

GEO THERMAL

Living

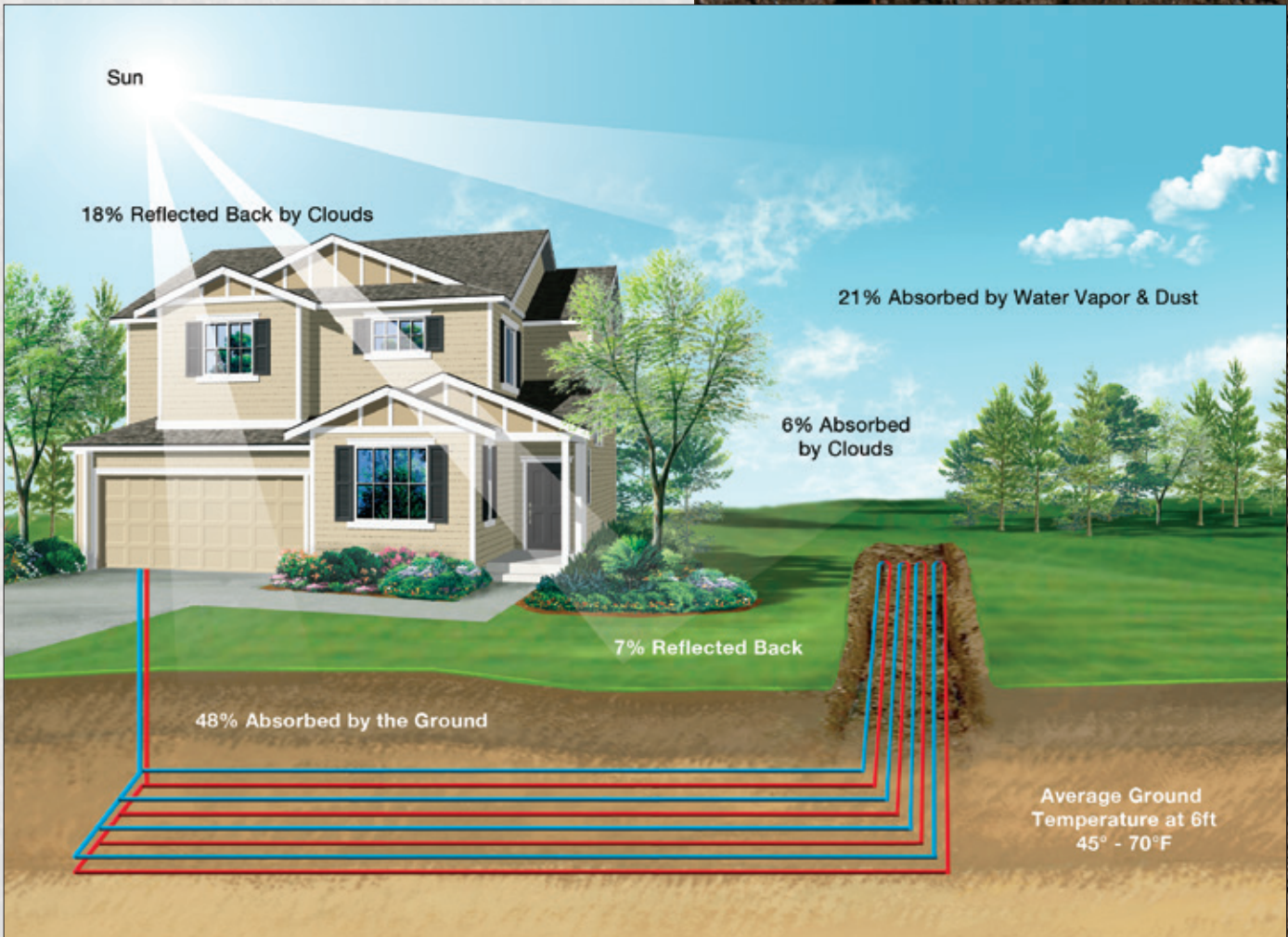
Handcrafted to meet your changing needs, **Hydron Module** systems take a **timeless**, old-world approach to **innovative**, new technology.



Pure and Simple™

What is **GEO THERMAL** heating and cooling?

Geothermal heating and cooling utilizes the solar energy stored just below the surface of the earth. This stored solar energy is removed from the earth to heat your home during the winter months and similarly heat is removed from the home and deposited back to the earth during the cooling season. This is accomplished through the use of a geothermal unit located in the house and a high density polyethylene pipe buried in the ground. **The earth is now being used as a heat exchanger to keep your home at its optimal comfort level all year round.**



How does **GEOHERMAL** work?

Virtually every household has an appliance that works by using the same principles as a geothermal system: the refrigerator. The refrigerator's internal compressor and refrigerant system have the ability to move heat from one location to another. Rather than applying cold, the refrigerator actually absorbs heat from the contents inside and deposits that heat out through the back or bottom of the appliance. A geothermal system operates in the same way with one big difference; our system has the capability of reversing the refrigerant cycle, allowing the geothermal system to heat in addition to cool.

