Cenfuse Geothermal HDPE 4710 Vertical EarthLoop™ Installation Procedures

▲WARNING

The product you are about to install is pressurized at the factory with up to 15psi of air and can cause an explosive type accident if not safely handled. These instructions are to remind you of proper testing, installation and inspection procedures. ***Failure to follow these instructions may void the warranty.*** Applicable local standards and nationally recognized and recommended practices such as those within the IGSHPA Installation guide, PPI Handbook and ASTM F2164 standard should be referred to for further details. More installation details can be found on the Company's web site, www.centennialplastics.com, or by calling 1-866-851-2227.

1. INSPECTION OF LOOP

All EarthLoops™ should be physically inspected at the job site for cuts and gouges. Do not use if a cut or gouge is more than 10% of the minimum wall of the pipe. Using a tire pressure gauge, verify that the loop is still pressurized. If there is little to no pressure in the loop, fill it with 15 psi of air pressure and recheck again in an hour. If the loop has no pressure after the second test, there may be a defect in the test cap or the pipe. The test caps should be cut off and the loop tested in a conventional manner (soap, water, etc.) and rechecked in an hour. If the loop still does not hold pressure, DO NOT INSTALL and contact your Centennial Plastics distributor.

2. TESTING OF LOOP (prior to borehole insertion)

The testing pressure should be adjusted for the pipe's ambient temperature. Do not test if the ambient temperature is above 100^0 F and do not exceed 160 psi (1 ½ times the working pressure of the system is satisfactory). There may be some pressure drop due to pipe expansion and/or temperature change. If the pressure drop is significant (more than 20%) add pressure and recheck after 45 minutes. After testing is completed, **release the air pressure through the valve stem PRIOR TO** cutting off the pipe towards the end to remove the factory installed test cap fittings. Cap or tape the pipe ends until the pipe is joined to the circuit to avoid contamination from trash, soil, small animals and other foreign debris.

WARNING: When opening valve stem to release air pressure, direct air AWAY from face, body, and any loose debris, which could become dangerous projectiles.

3. LOOP INSERTION INTO A MUD FILLED BOREHOLE

Fill the loop with water to assist with inserting the loop into the borehole. You may use the built-in tremie pipe-stop on the Bullet™ fitting to tape a piece of scrap steel or rebar to the loop. During this process make sure not to damage the loop by gouging or cutting the pipe. The steel or rebar will hold the pipe end straight and reduce buoyancy as the loop is inserted into the borehole. If other ballast is used and is retrieved after installation of the loop, do so slowly to avoid damaging the loop. *

CAUTION: Special care should be taken during the insertion process. The loop may be damaged due to voids, rocks, insertion speed, etc.

4. FLOW CHECK

Check for a free flow of water to insure that the loop did not become blocked or kinked during installation.

5. HYDROSTATIC TESTING OF LOOP (after borehole insertion and grouting)

Hydrostatically test each loop in accordance with ASTM F2164 to insure that the loop was not damaged during insertion.

* Insertion when Air Drilling: Extreme Caution must be exercised when inserting a water filled loop into an air drilled bore hole. A water filled loop will be heavy. Drain the water from the loop prior to insertion, if possible.

NOTE – these procedures are recommendations only and DO NOT supersede the project engineer's specifications.