



# Centennial

PLASTICS, INC.

*Quality and Service That Soars*

## Geothermal Exchange Pipe and Fittings



Featuring the exclusive



**earthLoops™**  
GEOTHERMAL EXCHANGE SYSTEM



 **GOLD ★★★★★**  
**STANDARD**  
GEOTHERMAL LOOPS





## ***The smart choice for closed-loop geothermal heat pump systems***

It's no mystery why so many engineers and architects rely on Centennial geothermal products. Centennial Plastics has a strong commitment to offering geothermal pipe that offers worry-free performance and provides true energy savings. Prompt, professional customer service is a top priority. And the search for innovative ways to make our products safer and easier to install never ends.

### ***Success starts with Centennial Geothermal HDPE 4710 CenFuse pipe.***

CenFuse geothermal pipe is ideal for horizontal or vertical installations that are underground or submerged in water. CenFuse resists corrosion and abrasions, is thermally conductive and comes in a wide selection of straight lengths, flexible coil lengths and SDRs to meet your specifications.

- » Footage markings and product identification are clearly and permanently indented on every coil.
- » Coils are secured with plastic banding, stretch-wrapped and shipped on pallets.

### ***CenFuse geothermal pipe is the first in the country to meet NSF International's NSF/ANSI Standard 358-1 for geothermal heat pump systems.***

NSF International is an independent third party organization that certifies products for the water, food, health sciences and consumer goods industries. It recently certified CenFuse pipe and Bullet™ U-Bend fittings to the American National Standard for Ground-Source Geothermal Piping systems.

This certification assures engineers, distributors and contractors that the pipe and fittings in Centennial Plastics' EarthLoops™ geothermal exchange system meet optimum safety and quality levels.

### ***Centennial Plastics makes customer satisfaction a top priority.***

- » For your peace of mind, Centennial Plastics offers a full 50-year non-prorated warranty on CenFuse pipe. (Visit [centennialplastics.com](http://centennialplastics.com) for more information.)
- » An extensive inventory of geothermal exchange products allows orders to be filled in a timely manner.
- » Custom orders or special requests for coil length, straight length or SDR are welcome.





## Exclusive EarthLoops™ Geothermal Exchange System makes installation quicker and easier



With the Earth Loops™ system, Bullet™ U-Bend fittings are fused to dual coils of CenFuse pipe at the Centennial Plastics manufacturing facility. The resulting EarthLoops™ arrive at the job site ready for installation.

Bullet™ U-Bend fittings are manufactured from the same virgin HDPE 4710 material as the CenFuse pipe to ensure proper fusion. Made to fit 1¼", 1", and ¾" diameter pipe, the result is the narrowest U-Bend fitting on the market for more efficient drilling. The Bullet™ U-Bend is NSF 358-1 certified.

### Dependability and ease of installation are assured in several ways:

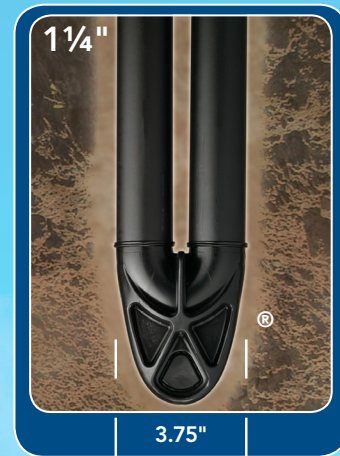
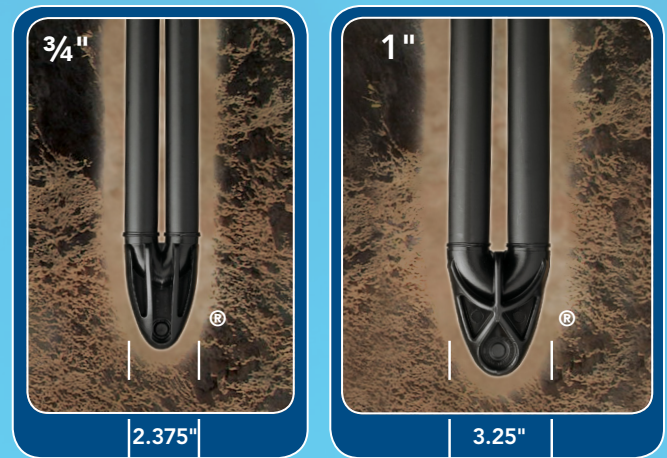
- » Bullet™ U-Bend fittings are made to SDR 9 specifications to cover 200/250 PSI installations.
- » The EarthLoops™ system allows for a narrower bore-hole which in turn needs less grout.
- » Bullet™ U-Bend fittings are designed for easy installation, and are securely butt-fused to EarthLoops™. Look for the unique bullet shape.
- » Knockouts are provided for directional/horizontal boring applications.

