

Nordic floor heating panels for 12 - 16 - 20 mm heating pipes

Installation of Nordic Fos floor heating panels



New floor heating panels from Nordic

- fast response time, fast assembly, significant energy savings

Recent developments in floor heating have seen a shift from heating pipes cast into concrete to light floor heating panels that distribute heat quickly. This helps reduce energy consumption and offers the consumer lower heating costs.

The new floor heating panels from Nordic can regulate the floor temperature in just 30 minutes. Not only do they save energy, but they are also easy, fast and more inexpensive to install.

Developed by Nordic universities

Nordic's new floor heating panels have been developed in close collaboration with technical universities. A team of experts was tasked with developing the optimal underfloor heating system, both in terms of energy consumption and installation. The new range of floor heating panels has therefore been designed to regulate temperature quickly – allowing for lower temperatures at night and continuous adjustment, resulting in much lower heating costs. The development work includes heating pipes that are close to the new floor, with less distance between them and a smaller dimension than before.

Response time of just 30 minutes

Older underfloor heating systems based on heating pipes cast in concrete often have a response time of 24 hours. Nordic's new systems cut that response time to just 30 minutes. Therefore, a room thermostat can easily regulate heat consumption on a continuous basis – e.g. when the sun offers natural heat during the day. Or when there are a lot of people in the room. The thermostat can regulate heat consumption continuously, offering savings on heating costs and providing a much better indoor climate.

One panel does it all

Nordic's new floor heating panel features aluminium heat distribution across the entire panel, as well as a Ω-shaped turning track integrated in all panels. This means you now only need one type of panel. The panels are suitable for heating pipe diameters of 12, 16 and 20 mm. They measure 1200 x 600 mm (0.72 m²) and are delivered folded up in an easy-to-handle dimension of 600 mm x 600 mm and with a weight of less than 1 kg. This all means that the installation work is easier and faster than before.

Suitable for all floor types

The Nordic floor heating panels are produced in XPS 400, which has a high compressive strength of 40 t/m². As a result, you can install all kinds of floors directly on top of the heating panels, e.g. tiles, parquet and laminate flooring. Herringbone parquet can be adhered to a floor panel – even a thin layer of concrete can be cast to form a raw and fashionable "New Yorker" floor. If you want vinyl flooring or carpet, plasterboard/chipboard must be laid as a base on top of the Nordic floor heating panel.

Extra thin version for renovations

For renovations in older homes, installation height is often a significant challenge. Special Nordic floor heating panels that are only a few mm thicker than the heating pipes themselves are available for this type of work – i.e. 16 mm in height for 12 mm heating pipes, and 19 mm in height for 16 mm heating pipes.

Suitable for all forms of energy, including low energy

Unique to Nordic is the ability of the floor heating panels to utilise heat from low-energy systems, such as geothermal heating, solar heating and heat pump systems, where the flow temperature can be as low as 30-32°C, compared to 50-60°C in traditional radiator systems.

The fast response time increases comfort while minimising energy consumption

The future of underfloor heating – energy savings

In underfloor heating systems of the future, the flow temperature requirement will be a decisive factor in energy consumption. A low water temperature can offer savings on the heating bill.

For underfloor heating cast in concrete, the supply water must be at least 37°C. Regulation is slow, and there are large fluctuations in room temperature. Night reduction is difficult and will typically be deselected due to the long response time.

Underfloor heating with Nordic floor heating panels

The water temperature only needs to be 30°C. Quick regulation with small fluctuations in room temperature. Night reduction is possible and can lead to even better savings. **Energy savings of 14% compared to underfloor heating in concrete** (increasing the flow temperature by 1 degree will lead to a 2% higher energy consumption.) The system has a fast response time and meets the requirements of DS-469 regarding light constructions, so the system can be used as the only heat source.

Installation instructions

The subfloor must be load-bearing, firm, level and stable before installation begins. If the floor is uneven, this should be corrected by using levelling screed prior to installation. The 16 mm heating pipes provide the best heat distribution for home renovations and new constructions, and the floor heating panels for these come in 2 heights: 19 mm and 25 mm. The panels for 20 mm pipes are primarily for rooms ≥ 100 m². **Always use 5-layer heating pipes. This gives the best result and prevents the floor from creaking.** (See Nordic Floor Heating Pipes).

Recommendations for circuit size when renovating:

12 mm pipes = 9 m² = 90 m

16 mm pipes = 15 m² = 120 m

20 mm pipes = 24 m² = 160 m

In very well-insulated homes, the circuit length can be increased significantly.

A: Laying floor heating panels with floating laminate parquet/laminate flooring on concrete:

1. **It is important that your floor is laid perpendicular to the heating pipes.**
2. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
3. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
4. Nordic floor heating panels can be laid loose, but can also be glued on using a tile adhesive/mounting glue.
NB: For 20 mm pipes, the panels must be glued to the substrate.
5. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
6. NordicFlex underlay can be laid to improve the floating floor's acoustics.
7. You can now lay your floating floor on top.

If you need extra insulation, a layer of insulation material (XPS ≥ 200 kPa) in the desired thickness can be laid out according to section 2.

