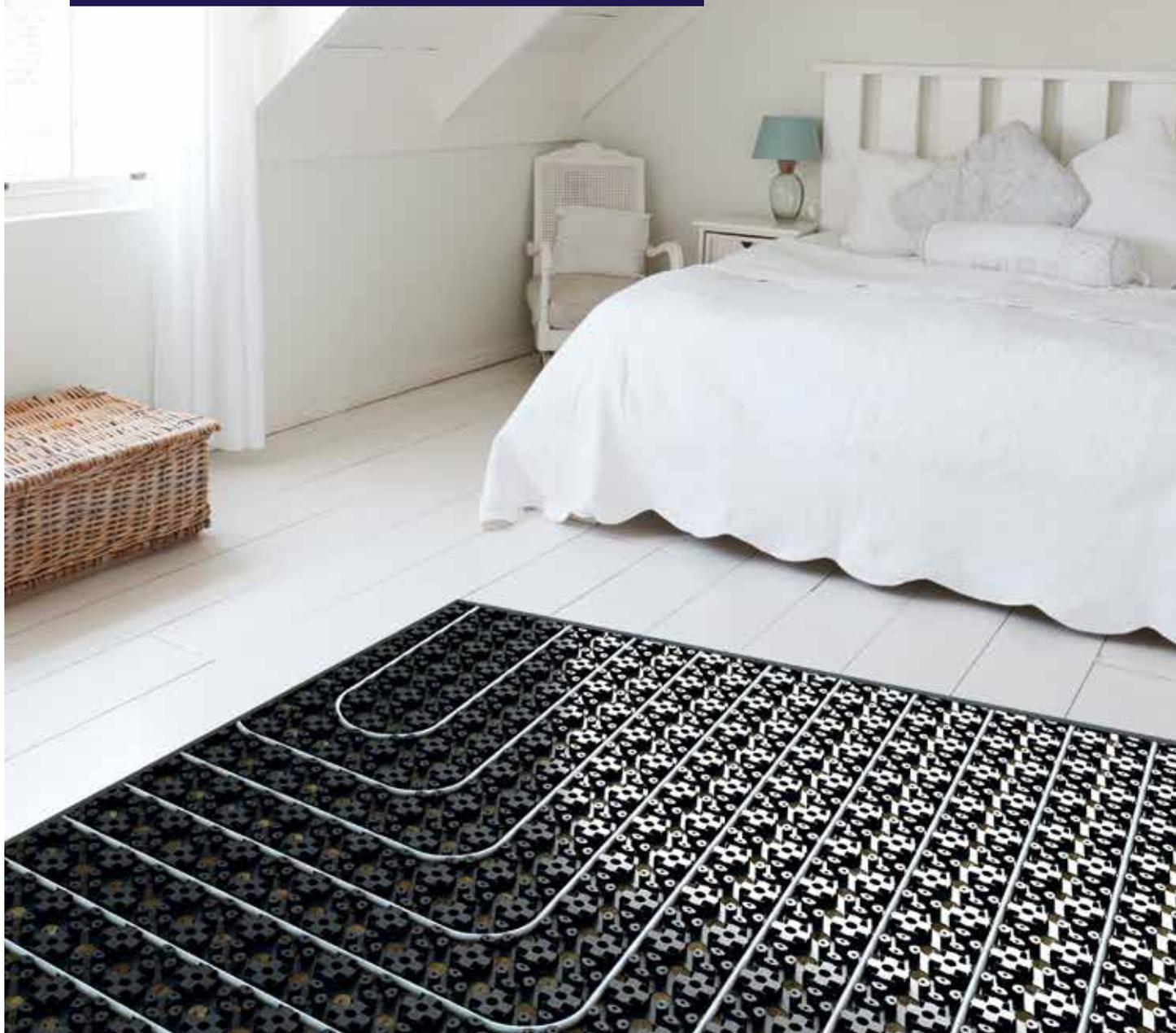




Uflex

Underfloor heating by Grant



Underfloor Heating By Grant

How it works

The installation of wet underfloor heating involves the fitting of floor integrated systems which provide an even distribution of heat. A series of flexible pipes are laid within the floor through which the hot water flows and transfers heat upwards. The system warms the large surface area of the floor with a constant heat which is then radiated evenly into the room.

