



Novopan Climate Floors

Construction methods fact sheets

Novopan Climate Floors can be used for renovation and new construction projects that require underfloor heating, for example:

- Load-bearing floors on joists and beams
- Floating floors on concrete or EPS insulation

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NOVOPAN CLIMATE FLOORS

Novopan Climate Floor is used for renovation and new construction projects requiring underfloor heating.

Novopan Climate Floor EN 312 P6 is classified for use as a subfloor in permanently heated rooms with an annual relative humidity that only exceeds 65% for a few weeks, i.e. in ordinary homes, offices and similar.

APPLICATIONS

Climate Floors installed with end supports on joists or beams can be used for all flooring applications in permanently heated rooms.

Climate floors mounted on joists or beams with end joints between joists or beams (floating joints) may ONLY be used in rooms with a maximum load of 2 kN, e.g. general residential rooms.

Climate floors mounted floating on EPS insulation can be used for all floor applications in permanently heated rooms.

Floors on joists provide good opportunities to run pipes and electrical installations between the joists or beams.

TECHNICAL DATA

Novopan Climate Floor 22 mm and 25 mm EN 312 P6 comes with a cover size of 1800 × 600 mm and 38 mm EN 312 P6 comes with a cover size of 1800 × 480 mm.

Novopan Climate Floors are equipped with a double profile on 4 sides. This ensures strong and durable joints and a stable base for most floor coverings. The floor panels fulfill the strength and stiffness requirements according to EN 312 P6.

The Climate Floor panels have pre-cut grooves for aluminum heat emission plates and heating pipes. The precise center distance in the pre-cut grooves ensures fast and correct installation of heat emission plates and heating pipes, as well as optimal heat distribution and heat utilization over the entire floor surface.

Heating zones for underfloor heating

The acceptable zone size for 22 mm Climate Floors is up to 15–16 m², for 25 mm Climate Floors up to 30–32 m² and for 38 mm Climate Floors up to 28–30 m²

Heating pipes

Always use 5-layer PERT/PEX heating pipes with internal oxygen barrier. Novopan Climate Floor 22 mm uses 16 mm PEX heating pipes and Novopan Climate Floor 25 mm and 38 mm uses 20 mm PEX heating pipes.

Consumption of heating pipes for 22 mm Climate Floor is: 5.4 m per m², for 25 mm Climate Floor: 3.2 per m² and for 38 mm Climate Floor: 3.8 m per m².

Kronospan is not responsible for defects and deficiencies, including creaking noises, where 3-layer PEX pipes or AluPex pipes are used.

Heat emission plates

Kronospan heat emission plates are developed and adapted specifically for Novopan Climate Floors.

The consumption of heat emission plates at approx. 70–80% coverage of the floor area is for 22 mm Climate Floor: 3.7 pieces per m², for 25 mm Climate Floor: 2.5 pieces per m² and for 38 mm Climate Floor: 3.8 pieces per m².

Moisture barrier

A moisture barrier should always be installed on concrete basement and floor slabs to prevent moisture damage to joists and floors, e.g. at least 0.20 mm PE membrane. Moisture barriers must be CE marked according to EN 13984.

Never use a moisture barrier on top of or between organic materials, e.g. never between Climate Floors and wood floors.

Handling, storage and weight

Climate Floor panels must be handled so that edges and surfaces are not damaged, the panels must be stored dry on a level surface. Particleboards should always be protected from moisture.

Manual transportation and panel lifting must be carried out in accordance with applicable lifting guidelines.

Climate Floors 620 × 1820 × 22 mm weighs 17 kg, 620 × 1820 × 25 mm weighs 18 kg and 480 × 1820 × 38 mm weighs 24 kg.

Moisture protection

The finished subfloor must be protected from drying out and wetting with e.g. PE membrane until the floor covering is installed.

Novopan Climate Floor

Underfloor heating in kitchens

INSTALLATION OF UNDERFLOOR HEATING IN KITCHENS

Novopan Climate underfloor heating in kitchens is installed so that the heat emission plates are only laid on the floor surfaces and not under plinths, see figure 1.

Novopan Climate Floors on joists can be installed as shown in figures 1 and 2, where turning grooves with heating pipes are routed under plinths. When installing Climate Floors, kitchen cabinets should not be placed on the Climate Floor as this prevents the free movement of the floating floor.

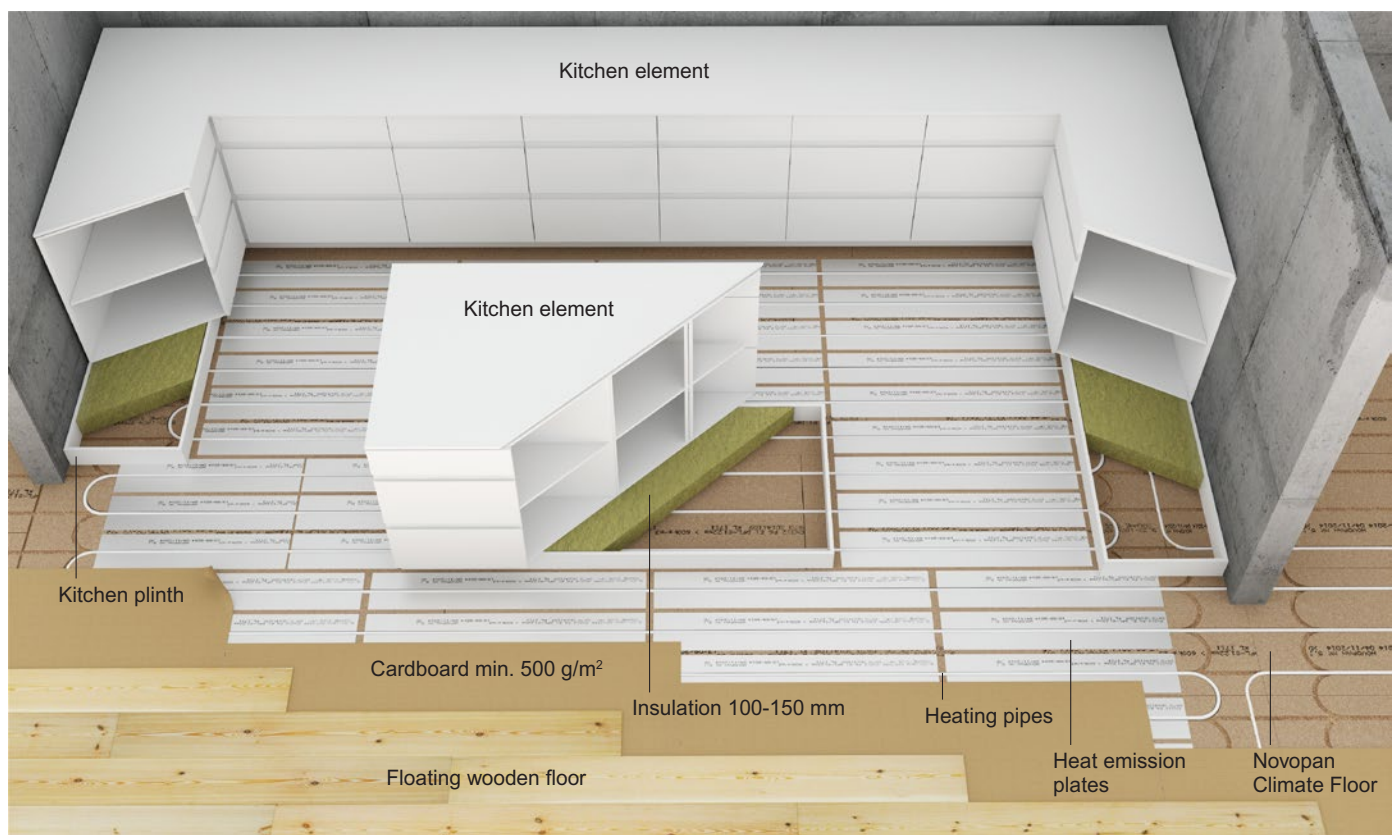


Figure 1 The location of the turning grooves is drawn on the Climate Floor so that they are placed inside the plinths.

CONSTRUCTION STRUCTURE

The location of the kitchen cabinets is drawn on the concrete deck so that turning grooves can be made under the plinths, see figure 1.

Install and block the floor joists on wedges and place extra joists where turning grooves are to be made, see 22 mm Novopan Climate Floor Installation Instructions and 25 mm Novopan Climate Floor Installation Instructions.

The location of the turning grooves is drawn on the Climate Floor so that they are placed inside the plinths. The turning grooves are cut with a router equipped with a profile guide and at the correct depth, see *Fact sheet #5: Cutting turning grooves in Climate Floors*.

When the turning grooves are placed underneath the plinth, the heat emission plates can be installed right up to the plinth to achieve an even heat distribution on the floor surface.

Novopan Climate floors on joists allow the heating pipes to pass under the plinths of cooking islands and other freestanding cabinet elements. The plinths must be insulated with 100-150 mm mineral wool to prevent heating of the plinth space. Never install heat emission plates under plinths.

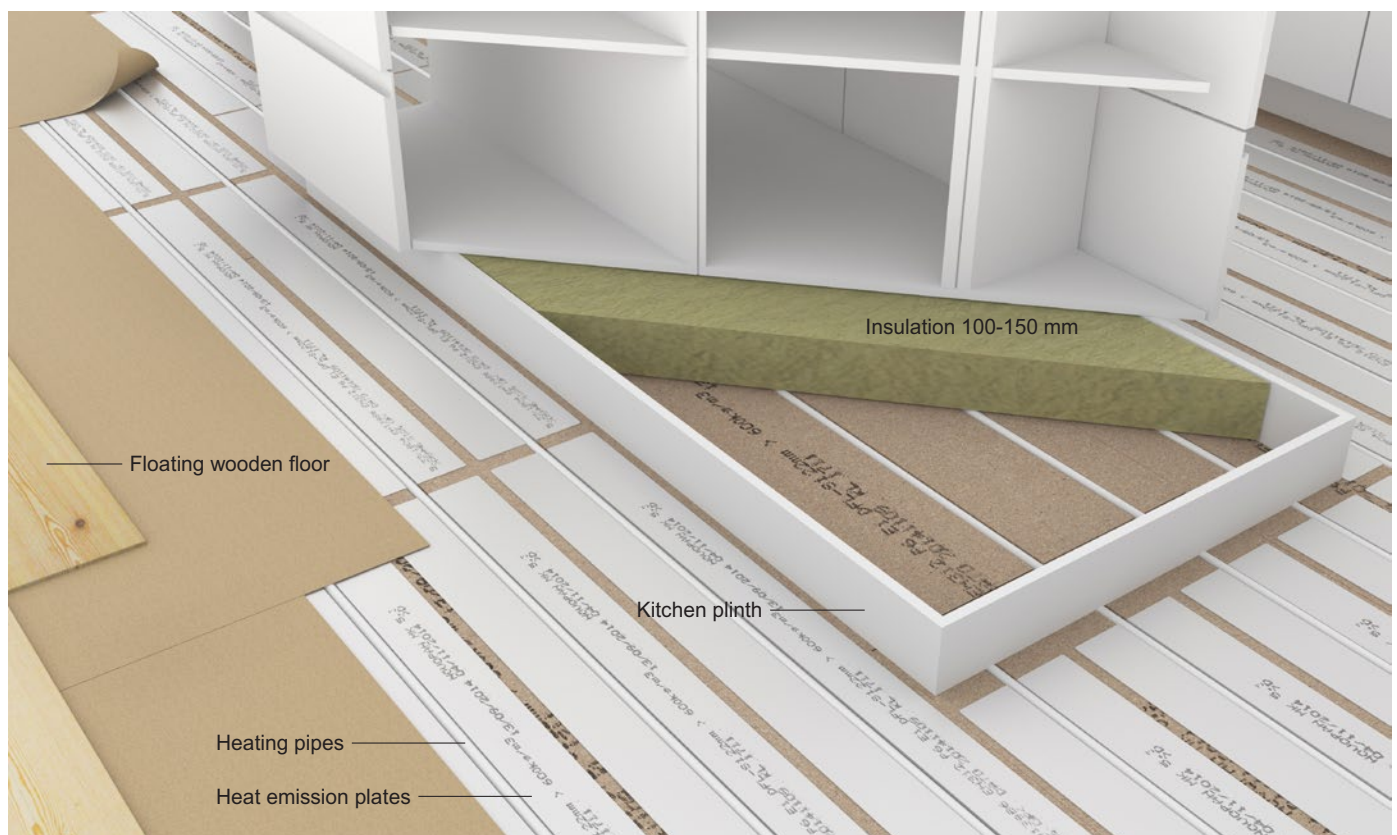


Figure 2 The plinths must be insulated with 100-150 mm mineral wool to prevent heating of the plinth space.

