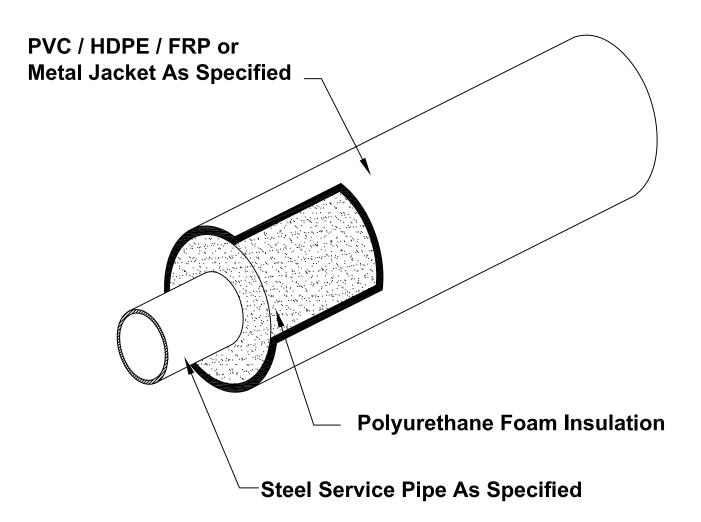
# **TRICON STEEL 250 SYSTEM**

# For Applications Up To 250° F Below And Above Ground

- □ Chilled Water
- □ Condensate
- □ Condenser Water

- □ Low Pressure Steam
- □ Heating Hot Water
- □ Process Piping





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

### TABLE 1

Pipe	Minimum	PVC	PVC
Size	Insulation	Jacket	Jacket
	Thickness	O.D.	Wall
1/2"	1.76"	4.50"	.070"
3/4"	1.66"	4.50"	.070"
1"	1.53"	4.50"	.070"
1¼"	1.35"	4.50"	.070"
1½"	1.23"	4.50"	.070"
2"	1.81"	6.14"	.070"
21/2"	1.56"	6.14"	.070"
3"	1.25"	6.14"	.070"
4"	1.75"	8.16"	.080"
5"	1.25"	8.16"	.080"
6"	1.69"	10.20"	.100"
8"	1.69"	12.24"	.120"
10"	1.65"	14.32"	.140"
12"	1.47"	16.00"	.160"

#### Service Pipe:

Carbon steel service pipe shall be standard weight A53 ERW or A106 seamless beveled for welding. Condensate return piping shall be Schedule 80. (Stainless Steel piping shall be Type 304L or 316L.) All joints for pipe 2 ½" and larger in size shall be butt-welded. Sizes 2" and smaller shall be socket welded. Straight lengths of piping will be supplied with 6" of piping exposed at each end for field joint fabrication. Pipe lengths to be supplied in 21-42 ft. lengths.

## 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 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. . . . 147 ASTM C-177

# Exterior Casing:\*\*

The exterior casing shall be

(1) Seamless, extruded white PVC Type 1, Grade 1 Class 12454-B per ASTM D-1784 or

(2) High Density Polyethylene (H.D.P.E.)

ASTM D-1248 with the following physical properties:

ASTM D-3350...Resin Type III, Grade P34
ASTM D-638...Ultimate Elongation 850%
ASTM D-638...Tensile Yield Strength 3300 psi
ASTM D-790...Tangent Flexural Modules 175,000 psi

No polyethylene tape casings will be allowed.

### TABLE 2

Pipe	Minimum	HDPE	HDPE
Size	Insulation	Jacket	Jacket
	Thickness	O.D.	Wall
1/2"	1.68"	4.50"	.150"
3/4"	1.58"	4.50"	.150"
1"	1.44"	4.50"	.150"
11/4"	1.27"	4.50"	.150"
1½"	1.15"	4.50"	.150"
2"	2.00"	6.63"	.150"
21/2"	1.73"	6.63"	.150"
3"	1.43"	6.63"	.150"
4"	1.58"	8.00"	.150"
5"	1.00"	8.00"	.150"
6"	1.51"	10.00"	.175"
8"	1.73"	12.43"	.175"
10"	1.48"	14.06"	.175"
12"	1.39"	15.87"	.175"
14"	1.72"	17.83"	.175"

#### **Sub-Assemblies:**

All fittings, anchors, end seals, other accessories shall be prefabricated or field fabricated dependant upon engineer's option and/or site conditions.