Grant's underfloor heating range consists of two systems – Uflex and Uflex MINI – both of which can be successfully used with a variety of heat sources, from traditional boilers through to renewable heating products such as air source heat pumps. When correctly designed and installed, underfloor heating will allow the heat source to work at its optimal efficiency. Homeowners can therefore not only benefit from the flexibility that this unobtrusive heat emitter offers, but they can also enjoy lower energy bills as a result of improving the overall efficiency of their heating system.

Benefits

Highly efficient

The warm water used in underfloor heating systems has a much lower flow temperature, compared to conventional radiator systems, as it feeds into a much larger surface area. This enables it to heat a room very effectively and efficiently.

Grant's underfloor systems operate at their most efficient when they are not frequently switched off and on. The floor screed takes time to heat up, but once up to temperature it only requires a small amount of energy to maintain this condition. Switching the system off and on, as is commonly the case with a radiator system, results in the floor losing temperature, requiring more heat input to reach that temperature when switched back on again, and so on.

Operating systems with a 'setback' (unoccupied) control, maintains the floor at a minimum temperature during these times and avoids the wasteful use of energy to reheat the floor from cold. With this type of control the normal room temperature can be achieved during periods of occupancy, but during other periods the 'setback' control automatically drops the room temperature to a lower level. This keeps the floor warm and reduces the heat-up time when the control switches back to provide normal room temperature again.

Over time, 'setback' control will reduce the overall demand on the heat source, increasing system efficiency and lowering running costs.

Optimal control and comfort

When designing an underfloor heating system, the pipework layout can be easily divided into zones. With both Uflex and Uflex MINI, rooms can either be split into more than one zone or multiple rooms can be incorporated into one zone. This allows homeowners to precisely control the temperature in a particular room or a space within a room. The temperature delivered is also evenly distributed from one side of the room to the other. The pipework is positioned so that the entire room will receive heat with no 'hotspots' or cool draughts. Underfloor systems radiate heat uniformly upwards, achieving a constant temperature throughout the space to deliver ultimate comfort.

Quick & easy installation

Grant underfloor heating is supplied as packs specifically suited to meet the requirements detailed in the system designs. From the pipework and connections through to the edging strip and controls, Grant can supply all the components required. Straightforward to install and with the Uflex MINI system suitable to be fitted by a single engineer, Grant's underfloor range is user-friendly to work with and simple to maintain. Furthermore, Grant can be on hand with a full design service, providing installers with assistance from start to finish (please see page 9 for further details).



Uflex manifold

Both the Uflex and Uflex MINI systems use the same manifold. The manifold distributes the water to the heating zones at the correct temperature (when heat is needed) at the appropriate flow rate. The flow rate through each pipework loop will vary depending on various factors like diameter and length of pipe etc. The manifold consequently plays an essential role in ensuring that the system is balanced and that the correct flow rates are maintained throughout.

Suitable floor coverings

Not all types of floor finishes are compatible with this type of heat emitter. The objective of underfloor heating is to transfer heat from the system into the room and some floor coverings can restrict this movement of heat. Flooring materials such as tiles and some types of vinyl flooring are low resistance and are therefore ideal for underfloor. Meanwhile, thicker finishes such as certain types of wood and thin carpets have medium resistance which means that some of the heat is retained. Any carpets and overlay which have a combined tog of over 2.5 are not suitable for an underfloor heating system.