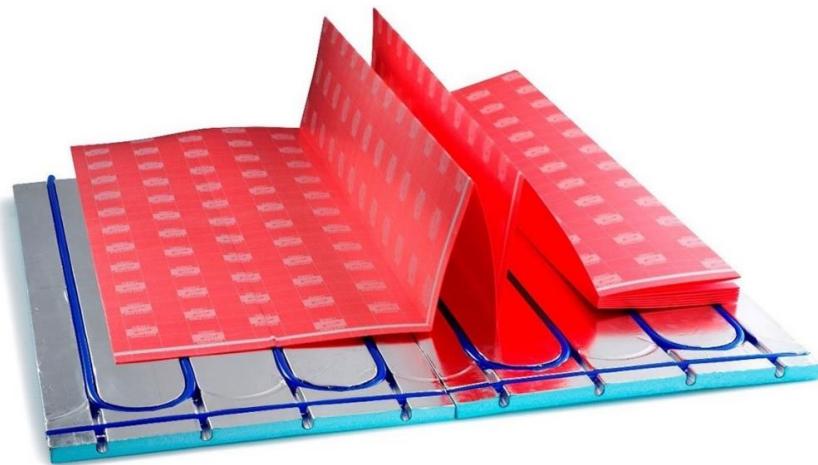
If you want LVT, vinyl flooring or carpet, a pressure distribution panel must be laid as a base over the Nordic floor heating panel.



B: Laying floor heating panels with floating laminate parquet/laminate flooring on wooden substrates:

- 1. It is important that your floor is laid perpendicular to the heating pipes.**
2. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
3. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
4. Nordic floor heating panels can be laid loose, but can also be glued or screwed in place.
NB: For 20 mm pipes, the panels must be attached to the substrate.
5. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
6. NordicFlex underlay can be laid to improve the floating floor's acoustics.
7. You can now lay your floating floor on top.

If you want LVT, vinyl flooring or carpet, a pressure distribution panel must be laid as a base over the Nordic floor heating panel.



In order to achieve better acoustics for parquet and laminate floors, we recommend using an underlay (see NordicFlex).

C: Laying floor heating panels with a fully glued floor on wood:

- 1. It is important that your floor is laid perpendicular to the heating pipes.**
2. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
3. Nordic floor heating panels can be glued with a mounting glue or screwed in place.
4. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
5. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
6. Once the panels and pipes have been laid, clean the surface of your Nordic floor heating panel with a cotton cloth covered in turpentine.
7. Your top floor can now be used as a base for the glue. Use parquet/floor adhesive.

For herringbone parquet: Some floor installers will want to glue their floor to a wooden panel that will be glued on top of the floor heating panels. This is possible, but not necessary (it will result in a slightly longer response time for the floor heating)

D: Laying floor heating panels with a fully glued floor on concrete:

- 1. It is important that your floor is laid perpendicular to the heating pipes.**
2. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
3. Prime the subfloor with a standard primer. You must ensure this dries before further treatment.
4. Nordic floor heating panels can be glued in place using a tile adhesive/mounting glue.
5. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
6. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
7. Once the panels and pipes have been laid, clean the surface of your Nordic floor heating panel with a cotton cloth covered in turpentine.
8. Your top floor can now be used as a base for the glue. Use parquet/floor adhesive.

For herringbone parquet: Some floor installers will want to glue their floor to a wooden panel that will be glued on top of the floor heating panels. This is possible, but not necessary (it will result in a slightly longer response time for the floor heating)

If you need extra insulation, a layer of insulation material (XPS ≥ 200 kPa) in the desired thickness can be laid out according to section 2.

E: Laying floor heating panels with tiles on concrete:

1. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
2. Prime the subfloor with a standard primer. You must ensure this dries before further treatment.
3. Nordic floor heating panels can be glued in place with a tile adhesive.
4. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
5. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
6. Once the panels and pipes have been laid, clean the surface of your Nordic floor heating panel with a cotton cloth covered in turpentine.
7. Prime the panels with a good primer.
8. The tiles can now be laid. Use finishing joints intended for floor heating.

If you need extra insulation, a layer of insulation material (XPS ≥ 200 kPa) in the desired thickness can be laid out according to section 2.

Illustration 1



F: Laying floor heating panels with tiles on wood:

1. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
2. The Nordic floor heating panels can be glued in place with a mounting glue and screwed in place using 25 screws per panel.
3. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
4. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
5. Once the panels and pipes have been laid, clean the surface of your Nordic floor heating panel with a cotton cloth covered in turpentine.
6. Prime the panels with a good primer.
7. The tiles can now be laid. Use finishing joints intended for floor heating.

G: Laying floor heating panels in wet rooms with tiles on concrete:

1. The subfloor must be stable and completely level. Use self-levelling floor screed if necessary.
2. Prime the subfloor with a standard primer. You must ensure this dries before further treatment.
3. Nordic floor heating panels can be glued in place with a tile adhesive.
4. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
5. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
6. Once the panels have been laid, clean the surface of your Nordic floor heating panel with a cotton cloth covered in turpentine.
7. Prime the panels with a good primer.
8. An approved wet room tanking membrane should then be applied. Applicable rules and legislation for wet room tanking must always be followed.
9. The tiles can now be laid. Use finishing joints intended for floor heating.