#### **Field Joints:**

After welding and hydrostatic testing, PVC jacketed straight field joints shall be insulated with polyurethane foam to the thickness specified, PVC sleeve and pressure sensitive tape. HDPE jackets will use polyurethane foam and a heat shrinkable sleeve.

#### **Expansion Compensation: \*\*\***

Expansion and contraction within the piping system shall be accommodated with factory prefabricated internal expansion elbows, z-bends, expansion loops, and anchors specifically designed for each application. External expansion compensation can be provided with the use of flexible foam bolsters.

#### 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.** 

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

#### Backfill:

A 4-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 **Steel 250** 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.

#### Accessories:

**Heat Tracing** 

### **System Options:**

- \* Insulation thickness will vary depending on the type of insulation specified and the operating temperature. Contact your Tricon representative for available sizes and system options.
- \*\* Optional metallic casings for above grade applications include Spiral Lockseam in Galvanized, Aluminum or Stainless Steel.
- \*\* Optional non-metallic casings for below grade offered include, Filament Wound FRP.
- \*\*\* Optional push-on expansion couplings are available upon request.

Tel: 315-697-8787

Fax: 315-697-8788

#### Backfill:

A 4-inch layer of sand or fine gravel shall be placed and tamped in the trench to provide stable and uniform bedding for the piping system. Once the system is in place, the trenches shall be carefully backfilled and hand tamped in 6" layers until a cover of at least 24" from the top of the pipe has been achieved. The first 12" of backfill shall be sand or fine gravel less than ½" in diameter. The remainder of the backfill shall be void of rocks, frozen earth and foreign material over 2" in diameter. The trench shall be compacted to comply with H-20 Highway loading.

#### Accessories:

**Heat Tracing** 

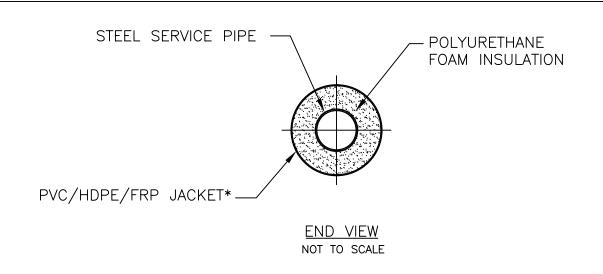
#### **System Options:**

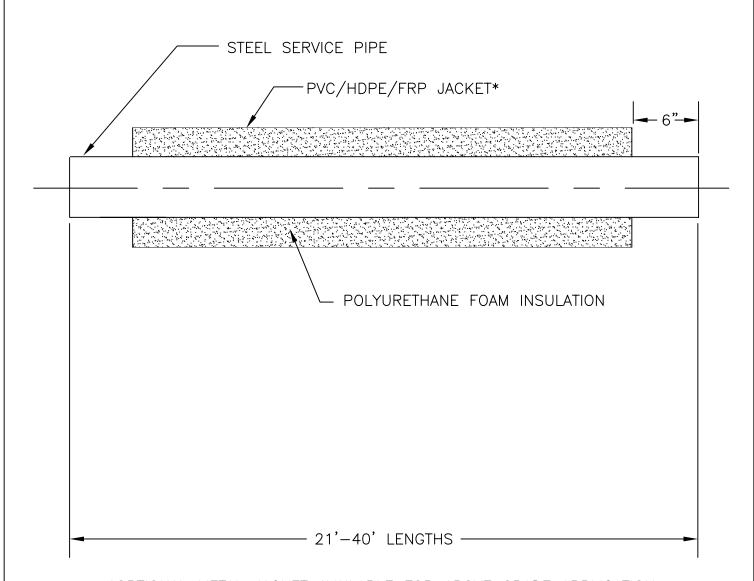
- \* Insulation thickness will vary depending on the type of insulation specified and the operating temperature. Contact your Tricon representative for available sizes and system options.
- \*\* Optional metallic casings for above grade applications include Spiral Lockseam in Galvanized, Aluminum or Stainless Steel.
- \*\* Optional non-metallic casings for below grade offered include, Filament Wound FRP.

