



YOUR COMPLETE GUIDE TO UNDERFLOOR
HEATING & HEAT PUMP SOLUTIONS





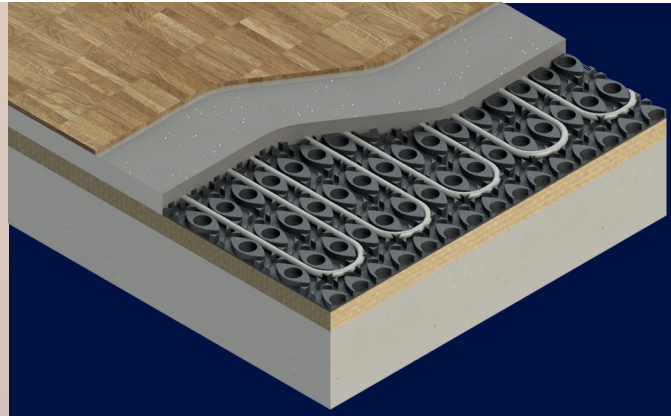
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WHO WE ARE



Working with specialist manufacturers, RES Distribution provide a complete range of renewable and energy efficient heating and hot water solutions to homes and businesses across the UK. So whether it's heat pumps, underfloor heating, solar thermal / PV or MVHR heat recovery systems we can offer a fully integrated renewable package to provide energy efficient sustainable solutions. As a member of the nationally recognized quality assurance Microgeneration Certification Scheme (MCS), customers can feel confident they are investing not only in the best technology but in a company with a proven track record. Our professional team comprises of experienced technicians, system designers, sales and marketing personnel who have many years experience, and understand how to specify and implement complete renewable solutions.



WHAT WE OFFER

RES specializes in the design and supply of heating systems primarily using Heat pumps and underfloor heating along with other energy efficient heat emitters. We provide domestic and commercial solutions for customers with projects such as new builds, renovations, barn conversions, apartments, offices and even schools and nursing homes.

“RES can assist customers to take advantage of the Renewable Heat Incentive (RHI) by supplying the products and technical support required to deliver a Microgeneration Certification Scheme (MCS) accredited air or ground source heat pump installation.”

*Shane Oxberry Managing
Director RES Distribution*

RHI funding is only available to MCS approved installations and many installers are not MCS accredited due to the upfront costs and considerable admin required. This is where RES can help. As a Renewables distributor, we offer a comprehensive range of MCS certified products with full technical back up. We design systems to MCS standards and undertake the final commissioning and project sign off on behalf of the installer. We can facilitate free training through Daikin regional training centres.

Using AutoCAD work stations and the very latest software, our highly experienced design team can provide heat loss calculations, detailed installation drawings for both heat pumps, underfloor heating and MVHR systems. When it comes to fitting, every project has detailed drawings along with full schematics, both electrical and mechanical. With all work completed to MCS and BPEC standards you can be confident you will be getting the most efficient system for your project.



WHY UNDERFLOOR HEATING?

There are many benefits to a modern UFH system. These systems are ideal for low temperature applications such as our ASHP & GSHP offerings.



Due to the large thermal mass/area much lower temperatures can be applied whilst achieving high comfort levels in the home. It also works extremely well with more traditional oil and gas installations. The heat emitted from the floor provides a greater even spread of temperature and eliminates cold areas or the “draft” effect radiators can often give. Bathrooms and tiled areas feel distinctly more luxurious as floor temperatures feel comfortable underfoot giving a sense of greater satisfaction.

UFH also has the added benefit of eliminating the need for wall space taken up by radiators, providing more useful wall space and flexibility in home furnishing. Once experienced our UFH customers/homeowners agree that the initial effort and costs associated with the installation was well worth the initial investment.



SELF BUILDERS

Whether you're starting from scratch or renovating, we can offer a bespoke solution from our wide range of floor construction options to fit your particular project. Our experienced design team can work with existing structures or liaise with your architect to ensure the most efficient solutions for your build. Underfloor heating offers so much more than just a comfortable living environment. Freedom from bulky radiators affords an interior design flexibility which means you can make the most of your living space.



Architects & Developers

We undertake all types of projects residential or commercial and have the technical knowledge and experience to work alongside specifiers. Our professional team comprises of experienced technicians, system designers, sales and marketing personnel who have many years experience, and understand how to specify and implement complete renewable solutions.

