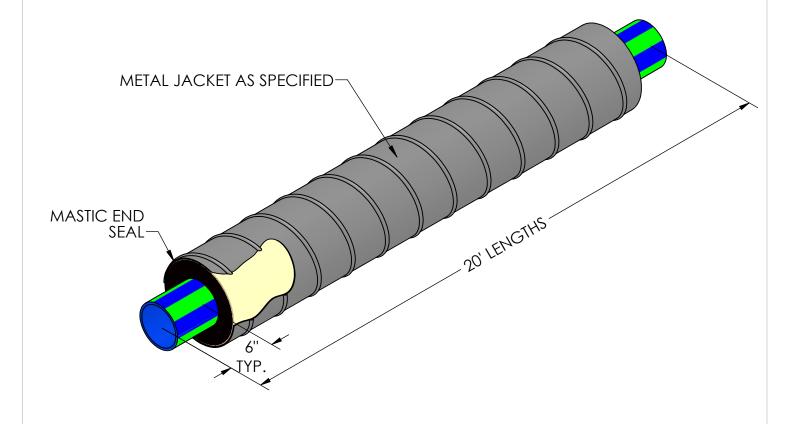






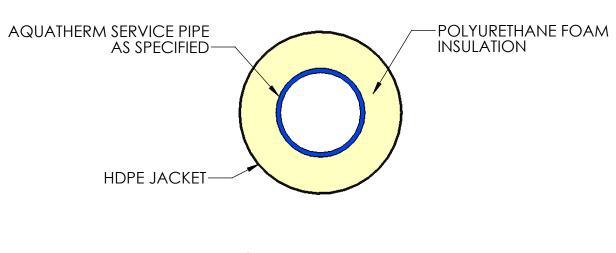
STRAIGHT LENGTH D	ETAIL		
PRODUCT	SIZE	scale NTS	12/01/2016
TRICON AQUATHERM	DWG. NO	). T-1	SHEET