Fact sheet #3

Read the instructions carefully
before you get started

Novopan Climate Floor

Conduit tubes for flow and return

INSTALLATION OF CONDUIT TUBES FOR PEX HEATING PIPES

Where supply and return pipes cannot be installed flush with the tracks in the Climate Floors, conduit tubes can be installed to feed the heating pipes under a screed floor.

A sketch should be made of the course of the heating pipes in the floor so that conduit tubes for the flow and return pipes can be placed appropriately under the screed.

INSTALLATION OF CONDUIT TUBES UNDER SCREED FLOORS

Conduit tubes must always be secured, e.g. by using cable ties, patent bands or similar. There must never be any sharp bends or kinks on the conduit tube. The design and installation of the conduit tube is shown in figures 2 to 7.

INSTALLING THE PEX HEATING PIPE IN THE CONDUIT TUBE

The heating pipe can be routed through the longest conduit tube, usually on the return side, before the heating pipe is installed in the Climate Floor.

When the heating pipe is installed in the Climate Floor, the heating pipe is inserted into the conduit tube at the flow end, see figures 8 and 9.

See also the installation instructions for Novopan Climate Floors.



Figure 1 Novopan Climate Floor with a conduit tube installation.



Figure 2 The conduit tube is installed under the floor joists and secured before installing the Climate Floor panels.



Figure 3 A hole of 15-20 cm is cut in the bottom of the groove on the Climate Floor at the point where the tube will come up through the floor.



Figure 4 Cut the hole clean with a chisel.



Figure 5 Install the Climate Floor panel and pull the conduit tube up through the floor panel.



Figure 6 Cut off the excess part of the conduit tube.



Figure 7 Check that the end of the tube is level with the floor panel.



Figure 8 The heating pipe can be sharpened with a knife to facilitate insertion into the tube.



Figure 9 Insert the heating pipe through the empty tube and place it in the grooves on the Climate Floor.

Fact sheet #4

Read the instructions carefully before you get started

Novopan Climate Floor

Cutting turning grooves

TURNING GROOVES IN 22 MM, 25 MM AND 38 MM NOVOPAN CLIMATE FLOORS

Turning grooves in 22 mm and 25 mm Climate Floors can either be made with turning panels or cut with a router and profile guide once the Climate Floor panels have been laid. Turning grooves in 38 mm Novopan Climate Floors are always made with a router and profile guide when the Climate Floor panels are installed, glued and screwed down.

REINFORCEMENT OF TURNING GROOVES

Turning grooves must always be supported by an extra joist c-c 200 mm from the wall, see installation instructions for Novopan Climate Floor, 22, 25 and 38 mm.

CUTTING TURNING GROOVES

Cutting is carried out with Novopan profile guide at least 250 mm from the wall and with cutters and a cutting depth according to Table 1. For turning grooves, see figure 2-5, page 2.

Table 1 Suitable cutting drill bit, specified cutting depth and distance to pencil screw for each Climate Floor type.

Climate Floor	22 mm Floor board	25 mm Floor board	38 mm Floor board
PEX pipes	16 mm	20 mm	20 mm
Router bit	18 or 20 mm	22 or 25 mm	22 or 25 mm
Cutter depth	18,2 mm	21,4 mm	21,4 mm
Distance c-c from pencil screw to router bit	100 mm	150 mm	120 mm

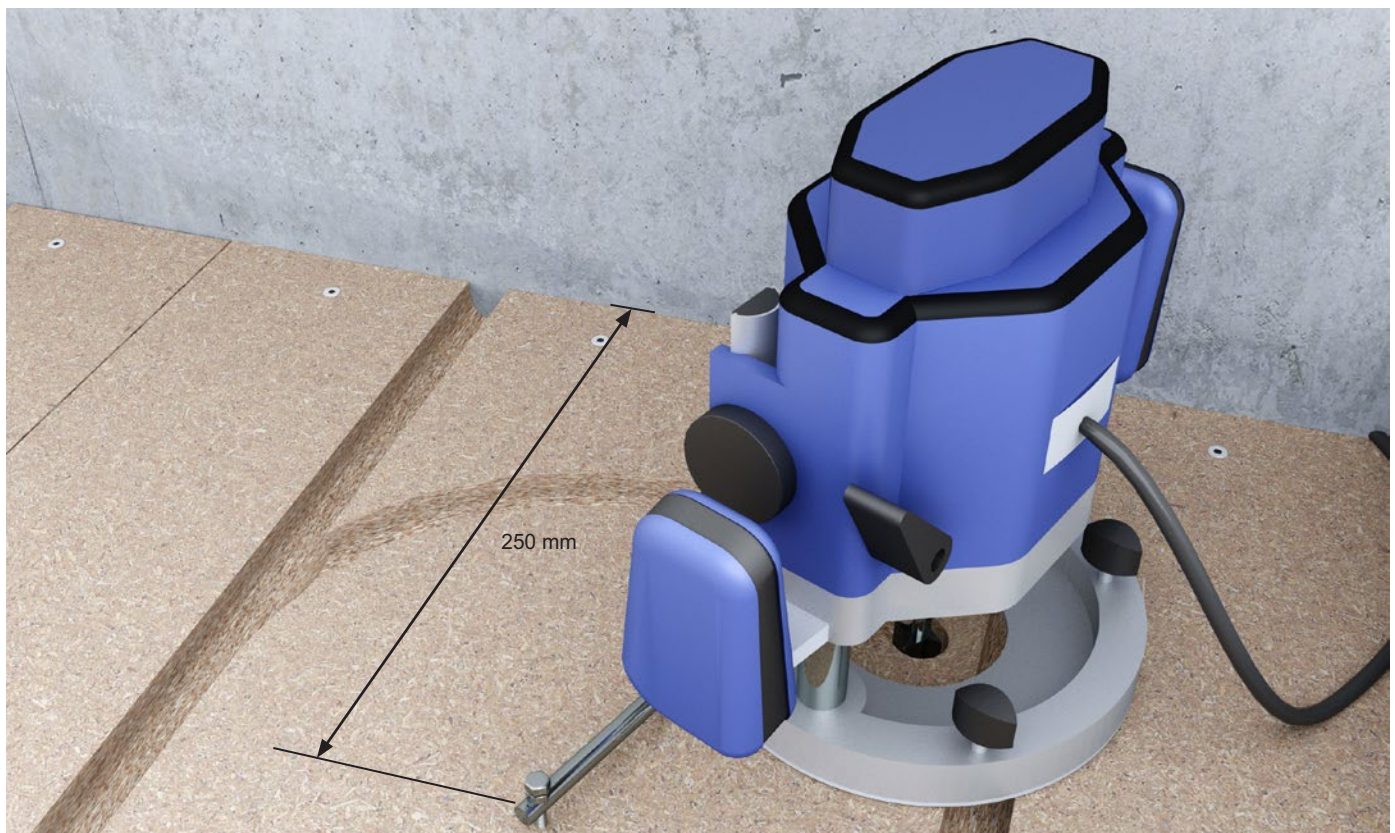


Figure 1 Turning grooves are cut in every second section so that the heating pipes match the flow and return points in the floor for each pipe section.

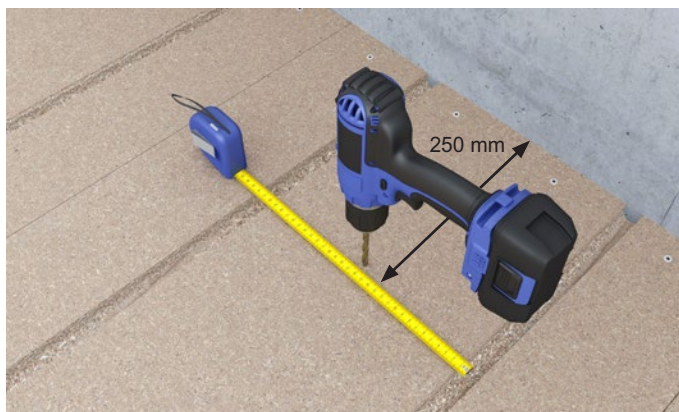


Figure 2 A 6 mm hole for the pencil screw is drilled midway between two longitudinal grooves and at least 250 mm from the wall for placement of the pencil screw.



Figure 4 Router bit and cutter depth are selected and adjusted, see table 1. Pencil screw may be adjusted in height and countersunk.



Figure 3 Cutting is carried out with a profile guide to ensure a correct soft turn. The profile guide is mounted in the router land. The distance c-c from pencil screw to router bit is adjusted for use on 22 mm, 25 mm or 38 mm floorboards, see table 1.

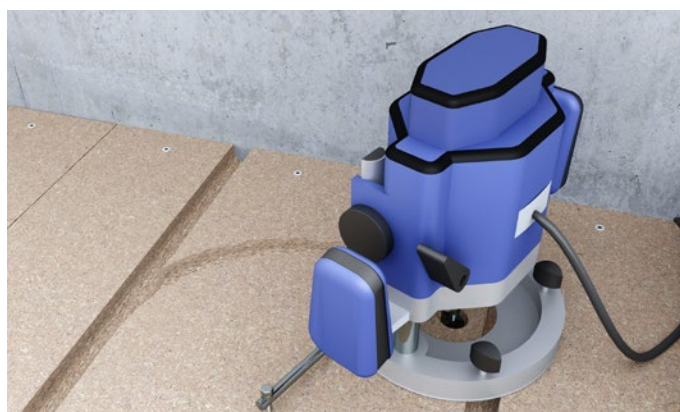


Figure 5 The turning groove is cut evenly to the prescribed depth by rotating the router in a circular stroke around the pencil screw.

PROFILE GUIDE

The Novopan profile guide can be used for all types of routers with room for guide rods of $\varnothing 10$ mm or thicker and for all types of Novopan Climate Floors see table 1. Profile guides can be ordered from Novopan.

Profile guides/templates of other brands can be requested from the router bit supplier.



Figure 6 Novopan profile guide for routers.

CUTTING DRILLS

Router bits are available either with interchangeable cutter plates or as a fixed profile bar for grinding (typically up to 5 times). Router bits can be delivered individually or in sets from the supplier.



Figure 7 Router bits are available individually, in sets of 6 bits and template.



Figure 8 Router bit with plate. Also available as profile iron for grinding.

Fact sheet #5

Read the instructions carefully before you get started

Novopan Climate Floor

Climate Floor floating on new ground deck

INSTALLING FLOATING CLIMATE FLOORS WITH WOODEN FLOORS

Novopan Climate Floors laid floating on a new concrete deck can be installed with solid wood flooring, parquet boards or engineered wood floors with a thickness of at least 12 mm when laid floating on the Climate floor, see figure 1.

