



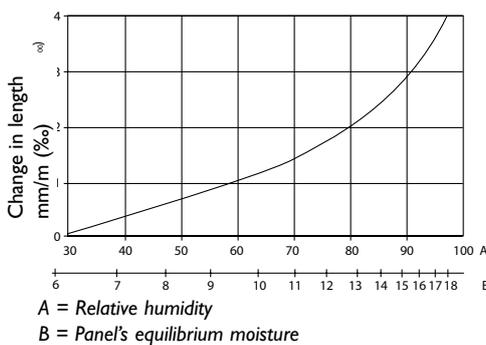
General

These guidelines are for the installation of Forestia Thermofloor, a special floor panel for use in connection with water-based underfloor heating. Forestia Thermofloor is available in qualities Standard and Extra.

Forestia Thermoflooring Standard has dimensions 22 x 620 x 1820 mm. Forestia Thermofloor Extra has dimensions 25 x 620 x 2420 mm.

NB!

Chipboard panels are affected by changes in air humidity. On delivery from the factory, the moisture content of the panels is 5-8%, corresponding to equilibrium at approx. 20-50% RH (Fig. 1). It is very important that building moisture is kept under control by ventilation and heating. The panels will move slightly in response to variations in air humidity (Fig. 1).



IMPORTANT

Due to the grooves, these panels do not have their full load-bearing capacity until the top floor is laid. For this reason, when the floor is used as a working platform during construction, a full load-distributing surface **must** be laid over the Thermofloor as a temporary measure. This could be in chipboard (or similar) of minimum 10 mm thickness. This flooring can then be removed as the top floor is mounted.

Do not place packs of panels or other heavy items directly on the floor. Instead rest them on bearers laid across the joists. Once the top floor has been mounted, the floor will withstand normal loads.

Transport, storage, handling

The panels must be protected from moisture during transport and storage, and must be stored indoors on a flat and stable substrate.

Areas of use

Forestia Thermofloor Standard is for use as a subfloor over wooden joists floor in dry rooms, and must be installed after the room has been enclosed (Climate class I). Masonry and plastering must be completed before installing the panels. Forestia Thermofloor Extra is for use as a platform floor (Climate class 2).

Installation foundation

On timber joists or I-beams

The use of I-beams as joists makes it easier to feed supply pipes, etc., through the floor. I-beams also shrink far less than timber joists once the joists have finished drying out. The joists should be dimensioned according to SINTEF Building Research Design Guide 522.351. Joists should be laid at precise c/c intervals, max. c/c 0.60 m, and **must be accurately levelled off**. Where floor tiles etc. are used, the joists should be laid at c/c intervals of 0.30 m.

Installation

Forestia Thermofloor has tongue and groove profiles on all four sides and three routed grooves on the top for mounting the heat diffusion panel and pipes (Fig. 2).

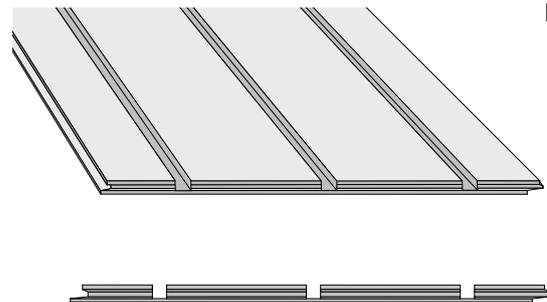


Fig. 2

The routed grooves have a width of 19.8. Forestia Thermofloor Standard has a groove depth of 18.9 mm, while Extra has 19.7 mm. The groove is designed for a 17 mm pipe system.

All free panel edges must be supported. It is recommended that feed pipes are laid in the joists. If an extra groove for feed pipes is necessary, extra support under the panels must be provided. Panels are installed offset to each other, with their longitudinal direction across the joists. The panels must span at least two joist gaps, and end-joints must always be formed over the centre-line of a joist.

