MITAKE

Floor Heating System

Far Infrared • Thermal Membrane • Made in Japan

Series: MITAKE

Manufacturer

ミタケ電子工業株式会社

Authorised Distributor

鈞泰工程
KWAN TAI ENGINEERING
乙德集團成員 Member of Twintek Group

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About our Company

KWAN TAI ENGINEERING

Established in 1988, Kwan Tai Engineering Co., Ltd has grown to become a leading building material contractor in the Hong Kong construction industry. Kwan Tai has successfully listed on the main board of HKEX in January 2018 (HKG: 6182).

Since its establishment in 1988, Kwan Tai has strived to attain and maintain a cutting edge technology with wide recognition in the building industry. It has continued to render technical support to architects and designers throughout all stages of project development for its committed projects including production, installation and maintenance. The project portfolio todate spans a wide ranging prestigious projects in the government, residential, commercial and institutional sectors.

The company's management system has been certified to accord with the standard of ISO9001 :2015 (quality management); ISO 14001:2015 (Environmental Management System); OHSAS 18001 Occupational Health and Safety

“Get the best out of rest”

About Manufacturer

MITAKE

MITAKE Electronics Industries Co., Ltd was founded in 1969. Its semi-fixed resistor products are targeted for large electrical and mechanical plants and has since got a solid foundation in the business. Capitalizing on this unique resistor technology, it has extended its research on the development of special ink. In 1992, the PTC ink (self-regulating temperature control) was developed, and the PTC ink planar heating element was brought forward to commercial production. It is widely used in various applications due to its unique safety, ease of construction and energy saving (about 40% of power saving characteristics).

Based on MITAKE self-developed PTC printing ink technology (Japanese Patent No. 3351697). It is now widely applied in areas of residential, surface heating, home appliances and medical therapy, as well as in the fields of vehicles, agriculture, and food produce.

Patent Certificates

Trademark registration certificate (Login No. 4680145)

PTC self-regulating temperature printing ink patent (Charge No. 3351697)

PTC self-regulating heating element patent (Cal. No. 3428857)

Conductive particles polymer sensor patent (Charge No. 3418561)

Product registration card (Registration No. 3038310)

Chinese invention patent certificate (No. 90991)

MITAKE Founded in 1969
Selling of PTC planer heating element in 1992

Certified by Japan Electrical Safety & Environment Technology Laboratories in 2001

JV with Kansai Electric Power Co., Inc

Obtain the PTC patent in 2002

Certified with "PSE mark" and "S-JET certification" under the Electrical Appliance and Material Safety Law

Thermal Membrane

unique materials with patent technology

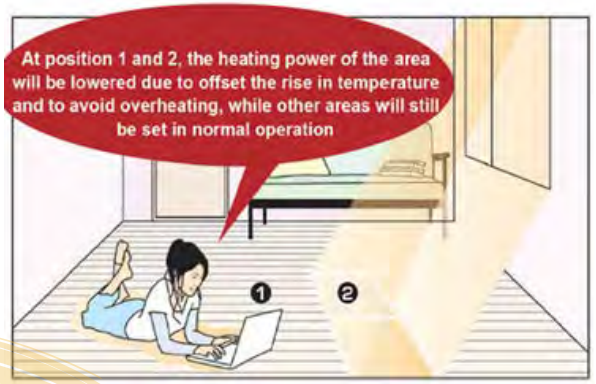
The MITAKE system from Japan is a planar heating element, following the concept of point-line-face, can raise the surface temperature of the floor planks in the shortest time possible, while the PTC automatic temperature control can allow extended carpeted coverage without undue abnormal temperature increase.

