



## Thermal-Line High Density Polyethylene Pipe for Geothermal Applications

Thermal-Line is used for general geothermal applications, such as the piping used when heating water circulated in underground geothermal circulation systems. Thermal-Line can also be used as the pipe of choice in installing these systems in residential housing and other developments. A blue strip is used to identify Thermal-Line and special type can be added in the print line. Upon request, A U-bend connection can be added during manufacturing, making it ready to connect to the coil system, once delivered to the project site. Thermal-Line is almost always shipped as coils.

Thermal-Line is part of United Poly Systems Earth-Line™ suite of products and is ideal for many renewable-related pipeline applications. United Poly Systems is committed to using sustainable material for a sustainable future.

- No corrosion when compared to copper pipe
- HDPE fusion joints are stronger than solder joints
- Lower cost Longer life span, 50 to 100 years
- Flexibility of HDPE pipe, compared to metal pipe, aids in installation
- More installation methods available for HDPE (open cut, directional drilling) compared to copper pipe



### Product Information

Thermal-Line is manufactured to meet or exceed the below standards and specifications:

- Potable water – NSF
- AWWA C901 (¾ to 3 in.)
- AWWA C906 (4 in. and up)

Thermal-Line is manufactured in IPS (iron pipe size) and DIPS (ductile iron pipe size), 4 inches and up.



Material requirements for Thermal-Line meets or exceeds ASTM Standard D3350 requirements. Materials produced for water application must meet or exceed ASTM D3035.

## Print line Information

Thermal-Line typically contains a blue stripe to identify water use.

The product may include "GEO" or other variant within the printline for identification.

## PE4710 Typical Physical Properties

| PROPERTY                              | TYPICAL VALUE          | UNITS          | TEST METHOD         |
|---------------------------------------|------------------------|----------------|---------------------|
| Density with minimum 2% carbon black  | 0.960                  | g / cc         | ASTM D 792 or 1 505 |
| High Load Melt Index                  | 8.5                    | g / 10 minutes | ASTM D 1238         |
| Melt Index                            | 0.08                   | g / 10 minutes | ASTM D 1238         |
| Flexural Modulus                      | 160,000                | psi            | ASTM D 790          |
| Tensile Strength @ yield (2 in / min) | 3600                   | psi            | ASTM D 638          |
| Tensile Elongation @ Break            | 740%                   |                | ASTM D 638          |
| Thermal expansion                     | 1.0 x 10 <sup>-4</sup> | in / in / 0    | ASTM D 696          |
| HDB 73.4°F (23°C)                     | 1600                   | psi            | ASTM D 2837         |
| HDB 140°F (60°C)                      | 1000                   | psi            | ASTM D 2837         |
| PENT                                  | > 500                  | hr             | ASTM F1473          |
| Brittleness Temperature               | < -103°F (-75°C)       | °F             | ASTM D 746          |
| Cell Classification                   | 445574C (black only)   |                | ASTM D 3350         |

*These are nominal values and used as guidelines only.*

*This is not a product specification and does not indicate minimum or maximum operating values.*