Against walls and fixed structures, there must be a clearance of min. 10 mm. Floor surfaces over 20 m long must be broken up into fields with expansion gaps between them. In the case of holes larger than 0.15 x 0.15 m, the panel edges must be supported.

The panels must be screwed or glued to the joists and fully glued at the tongue and groove (Fig. 3a). Screws must be countersunk 2.3 mm (Fig. 3b). Forestia Thermofloor is installed in an offset pattern (Fig. 4). The panels must be driven so tightly that adhesive emerges from the joints. **Remove excess adhesive.** Fix the panels to all supports with electrogalvanised screws of dimension 4.2/55 or similar.

Fig. 3a

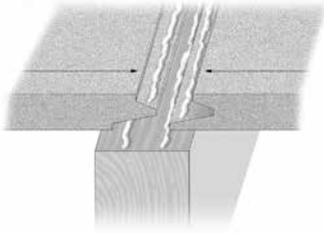
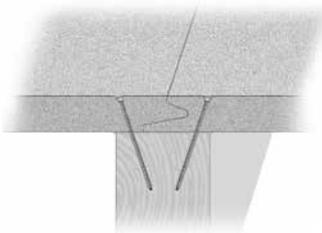


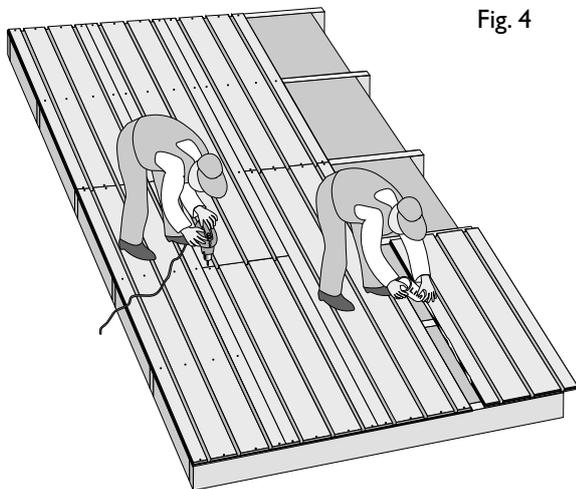
Fig. 3b



Mounting of heat diffusion panels and pipes

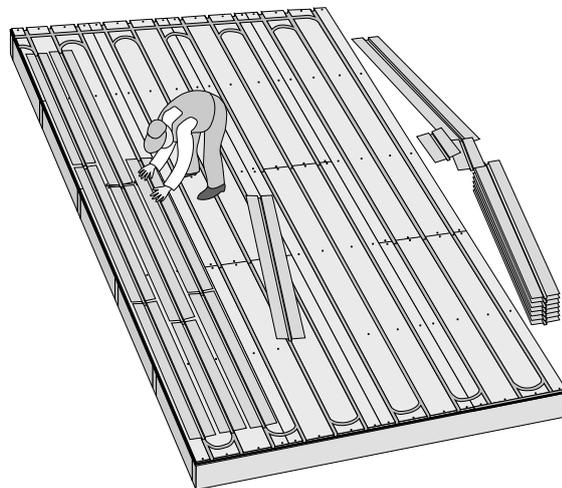
Before laying the heat diffusion panel/top floor, check that the floor does not creak. If it does, consider inserting more screws. **Any peaks or raised edges at joints must be levelled off by grinding.** **NB: Check groove depth after grinding.**

Fig. 4



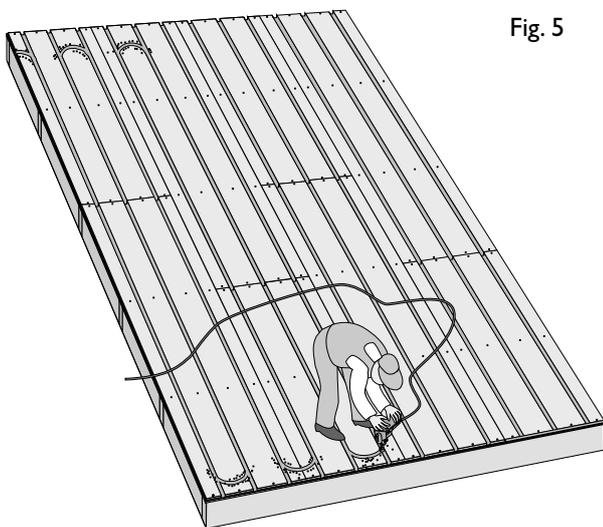
Use four screws at each panel end and four screws for each joist under the panel (Fig. 4).