| Tile, stone & polished screed | Vinyl flooring | Engineered timber & laminate flooring | Solid hard & soft wood | Carpet |
|---------------------------------|---|---|--|---|
| ✓ excellent heat transfer | ✓ good heat transfer | ✓ average heat transfer | ✓ average heat transfer | x low heat transfer |
| ✓ ideal for use with underfloor | ✓ robust & hard wearing | ✓ performs well with changes in temperature | x changes in temperature can cause warping | x carpet tog & underlay must not exceed 2.5 |
| ✓ can be heated to up to 29°C | ✓ can be heated to up to 27°C | ✓ can be heated to up to 27°C | x care should be taken when specifying board width & thickness | |
| | x not recommended for high heat loss areas such as conservatories | | | |

Low resistance
0.01 - 0.05m² K/W

Medium resistance
0.05 - 0.1m² K/W

High resistance
0.1 - 0.15m² K/W

IMPORTANT: Always check with the flooring manufacturer to confirm compatibility. Check moisture content of any wood flooring and ensure real wood floor boards are climatized in the laying area for a minimum of one day prior to fitting.

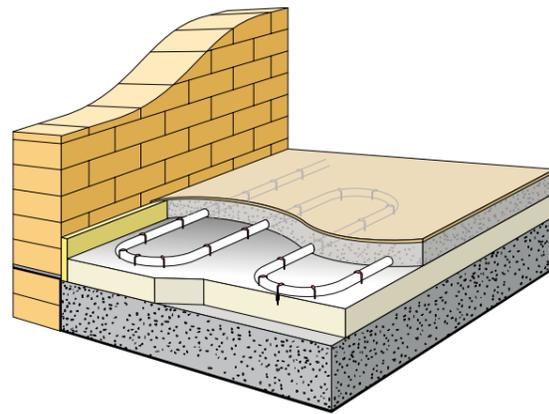


Grant's Uflex underfloor heating system is embedded into the floor construction. It is ideally suited for new builds whereby the pipework is installed during the initial stages of the property's development. The Uflex pipework is then positioned and clipped into place once the flooring's insulation and membrane has been fitted, after which a flow screed is laid over the top and allowed to fully dry before heat is introduced.

With a drying time of up to thirty days, the Uflex underfloor system can be fitted as part of the floor construction process, therefore causing no delays in construction. Grant's Uflex system makes underfloor heating a viable option for a wide range of projects, from one-off new build projects and room extensions through to larger multi-property developments.

Screeded system

Once the Uflex pipework has been secured into place, the manifold installed and system pressure tested, a screed is laid with a thickness of 75mm and then left to dry. During the drying period, no heat should be introduced to the system and no one should walk over the floor construction. Using a flow or sand/cement screed, as opposed to a solid screed system, means that the drying time is much quicker with the flow screed mix drying in up to thirty days.



Unique edge insulation

Grant's Uflex system includes the supply of self-adhesive edging strip which is located around the surrounds of the area in which the screed will be laid. This strip also comes with a unique 'skirt' design which provides an overhang which curves alongside the wall. This edging strip not only contains and seals the screed, it also serves to reduce heat loss where the floor meets the walls and allows for expansion of the floor.

Quick reaction time

The Uflex system is designed for continuous operation with heat being supplied through the screed all day. This means that the screed acts as a thermal store. As the change in the temperature demand between unoccupied and occupied will be relatively small, (17°C to 21°C for example) the manifold and controls will manage the flow of water into the system at the correct temperature and flow rate to satisfy the heat demand.



Installing Uflex

The installation of Grant's Uflex underfloor heating system can be summarised in six simple steps which are explained here.