The earth absorbs and stores approximately 48% of the sun's solar energy. The result is a fairly constant underground temperature of 45 degrees in northern climates to 70 degrees in southern climates. The geothermal system takes advantage of this stored energy by using it to provide **the most energy efficient heating and cooling system available today.**

The heat exchanger, commonly referred to as a closed loop system, is buried in the ground and circulates a water solution through a series of pipes. The solution captures the stored solar energy and delivers it back to the geothermal system located in the house. The mechanical components of the geothermal unit absorb the delivered free energy which is then concentrated and compressed to raise the temperature to be distributed throughout the house using standard forced air duct work or radiant floor heat, providing comfortable indoor temperature during the winter.

The same geothermal unit and buried heat exchanger will then reverse this cycle during the cooling season to provide air conditioning. Through the use of a forced air system it is able to remove heat and humidity from the air. The captured heat is transferred and deposited back into the earth through the same series of buried pipe, providing comfortable air conditioning throughout the summer.

Fuel Source Comparison	Electric Technologies			Fossil Fuel Technologies			
	Geothermal	air-to-air heat pump	electric resistance	propane	natural gas	fuel oil	wood burner
heating and cooling all in one	★	✓					
no outdoor equipment	★						
uses the earth's free heat	★						
no combustion	★	✓	✓				
environmentally friendly	★	✓**	✓**				
radiant floor application	★		✓	✓	✓	✓	✓
capable of zoning	★	✓	✓	✓	✓	✓	
volatile operating/fuel costs				✓	✓	✓	✓
highest efficiency	500%*	250%*	100%	95%	95%	83%	***
requires electricity to operate	★	✓	✓	✓	✓	✓	✓**
requires storage tank				✓		✓	

* Ground loop conditions up to 5.0 COP/17°F outdoor air temperature for air-to-air heat pumps

** Conditional on generation source

*** Varies dependant on wood type, type of fireplace, and method of operation

Benefits of **GEO THERMAL**

An investment in a geothermal system offers you more than a way to heat your home in the winter and cool it in the summer. Whether you are **committed to improving the environment** or you dread the hassles of home maintenance and upkeep, or maybe you just want to **save on your monthly utility bills** (*and who doesn't?!*), **a geothermal system is your total solution.**



Safe And Secure - no fossil fuel exhaust means no chimney or flue is required. There is no opportunity for explosions or carbon monoxide poisoning, which makes a geothermal system the safest choice for your family.

Money In Your Pocket – Geothermal systems are recognized by the EPA as the most energy efficient heating and cooling systems available today. Savings are produced by tapping into the free energy naturally stored in the earth.

Earth Friendly – Geothermal systems actually have a positive impact on our environment since they burn no fossil fuels and use very little electricity. This enhances our efforts to control pollution, green house emissions, and other issues that impact our everyday environment.

Noise Free Environment - no noisy outdoor air conditioner is required, so air conditioning no longer has to detract from your outdoor activities. An additional bonus: there is no unsightly outdoor unit to detract from your landscaping.

Less Maintenance And Service - a single system heats, cools, and produces hot water. Since this unit is located inside the home, it is not exposed to harsh outdoor conditions which could lead to mechanical issues.

Unmatched Comfort – because of the way geothermal systems cycle, they do a better job of air purification and dehumidification than conventional systems. They also provide more consistent air temperatures throughout the house, eliminating hot and cold spots. For ultimate comfort, zoning can allow you to maintain a different temperature in different areas of your home.

Free Hot Water – a geothermal system has the capability of capturing reclaimed heat during the heating and cooling modes thus reducing a typical four-person household's water heating cost by 50% to 60%!

Longer Life Expectancy – you can expect your geothermal system to provide you with, on average, 20 to 24 years of reliable total comfort and savings as compared to a 13 to 15 year life expectancy of conventional systems. The loop field has an indefinite life expectancy.

Flexibility – there is no job too big or too small for a geothermal system. Our versatile equipment can be installed in existing homes, new construction homes, small shopping centers, and even the largest commercial structures.

GEOHERMAL

Ground Loop Field

The heat exchanger also known as the loop system, captures the stored solar energy in the ground and delivers it back to the geothermal system in the house.

Your loop system is the heart of geothermal technology. There are four different types of loops. Your local geothermal dealer will help you select the proper loop system based on a site survey and by conducting a detailed energy analysis of your home.

Installing a geothermal loop system is like getting up to a 70% discount on energy for the life of your home.

Vertical loops are used mainly when land area is limited in retrofit applications of existing homes. A drilling rig is used to bore holes at of depth of 150 to 300 feet per ton. A U-shaped coil of high density pipe is inserted into the bore hole. The holes are then backfilled with a sealing solution.