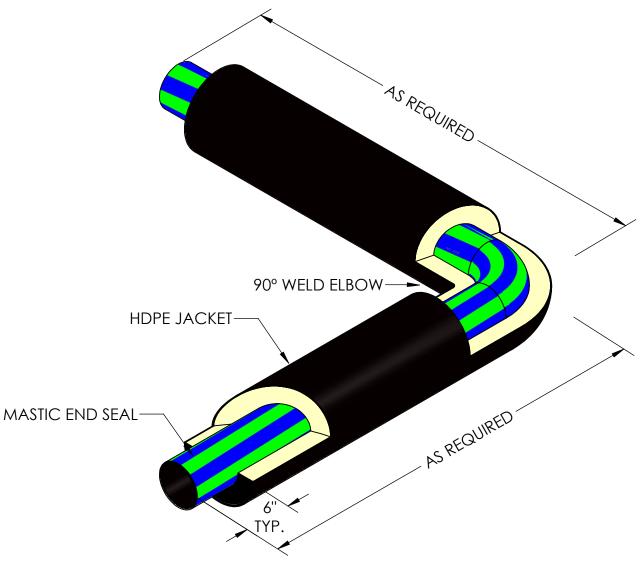






STRAIGHT LENGTH D	ETAIL		
PRODUCT	SIZE	scale NTS	12/01/2016
TRICON AQUATHERM	DWG. NO	). T-1	SHEET



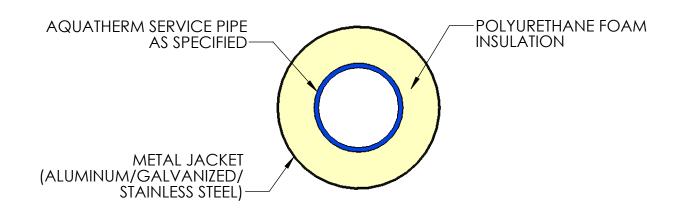


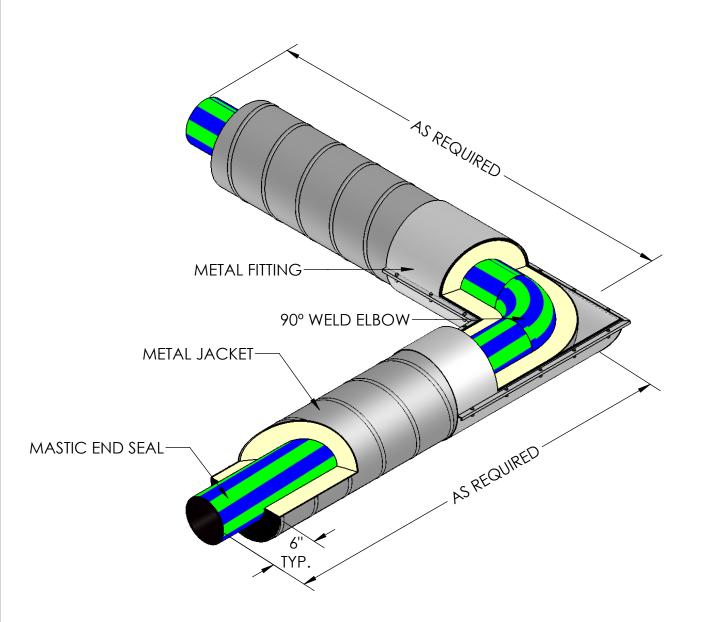


TRICON AQUATHERM

**PRODUCT** 

SIZE	scale NTS	12/01/2016
DWG. NO	). T-2	SHEET







SHEET TITLE PRE-FABRICATED 90-DEGREE ELBOW DETAIL

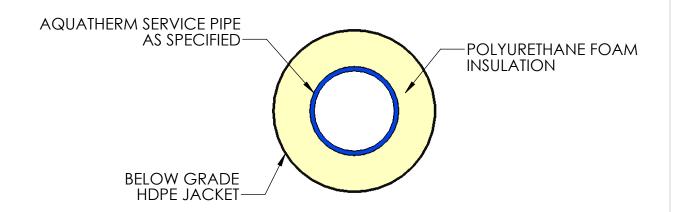
PRODUCT

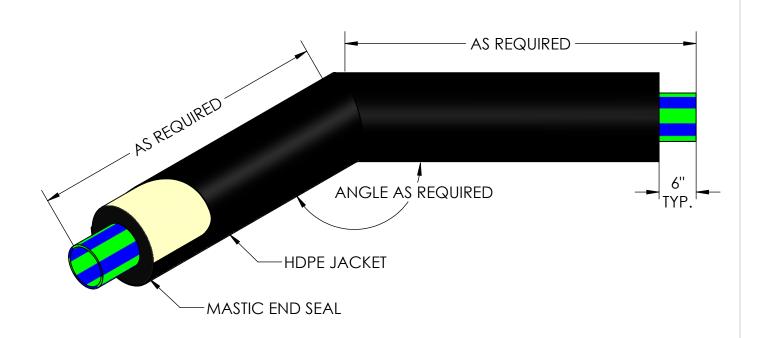
TRICON AQUATHERM

A NTS 12/01/2016

DWG. NO. SHEET

AT-2







PRE-FABRICATED 45-DEGREE ELBOW DETAIL

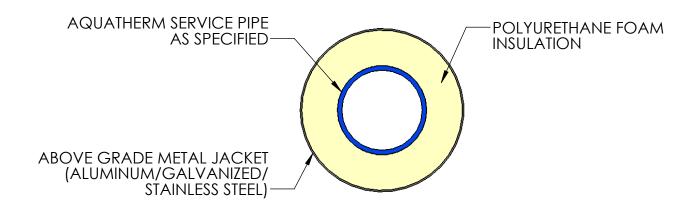
PRODUCT

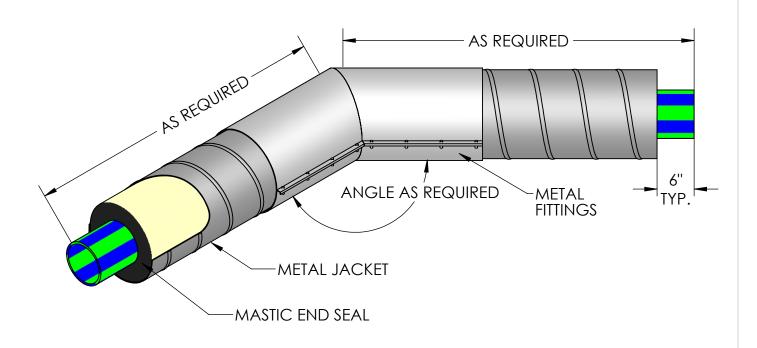
SIZE SCALE D.

