A domestic renovation project in London has been carried out using the JK fermafloor. To improve the thermal and acoustic values of the property and the wish to have an eco-friendly warm water underfloor heating system the customer chose the high-quality solutions from Fermacell, Uzin Utz UK and JK floorheating. The key features of the JK fermafloor with the unique JK 'routing on site' method made it possible to convert the property, a 1930s building with a timber subfloor, into a stunning, modern and environmentally sustainable home.

Revolution in renovation

James Hardie, Uzin Utz UK and JK offer a complete solution with the JK fermafloor

JK fermafloor is a complete, lightweight and customised dryfloor construction underfloor heating system which is the result of a collaboration between three companies: James Hardie, JK floorheating and Uzin Utz UK.

JK floorheating is your partner for installation of a warm water underfloor heating system. JK is from origin a Dutch company, founded in 1994, and headquartered in the Netherlands. JK invest highly in innovative underfloor heating solutions where the revolutionary installation method and a range of self-developed products are a great example of. In the past 20 years we have acquired more than one million square meters of knowledge and experience of in-ground underfloor heating.
For further information see: **www.jk-gb.com**

fermacell® is part of the James Hardie Group and specializes in leading gypsum fibreboard solutions across Europe for high performance dry lining projects. Combining the strength of solid block-work with the flexibility of dry lining, the acoustic, fire, moisture, impact and load hanging performance place fermacell® gypsum fibreboard in a category of its own. fermacell® products are manufactured from recycled materials and are tested and certified by the Cologne Eco Institute.
For further information see: **www.fermacell.co.uk**

Uzin Utz UK is a subsidiary of the Uzin Utz Group an international company with its headquarters based in Germany. The Uzin Utz group employs over 1,000 people worldwide and manufactures a range of products for the installation of floor coverings. Our specialist flooring range includes primers, damp proof membranes, smoothing compounds, sealants, resin coatings as well as grouts and lacquerers for timber floors.
For further information see: **www.uzin-utz.com**

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JK in-ground water-based underfloor heating system

JK is a provider of in-ground water-based underfloor heating (UFH) systems for residential and commercial buildings. We operate in more than 10 European countries and have been serving the Dutch and German markets since 1994.

Our unique installation method uses dustless grinding technology to quickly create precision grooves in the existing screed floor using a specially designed floor grinder. The 14 [mm] heating pipe (JK Flextube) is laid into these grooves.

JK's in-ground underfloor heating is comfortable and energy-efficient because the heating pipes are installed directly under the surface of the floor. This allows the floor temperature to rise much faster so the room temperature can be controlled more accurately compared to traditional underfloor heating systems.

Because of the low water flow temperature 45-35 [°C] required by JK's system is it an excellent asset for combining with modern and renewable energy sources such as solar panels or heat pumps.

Renovation and heating solution

fermacell® gypsum fibreboard has been developed to the highest standards of German engineering. The boards have a simple homogeneous composition – recycled gypsum, cellulose fibres from post-consumer waste paper, water and no added chemicals. fermacell® boards are fibre-reinforced throughout and are therefore extremely resilient and have particularly good sound-proofing properties.

A passion for flooring

Uzin Utz UK has experience and expertise in anything and everything to do with flooring. With the brands UZIN, WOLFF, PALLMANN, Arturo and codex, Uzin Utz UK offer an extensive range of products, systems and services for the installation, renovation, and maintenance of all types of floor coverings, wood flooring, resin coatings, ceramic tiles and natural stone.

Benefits at a glance!

fermacell® flooring key features

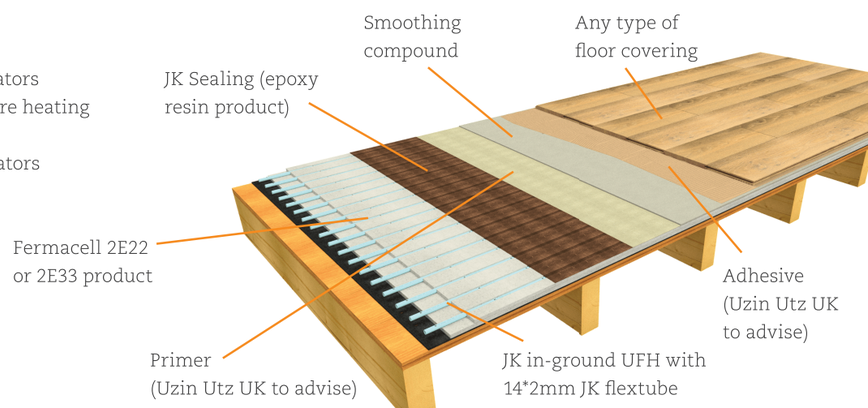
- Boosts underfloor heating
- Enhances acoustic performance
- Quick to install
- High point load
- Handy size 1500 x 500 [mm]
- Suitable for a wide range of floor coverings
- Chair roll resistance
- Ecologically tested