1
Prep floor and fix edge insulation around wall edges



2
Lay insulation over entire floor area



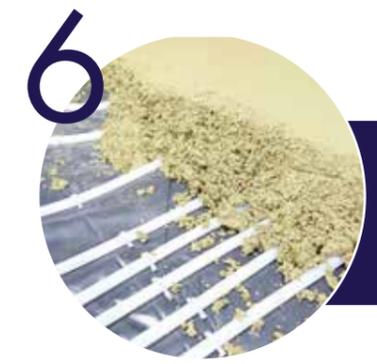
3
Lay membrane on top of insulation and stick edging strip overhang



4
Clip pipe in place



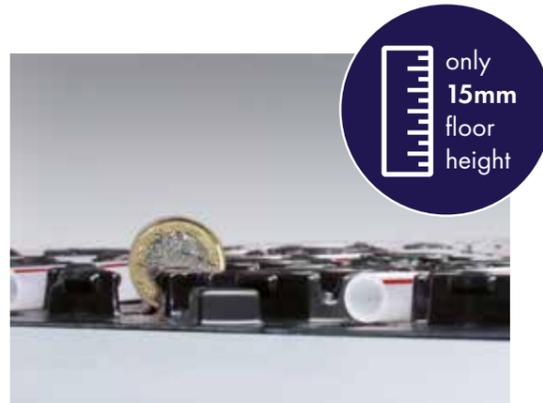
5
Install manifold, connect pipes and fill and test the system



6
Lay screed at 75mm thickness

The Uflex MINI system differs to Uflex in that it can be installed over any existing sound and level floor surface and is compatible with most types of floor covering. While it is suitable for new builds, Uflex MINI is specifically designed to suit retrofits and renovations, when an underfloor heating system is to be fitted in a property with a floor construction already in place. At just 15mm finished floor height, this underfloor system can be installed incredibly quickly and with minimal disruption to a property's existing floor and door arrangements.

Grant's Uflex MINI underfloor heating system consists of self-adhesive panels which are simply placed on top of the sealed floor. The pipework is then clipped into place without the need for staples before a self-levelling screed is laid over the top. The flexible, self-levelling screed used with the Uflex MINI system can be walked on the following day and dries within just three days enabling the heat source to be connected shortly after, restoring heat to a property within a minimal amount of time. With so many installation-friendly features, the Uflex MINI underfloor system can deliver ultimate comfort with minimal hassle.



Quick installation & drying time

The Uflex MINI system utilises a sturdy panel which has punched holes located in between the castellations. The pipework then securely attaches in between the castellations enabling installation. This arrangement allows the installation of Uflex MINI to be completed by a single technician. The panels are extremely easy to work with as they can be cut with just a sharp knife avoiding the need of saws which can be messy and heavy to handle.

The design of the panels means that the drying time is also very quick. A self-levelling screed, such as Mapei Ultraplan Renovation 3240, can be poured to a depth of between 15mm and 20mm over the Uflex MINI system. This screed can typically be walked on in less than six hours and heat can be applied after three days.

Low profile

The Grant Uflex MINI uses a 9.9mm diameter pipe and has an incredibly low profile. Just 15mm in finished floor height, this system is ideal for retrofit situations. The compact design of Uflex MINI means that it can be installed without requiring significant changes to the infrastructure of the room.

First floor installations

The Uflex MINI system is suitable for first floor installations as well. When installing underfloor heating upstairs, a number of steps are involved which can be time consuming and complicated. However, installing Grant's Uflex MINI upstairs is as straightforward as installing the system downstairs because the same procedure is used for both. Instead of lifting floorboards, fitting additional insulation, and installing cross batons, steps which are associated with more conventional first floor underfloor heating installations, the Uflex MINI system can be installed directly on top of the existing floor quickly and easily.

No overboarding required

Unlike other retro-fit systems, Uflex MINI also does not require overboarding. After the screed has dried, the desired floor finish can be laid straight on top. This is another feature which shortens the installation time too.

Quick reaction time

The heat profile of the Uflex MINI system is minimal which means that the overall reaction time is fast and considerably quicker than other types of underfloor heating systems. Compared to other systems which use a deeper screed, Uflex MINI is incredibly responsive to changes in the temperature demand. Within minutes, the floor surface will start to feel warm.