TRICON AQUATHERM

SIZE SCALE DATE 12/01/2016

DWG. NO. SHEET AT-3







PRE-FABRICATED 45-DEGREE ELBOW DETAIL

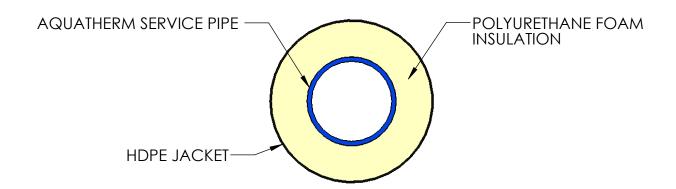
PRODUCT

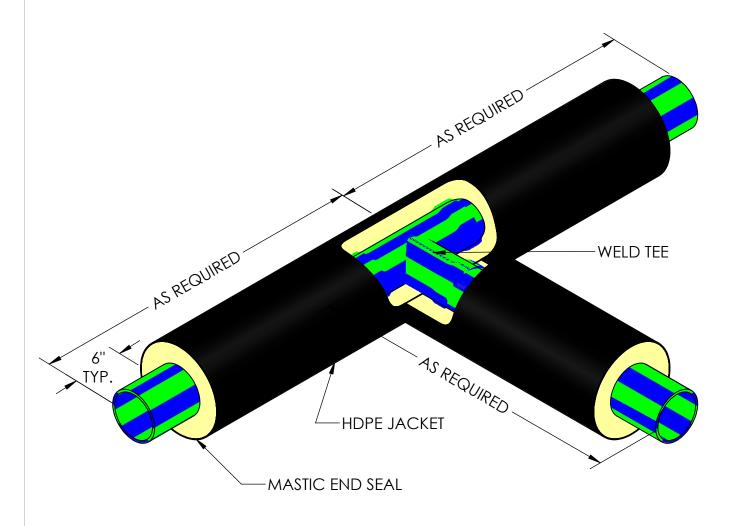
SIZE SCALE D.