Tel: 315-697-8787

Fax: 315-697-8788

www.triconpiping.com





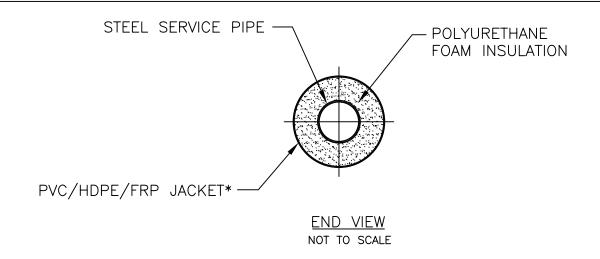
\*OPTIONAL METAL JACKET AVAILABLE FOR ABOVE GRADE APPLICATION.

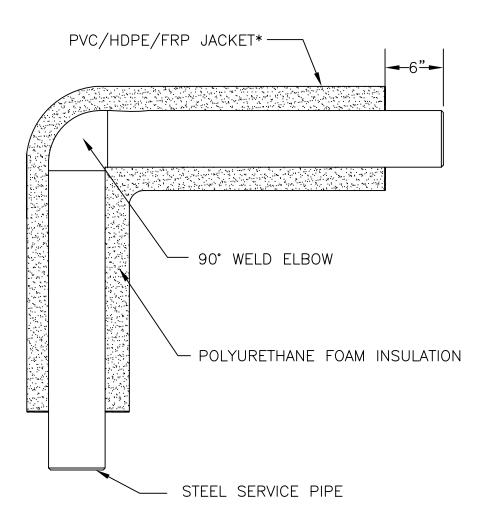
STEEL 250 STRAIGHT LENGTH DETAIL

TRICON STEEL 250

Date: 03/09/06 Dwg. No.: S250-1 Rev.:







\*OPTIONAL METAL JACKET AVAILABLE FOR ABOVE GRADE APPLICATION.

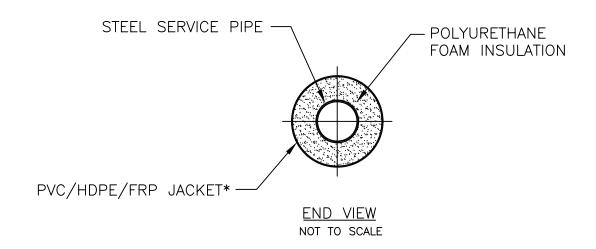
STEEL 250 PREFABRICATED 90° ELBOW DETAIL

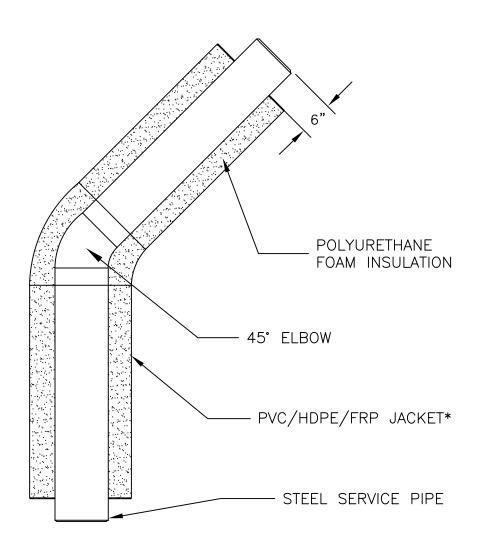
TRICON STEEL 250

Date: 03/09/06 Dwg. No.: S250-2

Rev.:







\*OPTIONAL METAL JACKET AVAILABLE FOR ABOVE GRADE APPLICATION.

