



# Centennial<sup>®</sup>

PLASTICS, INC.

*Quality and Service That Soars*

## Geothermal Exchange Pipe and Fittings



Featuring the exclusive





## ***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.



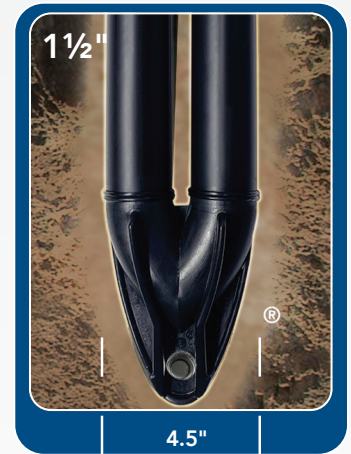
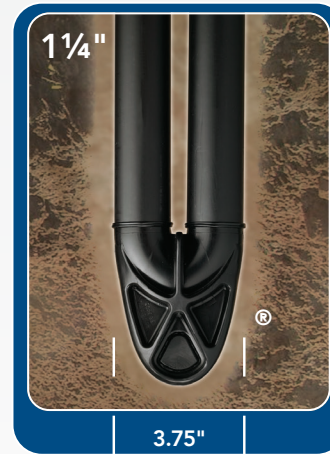
*Scan here to learn more  
about our Geothermal Pipe*

## 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 1½", 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.

### 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 patented 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.



Test Cap U.S. Patent No. D709,994 issued 07/29/14, U.S. Patent No. 8,172,276 issued 05/08/2012, U.S. Patent No. 9,593,789 issued 03/14/17, U.S. Patent No. 10,801,654 issued 10/13/20, U.S. Patent No. 9,297,486 issued 03/29/16, and U.S. Patent No. 8,662,541 issued 03/04/14.

# Specifications for CenFuse Geothermal Exchange Pipe

## CenFuse Geothermal HDPE 4710 Pipe

ASTM D3035		¾"	1"	1¼"	1½"	2"	3"	4"	6"
200 PSI	O.D.	1.050"	1.315"	1.660"	1.900"	2.375"	3.500"	4.500"	6.625"
SDR 11	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
- ASTM D3035 - CenFuse HDPE 4710
- IGSHPA requirements as set forth in Section 1C of the Close Loop/Geothermal Heat Pump Systems Design and Installation Standards.
- NSF-14 and 61
- AWWA C901 and C906 requirements

## 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



NEBRASKA  
1830 Centennial Ave.  
Hastings, NE 68901

IDAHO  
5150 Treasure Valley Way  
Nampa, ID 83687

[info@centennialplastics.com](mailto:info@centennialplastics.com)  
402-462-2227



[centennialplastics.com](http://centennialplastics.com)