TRICON AQUATHERM

SIZE SCALE DATE 12/01/2016

DWG. NO. SHEET AT-3







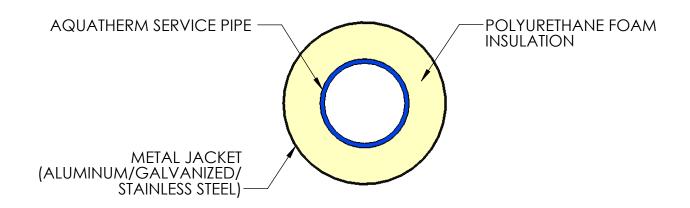
SHEET TITLE PRE-FABRICATED TEE DETAIL

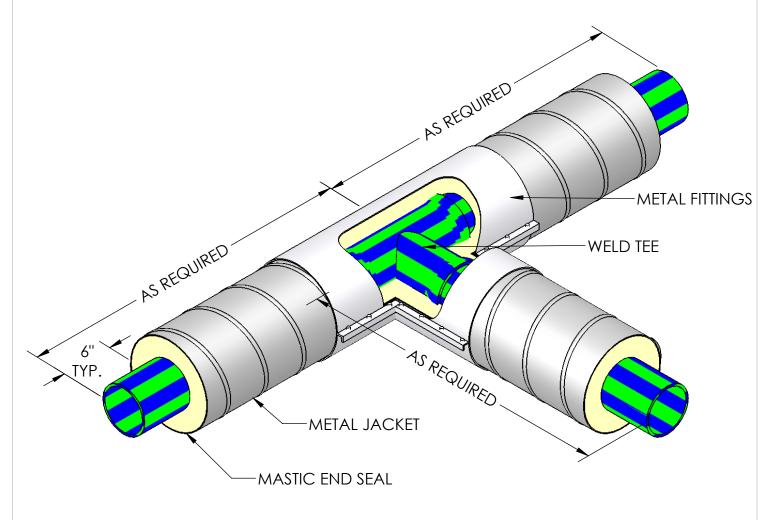
PRODUCT

TRICON AQUATHERM

SIZE SCALE DATE 12/01/2016

DWG. NO. SHEET AT-4







SHEET TITLE

PRE-FABRICATED TEE DETAIL

PRODUCT

TRICON AQUATHERM

SIZE	SCALE	DATE
Α	NTS	12/01/2016
DWG. NO	).	SHEET
AT-4		









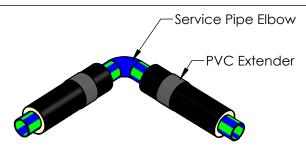


3. PVC Extenders PVC Cover 4.

Pressure-sensitive Tape

**Equipment List:** Razor knife, Handsaw, and safety glasses.

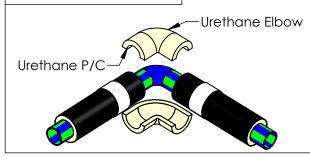
### STEP #2: Place PVC Extenders and Join Service Pipe



Prior to welding service pipe, slide PVC extenders over casing and move away from weld point to prevent damage.

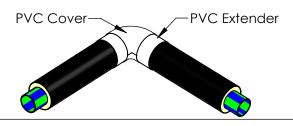
Weld fitting to service pipe and test/check all welds as required.

### STEP #3: Apply Insulation



Make sure the pipe and casing are clean and dry. Fit urethane elbow over over fitting. Cut the urethane pipe-covering to length using a hand saw. Fit over service pipe and secure in place.

### STEP #4: Fit PVC over the insulation



Slide the PVC extenders in place and secure in place. Fit the PVC cover in place.

### STEP #5: Tape wrap

**p** (315)697-8787



f(315)697-8788

Spiral wrap fitting with pressure-sensitive tape as shown.

Note: In colder weather, tape must be kept warm until time of use.

**TRICON** Piping Systems, Inc. P.O. BOX 361, Canastota, NY 13032

SHEET TITLE

90 DEGREE ELBOW KIT (RIGID FOAM) DETAIL

**PRODUCT** 

TRICON AQUATHERM

SIZE SCALE NTS DATE 12/01/2016

DWG. NO.







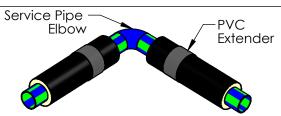


- Liquid Urethane Foam Materials
- 2. PVC Extenders
- PVC Cover
- Pressure-sensitive Tape



Equipment List: Razor knife, drill, gloves, and safety glasses.

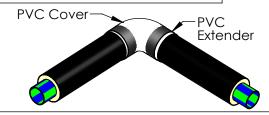
### STEP #2: Place PVC Extenders and Join Service Pipe



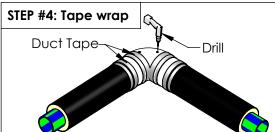
Prior to welding service pipe, slide PVC extenders over casing and move away from weld point to prevent damage.

Weld fitting to service pipe and test/check all welds as required.

### **STEP #3: Fit PVC Cover & Extenders**



Slide the PVC extenders in place and secure in place. Fit the PVC cover in place.



Wrap seams tightly with duct tape.

Drill two (2) 1" holes into the top of the PVC cover for introduction of polyurethane foam mixture.

# Mixing Bucket

Refer to the chart for the foam amount based on the jacket size. Mix "A" and "B" in a bucket and pour foam into opening. When the foam reacts, temporarily seal the opening with duct tape. Allow 4-5 minutes for reaction to take place.

Note: Required proportions may vary based on weather conditions and foam thickness (chart based on 1½" nominal insulation thickness). Contact your Tricon representative for more information.

Jacket Size (In.)	"A" (Oz.)	"B" (Oz.)
3	6	6
4	8	8
5	8	8
6	10	10
8	14	14
10	20	20
12	32	32



Trim off excess material after curing is complete.

Spiral wrap fitting with pressure-sensitive tape as shown.

Note: In colder weather, tape must be kept warm until time of use.

SHEET TITLE

90 DEGREE ELBOW KIT (LIQUID FOAM) DETAIL

**PRODUCT** 

TRICON AQUATHERM

SIZE SCALE DATE NTS 12/

12/01/2016

DWG. NO.

AT-5

TRICON
Piping Systems, Inc.

P.O. BOX 361, Canastota, NY 13032
P (315)697-8787 f (315)697-8788







The field joint kit includes:

- Urethane pipe covering (3-ft sections)
- Urethane Elbow 2.
- PVC Extenders PVC Cover 3.
- Pressure-sensitive Tape

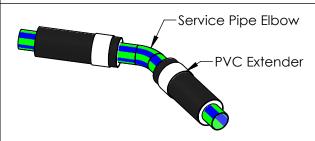




**Equipment List:** 

Razor knife, Handsaw, and safety alasses.