STEEL 250 PREFABRICATED 45° ELBOW DETAIL

Rev.:

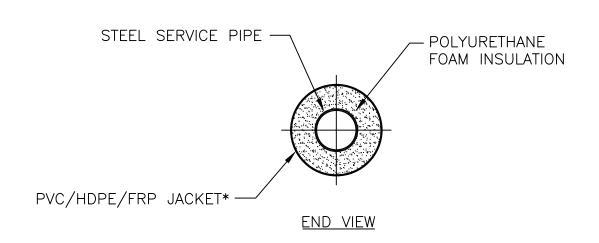
TRICON STEEL-250

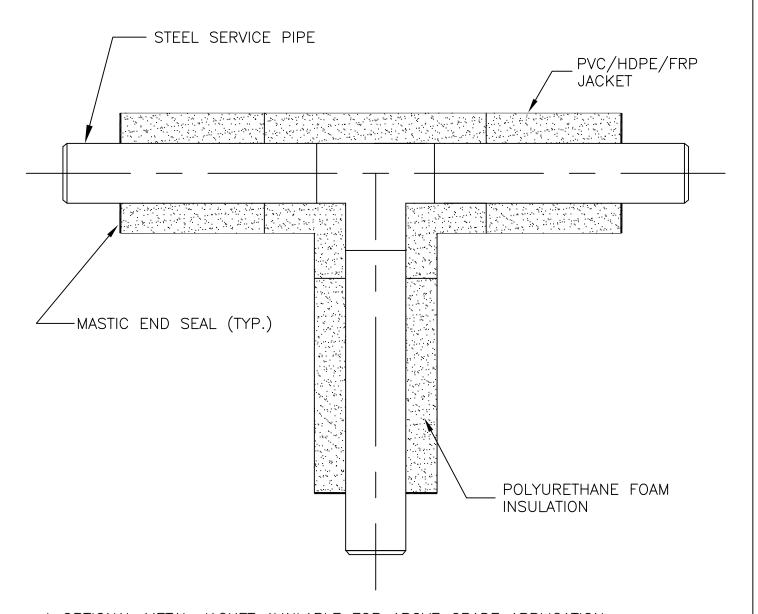
Date: 03/09/06 Dwg. No.: S250-3

TRICON
Piping Systems, Inc. ®

P.O. Box 361, Canastota, New York 13032

Tel: 315.697.8787 Fax: 315.697.8788



