

The Atlantis Vault

Engineering Specifications

- General:** This specification designates the requirements for the geothermal vault (vault pit) including internal pipe, fittings, and valves.
- External Shell:** Shall be constructed of high density polyethylene flat stock having a cell classification of 445574 with a UV stabilizer of C. All materials used shall have a minimum thickness of 1". Internal and external seams are heat welded using high density polyethylene welding rods having a cell classification of 445574C. Walls to be 72" high, with a 30" manhole with ladder. The manhole lid is connected with 8 - 3/8" stainless steel counter sunk bolts. Lid to have 5000 pound load bearing capacity.
- Internal Bracing:** Shall be spaced at a maximum of 30" and constructed of a minimum of 1" thick high density polyethylene flat stock heat welded to the external shell with high density polyethylene welding rods.
- Internal Piping:** Shall be constructed of GSC Energy Pro PE4710 High Density Polyethylene DR 11 pipe having a cell classification of 445574 with a UV stabilizer of C. This internal pipe is constructed in an offset over and under model for supply and return lines. All joints to be heat fused. The entire piping system is to be tested using 120 psi. The main supply and return pipe to be shipped with cap butt welded to pipe. All pipe penetrating the vault walls shall be DR 9 and heat welded to external shell.
- Fittings:**
- P/T Plugs:** Shall be constructed of solid brass and have a dual seal core of Nordel, good up to 350° F for water. Plugs shall be rated zero leakage from vacuum to 1000 psig and are capable of receiving a pressure or temperature probe.
 - Butterfly Valve:** Shall be constructed of a cast iron body, 416 stainless steel stem with a lever shut off system.
 - 90° Elbows:** Shall be molded out of high density polyethylene resins in accordance with the requirements of ASTM 3261.
 - Branch and Service Saddles:** Shall be molded out of high density polyethylene resins in accordance with the requirements of ASTM 3261.
- Installation:** The vault shall be lowered into a pit 105" deep with a 6" bed of #57 gravel. Once the vault is in its place, concrete is poured 36" deep and 12" thick around the vault to balance buoyancy pressure and allow for anchoring.

Due to our engineering research, product improvements are made on an ongoing basis; therefore, specifications are subject to change without notice.