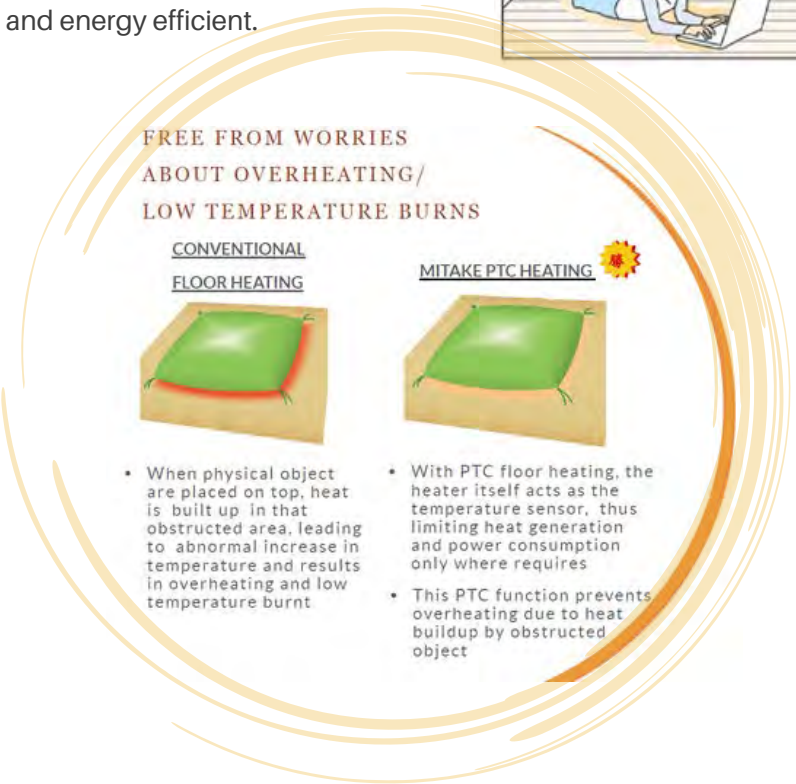
Patent PTC Technology

PTC (Positive Temperature Coefficient =正温度係数) is a unique material and technology that we could be proud of. It can regulate heat according to the temperature of the local area. That is to say, when some areas that are obstructed by physical objects, furniture or due to presence of direct sunlight, the PTC automatic temperature control technology can automatically adjust to increase or decrease the impedance of the heating element. This special feature can truly make our floor heating system safe and energy efficient.

Safety

The entire thermal membrane acts as a sensor to prevent hot spots. Temperature constantly adjusts to its surrounding conditions.



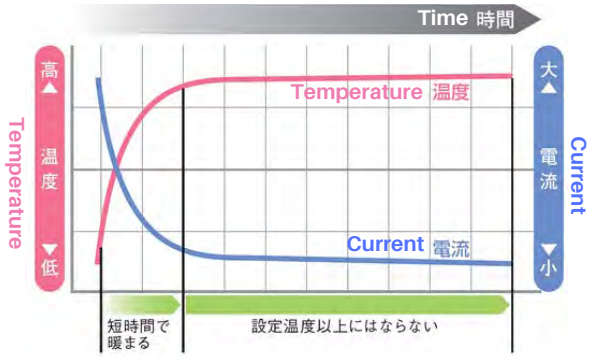


Shorter Preheating Time

Relatively short period of preheating to attain ambience comfort, approximately less than half of what would be required for the traditional floor heating cable system.

