



# Novopan Climate Flooring

Underfloor heating for every room in the house. Fast. Simple. Economical

**There are many  
ways to heat up your  
home. Only one gives  
you all the benefits!**

In connection  
with the  
Green-Line series



NOVOPAN CLIMATE FLOORING provides a uniform, quickly adjusting room temperature. At the same time, the flooring helps reduce energy consumption and thus reduce your heating bill.

## 22 mm assembly instructions

**kronospan**  
NOVOPAN TRÆINDUSTRI

## PERFORMANCE TESTED AND MK APPROVED

NOVOPAN CLIMATE FLOORING is performance tested by the Danish Technological Institute pursuant to EN1195:1997/EN12871:2000, and the manufacturing process is approved by Dancert.



MK Approval:  
22 mm MK-5.33/1804

## USE AND HANDLING

NOVOPAN CLIMATE FLOORING EN312 P6 in a format of 1800 x 600 mm. The floor panels are furnished with milled grooves every 200 mm for the laying of aluminium heat-emission plates and PEX pipes.

## AREAS OF USE

NOVOPAN CLIMATE FLOORING EN312 P6 is certified for use as a subfloor on a layer of wooden beams in permanently heated rooms with a relative humidity that exceeds 65% for only a few weeks of the year, in other words, ordinary housing.

## WELL-SUITED FOR DIFFERENT FLOOR STRUCTURES.

NOVOPAN CLIMATE FLOORING is well-suited for use as various floor structures, such as:

### LOAD-BEARING SUBFLOOR

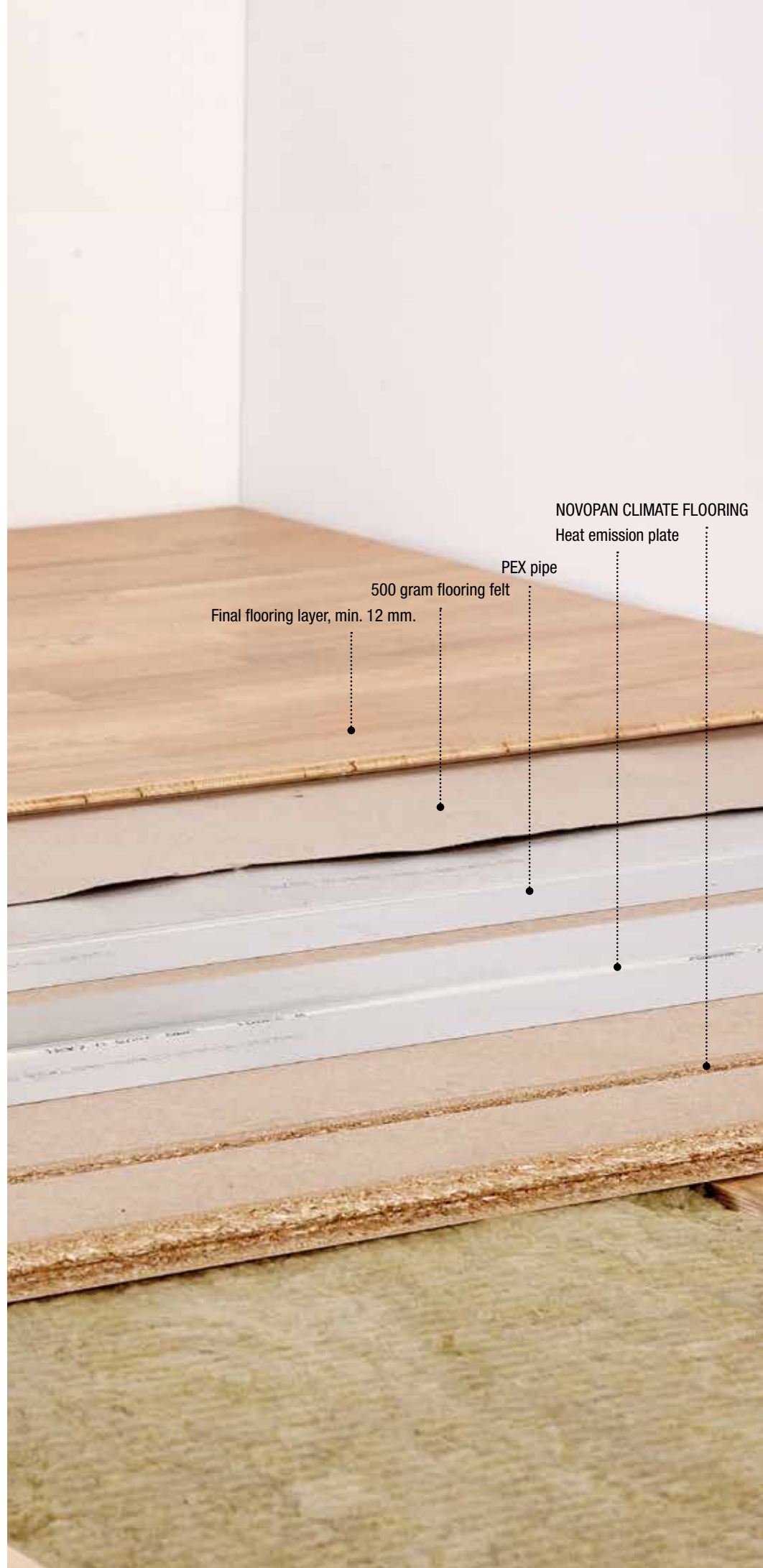
- a flooring structure where the chipboard floor panels are self-bearing on a joist/beam construction.