Installers

All RES systems are designed using BS EN 12831 standard heat loss calculations and in strict accordance with the Microgeneration Certification Scheme quality guidelines. This ensures the system performs as designed and that the energy efficiencies of the primary generator are safeguarded. RES systems are also very easy to commission and to put into operation. As well as providing all the information needed by the installer, all manifolds include flow meters, temperature gauges (on both flow and return) & automatic air vents. Installation instructions are provided on A3 sized laminated sheets. These contain all the information the installer requires to ensure the system performs as designed.

Res UFH systems comprise of:

- PE-RT or Alpert MLCP Underfloor heating pipe and suitable floor fixing system.
- Manifold with High temp pump and blending valve and actuators
- Room Thermostats and wiring centre
- Design & Commissioning Drawings & Documentation

THE RES SOLUTION

The RES underfloor heating solution provides a fully warranted product, which is designed specifically for each and every project. Whatever the application, we can supply a range of underfloor heating pipe fixing systems designed to work with any type of floor construction. As part of our bespoke service our design team calculates which system will work best with your project, from the various systems listed over the next few pages.



CALL OUR
EXPERT ENGINEERS
TODAY ON **01935 421 198**
OR ALTERNATIVELY
EMAIL US ON
SALES@RES-DISTRIBUTION.COM


distribution

Renewable Equipment Solutions

PIPE OPTIONS

STANDARD SCREED SOLUTION

The most common and most energy efficient system laid in new build properties. The heating pipe is clipped via staples or using a clip rail system to the insulation board to hold the pipe in place whilst the screed is either poured or laid on top.

Suitability: New build, Extensions, Over solid concrete slab, Block & Beam

Specifications:

- Very high heat output
- Proven most cost-effective solution for new builds
- Underfloor heating sealed during building's construction
- Very simple to install

STANDARD "OVER JOIST" ALUMINIUM SPREADER PLATE

Aluminium Spreader Plates (Double Groove) ensure even and speedy distribution of heat from underfloor heating pipes and the correct positioning of the pipes during installation.

Suitability: New builds, Extensions, Retrofits

Specifications:

- Aluminium spreader plates (double groove) ensure even & speedy distribution of heat from under-floor heating pipes to fit into situations where floor has already been laid
- Reverse aluminium spreader plates fit underneath floor boards and between joists
- Aluminium Spreader Plates are designed to fit between numerous joist sizing's.
- Pipework easily clips into preformed grooves
- Underfloor heating pipe is fixed in the grooves of the plates. Insulation is placed in the void below the plates to minimize downward heat loss and dissipate the heat evenly across the floor
- Insulation is then installed up against the plates

PIPE OPTIONS

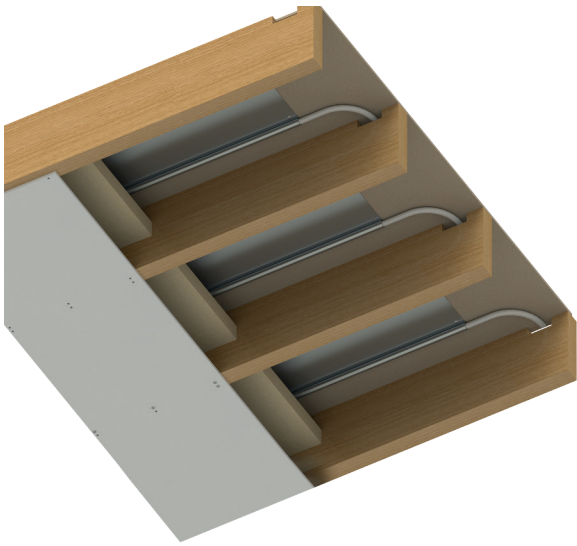
REVERSE “FIT FROM BELOW” ALUMINIUM SPREADER PLATES

Aluminium Spreader Plates (Double Groove) ensures an even and speedy distribution of heat from underfloor heating pipes and the correct positioning of pipes during installation.