¾" Bullet™ U-Bend Fitting Patent #US D498, 7715 issued 11/23/04.  
1" and 1¼" Bullet™ U-Bend Fitting Patent # US D488, 4865 issued 4/13/04.

### EarthLoops™ test-caps set the gold standard for factory-sealed pipe!

The CenFuse pipe used in the EarthLoops™ system is factory-pressurized and sealed with a patent pending test-cap that offers two significant benefits:

- » The tight, secure seal formed by the test cap is your assurance that the loops are factory-pressurized and free from leaks and contaminants.
- » The test cap's built-in pressure valve allows installers to use a tire gauge for field pressure tests. This can significantly shorten installation time.





# Specifications for CenFuse Geothermal Exchange Pipe

## CenFuse Geothermal HDPE 4710 Pipe

ASTM D3035		¾"	1"	1¼"	1½"	2"	3"	4"	6"
<b>200 PSI</b>	O.D.	1.050"	1.315"	1.660"	1.900"	2.375"	3.500"	4.500"	6.625"
<b>SDR 11</b>	I.D.	.860"	1.077"	1.358"	1.554"	1.943"	2.864"	3.682"	5.421"
	Wall	.095"	.120"	.151"	.173"	.216"	.318"	.409"	.602"
	Wt/ft	.122#	.191#	.306#	.402#	.627#	1.36#	2.249#	4.873#

CenFuse pipe meets these industry standards:

- NSF/ANSI 358-1
- NSF-14 and 61
- ASTM D3035 - CenFuse HDPE 4710
- AWWA C901 and C906 requirements
- IGSHPA requirements as set forth in Section 1C of the Close Loop/Geothermal Heat Pump Systems Design and Installation Standards.

## CenFuse HDPE Pipe and Bullet™ U-Bend Fitting Raw Material

### CenFuse Geothermal HDPE 4710 Pipe

Property	ASTM Test Method	English Units*	SI Units*
Density (Natural)	D 4883	—	0.9485 g/cc
Density (Black)	—	—	0.959 g/cc
Melt Index <sup>1</sup>	D 1238	—	8.5 g/10 min
Tensile Strength @Yield (2 in/min)	D 638	3625 psi	25.0 MPa
Tensile Strength @Break (2in/min)	D 638	5500 psi	38.0 MPa
Elongation @ Break (2 in/min)	D 638	>600%	>600%
Flexural Modulus <sup>2</sup>	D 790	150,000 psi	1,035 MPa
Notched Izod Impact Strength	D 256	9 ft-lbf/in	0.49 kJ/m
Hardness (Shore D)	D 2240	66	66
Vicat Softening Point	D 1525	259° F	126° C
Brittleness Temperature	D 746	<-180° F	<-118° C
Thermal Stability	D2513/D3350	428° F min	220° C min
Hydrostatic Design Basis @ 23° C	D 2837	1600 psi	11.0 MPa
Hydrostatic Design Basis @ 60° C	D 2837	1000 psi	6.9 MPa
Minimum Required Strength	ISO 9080	—	10.0 MPa
Environmental Stress Crack Resistance <sup>3</sup>	D 1693	>5000 hrs.	>5000 hrs.
Pipe Ring ESCR <sup>4</sup>	—	—	—
Notch Tensile (PENT)	F 1473	>10,000 hrs.	>10,000 hrs.
Carbon Black Concentration	D 1603	2.3%	2.3%
Cell Classification	D 3350	445576C	445576C

\* Typical Values

Cenfuse Geothermal pipe and EarthLoops™ are available in other SDR's and special lengths. Contact your distributor or visit our website at [www.centennialplastics.com](http://www.centennialplastics.com). CenFuse SDR 11 meets the applicable standards for AWWA C901 & C906.

<sup>1</sup> 190°C/21,600 g <sup>2</sup> 2% Secant-Method 1 <sup>3</sup> Condition C <sup>4</sup> Two inch, SDR 19

Centennial Plastics is an ISO 9001 certified company.



CenFuse is NSF/ANSI 358-1 certified.



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## PLASTICS, INC.

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For more information, contact the dealer nearest you:



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