wooden floor finish	~ 15 mins +
tile/marble floor finish	~ 15 -30 mins +

depends of thickness of floor finish material

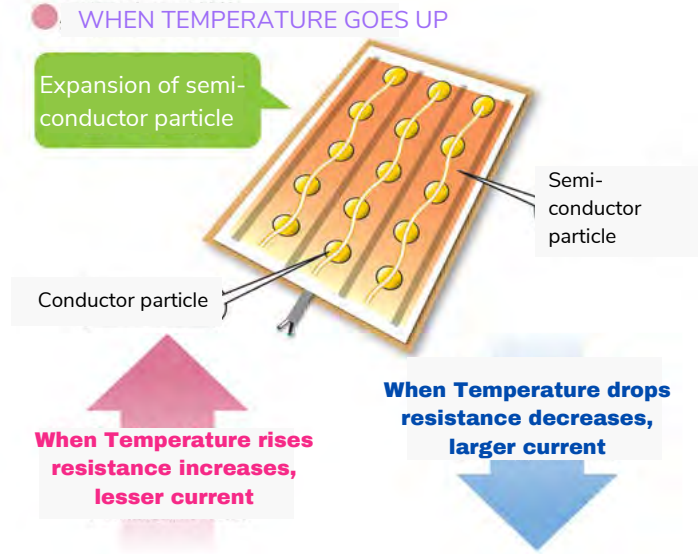


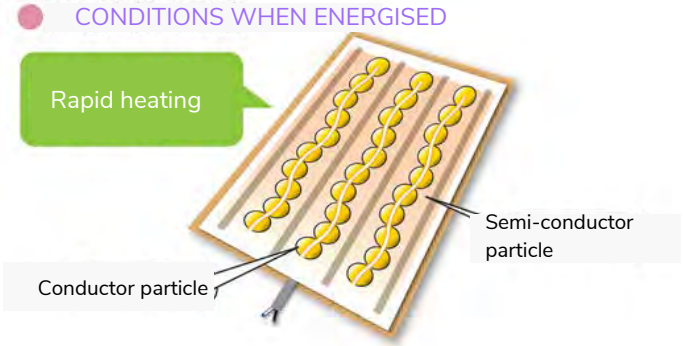
Heating temperature rises within a short duration. After which the resistance increases, current becomes smaller

Frequency conversion temperature control. At the initial stage of energisation, heat generation performance will be relatively high, where temperature rises within a short duration.
Thereafter, when a constant temperature is maintained, the power consumption drops by 50%, which amounts to 20% tinc than constant power floor heating.
Automatic control of power heating in each area.

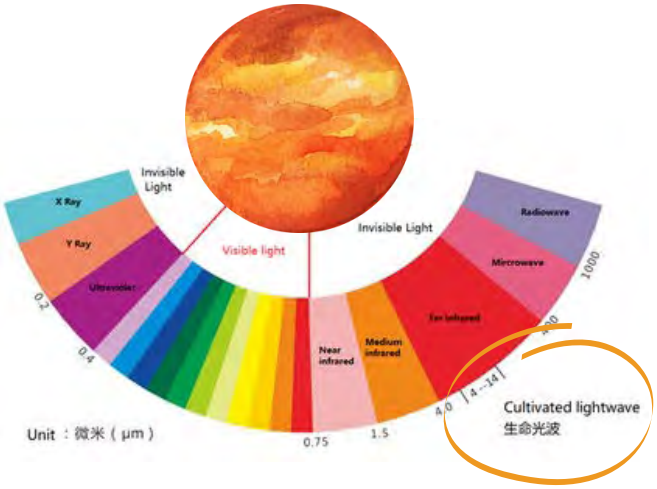
Energy Saving

Lower energy consumption than the conventional constant power floor heating.





Health Benefit of Far-Infrared Ray



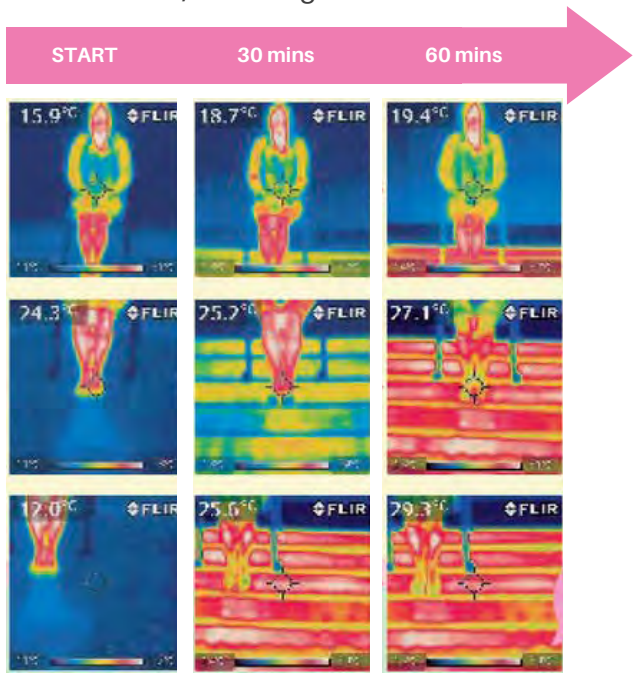
MITAKE thermal membrane releases 4-20 micrometers of “Cultivated Far-Infrared Lightwave”, equivalent to the Infrared wavelength band for use in physiotherapy (物理治療).

