

# FERRO-THERM

STEEL PIPING SYSTEM

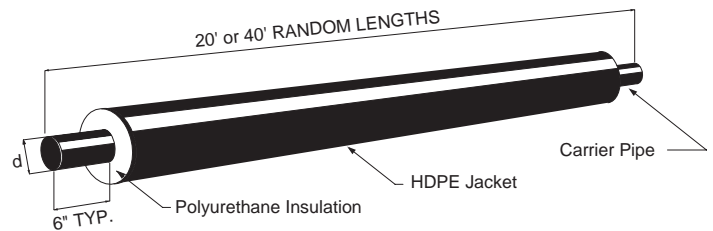


## FERRO-THERM

THERMACOR'S FERRO-THERM is a factory-fabricated, pre-insulated piping system for below or above ground distribution of hot and chill water, low pressure steam, condensate, or oil and viscous fluids. The system is designed with a steel carrier pipe (type and grade specified, as required), closed cell polyurethane foam insulation, and a High Density Polyethylene (HDPE) jacket.

### Carrier Pipe

- $d \geq 2"$  - A53 ERW Grade B, Std. Wt. Black Steel
- $d < 2"$  - A106 SML, Std. Wt. Black Steel
- Seamless & Schedule 80 pipe are available for all sizes.
- Std. Wt. is the same as Schedule 40 through 10".
- XS is the same as Schedule 80 through 8"



### Polyurethane Insulation

- |                        |                           |
|------------------------|---------------------------|
| • Density              | > 2.0 lbs/ft <sup>3</sup> |
| • "K" Factor           | ≤ 0.15 @ 75°F             |
| • Compressive Strength | > 30 psi                  |
| • Closed Cell Content  | ≥ 90% @ 75°F              |

### Jacket

- High Density Polyethylene (HDPE)

## SPECIFICATION GUIDE \*

### GENERAL

All underground and above ground piping materials transporting chill water, hot water, low-pressure steam (250°F) or condensate shall be **FERRO-THERM** as manufactured by **THERMACOR PROCESS, L.P.** All straight pipe, fittings, anchors, insulating materials, and technical support shall be provided by the manufacturer.

### SERVICE PIPE

The carrier or service pipe shall be A-53, Grade B, ERW, Standard Weight for pipe sizes 2" and larger and A106/ A53, Grade B, seamless, standard weight for pipe sizes 1.5" and smaller. Condensate piping materials shall be extra strong. Pipe shall be butt-welded for sizes 2" and larger and socket-welded for 1.5" and smaller. Straight sections shall be supplied in 20 or 40 foot random lengths with cutbacks to allow for welding at the field joints.

### INSULATION

Insulation of the service pipe shall be rigid polyurethane foam with a minimum 2.0 lbs/ft<sup>3</sup> density, 90% minimum closed cell content, and a "K" factor not higher than .15 at 75°F per ASTM C518. The polyurethane foam shall be CFC-free. The polyurethane foam shall completely fill the annular space between the service pipe and jacket, and shall be bonded to both. Insulation shall be provided to the minimum insulation thickness specified.

### JACKET

The outer protective jacket shall be high density polyethylene (HDPE). No FRP, HDUP, or tape jacket allowed. HDPE shall have a minimum wall thickness specified below:

Jacket OD	Minimum Jacket Thickness
OD < 14"	0.135"
14" ≤ OD < 20"	0.165"
OD > 20"	0.225"

### FITTINGS

Fittings are Thermacor's SC (standard component) factory pre-fabricated and pre-insulated fittings with polyurethane foam to the thickness specified and jacketed with a one piece seamless molded HDPE fitting cover, a butt fusion welded, or an extrusion welded and mitered HDPE jacket. Carrier pipe fittings shall be butt-welded, except sizes smaller than 2" shall be socket-welded. (*At the Engineer's option*, fittings can be pre-fabricated/ pre-engineered.) Fittings include expansion loops, elbows, tees, reducers, and anchors. Elbows, loops, offsets, or any other direction changes shall conform to the standards set by ANSI B31.1, Code for Power Piping.

### FIELD JOINTS

Service pipe shall be hydrostatically tested as per the Engineer's specification with a factory recommendation of 1.5 times the specified pressure of the system. Straight joint sections shall be insulated using urethane foam to the thickness specified, jacketed with an HDPE split sleeve, and sealed with a heat shrink sleeve. (*At the Engineer's option*, joints may be sealed with a pressure testable joint closures.) All joint closures and insulation shall occur at straight sections of pipe. All insulation and jacketing materials shall be furnished by THERMACOR.

### INSTALLATION

Installation of the piping system shall be in accordance with the manufacturer's instructions. Factory trained field technicians shall be provided for critical periods of installation, unloading, field joint instruction, and testing.

\* For alternate specifications, please contact THERMACOR.

## THERMACOR PROCESS, L.P.

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