The floorboards are usually laid crosswise to the Climate Floor and on cardboard of at least 500 kg/m² to prevent creaking and rattling noises. The floorboards can also be laid parallel to the heating pipes if recommended by the flooring supplier.

CONSTRUCTION STRUCTURE

Novopan Climate Floors on a flat concrete slab must always be installed with a vapour barrier placed directly on the concrete, see figure 1.

The vapour barrier can be made of at least 0.2 mm PE-membrane or equivalent. It is installed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer. The vapour barrier is laid over the radon barrier and adhered to it, folded up against all adjacent walls and clamped or adhered behind the skirting boards, see figure 1.

Novopan Climate Floors must be installed according to the installation instructions for 22 mm and 25 mm Climate Floors respectively, and

always on an intermediate layer of cardboard (at least 500 g/m²) against the ground floor to avoid squeaking noises.

The turning grooves must be made according to *Fact Sheet #5 Cutting turning grooves*.

If turning panels are used as an alternative to cutting turning grooves, they must be installed according to the installation instructions for Novopan turning panels for 22 mm Climate Floor and Novopan turning panels for 25 mm Climate Floor.



Figure 1 Novopan Climate Floor laid floating on the ground deck and finished with a floating wooden floor.

Underlay for thin floor coverings

Novopan Climate Floors laid floating on ground decks can also be used as an underlay for carpets, vinyl, linoleum and thin wood floors when laid on an intermediate layer of 12 or 16 mm chipboard with tongue and groove on four sides, see figures 2 and 3.

The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are staggered from row to row. They are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the plate edges:

On 22 mm Climate Floors, screw the interlayer boards per 200 mm at the longitudinal edges and in the centre of the boards, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is placed between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

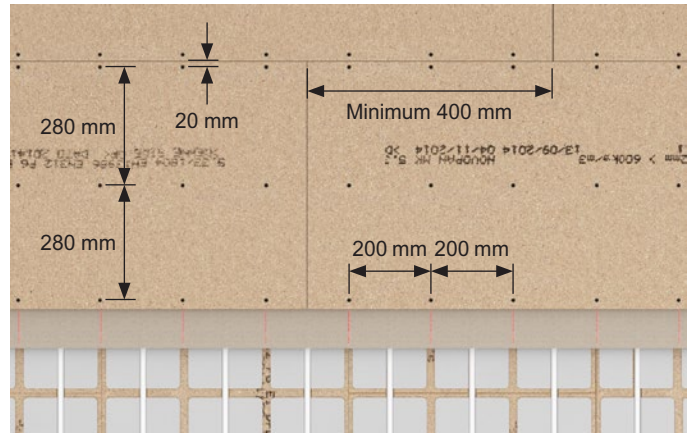


Figure 2 Novopan Climate Floor 22 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

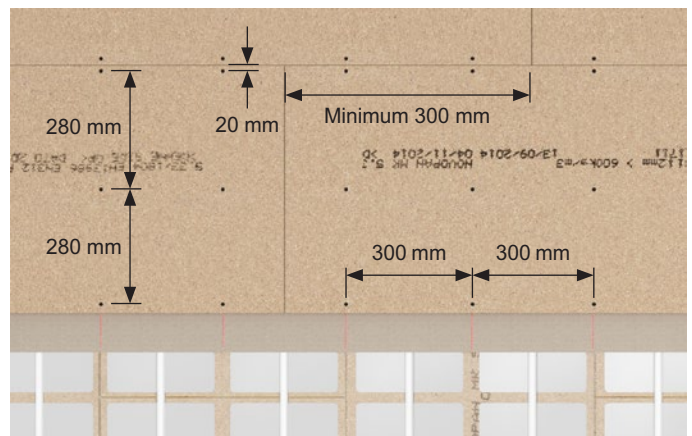


Figure 3 Novopan Climate Floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #6

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floor floating on older ground decks

INSTALLING CLIMATE FLOORS ON EPS INSULATION WITH WOODEN FLOORS

Novopan Climate Floors laid floating on EPS insulation can be made with solid wood flooring, parquet boards or engineered wood floors with a thickness of at least 12 mm when laid floating on the Climate Floor, see figure 1.

The floorboards are usually laid crosswise to the Climate Floor and on cardboard of at least 500 kg/m² to prevent creaking and rattling noises. The floorboards can also be laid parallel to the heating pipes if recommended by the flooring supplier.

CONSTRUCTION STRUCTURE

Novopan Climate Floors laid floating on EPS must always be installed with a vapour barrier laid on top of the EPS insulation just below the Climate Floor, see figure 1.

The EPS insulation must be at least EPS 150 and laid flat to minimise deformations from loads along the edges and to prevent long-term deformations.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is installed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer.

The vapour barrier is laid over the radon barrier and adhered to it, folded up against all adjacent walls and clamped or adhered behind the skirting boards, see figure 1.

Novopan Climate Floors must be laid according to the installation instructions for 22 mm and 25 mm Climate Floors respectively, and always on an intermediate layer of cardboard (at least 500 g/m²) against the EPS insulation to avoid squeaking noises.

The turning grooves must be made according to *Fact sheet #5 Cutting turning grooves*.

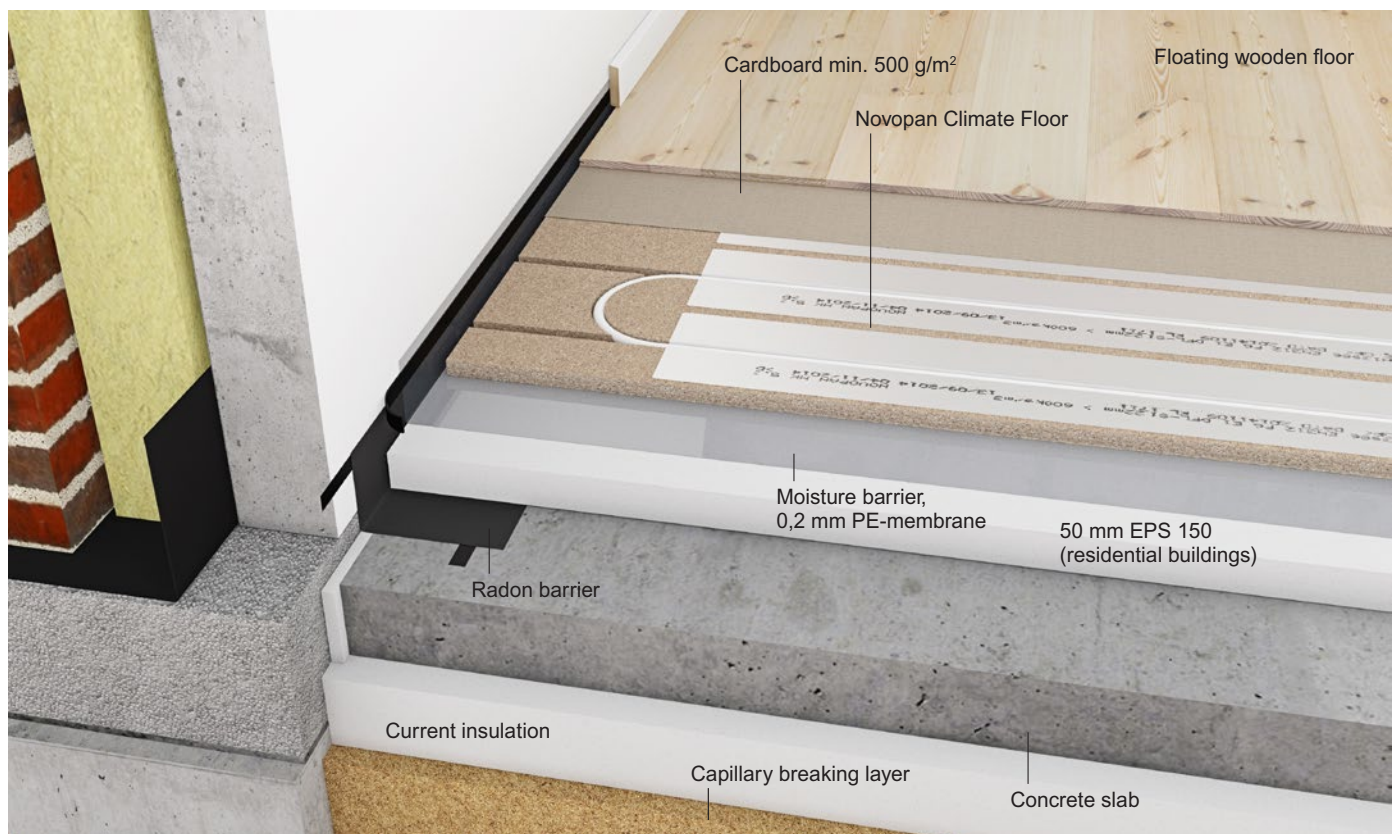


Figure 1 Novopan Climate Floor laid floating on an older ground deck and finished with a floating wooden floor.

Underlay for thin floor coverings

Novopan Climate Floors laid floating on EPS can also be used as an underlay for carpets, vinyl, linoleum and thin wood floors when laid on an intermediate layer of 12 or 16 mm chipboard with tongue and groove on four sides, see figures 2 and 3.

The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are staggered from row to row. They are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the plate edges:

On 22 mm Climate Floors, the interlayer boards are screwed every 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is placed between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

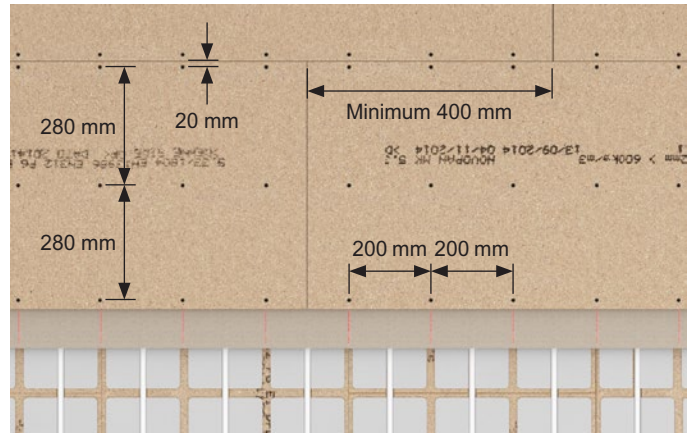


Figure 2 Novopan Climate Floor 22 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

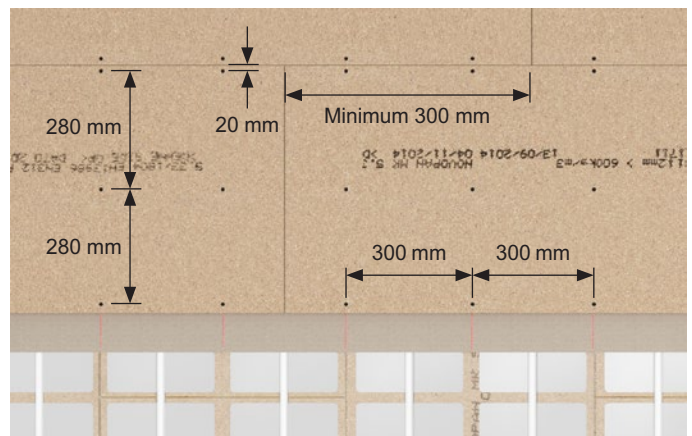


Figure 3 Novopan Climate Floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #7

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floor on ground floor of EPS insulation

INSTALLATION OF FLOATING CLIMATE FLOORS WITH WOODEN FLOORS, CARPETS, VINYL, ETC.