Medical studies suggests such could promote blood circulation, metabolism of human body. Especially suitable for elderly and children.

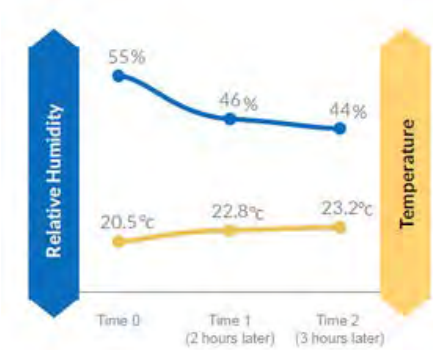
Transition in Body Temperature under 4-20μm Far Infrared Ray

The long wavelength of Far-infrared (FIR) moderately stimulate the temperature point of the body via heat radiation and conduction.

This gentle radiant heat can penetrate up to 4cm benefit the skin, achieving warmth from inside out.



Reduce Relative Humidity



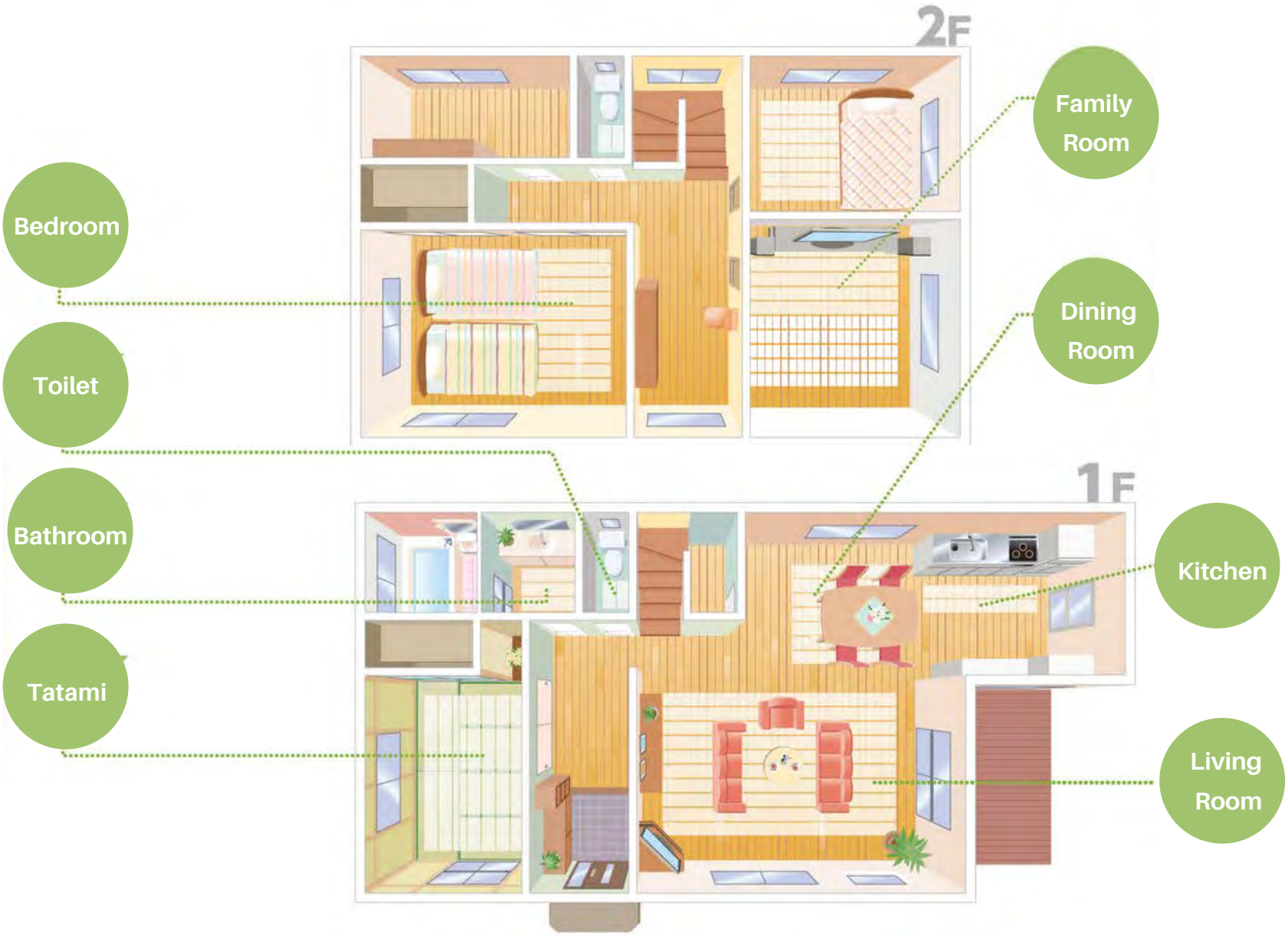
※ Test conducted by Pentasun Greentek Co., Ltd