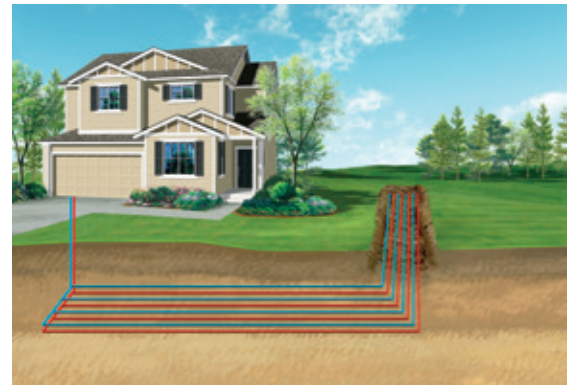
Horizontal loops are commonly used when adequate land area is available. Loop installers use excavation equipment such as chain trenchers, backhoes and track hoes to dig trenches approximately 6-8 feet deep. Trench lengths range from 100 to 300 feet per ton, depending on the loop design and application.

Pond loops are an option if a large body of water is available within approximately 200 feet of the home. A ½ acre, 10 to 12 foot deep body of water is usually adequate to support the average home. The system uses coils of pipe typically 300 to 500 feet in length. The coils are placed in and anchored at the bottom of the body of water.

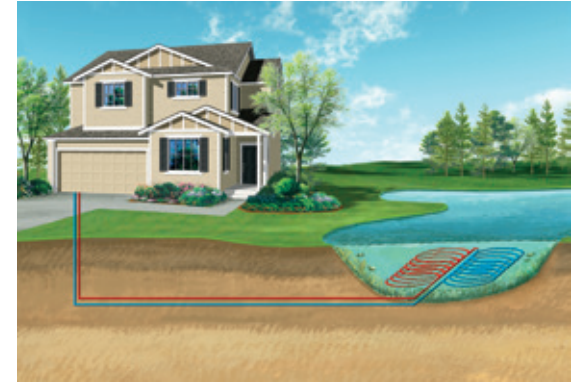
Open loop systems can be installed if an abundant supply of high quality well water is available. A typical home will require a well producing 4 to 8 gallons of water per minute. A proper discharge area such as a river, drainage ditch, stream, pond, or lake must be present. Check for local restrictions before selecting a specific discharge method.



Vertical Loop



Horizontal Loop



Pond Loop



Open Loop

The Best **GEOTHERMAL** Warranty.

The unsurpassed Hydron Module warranty is our commitment to maintain the highest level of excellence and reliability.

Hydron Module geothermal units are built upon a heritage of superb craftsmanship with the highest quality materials and unmatched attention to detail. A state-of-the-art geothermal system like ours deserves a warranty that reflects confidence in its design and construction.

Our exceptional warranty coverage does more than provide homeowners with peace of mind; it drives our engineers and quality control teams to be better. Testing on each unit ensures nothing but the highest quality geothermal heating and cooling systems ship from our manufacturing plant.



Residential Warranty

10/10/5+5 Standard Residential Warranty

**Effective Jan. 1, 2017*

10-Year Internal System Component Warranty

This includes refrigerant system components and all internal system components, warranted against defects in material and workmanship.

10-Year Parts Warranty

This includes accessories (thermostat, flow center, auxiliary heater and EWC zoning) when purchased with a heat pump manufactured by Enertech Global, LLC.

5+5-Year Limited Labor Allowance Warranty

This warrants the service labor allowances for five years. Product registration provides a FREE additional 5-Year Limited Labor Allowance (years 6-10). Product must be registered online or via mail-in form within 60 days of installation.

Optional Lifetime Microchannel Air Coil and Compressor Warranty

Covers the all-aluminum microchannel air coil heat exchanger and compressor to the original homeowner. Coverage is for one-time replacement, parts only, and is non-transferrable. Product must be registered online or via mail-in form within 60 days of installation.

**Please reference the effective warranty certificate for full details, conditions and exclusions.*



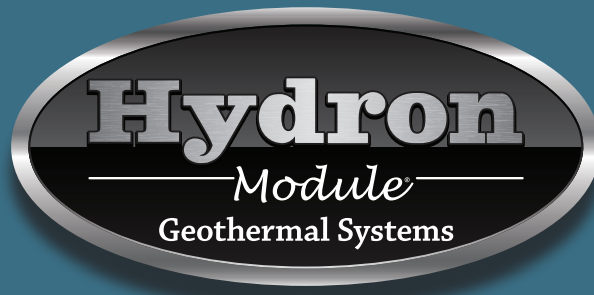
Financial Incentives

In addition to the extensive benefits offered by a geothermal heating and cooling system, there are also numerous financial incentives being offered across North America.

Many local municipalities, state entities, and utilities offer rebates or other financial incentives to homeowner's installing a geothermal system. Be sure to research their availability to ensure maximal benefit of installing a new efficient geothermal heating and cooling system. In the US, the online Database of State Incentives for Renewables and Efficiency is a helpful resource. Visit www.dsireusa.org. Contact your local utility or electric cooperative to find out what programs they offer.



Canadian provinces also offer tax incentives for Canadian residents installing a geothermal system. Since these offerings vary by Province, interested parties should contact their local Hydron Module dealer for details regarding their specific tax incentive availability.



Greenville, IL - Mitchell, SD - Portland, OR

info@enertechmfg.com

www.hydronmodule.com



Product specifications reflect available information at time of printing. Design and specifications may change without notice.