Fig. 6



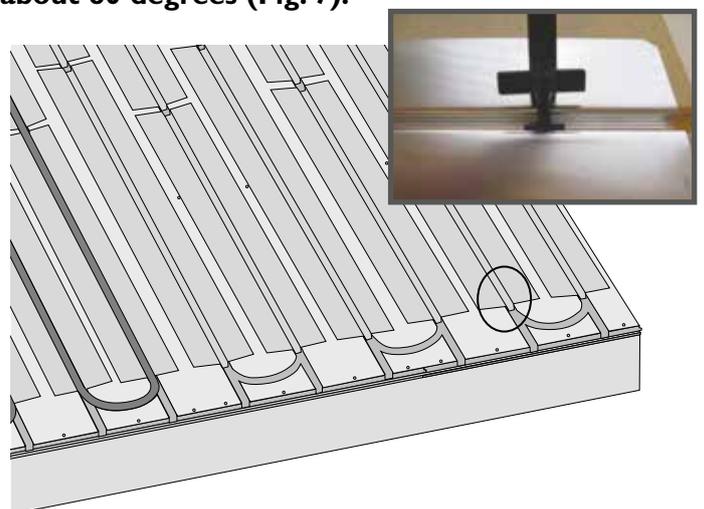
Carefully clean the grooves, removing adhesive, chips and other items before pressing the heat diffusion panels into place. (Fig. 6).

Fig. 5



Cutting the grooves for the turns is done with a hand router on site, after mounting the panels. We recommend the use of Forestia's router templates and router cutters. Check the groove depth. See separate instructions on www.byggma.no. (Fig. 5)

NB: Only lock the heat diffusion panel in the groove at the turns. Place the T-shaped end of the router template in the groove and twist about 80 degrees (Fig. 7).



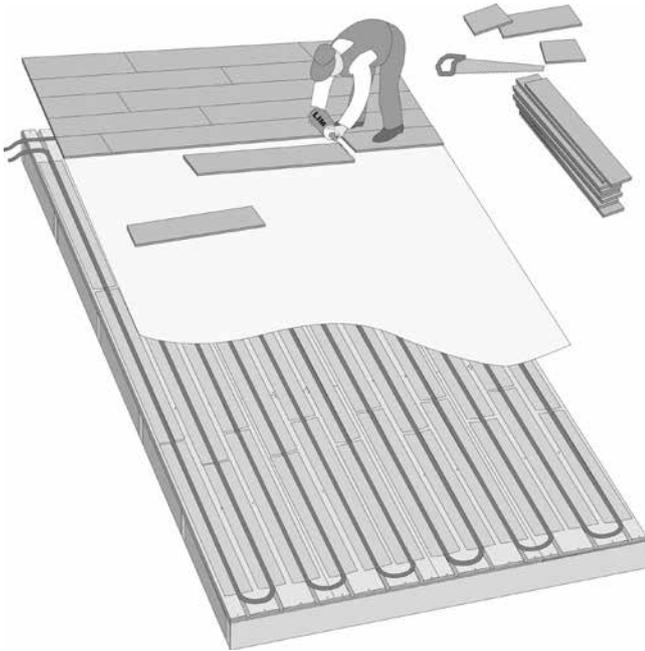
Mount the water pipes (Fig. 7).

Checking moisture content

Forestia Thermofloor Extra and Standard must not have a moisture content higher than 7% when the top floor is laid. With Thermofloor Extra, allow time for moisture to dry out.