The floor heating system is the solution to the high air humidity during rainy seasons around Spring and Summer.

This can also prevent the growth of mildew and mold and improves skin and respiratory allergies.

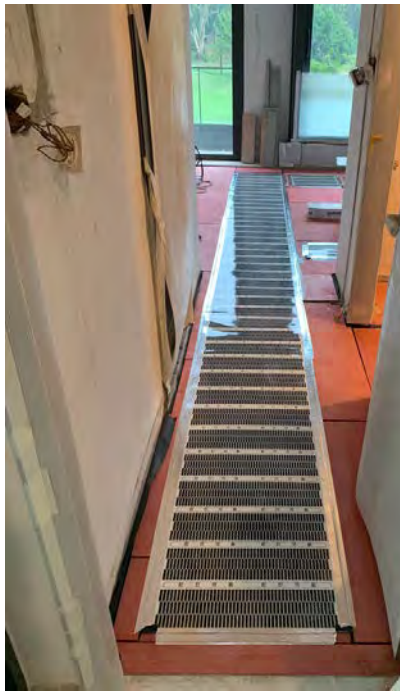
Furthermore, moisture will be heated up through the floor to balance the overall space humidity. This avoid cold and humid air from sinking to the ground.

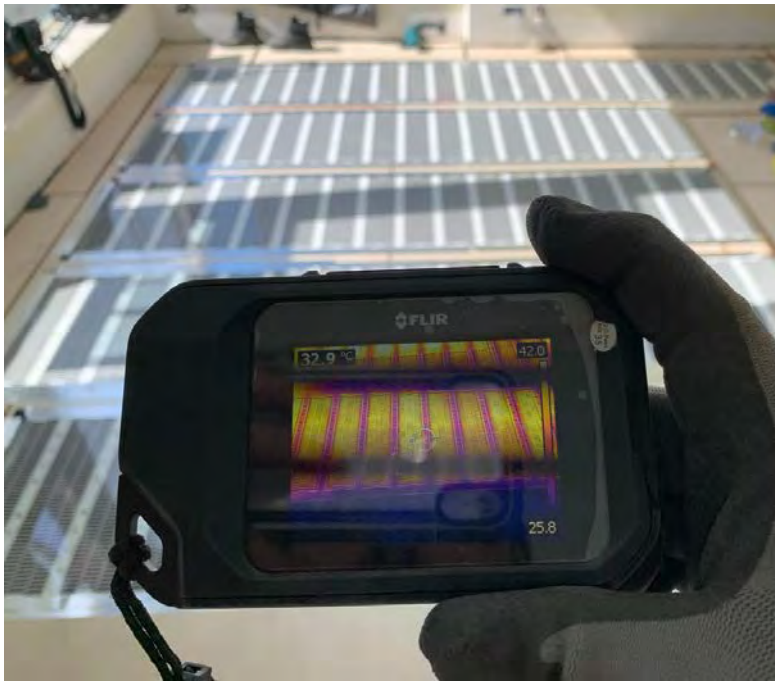
Recommended Installation Area



Recommendation

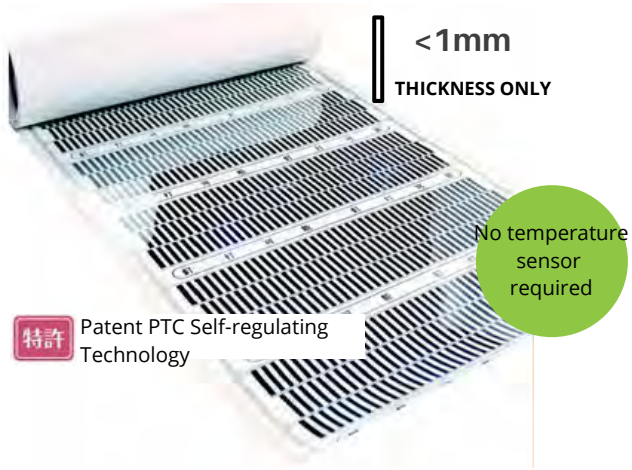
- Heating membrane 600mm distance from wall
- Space between membrane: 30mm
- Total area coverage for living/ dining room: 60-70%
- Total area coverage for bedroom: 40-60% (exclude area for bed, wardrobe etc.)





Specification

TECHNICAL ITEM	MITAKE
Rated voltage	220v (+/- 5%)
Electric current	50Hz
starting power	0.14A/pc
Constant power	0.7A/ pc
Surface heating time	2-3 minutes
Heating material	High molecular PTC carbon nano conductive particles
Heating material surface temperature (winter)	37-40°C
Floor surface temperature (winter)	≥29°C
Insulation resistance	≥500MΩ
Electrothermal radiation conversion rate	>97%
Formaldehyde, Benzene, TVOC	nil
Remote infrared	Release 5-15μm light ware
Dimensions	40m²/ roll
Manufacturer	ミタケ電子工業株式会社
Country of manufacture	Japan