Suitability: New builds (timber frame), Below joists, Retrofits

Specifications:

- Reverse aluminium spreader plates fit underneath floor boards and between joists
- Aluminium spreader plates are designed to fit between numerous joist sizing's
- Pipework easily clips into preformed grooves
- Underfloor heating pipe is fixed in the grooves of the plates, insulation is placed in the void below the plates to minimize downward heat loss and dissipate the heat even across the floor



STANDARD GROOVED FOIL BACK FOAM-BOARD

Pre-grooved insulation panels comprise a rigid thermal insulation material with grooves suitable for standard 16mm underfloor heating pipe.

Suitability: Existing properties, Over timber joist for first floors, Extension refurbishments

Specifications:

- Aluminium foil covers the surface of the foam board to minimize heat loss through the floor
- Perfect for a variety of installation types
- Fast, quick and easy to install
- Great for levelling mismatched floor heights
- Range of thickness's from 15mm to 50mm



PIPE OPTIONS

LOW PROFILE GROOVED FOIL BACK FOAM-BOARD

Pre-grooved insulation panels comprise a rigid thermal insulation material with grooves suitable for standard 12mm pipe.

Suitability: Existing properties, Over timber joist for first floors, Extension refurbishments

Specifications:

- Pre-grooved insulation panels comprise a rigid thermal insulation material with grooves and pattern positioned in the upper surface
- Aluminium foil covers the surface of the foam board to minimize heat loss through the floor
- Perfect for retrofitting properties with limited ceiling heights
- Great for levelling mismatched floor heights
- Cost-effective
- Thickness's 15mm

PROFIX PANEL

The high structural integrity of the Profix Panel enables the direct application of a highly thermally conductive screed which, in addition to a fast reaction time allows either a tiled, vinyl or thin laminate floor to be bonded directly to it or for a low tog carpet and underlay to be laid directly onto it.

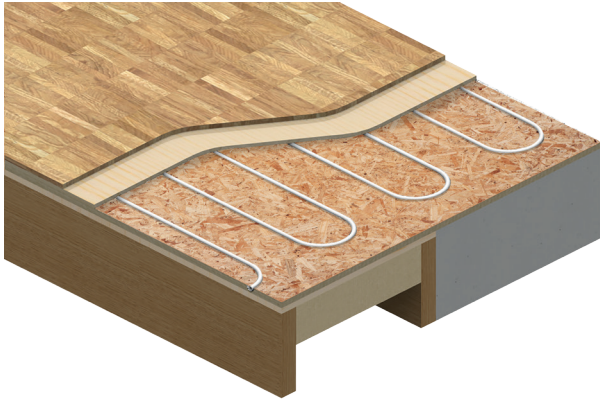
Suitability: Retrofits, New builds, Extensions, Renovations, Over existing flooring, any floor covering

Specifications:

- Extremely low 15mm overall thickness
- Snap clips help to fasten the panels together and multiple break points with V shaped notches aid installation
- Benefits from a unique slide and lock system to connect the panels together
- Ultra-low profile for either a 10mm or a 12mm pipe

PIPE OPTIONS

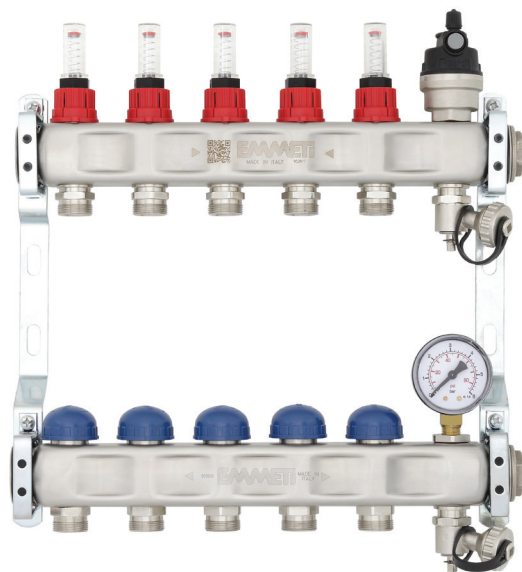
GROOVED CHIPBOARD FLOOR



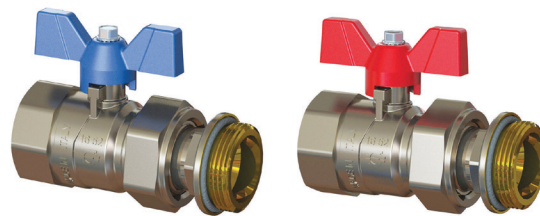
Pre-grooved foil face 22mm board with grooves of a specified diameter and pattern position in the upper surface. Foil face heat diffusion layer covering all of the board including the grooves and then the continuous pipework pressed into place.