Novopan Climate Floors laid floating on EPS insulation are always installed with a reinforcement of at least 12 mm chipboard screwed to the Climate Floor.

The intermediate layer of chipboard forms a flat base for solid wood, parquet, engineered wood floors or laminate flooring laid floating on cardboard, see figure 1, or as a flat base for adhesive carpets, vinyl or linoleum.

CONSTRUCTION STRUCTURE

Novopan Climate Floors laid floating on EPS must always be reinforced with at least 12 mm chipboard with tongue and groove on all sides, see section Installation of interlayer boards, and must always be installed with a vapour barrier placed no more than 1/3 inside the EPS insulation, see figure 1.

The EPS insulation must be at least EPS 250 and laid flat to minimise deformations from loading along the edges and to prevent long-term deformations.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is placed no more than 1/3 inside the insulation and with at least 50 mm

adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer. The vapour barrier is laid over the radon barrier and adhered to it, folded up against all adjacent walls and clamped or adhered behind the skirting boards, see figure 1.

Novopan Climate Floors must be laid according to the installation instructions for 22 mm and 25 mm Climate Floors respectively, and always on an intermediate layer of cardboard (at least 500 g/m²) against the EPS insulation to avoid squeaking noises.

The turning grooves must be made according to *Fact Sheet #5 Cutting turning grooves*.

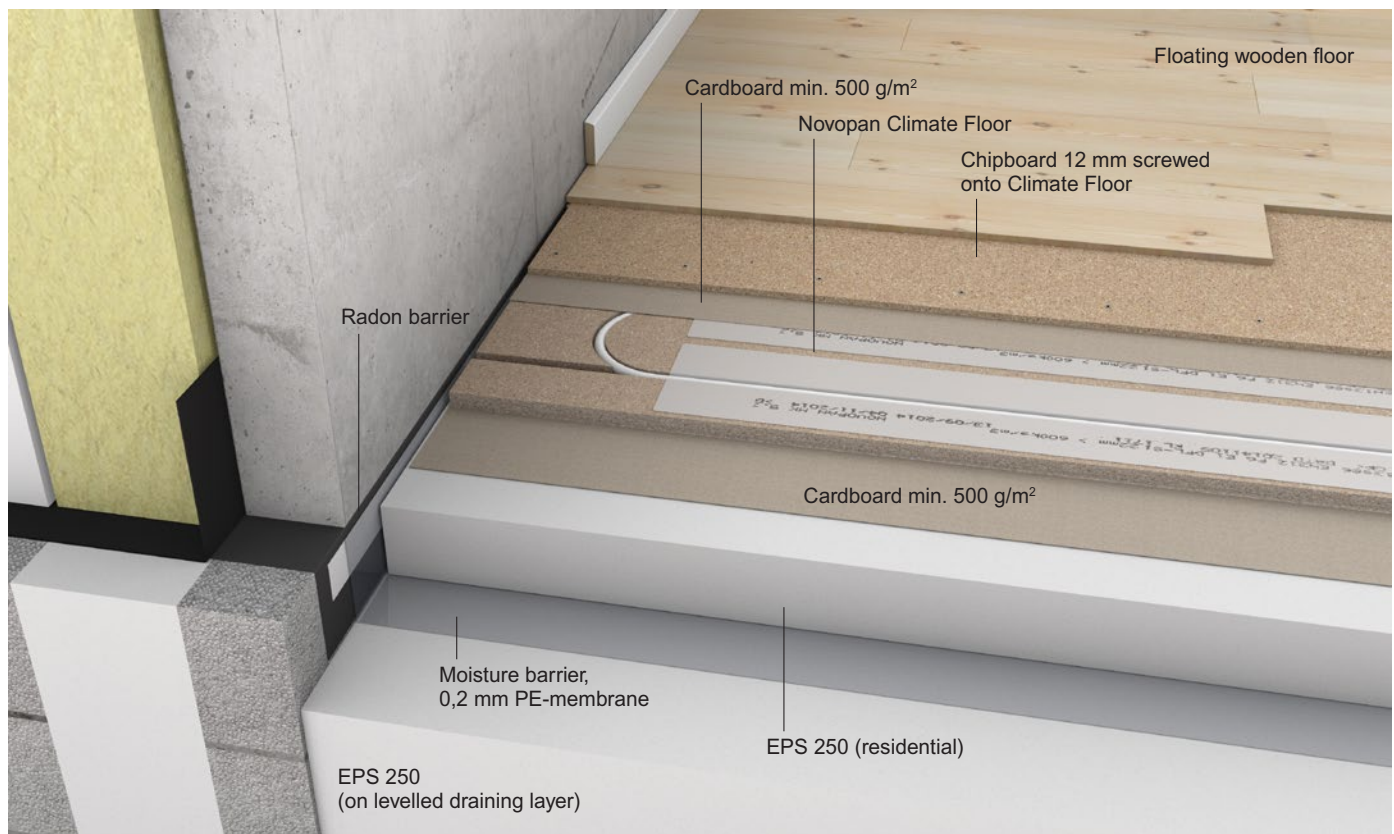


Figure 1 Novopan Climate Floor laid floating on a ground deck of EPS insulation and finished with a floating wooden floor.

Installation of interlayer boards

To reinforce the Climate Floor and as a substrate for floor coverings, install an interlayer of 12 mm chipboard with tongue and groove on four sides. The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are offset min. 300 mm from row to row.

The boards are fastened with 3.5×35 mm chipboard screws to the Climate Floor and no more than 20 mm from the board edges:

On 22 mm Climate Floors, screw the interlayer boards per 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is placed between the Climate Floor and interlayer boards to prevent creaking and rattling noises, see figure 1.

Please also refer to the installation instructions for 22 mm and 25 mm Novopan Climate Floor.

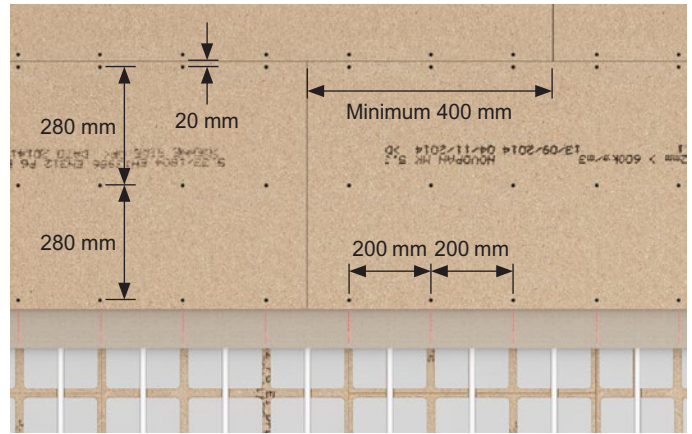


Figure 2 Novopan 22 mm Climate Floor - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5×35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

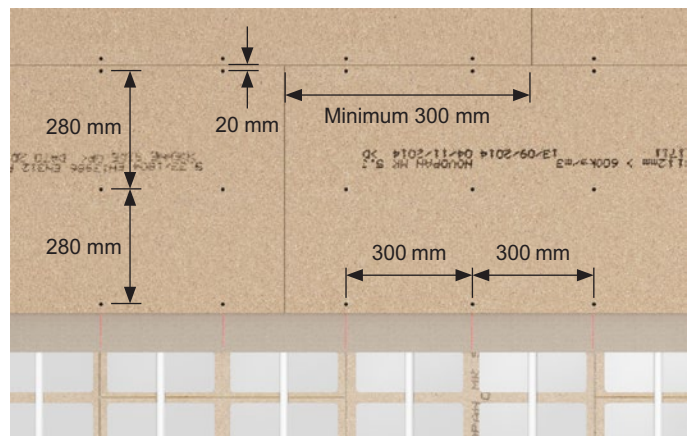


Figure 3 Novopan Climate Floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5×35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #8

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floors laid floating on concrete floor slabs

INSTALLING A FLOATING CLIMATE FLOOR WITH A WOODEN FLOOR

Novopan Climate Floors laid floating on concrete decks can be installed with solid wood flooring, parquet boards or engineered wood floors with a minimum thickness of 12 mm when laid floating on the Climate Floor, see figure 1.

The floorboards are usually installed crosswise to the Climate Floor and on cardboard of at least 500 kg/m² to prevent creaking and rattling noises. The floorboards can also be laid parallel to the heating pipes if recommended by the flooring supplier.

CONSTRUCTION STRUCTURE

Novopan Climate Floors on a flat concrete floor must always be installed with a vapour barrier placed directly on the concrete, see figure 1.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is installed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer, and folded up against all adjacent walls and clamped or glued behind the skirting boards.

Novopan Climate Floors must be installed according to the installation instructions for 22 mm and 25 mm Climate Floors respectively, and the turning grooves must be made according to *Fact Sheet #5 Cutting turning grooves*.

If turning panels are used as an alternative to cutting turning grooves, they must be laid according to the installation instructions for Novopan turning panels for 22 mm Climate Floor and Novopan turning panels for 25 mm Climate Floor.



Figure 1 Novopan Climate Floor laid floating on a concrete floor deck and finished with a floating wooden floor.

Underlay for thin floor coverings

Climate Floors laid floating on a concrete deck can also be used as an underlay for carpets, vinyl, linoleum and thin wood floors when laid on an intermediate layer of 12 or 16 mm chipboard with tongue and groove on four sides, see figures 2 and 3.

The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are staggered from row to row. They are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the plate edges:

On 22 mm Climate Floors, the interlayer boards are screwed every 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is laid between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

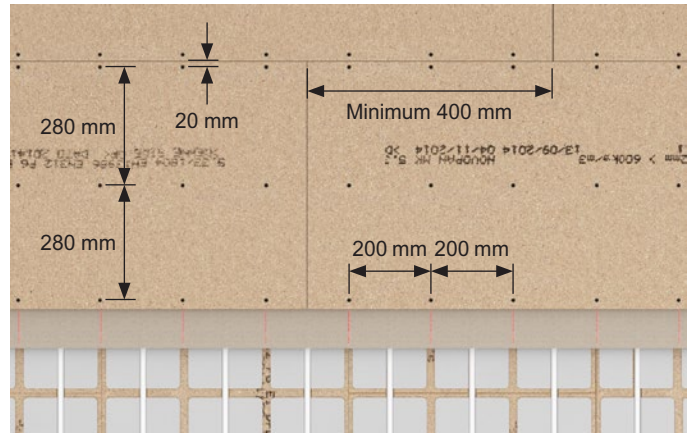


Figure 2 Novopan Climate Floor 22 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

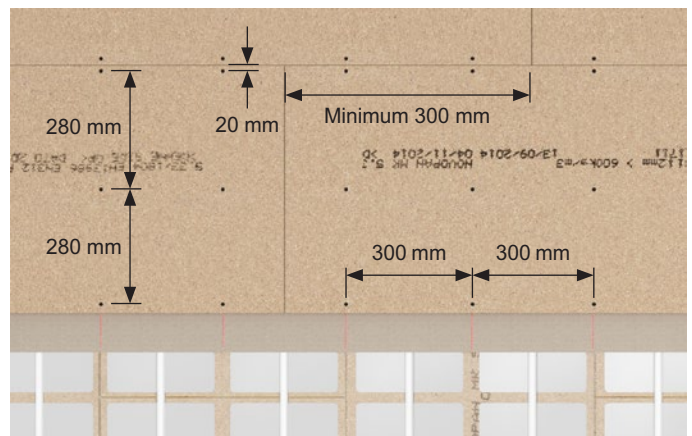


Figure 3 Novopan Climate Floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #9

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floors laid on joists with gypsum floorboards

INSTALLING CLIMATE FLOORS WITH PRESSURE-DISTRIBUTING GYPSUM BOARDS

Thin wood floors, engineered wood flooring and laminate flooring with a thickness of less than 12 mm can be laid floating on Novopan Climate Floor when installed on screwed interlayer boards.