### LOAD-BEARING SUBFLOOR WITH FLYING JOINTS

- a floor structure where the chipboard floor panels are self-bearing on a joist/beam construction but where it is permissible to have unsupported end joints between joists/beams.

### FLOATING FLOOR

- a flooring construction that is not attached and can shift, independent of the supporting subsurface. The floor panels are laid directly on a suitable, approved insulation material or on smooth concrete.





## FAST, CORRECT LAYING

NOVOPAN CLIMATE FLOORING ensures fast, correct laying of aluminium heat emission plates and PEX pipes with a precise distance between centres (CRS), which provides ideal heat dispersion and utilisation across the entire floor surface.

## FLOORING...

Types of flooring that can be laid on top of NOVOPAN CLIMATE FLOORING include:

- A. Laminate parquet tiles, min. 12 mm.
- B. Carpet, laminate flooring, vinyl or other flooring, on a subfloor of at least 10 mm chipboard, attached with screws.
- C. Glued parquet strips on a subfloor of at least 12 mm chipboard, attached with screws.
- D. Tile flooring, on a base of 12.5 mm plasterboard flooring, attached with screws.

## TRANSPORT AND STORAGE

Carefully handle the plates and panels to prevent damage to edges and surfaces and store them on a dry, level subsurface. Protect the chipboard floor panels against damp at all times. Complete all brickwork and plasterwork before laying the floor, and remove all construction moisture from the building by drying out, heating and ventilating the building.

## INSULATION AND MOISTURE BARRIER

If there is a risk of exposing joists and floors to damp, lay an effective moisture barrier, e.g. a 0.20 mm layer of type-approved durable plastic sheeting. Always lay the moisture barrier with a minimum 200 mm overlap and tape the joints. To ensure the correct placement of insulation materials and moisture barrier, e.g. at pipe lead-ins and other bushings, contact the supplier of the insulation material.

NB! Under normal circumstances, a moisture barrier is NOT laid on top of organic material.

# Installation instructions, 22 mm

Read these installation instructions thoroughly before beginning the work. Please note that the performance approval applies solely on the condition that these installation instructions are followed. Plan the installation of the underfloor heating system in relation to the position of the heating system and plan where to place the outflow and inflow for the underfloor PEX pipe. Calculate the distribution of joists and panels in relation to the floor surface. See “Good advice, 22 mm” on p. 8.

## LOAD-BEARING SUBFLOOR LAID ON JOISTS

### Step 1.1: ASSEMBLY

Support and blocking. For other joist dimensions than those mentioned (see overview on the right). Reduce the blocking distance at joist ends by at least 10%.

Support all panel edges with a border joist at a maximum of 40 mm from the wall.

Lay additional support joists where there is a return groove for a PEX pipe. Place additional support joists 200 mm from a wall.

Note that all transverse grooves must be supported.

Disperse other joists with a maximum

centre-to-centre distance of 600 mm. Attach blocking to joists with skew nails.

**Important:** Consult your HVAC technician before beginning the installation process, and do all installation work in consultation with the technician. These installation instructions do not include the structural engineering or installation of a heating system.

Actions on structures EN 1991-1-1 (residences, offices and light business Q=2kN)	Kerto (rigidity 10000 MPa)	
Joist dimension WxH mm	40 x 39	40 x 63
Blocking spacing, mm	500	800



### Step 1.2: LAYING

Lay the chipboard floor panels in a bond pattern across the established beams/joists.

Lay the panels at a distance of 12 mm from walls and pipe lead-ins. Glue the panels by applying D3 PVAc glue in the double profile. The glue must be visible after joining, and carefully wipe off the glue from surfaces and the bottom of the groove.

Attach the panels to joists/beams and along all supported sheet edges with screws. Screw spacing along panel edges: 150 mm.

Attach the panels to transversal joists using 4 screws on each support. Use partially-threaded screws, dimensions: 4.0/4.5 x 60 mm. Flying joints can also be used for ordinary housing strains.