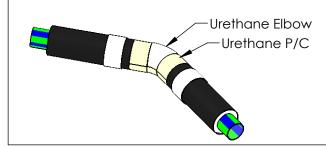
### STEP #2: Place PVC Extenders and Join Service Pipe



Prior to welding service pipe, slide PVC extenders over casing and move away from weld point to prevent damage.

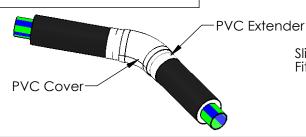
Weld fitting to service pipe and test/check all welds as required.

### STEP #3: Apply Insulation



Make sure the pipe and casing are clean and dry. Fit urethane elbow over over fitting. Cut the urethane pipe-covering to length using a hand saw. Fit over service pipe and secure in place.

### STEP #4: Fit PVC over the insulation



Slide the PVC extenders in place and secure in place. Fit the PVC cover in place.

### STEP #5: Tape wrap



Spiral wrap fitting with pressure-sensitive tape as shown.

Note: In colder weather, tape must be kept warm until time of use.



SHEET TITLE

ELBOW KIT (RIGID FOAM) DETAIL

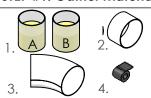
**PRODUCT** 

TRICON AQUATHERM

SIZE А SCALE DATE NTS

12/01/2016

DWG. NO.



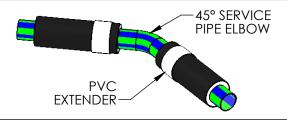
The field joint kit includes:

- Liquid Urethane Foam Materials
- 2. PVC Extenders
- PVC Fitting Cover
- Pressure-sensitive Tape



**Equipment List:** Razor knife, drill, gloves, and safety glasses.

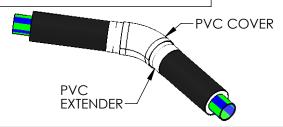
### STEP #2: Place PVC Extenders and Join Service Pipe



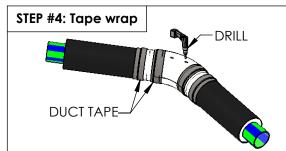
Prior to welding service pipe, slide PVC extenders over casing and move away from weld point to prevent damage.

Weld fitting to service pipe and test/check all welds as required.

### STEP #3: Fit PVC Cover & Extenders

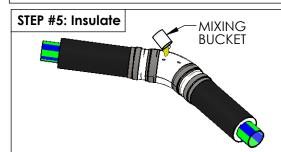


Slide the PVC extenders in place and secure in place. Fit the PVC cover in place.



Wrap seams tightly with duct tape.

Drill two (2) 1" holes into the top of the PVC cover for introduction of polyurethane foam mixture.



Refer to the chart for the foam amount based on the jacket size. Mix "A" and "B" in a bucket and pour foam into opening. When the foam reacts, temporarily seal the opening with duct tape. Allow 4-5 minutes for reaction to take place.

Note: Required proportions may vary based on weather conditions and foam thickness (chart based on 1½" nominal insulation thickness). Contact your Tricon representative for more information.

Jacket Size (In.)	"A" (Oz.)	"B" (Oz.)
3	6	6
4	8	8
5	8	8
6	10	10
8	14	14
10	20	20
12	32	32

STEP #5: Trim & Tape	DDEGGLIDE
	-PRESSURE- SENSITIVE TAPE

**TRICON** 

Trim off excess material after curing is complete.

Spiral wrap fitting with pressure-sensitive tape as shown.

Note: In colder weather, tape must be kept warm until time of use.

SHEET TITLE

### ELBOW KIT (LIQUID FOAM) DETAIL

**PRODUCT** 

TRICON AQUATHERM

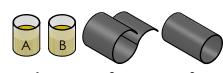
SIZE SCALE NTS Α

DATE 12/01/2016

DWG. NO.

