



Questions and Answers

What ground source training and qualifications do you have?

Ground Source staff, agents and dealers are trained and qualified with the International Ground Source Heat Pump Association (IGSHPA) and WaterFurnace

What type of ground source system are you going to supply?

We only supply "water source" systems. This means that the liquid circulating in the ground loop (polyethylene) is water. In excess of 90% of ground source systems world wide are "water source" systems.

What other types of ground source systems are available?

Direct exchange is a technology where copper pipe is buried directly in the ground. Refrigerant flows in this copper tube ground loop providing "direct exchange". This refrigerant operates at extremely high and extremely low temperatures in comparison to water source systems.

Do you model the direct impact of your ground source system on the environment?

Yes, we can model the environmental impact for 50+ years.

How many system lifecycles should I get from my ground loop before it need replaced?

We would expect your ground loop last 100+ years, so we anticipate at least 5 unit lifecycles.

How is the peak heating (or cooling) demand of my project to be calculated? Or is it only estimated?

It is very important that the peak demand be accurately calculated and modelled for your project.



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What options do I have for my ground loop?

All of or "closed" ground loops are polyethylene pipe, these maybe either vertical or horizontal configuration. A closed loop can also be installed in the form of a heat exchanger in a pond, lake, sea or other water body. An "open" loop maybe employed, by drawing and expelling to and from a water bore, lake, river or other water source.

I have an existing private water supply (well or bore). Can I connect directly to the ground source unit as an "open loop"?

Yes, in most circumstances.

What warrantee will my ground loop have?

Ground Source ground loop warrantee is 50 years.

What is my ground loop made of?

Polyethylene pipe

What fluid or gas is in my ground loop?

Water or water and a small amount of antifreeze (environmentally friendly available)

If my ground loop were to leak what would be the impact on the environment, would there be any contamination and if so how would it be cleaned up?

Due to the very small amounts of antifreeze (if required) there would be very little (if any) contamination. There is nil contamination if the antifreeze is environmentally friendly. And no special clean up procedure should be required.

Does the ground loop size and design change in relation to the total amount of heating or cooling required by my building?

Absolutely, the amount of heating (or cooling) required directly impacts the size and design of the ground loop.

Does the ground loop size and design change in relation geographical location my building?

Absolutely, the geographical location directly impacts the size and design of the ground loop.



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Does the local site geology (differing thermal conductivity of the earth's makeup) and ground temperature change the ground loop size and design?

Absolutely, the ground temperature and thermal conductivity of the earth is critical these factors directly effect the size and design of the ground loop. E.g. Damp earth (dirt) is much more thermally conductive than dry sand, which is a good thermal insulator. Therefore a ground loop for identical ground source systems in dry sand will be much, much larger than in damp earth.

What will the minimum and maximum operating temperatures of my ground loop be?

This varies from situation to situation however a loop design with a minimum operating temperature of 4°C and a maximum of 30°C would not be uncommon.

Can my ground loop freeze the earth surrounding it?

In all but the most extreme circumstances we do not operate ground loop temperatures below 0°C.

Can my ground loop bake the earth surrounding it?

No, we do not operate at ground loop temperatures hot enough to bake the earth.

What is the expected COP of my ground source system to be? At best? At worst? Average?

This varies from model to model of the WaterFurnace unit selected and subsequent ground loop design. Heating COP's in excess of 5 are quite possible and at worst around 3. Ground Source can supply the technical data to show exactly the efficiencies to be delivered at all stages of operation.

Is my ground source system designed to operate 24hrs/day 7days/week at full load without serious loss of system operating performance (COP)?

Yes, your ground source system is designed to operate 24/7 within the minimum and maximum loop temperatures parameters it is designed for.



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Is my ground source system only designed for periodic loads (such as a domestic water heater) where it may only operate a few hours a day?

No, your ground source system is designed to meet the required demand all day everyday.

Will my ground loop (earth) need time (periodic on/off operation) to recover temperature to bring my COP back up to "normal"?

No, your ground source system is designed to work in harmony and unison with nature. The earth is a limiting factor – the amount of thermal energy that be conducted by the earth is a primary limiting factor in correct ground loop design.



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