The screwed interlayer board construction can also be used as an underlay for carpets, vinyl, etc. see *Fact sheet #17 Interlayer boards for Climate Floors*.

CONSTRUCTION STRUCTURE

22 mm and 25 mm Kronospan Climate Floors are installed across wooden joists with a maximum span between joists c-c of 600 mm.

In ordinary homes and offices, Climate Floors can be installed with floating screeds when the joist spacing is no more than 600 mm. Where the joist spacing is greater than 600 mm, an additional floor joist must be installed or alternatively a 38 mm Climate floor must be used.

When cutting turning grooves for heating pipes in 22 mm or 25 mm Climate Floors, an extra beam must always be installed under the turning grooves to support the floor slab, see figure 1.

12 mm chipboard with tongue and groove on four sides is used as interlayer boards, see Installation of interlayer boards, page 2, and *Fact-sheet #17 Interlayer boards on Climate floors*.

Where there is a need to improve sound insulation, gypsum floorboards can be used instead, which are screwed to the Climate Floor and glued with a suitable adhesive according to the gypsum manufacturer's instructions, see figure 1 and *Fact sheet #2 Gypsum floorboards on Climate Floors* and *Fact sheet #18 Fermacell fibre gypsum on Climate Floors*.

Floor decks with wooden joists are usually not installed with a vapour barrier as the joists are located between heated rooms.

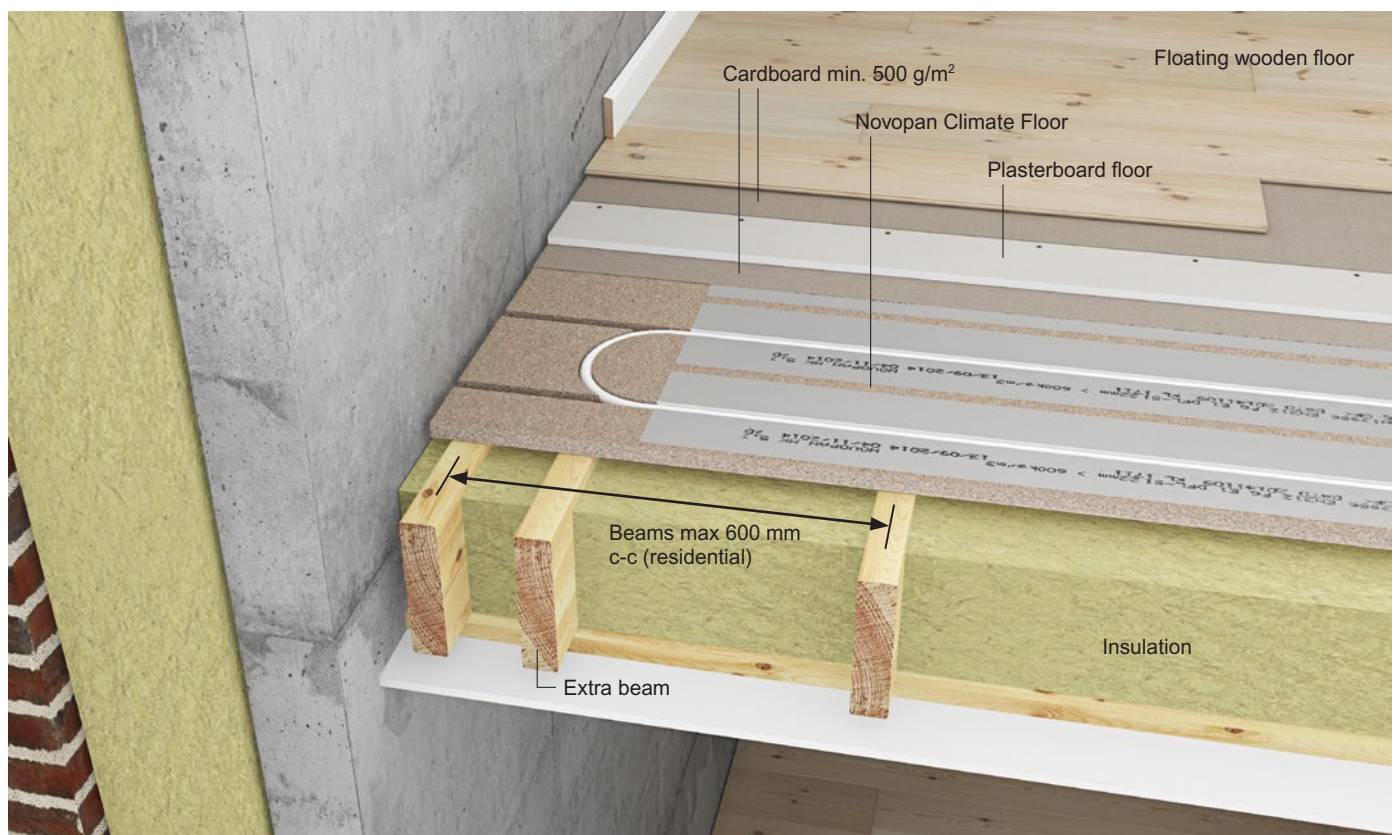


Figure 1 Novopan Climate Floor laid floating on a wooden deck and finished with a floating wooden floor. An additional beam is added to support the turning grooves.

Installing interlayer boards

As an underlay for thin floating wooden floors, install an intermediate layer of 12 mm chipboard with tongue and groove on four sides. The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are offset min. 300 mm from row to row.

The boards are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the board edges:

On 22 mm Climate Floors, screw the interlayer boards per 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is laid between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

Please also refer to the installation instructions for 22 mm and 25 mm Novopan Climate Floor.

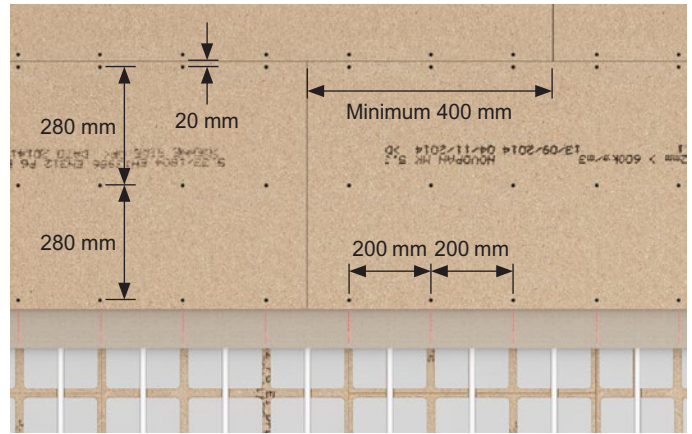


Figure 2 Novopan 22 mm Climate Floor 22 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

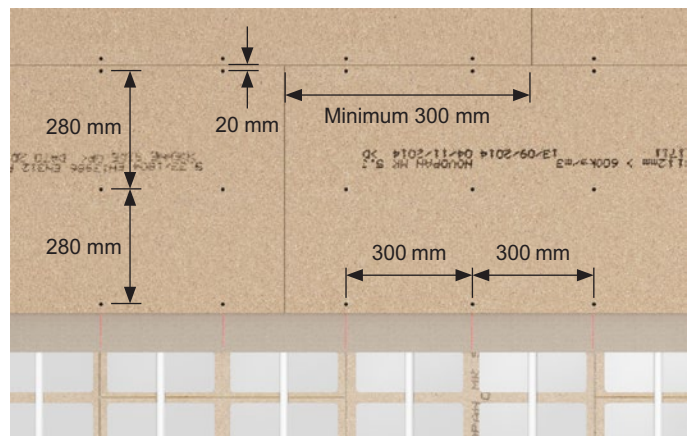


Figure 3 Novopan Climate Floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

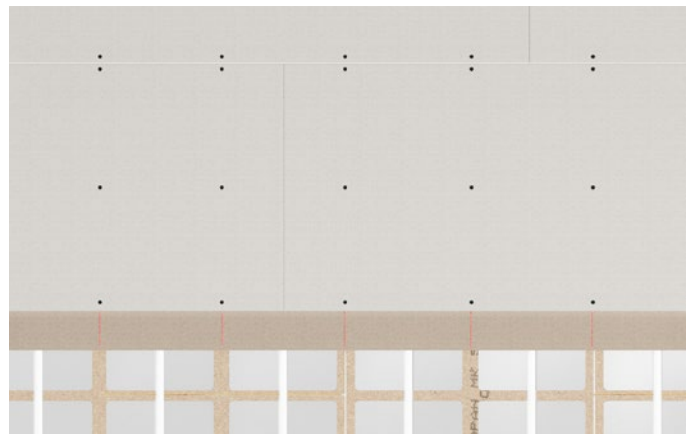


Figure 4 Interlayer boards such as gypsum floor boards and gypsum fibre flooring elements installed on 22 and 25 mm Climate Floor are fastened with screws according to the same principles as shown in figures 2 and 3. The design and screw dimensions are shown in *Fact-sheets #2 and #18*.

Fact sheet #10

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floors laid on floor joists

INSTALLING A CLIMATE FLOOR ON JOISTS WITH FLOATING WOODEN FLOOR

Solid wood floors, parquet boards and engineered wood floors of at least 12 mm in thickness can be laid floating on the Novopan Climate Floor, see figure 1.

The floorboards are usually laid crosswise to the Climate Floor and on cardboard of at least 500 kg/m² to prevent creaking and rattling noises. The floorboards can also be laid parallel to the heating pipes if recommended by the flooring supplier.

CONSTRUCTION STRUCTURE

Novopan Climate floors on wooden floor joists must always be installed with a vapour barrier placed directly on the concrete, see figure 1.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is installed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer. The vapour barrier is laid over the radon barrier and adhered to it, as well as folded up against all adjacent walls and clamped or adhered behind the skirting boards.

In ordinary homes and offices, Climate Floors can be laid with floating screeds when the joist spacing is 600 mm or less.

When cutting turning grooves for heating pipes in 22 mm or 25 mm Climate Floors, an extra joist must always be installed under the turning grooves to support the floor slab, see figure 1.

If turning panels are used as an alternative to cutting turning grooves, they must be supported by three joists, see the installation instructions Novopan turning panels for 22 mm Climate Floors and Novopan turning panels for 25 mm Climate Floors.