Installing Uflex MINI

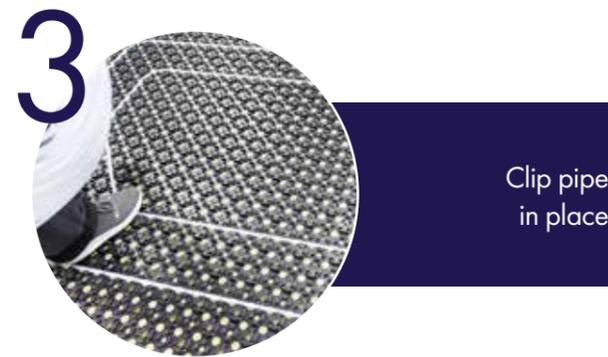
Fitting Grant's Uflex MINI system is even more straightforward than installing Uflex. Detailed here are the steps for installation.



Seal floor with a suitable primer



Lay self-adhesive Uflex mini panels



Clip pipe in place



Install manifold, connect pipes and fill and test the system



Pour self-levelling screed



Controls

Intelligent controls

In addition to the pipework and components, Grant also supply the necessary controls to operate Uflex and Uflex MINI underfloor heating systems as effectively and efficiently as possible.

Two control systems are available that give homeowners complete control of their underfloor heating system at the touch of a button.

The BASE PRO is a wired control system where the thermostats controlling each zone can be connected by wire to the controller in a 'daisy chain' configuration, both simplifying installation and significantly reducing the amount of cable required.

The WAVE PLUS is a wireless system where the zone thermostats are not physically connected to the controller and can be situated up to 30m away from it. This system also has the capability to be operated via an app.

Both controls are compatible with either the Uflex and Uflex MINI systems and can deliver a number of intelligent features, including:



Cleverly detects whether the room thermostats are assigned to the correct loop



Maintains the desired comfort setting to ensure the floor is always kept warm



Manages room bypass to secure the required water flow for the heat pump



Stores data on the system, carrying out system back-ups and data logging



Visual displays present end-users with room-by-room temperature settings



Auto-balancing

The controls feature auto-balancing technology which anticipates and adjusts the precise amount of energy required to deliver the optimal level of comfort. This technology removes the need for manual balancing at commissioning. Instead, the control constantly monitors any changes in the conditions indoors or outside and then calculates the energy needed to meet the comfort levels of the occupier. This adaptive technology ensures that the system only uses the right amount of energy at the right time, thus helping to save energy and improve efficiency without compromising comfort.

User friendly

The visual display provides homeowners with the essential information that they need to know about their system. Using the control, end-users can set the desired temperatures for each room via thermostats, a process which is simple to complete. A supporting app is also available which homeowners can access in order to monitor their home heating while away. The touchscreen display details room-by-room settings and can also assist with troubleshooting, making these controls the ideal partner for a radiant heating system such as underfloor.

A supporting app is also available for use with the wireless WAVE PLUS Control which homeowners can access in order to monitor their home heating while away.

Simple installation

Installing the underfloor controls is straightforward. With minimal wiring and an easy set-up process, the controls can be installed quickly and with ease. Suitable for new installations and compatible with existing installations, the minimal commissioning saves additional time on site.



Design & Guarantee

Dedicated design team

Grant has a Renewables Team who are on hand to provide product and design assistance. This Team has extensive experience in a range of products including air source heat pumps, complementary technologies, and heat emitters such as underfloor. From product specification through to producing full designs, Grant can help installers develop bespoke package solutions to suit the heating needs of their customers.

Quick quote turnaround

Specifying the required parts to complete an underfloor heating installation can be time-consuming so Grant are able to provide installers with comprehensive quotations, quickly and efficiently. Each quotation will detail the components required to complete the specific job being quoted for. These components can then be supplied as a pack once the order is finalised.