Laying the top floor - Forestia Thermofloor Std Parquet/timber flooring is laid at right angles to the Thermoflooring (Fig. 8). When laying engineered flooring or if the parquet/timber floor is laid longitudinally, a load-distribution panel must be laid under the top floor.

Fig. 8



Laying the top floor, Forestia Thermofloor Extra

With Forestia Thermofloor Extra, a load distribution panel (6.5 mm rehab plasterboard or similar) is required over the heat diffusion panels. This must be screwed to the Thermofloor at the opening between each row of diffusion panels, before mounting the top floor (c/c 0.20 m).

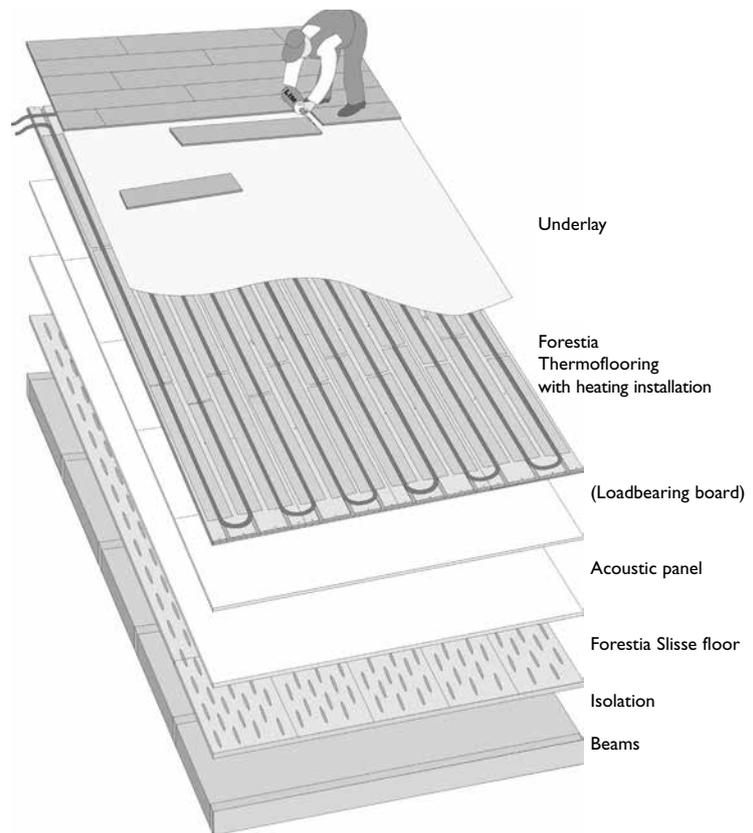
NB:

Before the top floor is laid, it must be ensured that the subfloor satisfies the top floor manufacturer's requirements for flatness.

Floors with sound insulation requirements

See our brochures: Floor panels from Forestia, Forestia Sound Reduction Floor and SINTEF Building Research Design Guide 522.511.

Above the acoustic panel, you may lay a load distribution panel before laying Forestia Thermofloor as a floating floor, after which the heat diffusion panels and pipes can be mounted.



Internal partitions are mounted directly on the slit floor before installing the rest of the floor. A top floor is laid over the underfloor heating installation (e.g. engineered flooring, parquet, timber boards – follow the flooring manufacturer's instructions) (Fig. 9). If a floor covering is used as top floor, this must be laid over Forestia Floating Floor. Remember to seal the routed grooves under the floorplate with, e.g. Casco foam sealant or similar, for reasons of sound transmission.