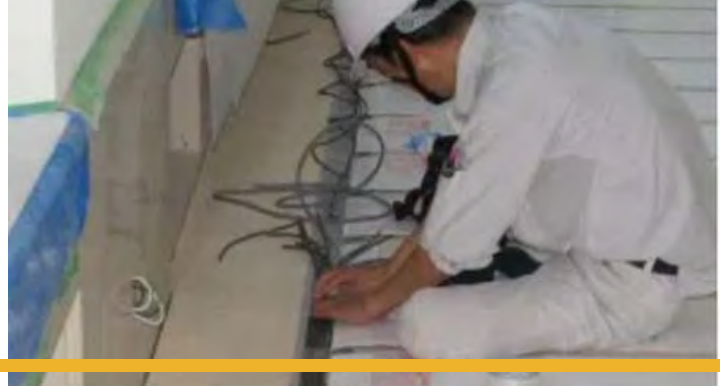


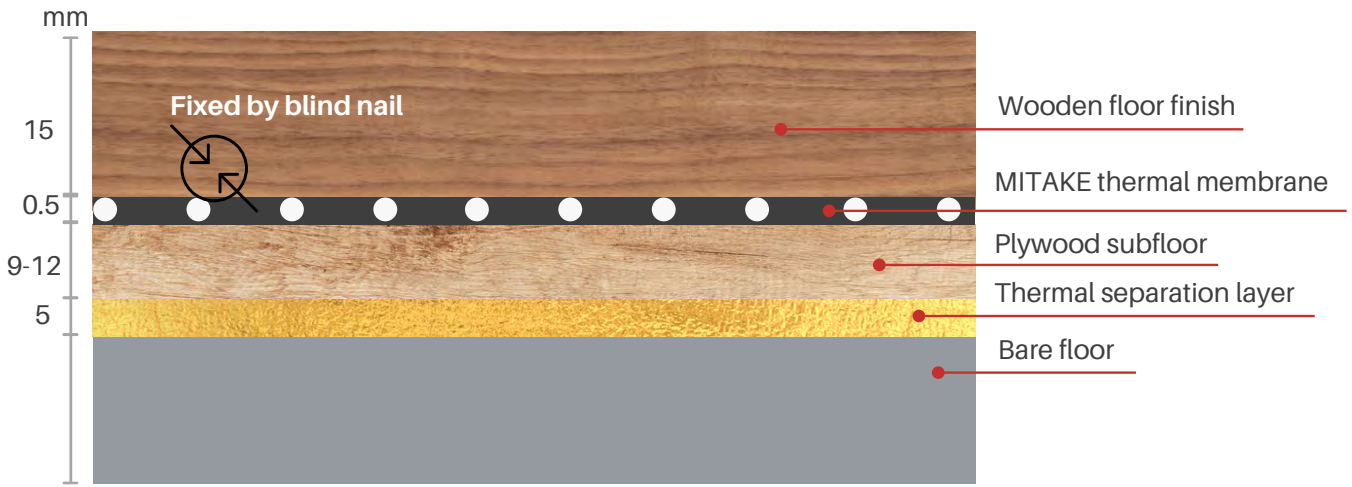
Note:

- Starting power of each piece of thermal membrane is 0.14A and constant power at 0.07A. Maximum 110 pieces of thermal membrane per each 16A thermostat.
- Each thermostat on the main circuit control board needs to be configured with a 30mA leakage protector.
