



floorheating

Underfloor **heating** professionals

fermacell[®]

Solution for **dry-flooring**



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 it is an excellent asset for combining with modern and renewable energy sources such as solar panels or heat pumps.

Ecological and sustainable building solutions

The demands on modern building materials are increasing and becoming more and more diverse. The market is dominated by fast, high-quality solutions that meet or even exceed all current safety regulations and energy efficiency requirements. Construction work needs to be completed efficiently in short time frames, without unnecessarily long drying times and without creating too much dirt. These requirements are met by using easy-to-handle products and time-saving processes and installation techniques. Fermacell is a universal material which can be used as a straightforward building board, for fire protection purposes and in rooms where resistance to moisture is required. Fermacell outperforms traditional dry-lining where other systems need multiple layers and separated studs to achieve similar impact, acoustic and fire ratings.



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.

Renovation and heating solution

Fermacell gypsum fibre boards have 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.

Dry, fast and simple!

Fermacell gypsum flooring systems are designed for use as floating floors in a wide variety of applications. They are manufactured using the same technology as the high-performance Fermacell gypsum fibreboards. Fermacell flooring is supplied in the form of two layers of 12.5 [mm], with a 50 [mm] overlap (shiplap). The overlap gives a wide fixing edge around the perimeter for easy jointing. The Fermacell boards are routed on site and the JK Flextube is then laid into the routed grooves. The JK Flextube is an oxygen-proof Poly-Ethylene or Raised Temperature resistant (PE-RT) pipe that complies with the German DIN 4726/4721, KIWA KOMO and the BRL 5602 standards for use in underfloor heating/cooling systems.

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's 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.

Benefits at a glance!

Fermacell flooring key features

- Thermal performance
- Improved sound insulation
- Resistant to fire, rot and vermin
- Easy and simple installation and usage within 24 hours
- 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



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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]

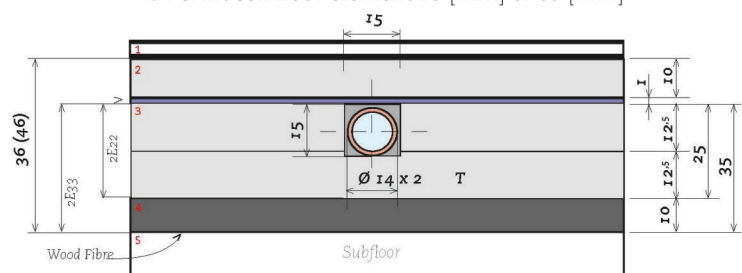
Thermal resistance 0.26 [m² K/W]

Class Fire load from above F90

**Tested products: JK in-ground UFH with Fermacell 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 10 [mm] Fermacell (optional)
- 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 m ² K/W] approx:	45	56	71	75	80
Carpet [R 0.15 m ² 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



Revolution in renovation

Case study; Fermacell and JK offer a complete solution for a domestic project in London

A domestic renovation project in London has been carried out using Fermacell dry construction floor elements combined with the JK warm water UFH system. To improve the thermal and acoustic values of the property the customer chose the high-quality solutions from Fermacell and JK floorheating; an eco-friendly warm water underfloor heating system installed into the Fermacell floor elements as the primary heat source.

The key features of Fermacell's dry construction products in combination 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.

JK floorheating has more than 20 years' of experience and is known as a reputable company. With more than 100 qualified installation engineers our installation times are guaranteed because the majority of underfloor heating systems are installed within one working day. Installing the JK floorheating warm water underfloor heating system offers the following benefits: fast, dust-free and precision. Our knowledge and experience has been gained over many years, with more than 100,000 reference projects throughout Europe. For further information see: www.jk-gb.com

Fermacell gypsum fibreboard was first developed in 1971 and since then has become the obvious choice 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 in a category of its own. The Fermacell product range includes gypsum fibre-board panels, dry flooring elements, the glass fibre-reinforced, cement-bonded Fermacell Powerpanel dry lining boards and the Fermacell green-line range which are all manufactured in factories in Germany, the Netherlands and Spain. 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



JK floorheating Ltd.

18 The Driftbridge
Reigate Road
Epsom
Surrey
KT17 3JZ
T: 0173 736 2511
E: info@JK-gb.com



Fermacell UK

Unit 2, The Courtyard
Reddicap Trading Estate
Sutton Coldfield
West Midlands
B75 7BU
T: 0121 311 3480
E: fermacell-uk@xella.com