## FLOATING FLOOR LAID ON APPROVED LOAD-BEARING INSULATION

NOVOPAN CLIMATE FLOORING with grooves is well-suited for water-based underfloor heating systems laid down as a floating floor on an approved load-bearing insulation, such as polystyrene (EPS). Novopan recommends a minimum of type 250.

Laying and assembly otherwise pursuant to the instructions in the section on load-bearing subfloor.

If the insulation thickness is more than 100 mm, screw on 12 mm tongue-and-groove chipboard (all 4 sides) on top of the Klimagulv panel. Along walls paralleling the grooves, attach with screws in two rows per 200 mm and along walls at a right angle to the grooves in three rows per 200 mm. Over the rest of the area, attach with screws every 600 x 600 mm, but at end-joints attach with screws every 200 mm.

Place the structural moisture barrier on top of the polystyrene. This functions as sliding layer at the same time. It is beneficial to lay 500 g of flooring felt between the chipboard panel and the moisture barrier.

Glue down all edges of the panels.



## RETURN PANELS

### Step 2.1: INSTALLING GROOVED RETURN PANELS

Joist structures: when using Novopan's grooved return panels, a stub joint will occur in each row of panels (where the tongue-and-groove has been sawn off – a rubbed joint). These panels must always be joined over a joist.

joint). In other words, the return panel and next-to-last panel are cut to shape, thereby cutting off the groove/tongue. To obtain satisfactory strength in the joint, it is advisable to mill in two flat dowels. Apply plenty of glue to panel edges and flat dowels before joining.

Glue the panel ends and attach to a joist using two sets of four screws. Glue and attach other panel joints as previously described. Meticulously remove the glue from the grooves.

Floating structures: when using Novopan's grooved return panels, a stub joint will occur in each row of panels (where the tongue-and-groove has been sawn off – a rubbed



# Installation instructions, 22 mm

## Step 2.2: MILLING RETURN GROOVES

Mill return grooves using a manual router, e.g. as follows:

A router with land and pinole screw or profile steering is used, and 18 or 20 mm drill (possibly profiled drill)

To fixate the router, drill a hole  $\varnothing$  6 mm, min. 250 mm from the wall and centre between two heating grooves. Milling depth: 18.2 mm.

**NB!** For floor surfaces of around 10 running metres or more, increase the width of the return groove to 24–26 mm.

Mill in a return groove in every other row.



## Step 3: LAYING NAILLESS HEAT-EMISSION PLATES

Thoroughly vacuum floor panels and grooves. Release the assembly panel and it will fall into place easily and unobstructed. Lightly press the heat-emission plate into the chipboard floor panel's grooves without the traditional use of nails for fixation. Nailless fixation reduces the risk of tension and dents in the aluminium plates. The installation is easy and ergonomically correct, and does not require inexpedient, straining working positions.

Mutual longitudinal distance between the panels/plates: min. 10 mm. Distance from panel to beginning of return groove: min. 20 mm.

Distance between PEX pipes: 200 cc. The connection should be done by an authorised HVAC technician. Pipe dimension: 16 mm. Use a type of pipe with oxygen barrier. **NB!** NOVOPAN recommends soft 5-layer PEX-A or PE-RT pipes, dimension 16 mm for Climate Flooring. If

Aluplex is chosen, care must be taken to install the pipes with great precision, since the rigid Aluplex can cause deformation of the Ohm-profile of the heat-distributor plates, which may result in creaking sounds.





#### Step 4: INSTALLATION OF FINAL LAYER OF FLOORING

After installing the heat-emission plate and PEX pipes, lay a layer of flooring felt, 500 g/m<sup>2</sup>, over the entire floor surface and then install the final layer of flooring:

- A. Laminate parquet tiles, min. 12 mm (laying direction: according to choice)
- B. Carpet, laminate flooring, vinyl or other flooring, on a subfloor of at least 10, 12, or 16 mm chipboard, attached with screws.
- C. Glued parquet strips on a subfloor of at least 12 mm chipboard, attached with screws.
- D. Tile flooring, on a base of 12.5 mm plasterboard flooring, attached with screws.



#### A. LAMINATE PARQUET TILES, MIN. 12 MM

Lay the laminate parquet tiles as a floating floor on top of the chipboard floor, parallel or at a right angle to the PEX pipes. NB! Some flooring manufacturers require the laying of an intermediate plate; please ask your supplier.

#### B. CARPET, LAMINATE FLOORING, VINYL OR OTHER FLOORING

Lay thin floorings and rolled flooring on a subsurface of 12 mm or 16 mm tongue-and-groove chipboard, attached with screws. Lay the panels in a bond pattern parallel to the PEX pipes. Lay the panels so the joints are staggered in relation to the subfloor (min. 200 mm) and glue all joints. Attach the chipboard floor panels to the subfloor in a grid of roughly 200 x 200 mm. Attach with screws (4.0 x 30 mm) and surface-grind as required. The flooring structure must maintain a moisture balance before any

flooring surface is glued to the chipboard. This means that the chipboard moisture may not exceed approx. 8%.