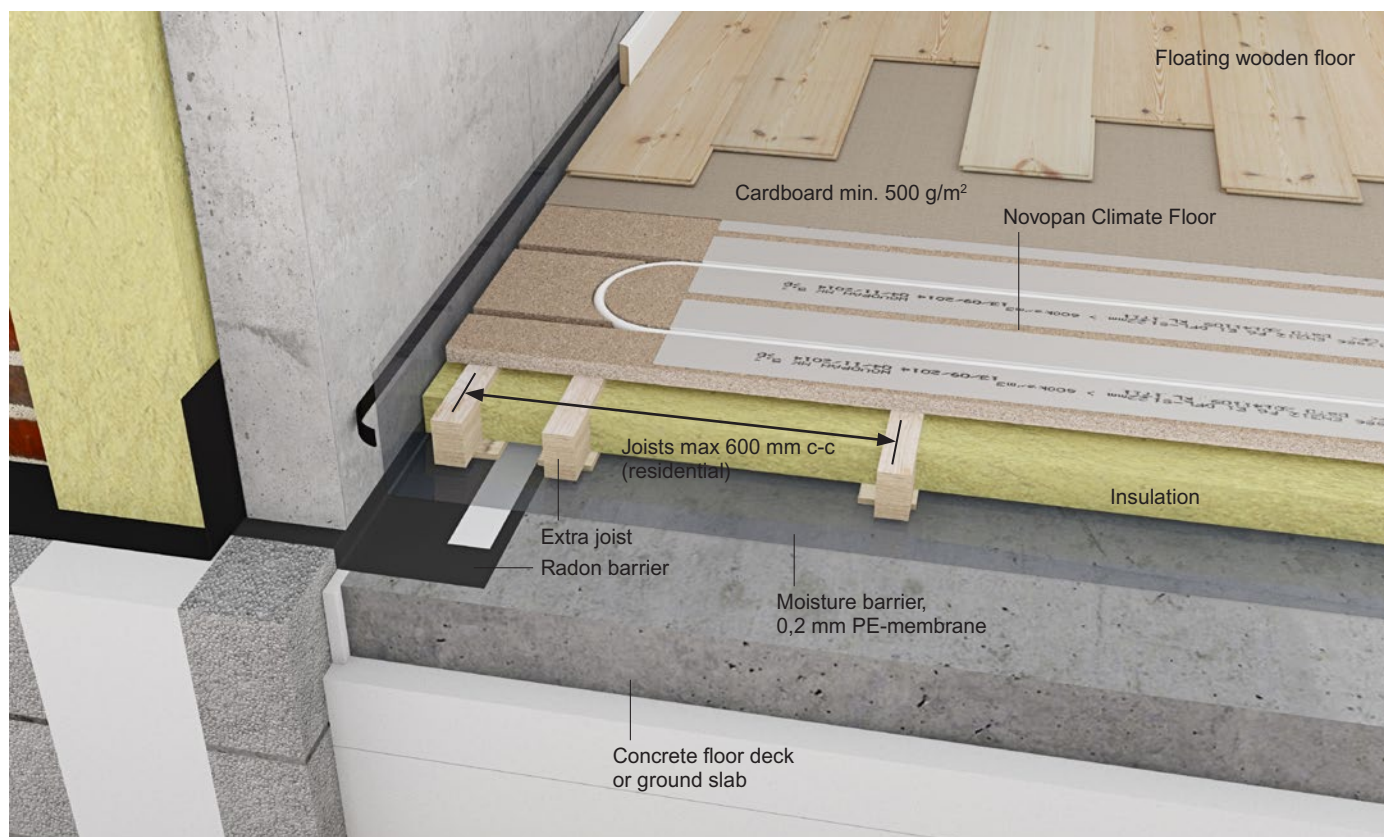


Figure 1 Novopan Climate Floor laid on joists and finished with a floating wooden floor.

Underlay for thin floor coverings

Novopan Climate Floors can also be used as an underlay for carpet, vinyl, linoleum and thin wood floors when laid on a 12 mm chipboard interlayer with tongue and groove on four sides. The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are staggered from row to row, see figures 2 and 3.

The boards are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the board edges:

On 22 mm Climate Floors, screw the interlayer boards per 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is laid between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

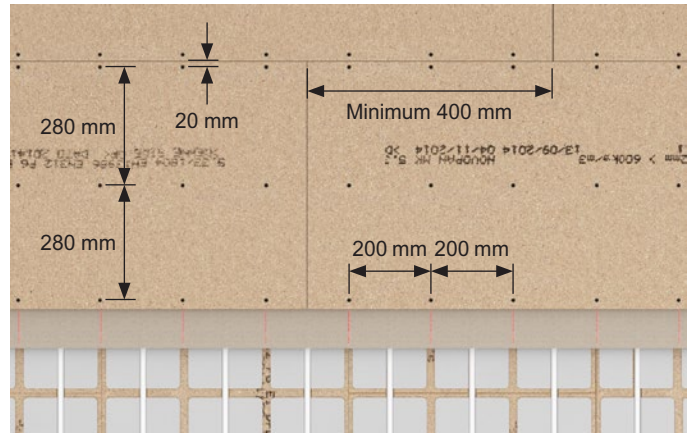


Figure 2 Climate Floor 22 mm - screw distances and offset of plate joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

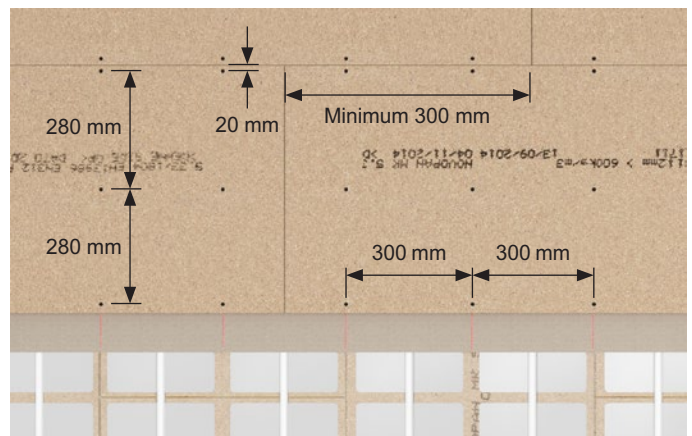


Figure 3 Novopan Climate floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #11

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate floor laid over old crawl space

INSTALLING CLIMATE FLOOR WITH WOOD FLOOR ON CRAWL SPACE DECK

Thin wood floors, engineered wood flooring and laminate flooring with a thickness of less than 12 mm can be laid floating on Novopan Climate Floor when installed on screwed interlayer boards.

The construction with screwed interlayer boards can also be used as an underlay for carpets, vinyl, etc. see *Fact sheet #17 Interlayer boards for Climate Floors*.

CONSTRUCTION STRUCTURE

Climate Floors installed as subfloors over older crawl spaces must always be installed with a vapour barrier on the upper side of the wooden joist layer. This means that old floors must be removed before the vapour barrier and Climate Floor can be installed, see figure 1.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is placed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer. The vapour barrier is folded up against all adjacent walls and clamped or glued behind the skirting boards.

When cutting turning grooves for heating pipes in 22 mm or 25 mm Climate Floors, an extra beam must always be installed under the turning grooves to support the floor slab, see figure 1.

In ordinary homes and offices, Climate Floors can be installed with floating screed when the joist spacing is 600 mm or less. Where the joist spacing is greater than 600 mm, an additional floor joist must also be installed.

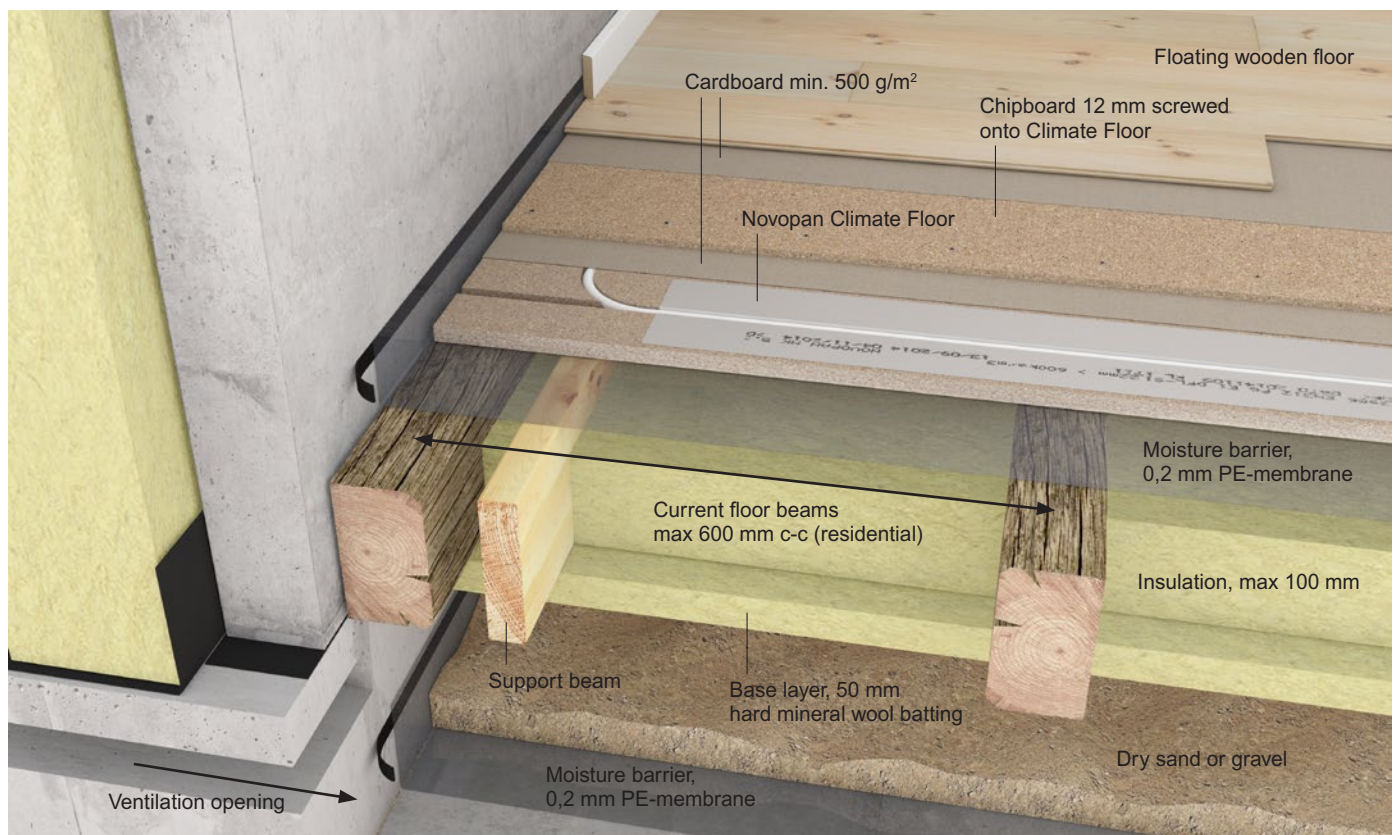


Figure 1 Novopan Climate Floor laid on an older crawl space deck and finished with a floating wooden floor.

It is a prerequisite that the crawl space is moisture-proofed with a moisture barrier against the ground, at least 0.2 mm PE foil or equivalent, and that the crawl space is ventilated through openings of at least 150 cm² in all foundation corners and in foundations under partitions.

The total thermal insulation in the wooden joist layer must not exceed 150 mm to ensure that the structure can continue to be kept dry by the room heat.

Installing interlayer boards

As an underlay for thin floating wooden floors, install an interlay of 12 mm chipboard with tongue and groove on four sides. The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are staggered min. 300 mm from row to row.

The boards are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the board edges:

On 22 mm Climate Floors, screw the interlayer boards per 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is laid between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

Please also refer to the installation instructions for 22 mm and 25 mm Novopan Climate Floor.