Full design indemnity

To provide complete peace of mind to installers and their end-users, all of Grant's underfloor heating designs come with indemnity (subject to Terms and Conditions). This reflects the confidence that Grant has in the level of expertise of those within the Team developing and designing the system drawings.

Quality guarantees

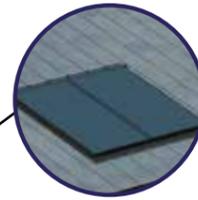
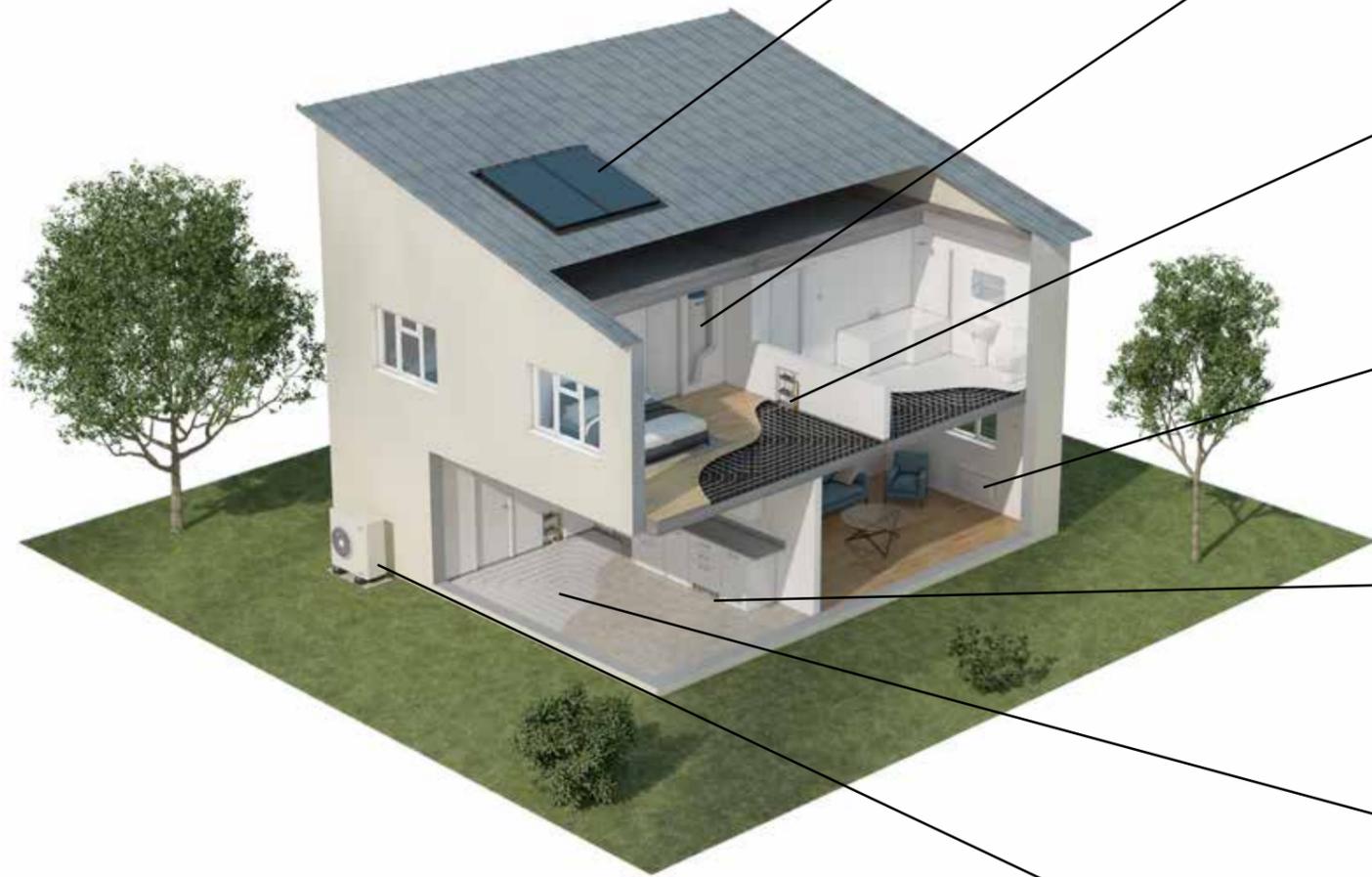
The following guarantees are also available with Grant's underfloor heating offering. The pipework for both the Uflex and Uflex MINI systems comes with a 25 year guarantee which is market leading. Meanwhile, the mechanical and electrical components come with a 2 year guarantee. All of the underfloor system components undergo rigorous product testing and are manufactured to a very high specification and standard, resulting in the comprehensive guarantees supplied. (All guarantees are subject to Terms and Conditions).