Alternative: If there is a shortage of space, it is possible to lay 10 mm chipboard as an intermediate layer (attach as described above). This is not advisable for glued flooring.

Note: Thinner floorings entail a risk of showing joints and screw holes. Never fill in screw holes.

#### C. GLUED PARQUET STRIPS

Lay tongue-and-groove 12 mm chipboard as an intermediate layer. Attach the chipboard to the subfloor in a grid of roughly 200 x 200 mm. Attach with screws, 4.0 x 35 mm (or 4 x 45 mm, if 22 mm chipboard is used).

Be particularly aware that glued solid top flooring requires a completely even distribution of heat of 27° C. Otherwise, follow the manufacturer's instructions.

#### D. TILE FLOORING, DRY ROOMS

Lay the subflooring on joists with a maximum centre-to-centre distance of 300 mm. Attach an intermediate layer of flooring plasterboard to the subfloor in a grid of approximately 200 x 200 mm, using screws (4.0 x 30 mm), or those recommended by the plasterboard manufacturer.

#### SUBFLOORS FOR HEAVIER LOADS

For heavy load-bearing purposes, e.g. in preschools, nursing homes, offices, etc., the underlying joist structure must be installed pursuant to the laying instructions for SPAANDEX K-FLOOR PANEL, EN 312 P6. For this structure, use SPAANDEX K-FLOOR PANEL 22 mm, laid as a floating floor (or attached with screws) as the subsurface for a final layer of flooring.

# Good advice, 22 mm

- Lay a conduit pipe (Diameter 25 mm) between the first and second joists for PEX-pipe inflow/outflow
- Remember to insulate the conduit pipe
- PEX pipe (16 mm) with internal oxygen barrier
- NOVOPAN recommends soft 5-layer PEX-A or PE-RT pipes, dimension 16 mm for Climate Flooring. If Alupex is chosen, care must be taken to install the pipes with great precision, since the rigid Alupex can cause deformation of the Ohm-profile of the heat-distributor plates, which may result in creaking sounds
- Coordinate the choice of heat emission plate panel with the pipe dimension chosen
- All heating systems must be shunt-controlled so that the floor surface temperature does not exceed 27° C
- The shunt control requirement also applies during the construction period and for drying out any construction moisture
- Connect the underfloor heating and operate it for one or two weeks to get rid of any construction moisture before installing the final layer of flooring
- Moisture content of joists: approx. 8%,  $\pm 2$
- Gluing on joists. In cases where solid beams/joists are used and the moisture content exceeds 11% in joists and 13% in the beams, you should glue the floor chipboard to the joists
- Make sure that the structure is protected against damp rising from below
- Remember to position any moisture barrier correctly
- Use plenty of glue: approx. 3/4 litre per 25 running metres
- Meticulously remove all glue from the grooves
- Only use screws with partial threading
- Groove dimension: width 19 mm, depth 18.2 mm
- Number of aluminium heating emission plates to use: use 3.7 panels per m<sup>2</sup>, covering 70–80% of the floor area
- Length of PEX pipes to use: 5.4 running metres per m<sup>2</sup>
- Zone dimension: 15–16 m<sup>2</sup>
- Do not use the floor as a workplace: do not walk on the flooring during installation
- Cover the floor with PE plastic if the final layer of flooring is not installed right away
- Never fill up screw holes with putty
- Do not try to attach floorboards, laminate parquet tiles or parquet strips to chipboard floor panels using staples or a nail gun

## HANDLING

- According to the lifting guidelines of the Danish Working Environment Authority, the manual transport and lifting of boards/panels must be done by two people
- Wear work gloves, category 2, pursuant to EN 388, for handling
- Wear protective goggles/glasses and respiratory protection equipment when processing panels and plates
- Weight of chipboard, 620 x 1820 x 22 mm: 17 kg

**kronospan**  
NOVOPAN TRÆINDUSTRI

**Kronospan ApS**  
Pindstrup | 8550 Ryomgård |  
Tlf. 8974 7400 |  
sales@kronospan-dk.dk |  
www.novopan.dk

**DISCLAIMER** NOVOPAN CLIMATE FLOORING is designed for use in rooms where underfloor heating is to be established. The instructions do not cover the decision to choose underfloor heating, or the structural engineering or installation of the underfloor heating system itself, and KRONOSPAN ApS waives all liability for this. NOVOPAN CLIMATE FLOORING is manufactured under a meticulous quality control process. The product from KRONOSPAN is continuously being developed, and the technical specifications are provided subject to reservations and modifications. Otherwise, please refer to our current Terms and Conditions of Sale and Delivery. January 2019 version 1.0 © offenm.com