Suitability: Existing Properties, Over timber joist for first floors, Extension refurbishments

MANIFOLD SYSTEMS

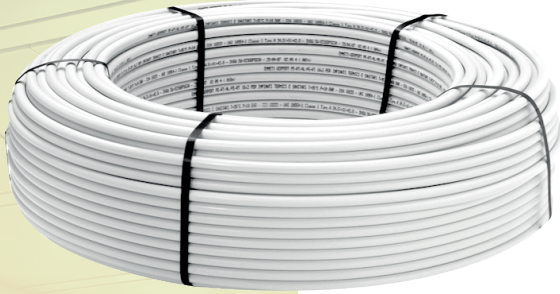


Low temperature heat pump systems normally have a circulating pump integral to the system suitable for supporting the underfloor heating system without the need for additional pumps. High temperature systems require a pump and blending valve.



PIPE OPTIONS

ALPERT MLCP BARRIER



Multi-layer pipe for heating systems only - made from a 5-layer composite material using PE-RT as the inner and outer layers coupled with a 0.2mm thick aluminium core. This multi-layer pipe can run straight from a distribution manifold to an outlet point in one continuous length, without joints and reducing the chance of leaks. As multi-layer pipe has no memory, it doesn't spring or resist when laying so it's ideal for the one-person installation.

Key Benefits:

- Oxygen diffusion tight
- Corrosion resistant
- Lightweight
- High form stability after bending
- Excellent long-run life expectancy
- Easy, fast and safe installation

PE-RT BARRIER PIPE



The RES 3-layer PE-RT is very flexible, even more so than traditional PE-X pipes. The pipe is a 16mm x 1.8mm 3 layer barrier pipe constructed of a polyethylenated temperature inner and an EVOH outer layer. PE-RT is a flexible low-cost solution for underfloor heating and as such is the most popular pipe we supply.

Key Benefits:

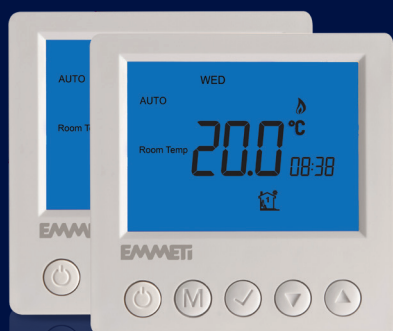
- Oxygen diffusion tight
- Corrosion & abrasion resistant
- Lightweight
- Flexible
- Chemically resistant



THERMOSTATS & CONTROLS

Control of heating systems are key to ensuring maximum comfort and system efficiency. RES supply digital, wireless touchscreen or Wi-Fi Smart controls.





ZONA Smart

The Wi-Fi ZONA™ smart controls are our most advanced yet. The Wi-Fi controlled thermostat allows remote control and monitoring of your heating system. Featuring GEO-location and optimum start for increased efficiency of the heating system, the ZONA range is fully Boiler Plus compliant and smart home enabled integrating simply with Amazon Alexa and Google Assistant. Each thermostat has a built in Wifi module negating the need for a Hub and is ideal for upgrading from basic dial thermostats.

Touchscreen CS17

The touchscreen programmable CS17 thermostat can be used in both underfloor heating and radiator systems. With its large, simple and clear LCD touch screen designed to offer maximum functionality whilst remaining simple to use but also modern and sleek in design.