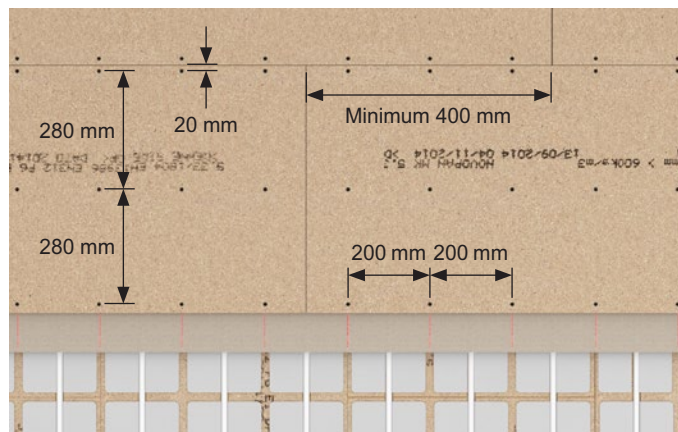


Figure 2 Novopan 22 mm Climate Floor - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

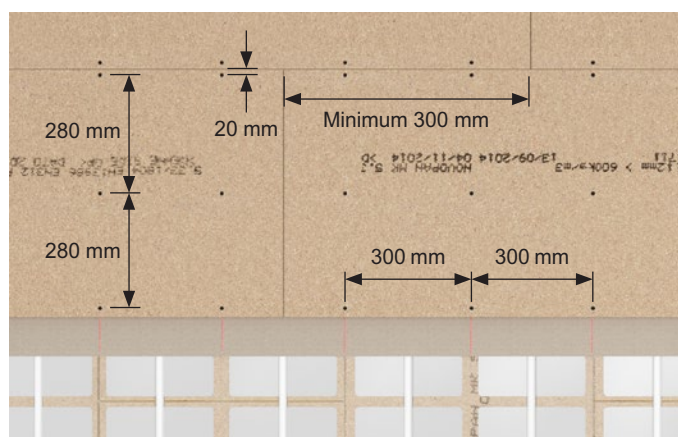


Figure 3 Novopan Climate floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #12

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floors laid on floor joists with parquet flooring

INSTALLING A CLIMATE FLOOR WITH FULLY GLUED PARQUET FLOOR

Solid parquet floors, herringbone parquet, strip parquet and engineered wood flooring that are to be fully glued to Novopan Climate Floors must always be installed on a screwed-on interlayer board, see figure 1.

The screw-on interlayer board construction can also be used under thin wood or laminate floors with a thickness of less than 12 mm and as an underlay for carpets, vinyl, etc. see *Fact sheet #17 Interlayer boards for Climate Floors*.

CONSTRUCTION STRUCTURE

Novopan Climate Floors on parquet flooring must always be installed with a vapour barrier placed directly on the concrete, see figure 1.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is installed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer. The vapour barrier is laid over the radon barrier and adhered to it, as well as folded up against all adjacent walls and clamped or adhered behind the skirting boards.

In ordinary homes and offices, Climate Floors can be installed with floating screed when the joist spacing is 600 mm or less.

When cutting turning grooves for heating pipes in 22 mm or 25 mm Climate Floors, an extra joist must always be installed under the turning grooves to support the floor slab. If turning panels are used, they must be supported by three joists, see the installation instructions Novopan turning panels for 22 mm Climate Floor and Novopan turning panels for 25 mm Climate Floor.

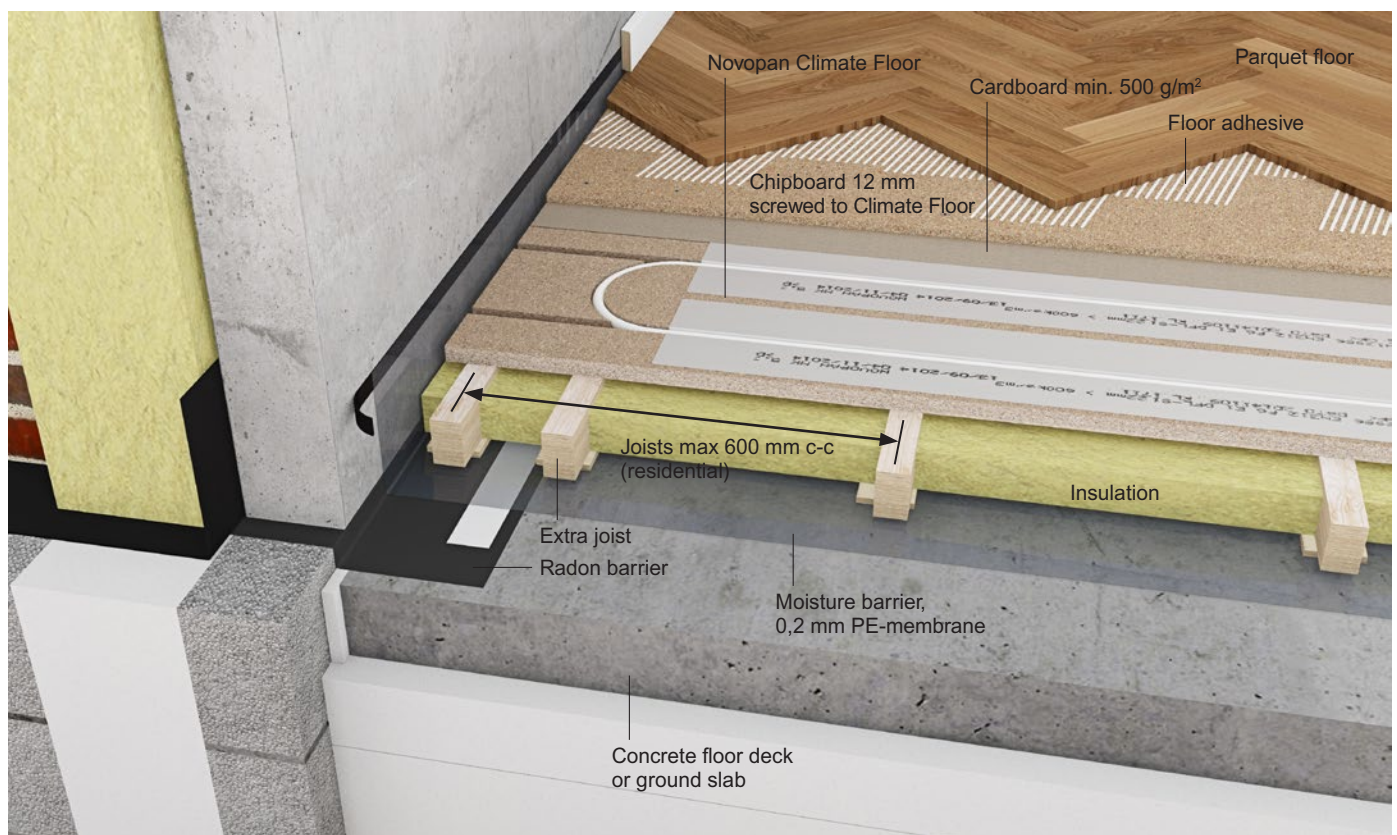


Figure 1 Novopan Climate Floor laid on floor joists and finished with a fully glued wooden floor.

Installing interlayer boards

As an underlay for fully glued wood floors, install an intermediate layer of 12 mm chipboard with tongue and groove on four sides. The boards are installed perpendicular to the Climate Floor and the board joints (short edges) are offset min. 300 mm from row to row.

The boards are fastened with 3.5 × 35 mm chipboard screws to the Climate Floor and no more than 20 mm from the board edges:

On 22 mm Climate Floors, screw the interlayer boards per 200 mm at the longitudinal edges and at the centre of the board, see figure 2.

On 25 mm Climate Floors, screw the interlayer boards per 300 mm at the longitudinal edges and at the centre of the board, see figure 3.

A layer of 500 g/m² cardboard is laid between the Climate Floor and interlayer boards to prevent creaking and rattling noises.

Please also refer to the installation instructions for 22 mm and 25 mm Novopan Climate Floor.

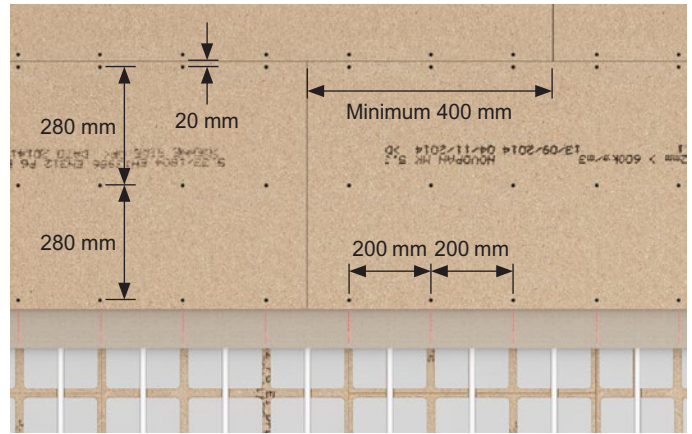


Figure 2 Novopan 22 mm Climate Floor - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 22 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

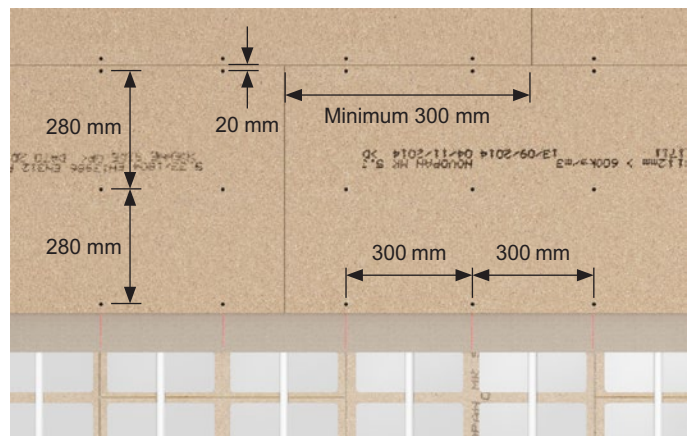


Figure 3 Novopan Climate floor 25 mm - screw distances and offset of board joints.

Interlayer boards of 12 mm chipboard are fixed to the 25 mm Climate Floor with 3.5 × 35 mm chipboard screws. A cardboard (500 g/m²) is placed between the heat emission plates and the interlayer boards to avoid squeaking noises.

Fact sheet #13

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floors laid on floor joists with wood flooring

INSTALLING CLIMATE FLOORS ON JOISTS WITH SOLID WOOD FLOORING

Solid wood flooring and parquet boards can be screwed to the Novopan Climate Floor either concealed in the board face or visible from above and plugged.

The floorboards are laid crosswise to the Novopan Climate Floor on an underlay of cardboard of at least 500 kg/m² to prevent creaking and rattling noises, see figure 1.

CONSTRUCTION STRUCTURE

Climate floors with solid wood flooring on joists must always be constructed with a vapour barrier placed directly on the concrete, see figure 1.

The vapour barrier can be at least 0.2 mm PE foil or equivalent. It is installed with at least 50 mm adhesive overlays, e.g. a suitable tape recommended by the vapour barrier manufacturer. The vapour barrier is laid over the radon barrier and adhered to it, as well as folded up against all adjacent walls and clamped or adhered behind the skirting boards.

In ordinary homes and offices, Novopan Climate Floors can be laid with floating screeds when the joist spacing is 600 mm or less.

When cutting turning grooves for heating pipes in 22 mm or 25 mm Climate Floors, an extra joist must always be installed under the turning grooves to support the floor slab, see 22 mm Climate Floor installation instructions and 25 mm Climate Floor installation instructions.

If turning panels are used, they must be supported by three joists, see the installation instructions Novopan turning panels for 22 mm Climate Floor and Novopan turning panels for 25 mm Climate Floor.

