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NIBCO

THE FUTURE OF FLOW CONTROL – FOR OVER 100 YEARS

Revision: December 21, 2009

Specification for Radiant Floor Heating System Tubing – DURA-POLY XL

Material Specification:

High Density Polyethylene resin having the following properties:

<u>Property</u>	<u>Value</u>	<u>ASTM Evaluation method</u>
Melt Flow	.28	D 1238
Density	.947	D 792
Elongation	>600	D 638
Flexural Modulus	115,000	D 790
Cell Classification	335440	D 3350

UV inhibitors and anti-oxidants shall be added to protect the tubing from deleterious effects of outdoor exposure during a limited amount of storage and construction time.

Cross linking by electron beam after extrusion shall make PEX with a hydrostatic design basis (HDB) of 800 psi at 180°F as listed under TR-4 with the Plastics Piping Institute.

Dimensions

DURA-POLY XL heating tubing shall be made to dimensions consistent with SIDR 11.5 (see ASTM D 2239 where 7/8" nominal size is an interpolation of 3/4" and 1" sizes)

Inside Diameter	0.824"	+ .010" / - .015"
Wall Thickness	0.720"	+ .020" / - .000"

Pressure / Temperature Ratings

Working Pressure rating of the tubing is calculated as follows (see D 2239):

$$P = \frac{2 S}{\frac{D_i}{t} + 1}$$

P = pressure in PSI

S = Hydrostatic Design Stress (HDS = HDB with a .50 safety factor applied)

Di = Average inside diameter

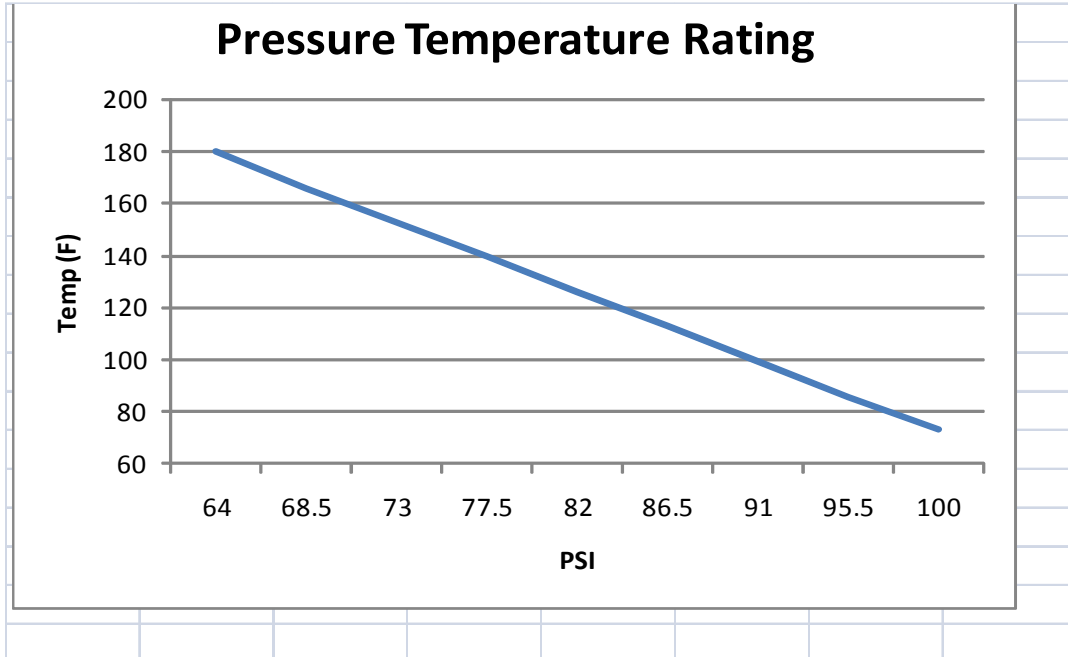
t = Minimum wall thickness

Calculation:

$$\begin{array}{r} 73 \text{ degrees:} \quad 2 \times 625 \\ \text{-----} = 100\text{psi} \\ 0.824 \\ \text{----} +1 \\ .072 \end{array}$$

$$\begin{array}{r} 180 \text{ degrees} \quad 2 \times 400 \\ \text{-----} = 64\text{psi} \\ 0.824 \\ \text{----} +1 \\ .072 \end{array}$$

Pressure ratings at other temperatures can be interpolated using a straight line graph between the two above data points:



Markings

Print Stream on tubing shall read:

Name:	DURA-POLY XL RADIANT FLOOR COMPANY HEAT EXCHANGER TUBING
Listing:	NSF-61
Working Pressure / Temp.:	60psi @ 180°F 100psi @ 73°F
Nominal Size:	7/8"
Dimension:	SIDR 11.5
Manufacture:	Date Code, Lot Number, Footage Markings

Application

This product is to be used in Radiant Floor space heating applications.

Please call if you have further questions or need further clarification.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Coe', with a stylized flourish at the end.

Tom Coe
PEX Product Manager