H: Laying floor heating panels in wet rooms with tiles on wood:

1. The subfloor must be stable and completely level.
2. The Nordic floor heating panels can be glued in place with a mounting glue and screwed in place using 25 screws per panel.
3. The panels can easily be adjusted with a Stanley knife and any excess used after the turning track in the next row.
4. Lay the Nordic floor heating pipes in the panels. Tracks in the Nordic floor heating panels have a smart Ω shape and will hold the underfloor heating pipe in place if you apply light pressure. There are turning tracks in all panels, and these are easy to prepare with a Stanley knife (*see illustration 1*)
5. Once the panels and pipes have been laid, clean the surface of your Nordic floor heating panel with a cotton cloth covered in turpentine.
6. Prime the panels with a good primer.
7. An approved wet room tanking membrane should then be applied. Applicable rules and legislation for wet room tanking must always be followed.
8. The tiles can now be laid. Use finishing joints intended for floor heating.



Remember! Floor heating panels should be laid over the entire floor, but pipes should not run under kitchen cabinets and other fixed installations.

Adjustment

If pipes must be run between rooms or if you need additional tracks for conveyance, new tracks can be easily made with a power router. A router bit for the 16 mm pipe can be ordered with the panels.



Important information

Nordic's floor heating panels are one of the newest and most innovative floor heating system with an ALL-IN-ONE solution. That means you only need one panel to complete your floor heating work. The panel includes Ω-shaped tracks for turning the pipes and additional tracks for supply flow, as well as an aluminium coating to distribute the heat across the entire panel. The extra high compressive strength allows almost all types of floors to be installed on top: wooden flooring, laminate, tile, etc.

Temperature tolerance range: -20°C to +50°C. The panels must have a temperature of at least +10°C throughout the entire installation process (this applies until the whole floor is finished). Nordic floor heating panels can be installed on virtually any type of load-bearing floor structure that has an even and uniform surface. The maximum fluctuation in the level of the subfloor should be 1-2 mm per metre. If the subfloor is covered by vinyl, tiles or PVC, it must first be approved as a substrate by a floor installer. If Nordic floor heating panels are to be placed on an existing tile floor, it must be scrubbed and primed to provide optimal adhesion.

Always ensure that the substrate is completely clean and free of oil, grease, wax, etc. It must be firm and without any loose plaster, cement slurry or cracks. If the substrate is very absorbent, we recommend using a primer. Primer should also be used wherever it is deemed necessary to achieve optimum adhesion to the bearing substrate, e.g. on old concrete, plasterboard and wooden substrates.

Help planning your underfloor heating project

If you have special requirements for your new floor with underfloor heating, design, heating or cooling, in floor, wall or ceiling, please contact us. You are always welcome to contact the Nordic customer support centre via email: info@nordicfos.com

Accessories

NordicFlex underlay: Art. no. 14316, 6 m²

Impact noise damping, designed for installation on top of the floor heating system. With an integrated vapour barrier and smart cutting lines that make laying it extra easy. Folding system with self-adhesive overlap strip. Easy and quick to install.

Impact noise insulation: 19 dB. Improvement in ambient noise: 14%

Thickness: 1.6 mm Width: 1.18 m. Length: 5.1 m = 6 m²

Nordic floor heating pipes

Nordic floor heating pipes meet all the requirements for an underfloor heating pipe. The pipe is flexible and easy to work with, even in cold weather. Nordic floor PE-RT heating pipes are 5-layer EVOH pipes, which means that the oxygen barrier is inside the pipe, ensuring that it does not contribute to any creaking noises when the pipes are used in metallic heat distribution panels.

Nordic 16 mm and 20 mm. In addition to underfloor heating, 6 bar pipes are approved for use in High and Low temperature radiators.

Nordic PE-RT 12x2 - 5 layers floor heating pipes 10 bar

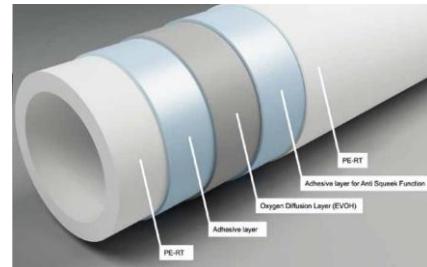
Nordic PE-RT 16x2 - 5 layers floor heating pipes 6 bar

Nordic PE-RT 20x2 - 5-layers floor heating pipes 6 bar

Class of application according to ISO 10508. Class 4 Underfloor heating and low temperature radiators. Class 5 High temperature radiators.

Manufactured according to ISO 22319/ ISO 24033/ ISO 21003. Production and product monitoring by Institut KIWA NV.

Certificates: KIWA KOMO, DIN CERTCO, CE-ETA, SKZ.



NORDIC FOS A/S

Denmark: A. P. Møllers Allé 55, DK-2791 Dragør, Denmark. info@nordicfos.com +45 44240111