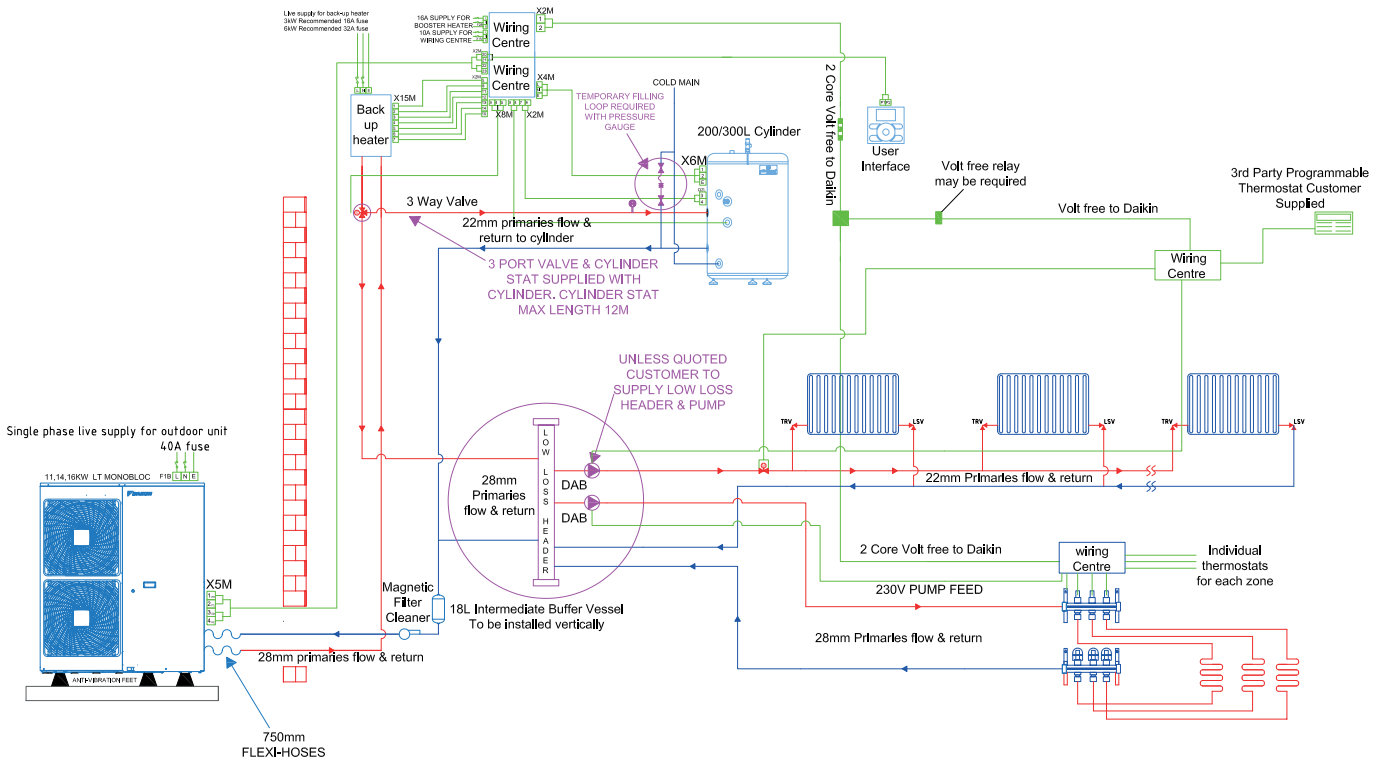
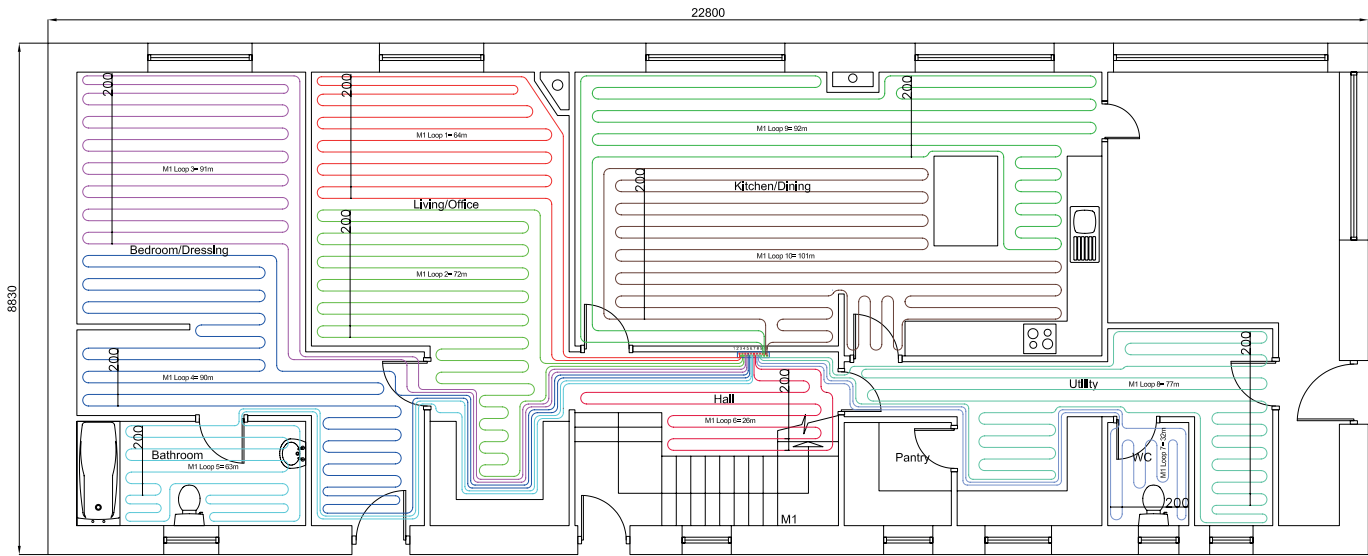
Wireless Control