AT-6

Piping Systems, Inc. P.O. BOX 361, Canastota, NY 13032 **p** (315)697-8787 f(315)697-8788



One field joint kit includes:

- Liquid Urethane Foam Materials
- Shrink Sleeve Materials

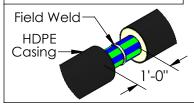
Split HDPE Rockshield (18" long)



Equipment List:

Hand saw, razor knife, propane tank, torch, safety glasses, and gloves

### STEP #2: Join Service Pipe



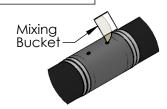
Weld the service pipe and test/check all welds as required.

### STEP #3: Ready The Mold



Place HDPE mold/rockshield into the center of the joint and wrap seams tightly with duct tape. Drill two (2) 1" holes into the top of the HDPE mold/rockshield for introduction of polyurethane foam mixture.

### STEP #4: Insulate

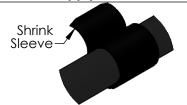


Refer to the chart for the foam amount based on the jacket size. Mix "A" and "B" in a bucket and pour foam into opening. When the foam reacts, temporarily seal the opening with duct tape. Allow 4-5 minutes for reaction to take place.

Note: Required proportions may vary based on weather conditions and foam thickness (chart based on  $1\frac{1}{2}$ " nominal insulation thickness). Contact your Tricon representative for more information.

(ln.)	(Oz.)	(Oz.)
3	3	3
4	4	4
5	5	5
6	6	6
8	8	8
10	10	10
12	12	12
14	14	14
16	1.6	1.6

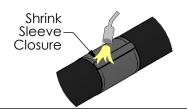
### STEP #4: Apply Shrink Sleeve



After reaction has taken place, trim off any excess foam and remove HDPE mold/rockshield from joint.

Remove release liner and place shrink sleeve around pipe insulation. Gently heat backing of sleeve and closure. Overlap sleeve at the 10 and 2 o'clock positions. Press the closure firmly into place. Gently heat closure and pat down.

### STEP #5: Heat the Shrink Sleeve



With a yellow flame, heat the shrink sleeve from the middle toward each side of the sleeve until recovery is complete. Remove any wrinkles or trapped air by working them from the center outward using the roller. Shrinking has been completed when adhesive oozes from the sides.

Note: Avoid excessive heat to overlap area.

### STEP #6: Inspect Shrink Sleeve & Apply Rockshield

f(315)697-8788



After shrink sleeve has cooled, inspect the sleeve to ensure full contact with casing and adhesive has flowed beyond both sleeve edges. Make sure no cracks or holes appear on the sleeve. Install HDPE Mold/Rockshield over shrink sleeve with a minimum 2" overlap over sleeve and secure in place.



SHEET TITLE

Field Joint Kit (Liquid Foam) with HDPE Casing Detail

**PRODUCT** 

TRICON AQUATHERM

SIZE SCALE DATE NTS 12/01/2016 Α

DWG. NO.



1.





2.



The field joint kit includes:

- Liquid Urethane Foam Materials
- PVC Sleeve (18" long)
- Metal Cover

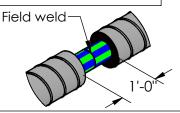






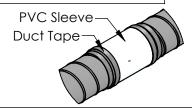
**Equipment List:** Razor knife, drill, gloves, and safety glasses.

### STEP #2: Prepare PVC Sleeve



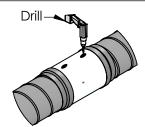
Weld the service pipe and test/check all joints as required.

### STEP #3: Join Service Pipe



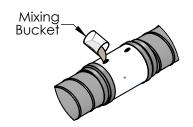
Fit the PVC cover and wrap the seams tightly with duct tape.

### STEP #4: Apply Sleeve and Cut Hole



Drill two (2) 1" holes into the top of the PVC sleeve for introduction of polyuretháne foam mixture.

### STEP #5: Insulate



Refer to the chart for the foam amount based on the jacket size. Mix "A" and "B" in a bucket and pour foam into opening. When the foam reacts, temporarily seal the opening with duct tape. Allow 4-5 minutes for reaction to take place.

Note: Required proportions may vary based on weather conditions and foam thickness (chart based on  $1\frac{1}{2}$ " nominal insulation thickness). Contact your Tricon representative for more information.

Jacket Size (In.)	"A" (Oz.)	"B" (Oz.)
3	3	3
4	4	4
5	5	5
6	6	6
8	8	8
10	10	10
12	12	12
14	14	14
16	16	16

### STEP #6: Trim and Seal



Remove the PVC sleeve and tape.