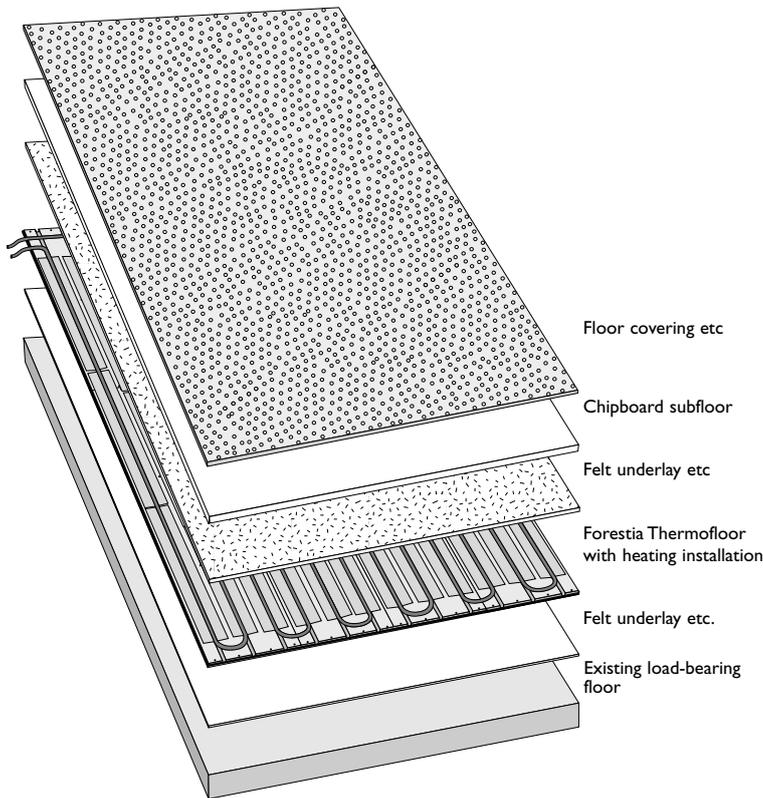
Renewal/rehabilitation of floor

When renewing/rehabilitating an existing load-bearing floor where water-based underfloor heating is desired, Forestia Thermofloor is laid as a floating floor over a subfloor of parquet/felt, etc. (Fig. 10).

The panels are laid offset to each other with glued joints.

Pressure on the adhesive is achieved by wedges between the wall and the panels (Remember to remove the wedges the next day).

Fig. 10



In platform construction, partitions are mounted directly on the Forestia Thermofloor. The grooves must be sealed under partitions and external walls, for example with Bostik foam sealant or similar.

We recommend that Forestia Thermofloor is installed by a professional builder. We recommend entrusting the choice of energy source and calculation of heat requirements to companies with good skills in heating and plumbing. All work involving the connection of pipes and installation of technical installations must be carried out by an authorised plumber.

As manufacturer of Forestia Thermofloor, Forestia is only responsible for the product's defined properties.

General information

Chipboard is a factory-produced product. Despite thorough quality controls, it may sometimes occur that defective panels are delivered from the factory. Note that the user must check the product **PRIOR TO INSTALLATION**. Our instructions and recommendations are based on our experience. They are given here as an aid for consumers in finding the best working method and achieving the optimum result. Consumers' working conditions are outside our control. We accept no liability for incorrect use of the products. We reserve the right to make changes to the specification without prior warning

Useful tips

Be extra precise when removing excess adhesive, waste material, etc. from the grooves, before laying the heat diffusion panels and water pipes.

Remember to seal the routed grooves under internal partitions and outer walls.

Do not use the routed grooves to stop ladders etc. from slipping.

The use of I-beams as joists makes it easier to feed supply pipes, etc., through the floor and makes the floor more rigid.

If floor tiles are required – consult your tile supplier.

In case of heavy/long-term exposure to moisture in Thermofloor Extra, additional sanding of the routed grooves is recommended.

22 mm and 25 mm panels must be fixed to supports with Essve chipboard screws of dimension 4.2/55 mm or equivalent. Recommended adhesive is Casco chipboard adhesive or equivalent. See also our adhesive and screw guide on www.forestia.no



EN 13986
NS-EN 312 P5/P6
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Forestia AS
Damvegen 31, 2435 Braskereidfoss
Phone: +47 38 13 71 00
E-mail: forestia.kundesenter@byggma.no
www.forestia.no