Wireless heating control systems offer a solution for UFH or radiator zone control. The range of products include wiring centres, sensors, programmable and dial operated thermostats. The system is suitable for domestic or commercial applications.



OUR DESIGN CAPABILITIES

EXAMPLES OF OUR QUALITY DESIGN SCHEMATICS



ZONA™

COMFORTABLE HOMES THE SMART WAY

Our ZONA smart controls are our most advanced yet, the wifi controlled heating thermostat allows remote control and monitoring of your heating system which complement the EMMETI systems controls range perfectly.

Featuring geo-location and optimum start for increased efficiency of the heating system the ZONA range is fully Boiler Plus compliant and smart home enabled integrating simply with Amazon Alexa and Google Assistant.



amazon echo





AIR SOURCE HEAT PUMPS

Daikin are the largest manufacturer of heat pumps in the world.

Daikin - The future of heating is here

A high efficiency Daikin Altherma air-to-water heat pump (ASHP) uses heat from the outside air to warm a home's central heating and hot water systems. Even in the harshest UK conditions, a Daikin Altherma air-to-water heat pump can extract heat from the air using it as a highly effective form of renewable energy. For every kilowatt of electricity the heat pump uses, it generates about 3-4 kilowatts of renewable heat from the air. Over the course of a year, it's up to 300% efficient (even the most efficient fossil fuel boiler is less than 100% efficient.) Best of all, running costs could be even lower when you choose Daikin, particularly if a home is heated by oil, LPG or electricity. The future of heating is here.

The Daikin Altherma Range from RES

These highly reliable domestic heating and hot water solutions are suitable for both new build properties and retrofit projects. Fully compliant with ErP and other environmental directives, Daikin's high seasonal efficiency heat pumps are designed to lower energy bills and reduce our Carbon Legacy. Daikin offer a 3-year parts and labour warranty with an option to extend the warranty for the life of the appliance.

"Daikin manufacture every component in house from refrigerant to PCB's and can therefore guarantee reliability. Their compressors are designed to run at only 80% of capacity to maximize efficiency and longevity."

Shane Oxberry Managing Director RES Distribution



THE DAIKIN ALTHERMA RANGE



LOW TEMPERATURE MONOBLOC SYSTEM

The most compact ever all-in-one heat pump, yet it's also extraordinarily efficient and reliable all year round. A natural fit for homes where space is limited, the new Daikin Altherma LT Monobloc has only a wiring centre indoors, while the compact and quiet outdoor unit can be installed almost anywhere - under a windowsill or in the smallest of gardens. Perfect for an energy-efficient new property. It's also suitable for replacing an older heating system.

3 key advantages:

- Co-efficient of Performance of up to 5*
- Space-saving design
- Reliable operation even when -25C outside



LOW TEMPERATURE SPLIT SYSTEM

Daikin Altherma Low Temperature (LT) Split is the most versatile and efficient air-to-water heat pump for new properties and low energy homes. Offering the ultimate in comfort and control for heating and hot water, it includes a space saving, wall hung indoor unit and optional hot water cylinder, while the compact and quiet outdoor unit can be installed almost anywhere - up to 50 metres from the property. Perfect for a an energy-efficient new home, it's also suitable for replacing an older heating system.