Trim any excess foam, and center the stainless steel drawband in place and dry fit. Put a bead of silicone sealant around the casing 1" from each end. Place the two-piece cover over the joint and tighten the bolts.

SHEET TITLE

Field Joint Kit (Liquid Foam) with Metal Casing Detail

**PRODUCT** 

TRICON AQUATHERM

SCALE DATE SIZE NTS 12/01/2016 А

DWG. NO.

AT-7

**TRICON** 

Piping Systems, Inc.







The field joint kit includes:

 Urethane pipe covering (3-ft sections)

2. Shrink Sleeve materials

3. Split HDPE Rockshield (18" long)



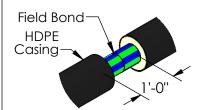




Equipment List:

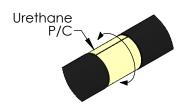
Hand saw, razor knife, propane tank, torch, and safety glasses.

### STEP #2: Join Service Pipe



After field bonding with coupling & adhesive, test/check the service pipe as required.

### STEP #3: Apply Insulation



Make sure the pipe and casing are clean and dry. Cut the polyurethane foam half-shells to length using a hand saw. Fit the urethane to contours of service pipe by rotating the half-shells back and forth until they seat properly. Secure the urethane into place. Some trimming may be required for a tight fit.

### STEP #4: Apply Shrink Sleeve



Remove release liner and place shrink sleeve around pipe insulation. Gently heat backing of sleeve and closure. Do not get dirt onto inside of shrink sleeve. Overlap sleeve at the 10 and 2 o'clock positions. Press the closure firmly into place. Gently heat closure and pat down.

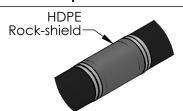
### STEP #5: Heat the Shrink Sleeve



With a yellow flame, heat the shrink sleeve from the middle toward each side of the sleeve until recovery is complete. Remove any wrinkles or trapped air by working them from the center outward using the roller. Shrinking has been completed when adhesive oozes from the sides.

Note: Avoid excessive heat to overlap area.

### STEP #6: Inspect Shrink Sleeve & Apply Rockshield



After shrink sleeve has cooled, inspect the sleeve to ensure full contact with casing and that adhesive has flowed at 360° beyond both sleeve edges. Make sure no cracks or holes appear on the sleeve. Install HDPE rockshield over shrink sleeve with a minimum 2" overlap over sleeve and secure in place.



SHEET TITLE

FIELD JOINT KIT (RIGID FOAM) WITH HDPE CASING DETAIL

**PRODUCT** 

TRICON AQATHERM

A SCALE NTS

SCALE DATE

12/01/2016

DWG. NO.

STEP #2: Join Service Pipe



2.

3.

The field joint kit includes:

- Urethane pipe covering (3-ft sections)
- 2. 3. Metal Draw Band
- Silicone Sealant

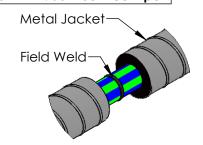






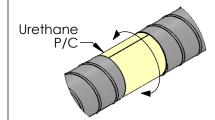
Equipment List:

Hand saw, razor knife, and safety glasses.



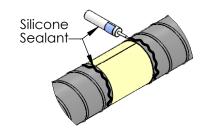
Weld the service pipe and test/check all welds as required.

### STEP #3: Apply Insulation



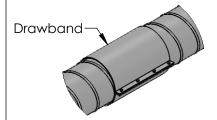
Make sure the pipe and casing are clean and dry. Cut the polyurethane foam half-shells to length using a hand saw. Fit the urethane to contours of service pipe by rotating the half-shells back and forth until they seat properly. Secure the urethane into place.

### **STEP #4: Apply Silicone**



Put a bead of silicone sealant around the jacket 1" from each end.

### STEP #5: Install Drawband



Center the drawband in place and dry fit. Place the drawband over the joint and tighten the bolts. Apply silicone sealant around the edge of the drawband and jacket.

Note: Metal casing options include Stainless Steel, Aluminum, and Galvanized Steel.



SHEET TITLE

Field Joint Kit (Rigid Foam) with Metal Casing Detail

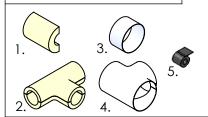
**PRODUCT** 

TRICON AQUATHERM

SIZE SCALE DATE NTS

12/01/2016

DWG. NO.