JK in-ground UFH key features

- Fast heat response time
- Better levels of humidity
- Reduces dust circulation
- More space due to absence of radiators
- Eco-friendly due to low temperature heating
- Comfortable heating
- Hygienic, no cleaning around radiators
- Installed by trained JK engineers

Uzin Utz UK flooring key features

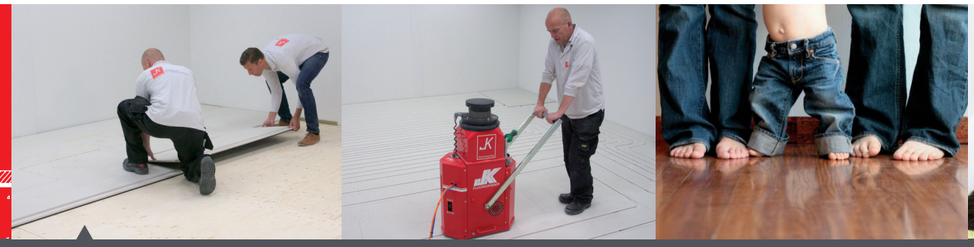
- Compatible with underfloor heating systems
- Mutually compatible products for the installation of any type of flooring
- Cleaning and maintenance products for the repair and aftercare of floor coverings
- Low emission and solvent free products suitable for environment building certification such as BREEAM
- Different systems suitable for residential, commercial or industrial environments
- Free technical advice and flooring specification service



The JK Floorgrinder produces dust-free grooves in the Fermacell® floor panels -

- into which the heating pipes are laid

Heating pipes are installed directly under the surface of the floor, for quick heating and precision room temperature control.



The combination of Fermacell® flooring products and JK's UFH system results in a complete solution that incorporates high-quality gypsum-based dry flooring panels and an optimum and customised integrated eco-friendly, low-temperature heating system.

All-in one solution

The combination of fermacell® flooring products and JK's UFH system results in a complete solution that incorporates high-quality gypsum-based dry flooring panels and an optimum and customised integrated eco-friendly, low-temperature heating system.

'The dry-construction panels are routed on site'

Minimal floor elevation, thermal improvement, acoustic reduction potential and fully customised UFH floor plans with total flexibility regarding manifold positions and zones makes the fermacell® & JK solution unique, cost effective, sustainable and very efficient. Key features of fermacell® flooring system are improvements in airborne and impact sound and thermal performance. The system is also resistant to fire, rot and vermin, it's ideal for uneven floors and it's easy to install. Key features of JK's in-ground UFH system are health and safety benefits, eco-friendliness, comfortable, practical and aesthetic. An additional benefit is that the UFH system is installed by fully-trained JK engineers. Any type of floor can then be installed over the underfloor heating system using products from Uzin Utz UK, whether its a timber floor, ceramic tiles, resin or luxury vinyl tiles. Uzin Utz UK are able to provide advice and specification for any project.

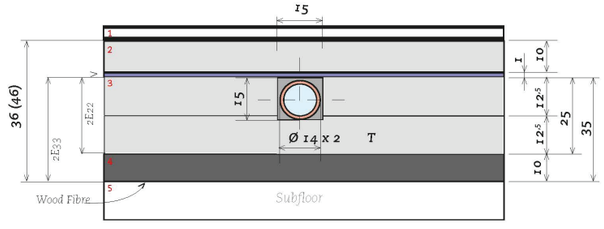
*fermacell® flooring products**

fermacell® 2E22 [25mm]
Weight 0.30 [kN/m²]
Admissible point loading 3.0 [kN]
Thermal resistance 0.075 [m² K/W]
Class Fire load from above F60
fermacell® 2E33 [35mm]
Weight 0.31 [kN/m²]
Admissible point loading 3.0 [kN]
Thermal resistance 0.26 [m² K/W]
Class Fire load from above F60

**Tested products: JK in-ground UFH with fermacell® gypsum fibreboard 10 mm. Experimental determination of heat output by Wärmetechnische Prüfgesellschaft WTP, Accredited testing laboratory in accordance to DIN EN ISO/IEC 17025. Thermo-technical audit by test method; DIN EN 1264-2:2013-03. Water based, surface embedded heating and cooling system.

Floor construction

1 Floor finish
2 fermacell® gypsum fibreboard
3 fermacell® floor element 25 [mm] or 35 [mm]
4 Wood Fibre (only with 2E33)
5 Subfloor construction (Timber)



Heat output [W/M²]					
Average water temperature [°C]:	35	40	45	50	55
Stone/Tile [R 0.05 m² K/W] approx:	45	56	71	75	80
Carpet [R 0.15 m² K/W] approx:	34	44	55	67	75

*Indicative figures for general guidance only. Output at room temperature of 20 [°C] and max floor surface of 29 [°C].

Underfloor heating professionals