3 key advantages:

- High efficiency (COP up to 5.04%*) with typical annual efficiencies of up to 300%
- Ideal for new properties and low energy homes
- Reliable operation even when -25C outside



HIGH TEMPERATURE SPLIT SYSTEM

Daikin Altherma High Temperature (HT) air-to-water heat pump is the ideal solution for refurbishment and renovation projects. Designed to work perfectly with existing radiations it can replace an existing boiler with little fuss. To minimise floor space needed inside the indoor unit and hot water cylinder can be stacked one on top of the other, or installed side by side where ceiling heights are low, while the compact and quiet outdoor unit can be installed up to 50 metres from the property. Offering efficient heating and hot water with fast heat-up times, the Altherma HT promises comfort and reliability even when it's below zero outside.

3 key advantages:

- Ideal for refurbishments & retrofit projects
- Works with existing radiators
- Simple replacement for oil boiler



HYBRID SYSTEM

The Hybrid heating system combines renewable heat pump technology with a traditional gas boiler. The hybrid gas boiler automatically selects the most efficient mode, choosing between heat pump, boiler and hybrid modes to give the most economical or ecological operation, depending on preference. The Daikin Altherma Hybrid system is the most advanced way to replace a gas or LPG boiler, combining a familiar gas boiler with the added efficient of a renewable energy heat pump, giving you the best of both worlds.

3 key advantages:

- Two-in-one heating systems for total peace of mind
- Automatically selects the most energy efficient operation
- Works with all types of radiators*

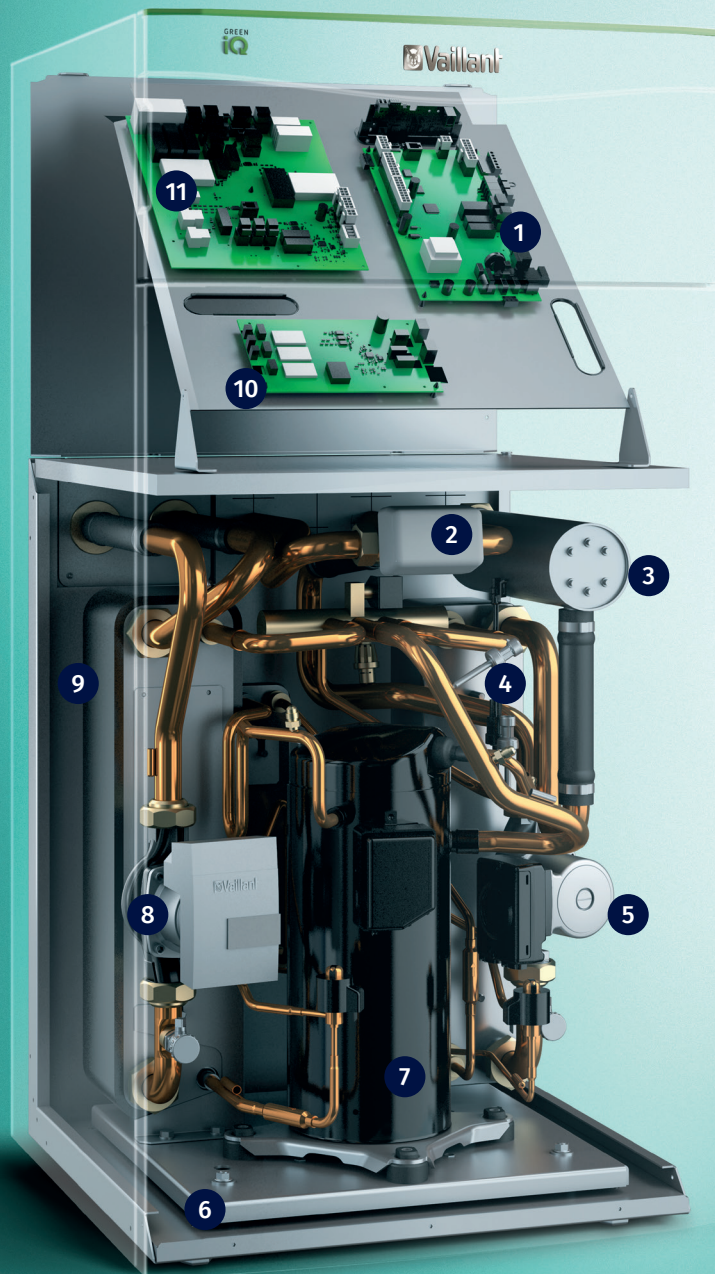




GROUND SOURCE HEAT PUMPS

Why use a Vaillant ground source heat pump?