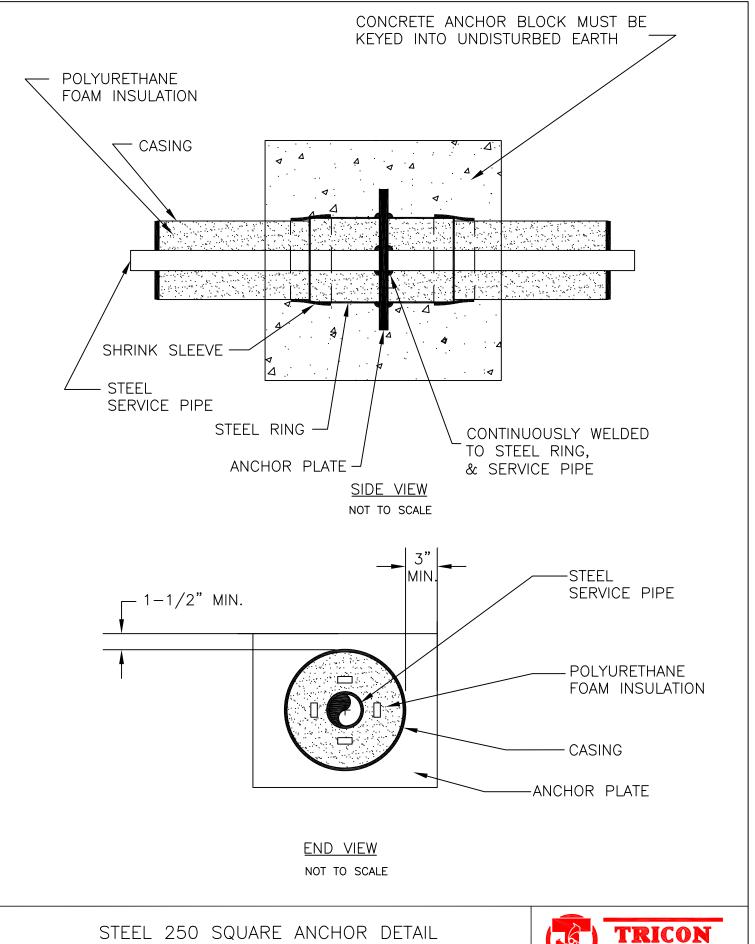


\* OPTIONAL METAL JACKET AVAILABLE FOR ABOVE GRADE APPLICATION.

STEEL 250 PREFABRICATED TEE DETAIL

TRICON STEEL-250

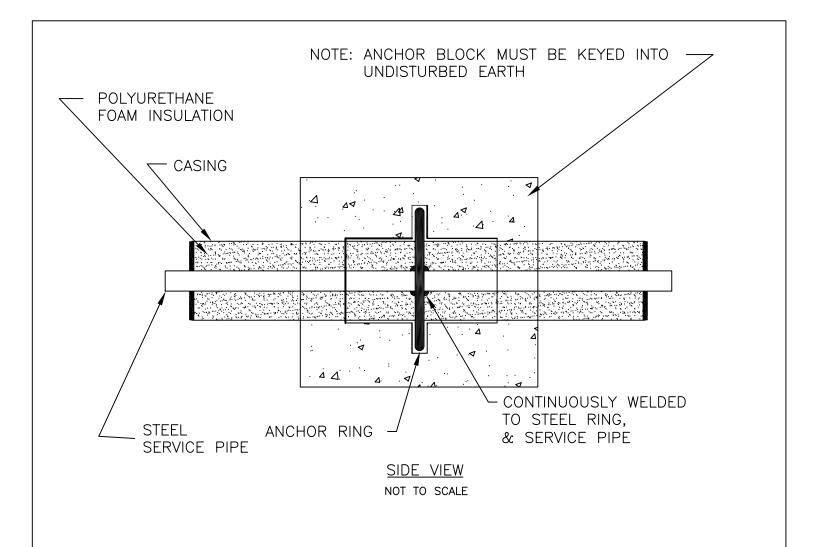


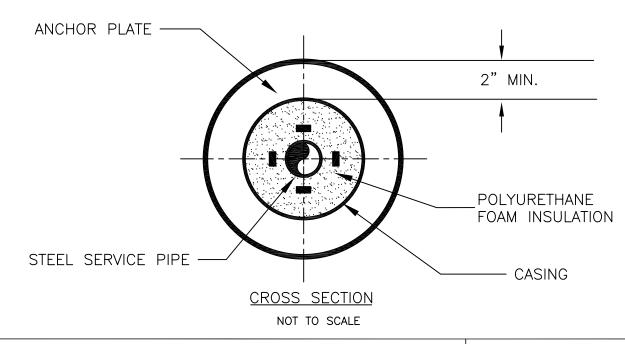


TRICON STEEL 250

| Date: 03/09/06 | Dwg. No.: S250-5A | Rev.:





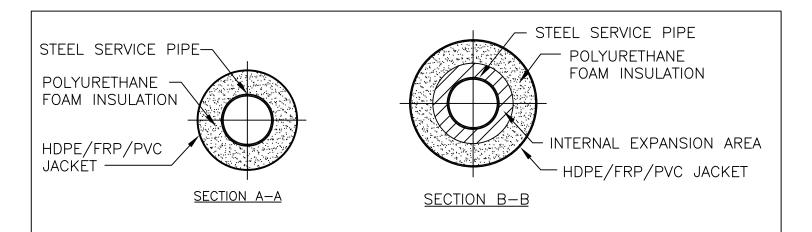


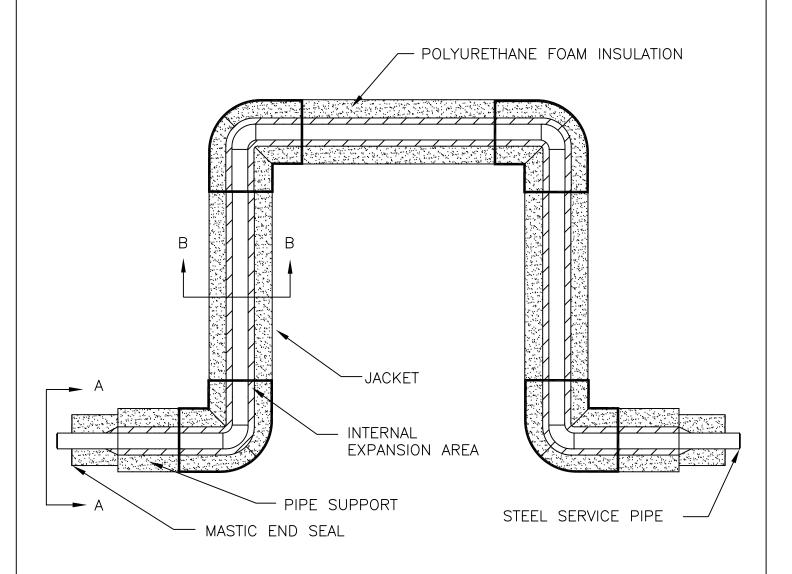
STEEL 250 ROUND ANCHOR DETAIL

TRICON STEEL 250

Date: 03/09/06 Dwg. No.: S250-5B





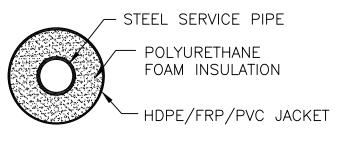


STEEL	250	EXPANS	SION	LOOP	DETAIL	WITH
	IN	TERNAL	EXP	ANSION	1	

TRICON STEEL 250

Date: 03/09/06 Dwg. No. S250-6
Rev.:



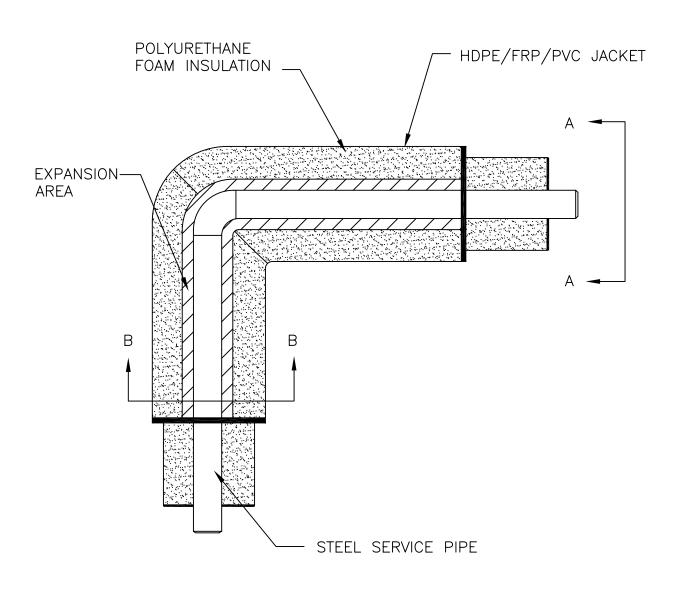


POLYURETHANE FOAM INSULATION

EXPANSION AREA

PVC JACKET

SECTION A-A

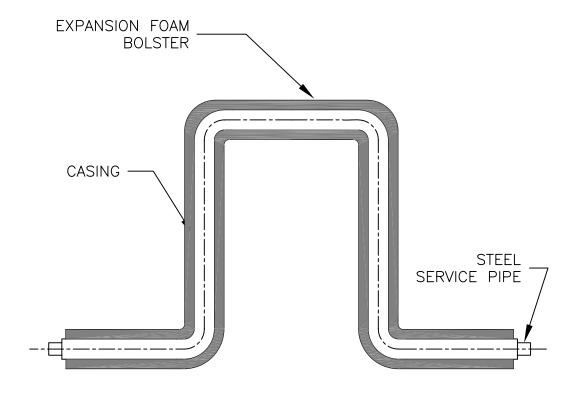


STEEL 250 EXPANSION 90° ELBOW DETAIL WITH INTERNAL EXPANSION

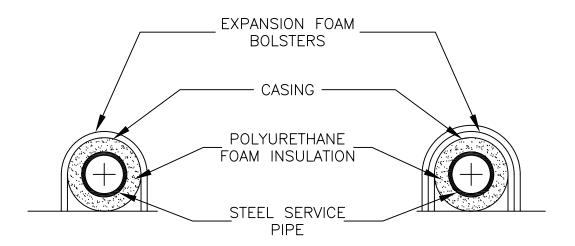
TRICON STEEL 250

Date: 03/09/06 Dwg. No. S250-6A Rev.:





- EXPANSION PADDING MATERIAL IS SUPPLIED IN PRECUT LENGTHS AND WIDTHS.
   WRAP PADDING AROUND THE JACKET FOR A SNUG FIT. HOLD IN PLACE WITH BEDDING SAND.



1 LAYER CROSS SECTION

2 LAYER CROSS SECTION

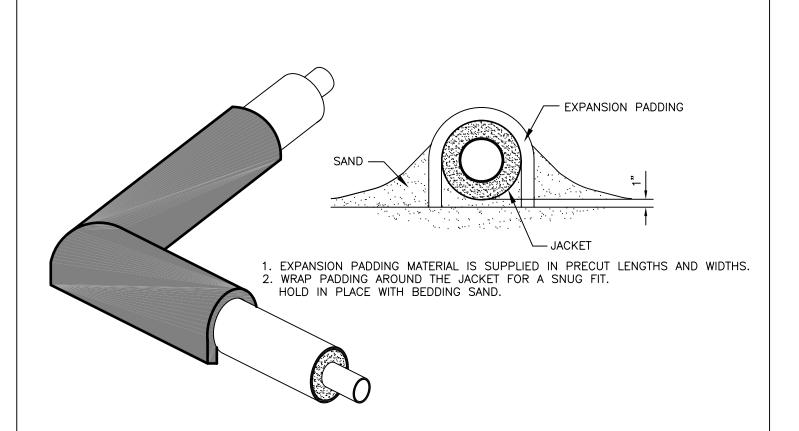
# STEEL 250 EXPANSION LOOP DETAIL WITH EXTERNAL EXPANSION PADDING

Rev.:

TRICON STEEL 250

Date: 03/09/06 | Dwg. No.: S250-7





# **PROCEDURE**

- 1. EXPANSION PADDING MATERIAL IS SUPPLIED IN PRECUT SIZES
- 2. WRAP PADDING AROUND THE JACKET FOR A SNUG FIT.

#### MAKE SURE TO COVER 90° ELBOW COMPLETELY.

HOLD IN PLACE WITH BEDDING SAND.