- Design drawing must indicate the number of thermal membrane, stating the starting power, constant power and number of thermostat per zone.

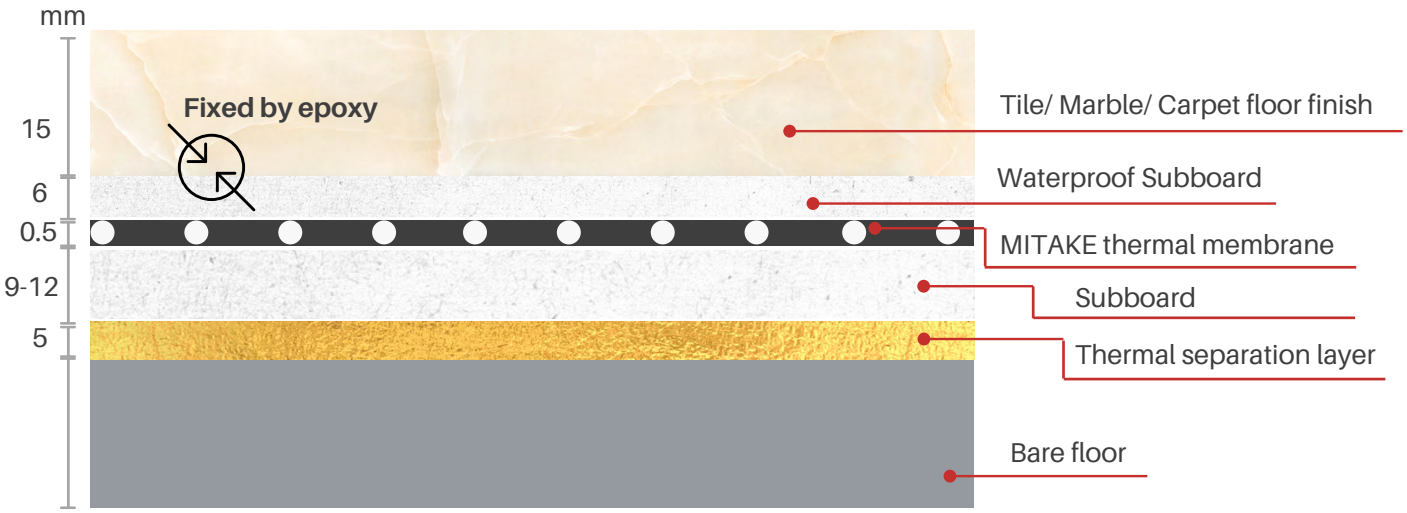
The Dry-fixing method suitable for all types of flooring

Easy Installation





Wooden Floor



Tile/ Marble/ Carpet

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