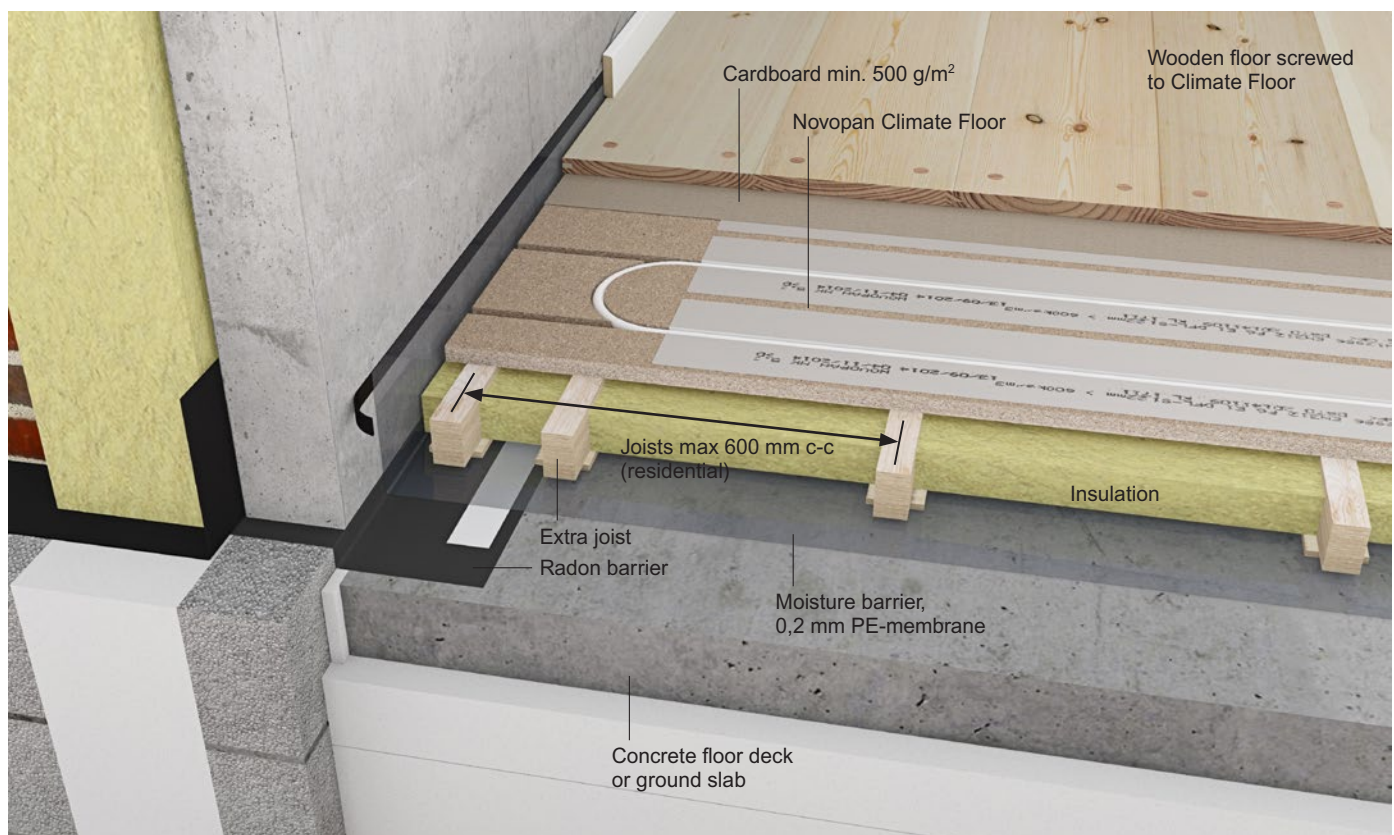


Figure 1 Novopan Climate Floor laid on floor joists and finished with a wooden floor screwed to the Climate Floor.

Installation of wooden floors

Install the floorboards crosswise to the Climate Floor and screw them to the floor panels. A layer of cardboard, at least 500 g/m², is placed between the Climate Floor and the solid wood floor to prevent creaking and rattling noises, see figure 1.

Solid wood floors and parquet boards can be screwed to the Novopan Climate Floor either concealed in the board surface, see figures 2 and 3, or visible from above and plugged, according to the flooring supplier's instructions.

The floorboards are screwed to the Climate Floor with the screw distances shown in figures 2 and 3. The screws must be long enough for the threaded part to pass through the Climate Floor. To avoid screwing into the heating pipes, it is a good idea to mark the screw lines with chalk lines before laying the wooden floor, see figures 2 and 3.



Figure 2 Novopan Climate floor 22 mm.

The floor boards are screwed between the heat emission plates, in every third gap (per 600 mm). Screw lines can be made with chalk lines on the cardboard.



Figure 3 Novopan Climate floor 25 mm

The floorboards are screwed between the heat emission plates, in every second gap (per 600 mm). Screw lines can be made with chalk lines on the cardboard.

Fact sheet #14

Read the instructions carefully
before you get started

Novopan Climate Floor

Climate Floors on a load-bearing substrate of boards

INSTALLING A CLIMATE FLOOR ON LOAD-BEARING BOARDS WITH A SOLID WOOD FLOOR

Novopan Climate Floor on timber joists can be installed on a layer of cross-braced load-bearing boards as a stable underlay for solid wood floors, see figure 1.

The floorboards are laid crosswise across the Climate Floor on a layer of cardboard to prevent creaking and rattling noises, see figure 1.

CONSTRUCTION STRUCTURE

Novopan Climate Floors, 22 mm and 25 mm, with solid wood flooring on wooden joists must be supported by load-bearing boards laid crosswise to the joists, see figure 1.

As a minimum, the load-bearing boards must be dimensioned according to table 1 and laid at least every 300 mm to ensure the load-bearing function and the necessary rigidity.

The Climate Floor is laid crosswise the load-bearing boards and screwed to the load-bearing boards with the screw types specified in the installation instructions for 22 mm and 25 mm Novopan Climate Floor. In ordinary homes and offices, Climate Floors can be laid with floating screws.

When cutting turning grooves for heating pipes in 22 mm or 25 mm Climate Floors, an extra joist must always be installed under the turning

Table 1 Minimum dimension of load-bearing boards for joist spacing from 600 mm to 1300 mm.

Beam spacing	600 mm		800 mm		1000 mm		1300 mm	
Load-bearing boards	25×100 mm	23×115 mm	28×100 mm	25×125 mm	32×100 mm	28×125 mm	25×100 mm	32×125 mm

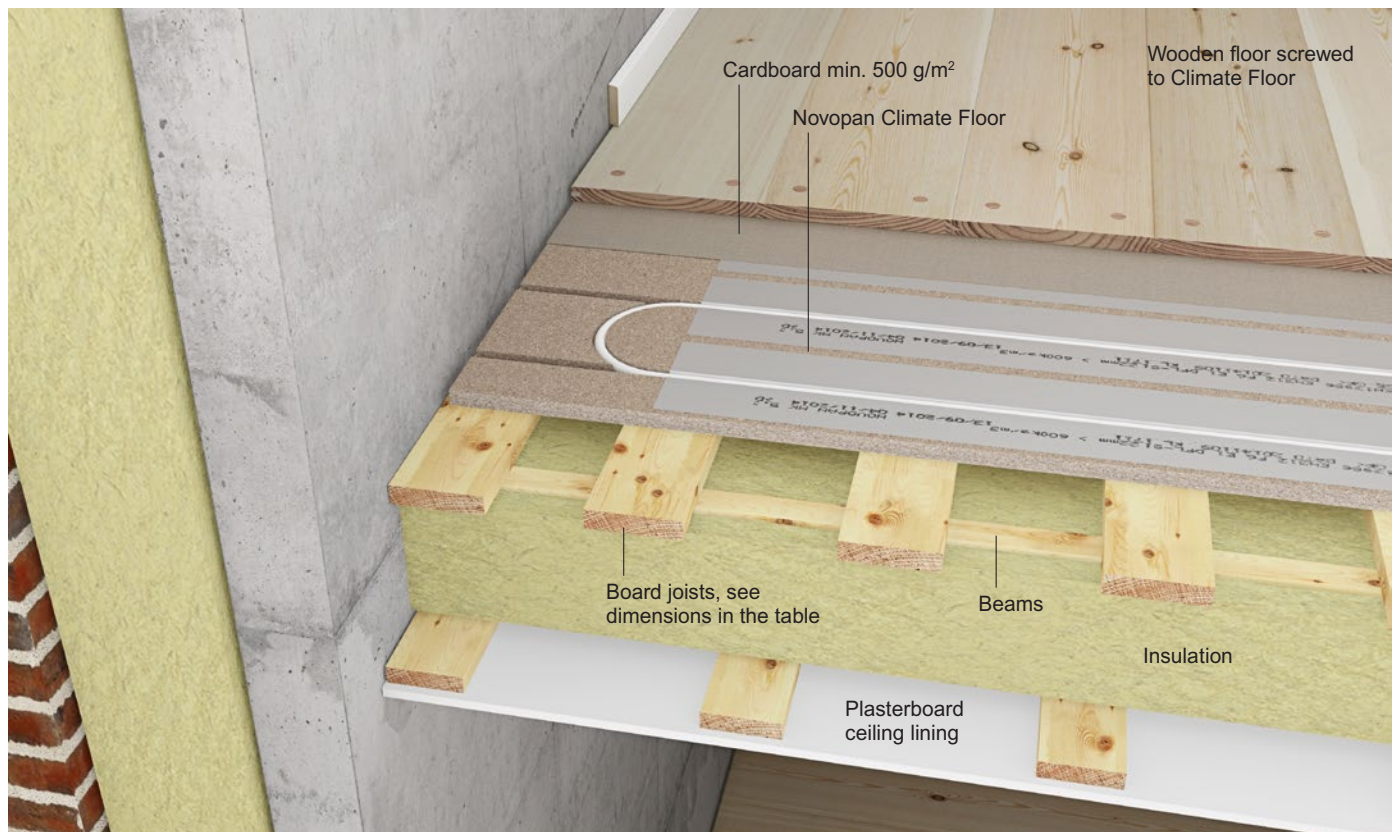


Figure 1 Novopan Climate Floor laid on load-bearing substrate of boards and finished with a wooden floor screwed to the climate floor.

grooves to support the floor slab, see 22 mm Climate Floor installation instructions and 25 mm Climate Floor installation instructions.

If turning panels are used, they must be supported by three joists, see the installation instructions Novopan turning panels for 22 mm Climate Floor and Novopan turning panels for 25 mm Climate Floor.

Wooden joist floor decks are not normally installed with a vapour barrier as the joists are located between heated rooms.

Installation of wooden flooring

The floorboards are laid crosswise to the Climate Floor and screwed to the floor slab. A layer of cardboard, at least 500 g/m², is laid between the Climate Floor and the solid wood floor to prevent creaking and rattling noises, see figure 1.

Solid wood floors and parquet boards can be screwed to the Novopan Climate Floor either concealed in the board surface, see figures 2 and 3, or visible from above and plugged, according to the flooring supplier's instructions.

The floor boards are screwed to the Climate Floor with the screw distances shown in figures 2 and 3. The screws must be long enough for the threaded part to pass through the Climate Floor. To avoid screwing into the heating pipes, it is a good idea to mark the screw lines with chalk lines before laying the wooden floor, see figures 2 and 3.



Figure 2 Novopan Climate Floor 22 mm.

The floor boards are screwed between the heat emission plates, in every third gap (per 600 mm). Screw lines can be made with chalk lines on the cardboard.



Figure 3 Novopan Climate Floor 25 mm

The floorboards are screwed between the heat emission plates, in every second gap (per 600 mm). Screw lines can be made with chalk lines on the cardboard.

Fact sheet #15

Read the instructions carefully
before you get started

DISCLAIMER OF LIABILITY

Novopan Climate Floor is manufactured under careful quality control. Kronospan products are under continuous development and the technical specifications are subject to change. Please also refer to the applicable terms of sale and delivery. The latest version is always available at kronospan-dk.dk.

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