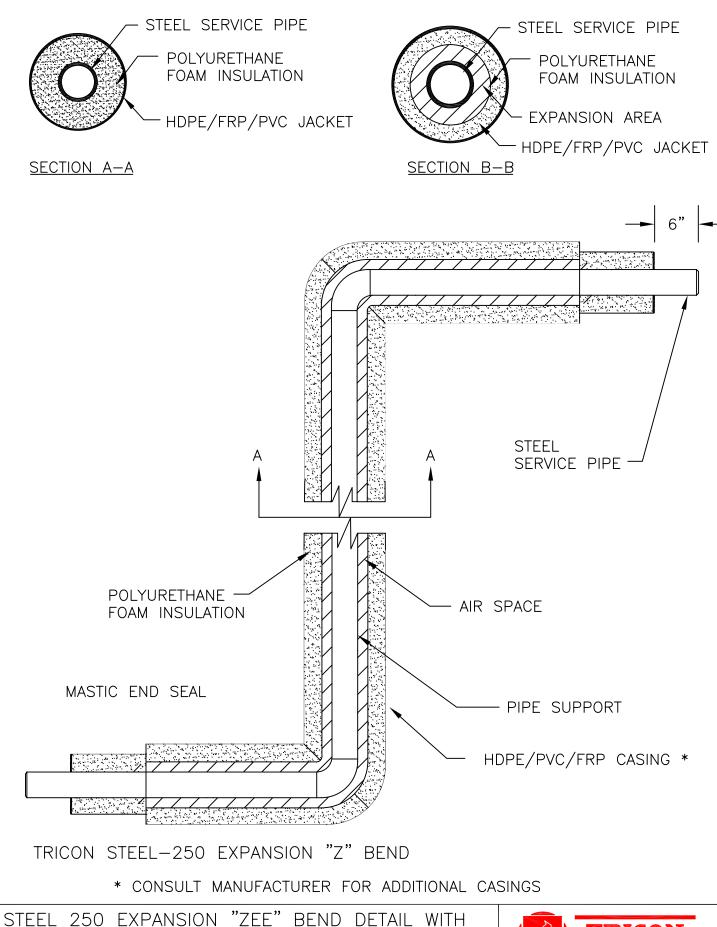
LOCATION	LENGTH OF PRECUT PADDING REQUIRED IN FEET, ON <u>EACH</u> SIDE OF ELBOW.		
	FIRST LEG	SECOND LEG	THIRD LEG

STEEL 250 EXPANSION 90° ELBOW DETAIL WITH EXTERNAL EXPANSION PADDING

TRICON STEEL 250

Date: 03/09/06 Dwg. No.: S250-7A





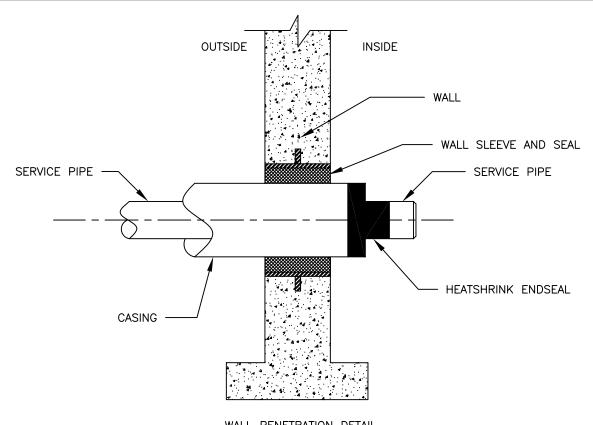
INTERNAL EXPANSION

TRICON STEEL 250

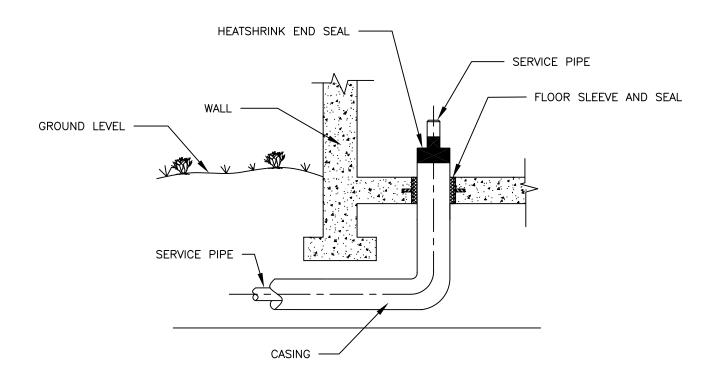
Date: 03/09/06 Dwg. No.: S250-8

Rev.:









**BUILDING RISER DETAIL** 

HEATSHRINK END SEAL DETAIL

TRICON STEEL 250

Date: 03/09/06 Rev.:

Dwg. No.: S250-9

Piping Systems, Inc. ®

P.O. Box 361, Canastota, New York 13032

Tel: 315.697.8787 Fax: 315.697.8788