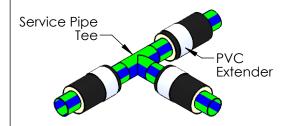
The field joint kit includes:

- Urethane pipe covering (3-ft sections)
- Urethane Tee
- 2. PVC Extenders PVC Cover
- 4.
- Pressure-sensitive Tape



Equipment List: Razor knife, drill, and safety glasses.

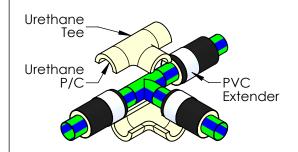
### STEP #2: Place PVC Extenders and Join Service Pipe



Prior to welding the tee to the service pipes, slide PVC extenders over casing and move away from weld point to prevent damage.

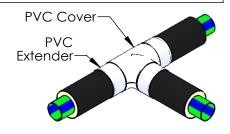
Weld fitting to service pipe and test/check all welds as required.

### **STEP #3: Apply Insulation**



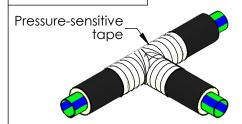
Make sure the pipe and casing are clean and dry. Fit urethane tee over over fitting. Cut the urethane pipecovering to length using a hand saw. Fit over service pipe and secure in place.

### STEP #4: Fit PVC over the insulation



Slide the PVC extenders in place and secure in place. Fit the PVC cover in place.

### STEP #5: Tape wrap



Spiral wrap fitting with pressure-sensitive tape as shown.

Note: In colder weather, tape must be kept warm until time of use.



f(315)697-8788

SHEET TITLE

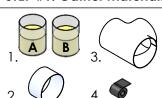
TEE KIT (RIGID FOAM) DETAIL

**PRODUCT** 

TRICON AQUATHERM

SIZE SCALE DATE NTS 12/01/2016

DWG. NO.



The field joint kit includes:

- Liquid Urethane Foam Materials
- **PVC Extenders**
- 2. 3. **PVC Cover**
- Pressure-sensitive Tape



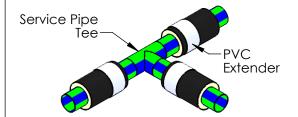






**Equipment List:** Razor knife, drill, gloves, and safety glasses.

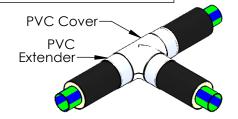
### STEP #2: Place PVC Extenders and Join Service Pipe



Prior to welding tee to the service pipes, slide PVC extenders over casing and move away from weld point to prevent damage.

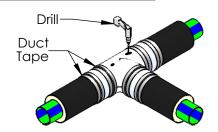
Weld fitting to service pipe and test/check all welds as required.

### **STEP #3: Apply Insulation**



Slide the PVC extenders in place and secure in place. Fit the PVC cover in place.

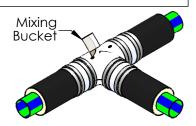
### STEP #3: Apply Insulation



Wrap seams tightly with duct tape.

Drill two (2) 1" holes into the top of the PVC cover for introduction of polyurethane foam mixture.

### STEP #4: Fit PVC over the insulation



Refer to the chart for the foam amount based on the jacket size. Mix "A" and "B" in a bucket and pour foam into opening. When the foam reacts, temporarily seal the opening with duct tape. Allow 4-5 minutes for reaction to take place.

Note: Required proportions may vary based on weather conditions and foam thickness (chart based on 1½" nominal insulation thickness). Contact your Tricon representative for more information.

Jacket Size (In.)	"A" (Oz.)	"B" (Oz.)
3	9	9
4	12	12
5	12	12
6	15	15
8	21	21
10	30	30
12	48	48

STEP #5: Tape wrap	
Pressure- sensitive	
tape	

Trim off excess material after curing is complete.

Spiral wrap fitting with pressure-sensitive tape as shown.

Note: In colder weather, tape must be kept warm until time of use.

SHEET TITLE

TEE KIT (LIQUID FOAM) DETAIL

**PRODUCT** 

TRICON AQUATHERM

SIZE	scale NTS	DATE 12/01/2016
DIA/O NI		

DWG. NO.

AT-8

Piping Systems, Inc. P.O. BOX 361, Canastota, NY 13032 **p** (315)697-8787 f(315)697-8788

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