Vaillant has been setting high standards in the heating market for many years. They have become a household name across Europe. Vaillant have a comprehensive range of renewable technologies including heat pumps and Solar Thermal systems.



1. Heat management unit 2. HW diverter valve 3. Back-up heater 4. Condenser 5. CH pump 6. Sound safe floating floor 7. EVI compressor 8. Brine pump 9. Evaporator 10. Inrush current limiter 11. Power PCB

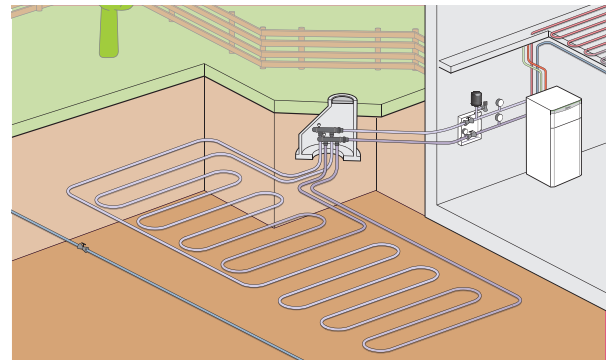


FLEXOTHERM GROUND SOURCE HEAT PUMP

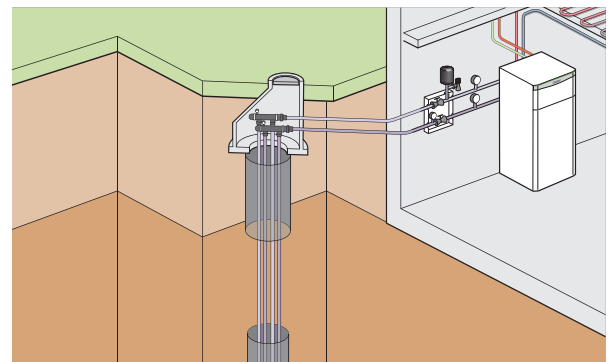
A versatile heat pump that draws natural thermal energy into a building from the ground, water or air.

Key features and Benefits

- The flexoTHERM comes in various outputs for most types of property, with 230v 5, 8, 11 KW versions and 400v 5,8,11,15 and 19kW models available.
- Flexible energy sources - flexoTHERM can be connected to three different sources: Ground ,Water or Air
- Two-year warranty with an option to extend to Seven.
- Intelligent controls ensuring maximum efficiency and comfort
- High Quality and sustainable.
- Low noise levels at 42dB earning a Quiet Mark award.
- The flexoTHERM is certified by the Microgeneration Certification Scheme (MCS).
- As an MCS certified product, you could benefit from Renewable Heat Incentive (RHI) payments.



flexoTHERM with ground array system



flexoTHERM with borehole system



The Certification Mark for Onsite Sustainable Energy Technologies

RENEWABLE HEAT INCENTIVE (RHI) & MICROGENERATION CERTIFICATION SCHEME (MCS)

Benefits of the Renewable Heat Incentive

The RHI is a UK government scheme set up to encourage the uptake of renewable heat technologies amongst householders, communities and businesses through financial incentives. When you select an ASHP or GSHP, funding may well be available from the RHI. It offers quarterly payments over seven years based on a set of tariffs, according to the type of system installed.

Payments are usually based on the heating system's estimated annual heat use and made on the portion of renewable energy generated. For heat pumps this figure is generally taken from the property's EPC. The RHI makes heat pumps more attractive than ever for householders. The tariff fluctuates according to the Consumer Price Index (CPI). For more information see www.ofgem.gov.uk

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A greener future

The use of heat pumps will soon become the norm, after the government announced low-carbon heating systems would replace gas boilers in all new homes built after 2025, in an attempt to tackle the escaping climate crisis. Currently, around 14% of UK greenhouse gas emissions comes from homes and last year emissions from housing increased, mainly from gas boilers. So, the move towards more environmentally sustainable systems will not only help the UK reduce its carbon emissions, it will also give the home owner the opportunity to heat their home in a more innovative way.

RES has the know-how to help you with all your heating needs. So, whether you're a developer, architect, self-builder, renovator or installer we can work with you to make your project hassle-free.







www.res-distribution.com