

## Technical Note 807 - Large Diameter Coiled PE Pipe

### Large Diameter Coiled PE Pipe

#### *Coil Configurations*

Large diameter, **4" IPS, 5" IPS, and 6" IPS** Performance Pipe™ polyethylene piping products are available in coils and coiled on reels. Because of their size and weight, coiled large diameter PE piping products require appropriate equipment and procedures for safe handling, installation, and use.

#### *Safety on Site*

This bulletin does not address all of the safety concerns associated with coiled large diameter PE piping products.

§ **Before and during installation, the owner or installer is responsible for establishing appropriate safety practices, and for complying with all applicable federal, state, and local codes and regulations.**

If you have limited experience with polyethylene piping, or with the piping product size you are to install, please seek more information from persons who know about installing HDPE piping products, or your Performance Pipe Distributor, or Performance Pipe.

§ **Safe handling and operating procedures must be observed.**

*Request Performance Pipe unloading instructions from the truck driver.*

§ **Observe unloading instructions when unloading pipe and fittings from the truck.**

§ **Unload coils and reels by lifting them off the truck with appropriate lifting equipment. Do not push, roll or dump pipe coils or reels off the truck.**

Lifting equipment such as a crane, side boom tractor, or extension boom crane (cherry picker) should be used for unloading.

§ **Coiled large diameter pipe can be heavy. Lifting equipment load ratings must be adequate for lifting coiled large diameter PE pipe.**

Use fabric choker slings through the coil or reel. *Do not use chains or wire rope. They can slip on the product surface, and result in hazards to persons or product damage.*

§ **Lifting and handling equipment must be in safe working condition.**

§ **Do not use worn-out or damaged equipment because safety or load capacity may be compromised.**

#### *Rerounding and Straightening*

Flexible PE piping will ovalize when it is coiled, and after a period of time, the product will take a "coil set", that is, it will retain some coil curvature and ovality after uncoiling. Residual coil curvature and ovality are normal for all coiled PE piping products. But because larger piping is coiled to a tighter

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bending radius, residual curvature and ovality is greater for larger diameters. Residual coil curvature and ovality may not be a concern for some applications, but may be a consideration for others.

Ovality may affect the capacity for internal cables or conduits, and may affect joining by socket fusion, saddle fusion, electrofusion, or mechanical fittings. Residual curvature and ovality may be corrected in the field by running the entire coil through rerounding and straightening equipment during installation. In accordance with ASTM D 2513, coiled gas piping larger than 3" IPS must be rerounded when it is installed.

Running coiled pipe through straightening and rerounding equipment reduces residual coil curvature and ovality. Large diameter coiled piping that has been field rerounded and straightened is easier to install, cut, and join. For pressure piping systems, internal pressure also helps reround the pipe.

*Equipment for uncoiling, straightening and rerounding must be operated and maintained in accordance with the equipment manufacturer's instructions. Procedures for field rerounding and straightening will vary depending upon the equipment used.*

Equipment used for uncoiling large diameter coiled PE piping frequently holds the coil vertically. Some equipment surrounds the coil with a steel cage.

**§ Coils should be installed in uncoiling equipment before removing bands.**

**§ Coiled piping can spring out explosively when some or all bands are removed. Bands should be cut from the side of a vertical coil, and from the inside of a horizontal coil. Keep away from pinch points when bands are being removed.**

Steel banding must be removed before uncoiling. *Use band-cutting tools that can reach coil banding through uncoiling equipment without placing the body or appendages into pinch points or other potentially harmful areas.*

**§ Stand clear. The tail end of the coil can whip around when it exits uncoiling equipment.**

Once uncoiled, and rerounded and straightened (if required), piping products may be installed using appropriate direct burial, directional boring, plowing, planting, or other techniques.

### **Cutting Coiled Pipe**

*Before cutting coiled piping products, both sides of the cut should be restrained. If not, piping ends can spring back forcibly when the cut is complete.*

### **Cold Weather Effects**

*At freezing temperatures and below, more effort will be required to uncoil the pipe, and piping will spring back more forcibly if the ends are not anchored or restrained.*

Installing large diameter coiled PE pipe in freezing or sub-freezing conditions is discouraged. At sub-freezing temperatures, PE piping products are much less flexible, and more susceptible to handling impact damage. Observe straightening and re-rounding equipment manufacturer's recommendations for low temperature equipment operation. At temperatures below 32°F (0°C), piping should be fed through straightening and rerounding equipment at a reduced rate, usually half, or less than half of the rate at higher temperatures.

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