send us your plans
design@grantuk.com



Multiple Package
Solutions.
All From Grant.



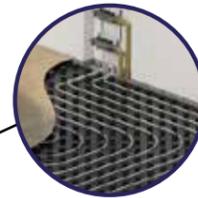
Sahara solar thermal

- On roof, in-roof & flat roof mounting options
- Solar Keymark approved
- 82.6% collector efficiency



Wave high performance cylinders

- Pre-plumbed, single & twin coil options
- Fast recovery stainless steel coils
- Sizes between 125 - 500 litres



Uflex MINI underfloor heating

- Very low profile (15mm finished floor height)
- Suitable for ground & first floor installation
- Quick installation & drying time



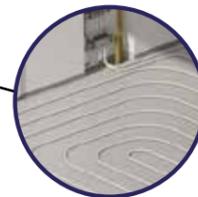
Solo fan convectors

- Flexible zone & temperature control
- Low energy consumption
- Small & slim in size



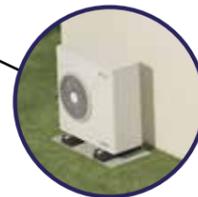
Solo Hideaway fan convectors

- Under cabinet plinth heater
- Low energy consumption
- Adjustable temperature control



Uflex underfloor heating

- Quick reaction time
- Ideal for new builds or extensions
- Highly efficient



Aeronas³ air source heat pumps

- High SCOP's sustainable at low temperatures
- MCS approved
- Factory fitted weather compensation control



- Air source heat pumps
- Underfloor heating
- Cylinders
- Fan Convectors
- Solar thermal

A heating system's overall efficiency can be significantly improved by combining multiple technologies. By installing an air source heat pump alongside a high performance cylinder and effective heat emitters, a home's heating system can be taken into a new class of efficiency. And, what's more, you can get all of these products from Grant.



Send your plans to
design@grantuk.com



This leaflet is accurate at the time of printing but as Grant UK has a policy of continual improvement it may be superseded. We reserve the right to amend specifications without prior notice. The statutory rights of the consumer are not affected. All products manufactured under I.S. EN ISO 9001. Grant UK additionally holds ISO 14001 accreditation. TMTHE GRANT 'EZ-FIT FLUE' SYSTEM is a trade mark of Grant Engineering Limited.

©Grant Aeron, Grant Spira, Grant Vecta, Grant Vortex, Grant VortexBlue, Grant VortexAir, Grant Solar, Grant Aurora, Grant Sahara, Grant CombiSOL, Grant WinterSOL, Grant MonoWave, Grant DuoWave, Grant ThermaWave, Euroflame and Multi Pass are registered trade marks of Grant Engineering Limited. The contents of this leaflet are fully protected by copyright and nothing may be reproduced without permission from Grant UK.



Grant Engineering (UK) Ltd
 Hopton House, Hopton Industrial Estate,
 Devizes, Wiltshire, SN10 2EU
 t: +44 (0)1380 736920 f: +44 (0)1380 736991
 e: sales@grantuk.com w: www.grantuk.com

