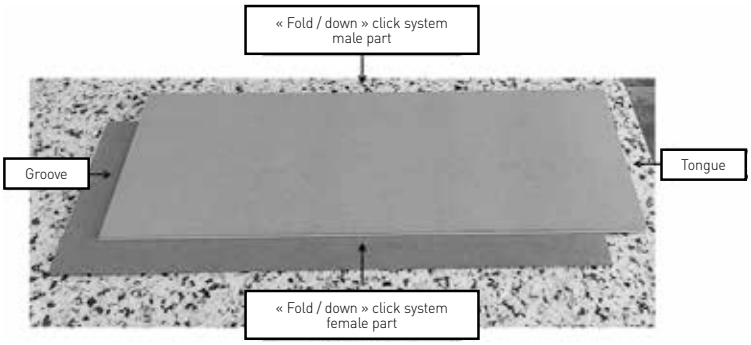
PMO
[709 V1]

INSTALLATION OF THE SUBFLEX SUB-CONSTRUCTION

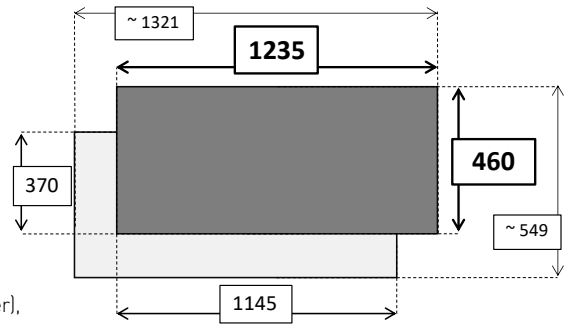
1. SYSTEM DESCRIPTION, TOOLS AND EQUIPMENT REQUIRED

The SUBFLEX sub-construction consists of the combination of a polyethylene film (min. thickness: 200 microns), a layer of foam and wood-based panels.

- The foam is delivered as 1.6 m x 2 m sheets. Thickness: 15 mm.
- The sub-construction panels are composed of two connected boards.
- The sub-construction panels are composed of two connected boards.The surface board has a connection system on its peripheral edge
  - a «fold/down» click system on the lengths,
  - a «tongue and groove» system on the widths.



- Panel size: 1321 x 549 mm. Thickness: 18,8 mm.
- Panel weight: 9,5 kg.
- Usable area of a panel for the first line (overhang cut): 1145 x 370 mm.
- Usable area of a panel for the subsequent lines: 1235 x 460 mm.



- The following tools and equipment are required for installation:
- Polyethylene film with a minimum thickness of 200 microns,
- Scissors suitable for cutting foam,
- Circular saw for cutting panels,
- Router for recessing anchor points,
- 2 cm (minimum) wedges,
- Pull bar and mallet for clamping the panels together,
- Progressive setting wood glue for panel connection (average consumption: 20 g/panel),
- Flexible patching compound for wooden panels as TEC DSP 900 (HB Fuller),
- Sander,
- Primer and roll applicator,
- Floor coverings and associated installation equipment,
- Vented cove base.

2. SUBSTRATES

- New slabs that are permissible for the installation of SUBFLEX sub-construction are:
  - Cement based slabs,
  - Asphalt concrete slabs,
  - Asphalt slabs.

- Old floors that are permissible after thorough cleaning are:
- The substrates above that have not been covered, stripped or prepared by removing the old floor covering and poorly adhered parts,
- Painted floors,
- In-situ glue-down floors on a base of rubber granules or poured over underlays (resins, PU etc.),
- Compact or foam-backed glue-down PVCs protecting the surface from the risk of rising damp*,
- Wooden floors or wooden panels that have not been covered, stripped or prepared by removing the old floor covering and poorly adhered parts; their surface must be protected from the risks of rising damp*; old sportive sub-constructions have to be removed to keep SUBFLEX sub-construction performances.
- Glue-down linoleum where the surface is protected from the risks of rising damp.*

* It is not necessary to install polyethylene film on PVC, wood or linoleum surfaces where the surface is protected from the risks of rising damp.

- Heated floors are not permissible surfaces.

- Installing the sub-construction makes it possible, to a certain extent, to reduce the preparation of surfaces; however, the following requirements must be adhered to:
  - Moisture < 7% in the carbide bomb test for cement based slab,
  - Moisture < 1% in the carbide bomb test for calcium sulfate based slab,
  - Flatness tolerance < 6 mm under the 3 m ruler and < 2 mm under the 30 cm ruler,
  - General flatness tolerance of a height of +/- 1 cm relative to the theoretical height.

- Cracks, construction joints and contraction joints do not require specific treatment.

INSTALLATION OF THE SUBFLEX SUB-CONSTRUCTION

3. ACCLIMATIZATION AND INSTALLATION CONDITIONS

Pallets of panels and foams must be stored in enclosed and ventilated rooms (gym) away from moisture.
The temperature must be between 15°C and 25°C and the ambient humidity (relative humidity) between 40% and 60%.
Once these conditions are met, all protection and packaging of panels and foams must be removed to allow the materials to acclimatize.

These conditions must be maintained throughout the installation.

4. IMPLEMENTING THE SUBFLEX SUB-CONSTRUCTION

4.1 POSITIONING THE POLYETHYLENE FILM

- Polyethylene film sheets (min. thickness: 200 microns) must be placed over the entire surface, going up the peripheral walls a few centimeters.
- Sheets joints are made by covering at least 20 cm. The floor covering is fixed in place using a single-sided adhesive that is at least 5 cm wide and moisture-resistant.

- If renovating on top of a wood or linoleum surface where the surface is protected from the risks of rising damp, it is not necessary to install a polyethylene film.

- Identify where the anchor points are.

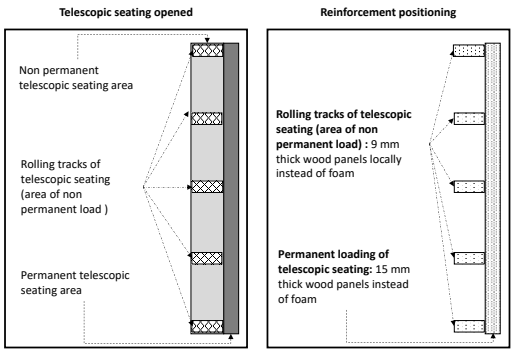
4.2 POSITIONING THE FOAM SHEETS AND REINFORCEMENT FOR TELESCOPIC SEATING

4.2.1 - Foam sheets
- The foam sheets must be laid on top of the polyethylene film over the entire installation.
- The sheets can be cut using carpet scissors. To make things easier, use long scissors.
- Foam sheet joints are made by installing them edge to edge.
- Identify where the anchor points are.

4.2.2 Reinforcement for telescopic seating
If venue has telescopic seating / bleacher, we recommend to place locally wood panels instead of foam considering following rules:

- **Areas with permanent occupation of telescopic seating / bleacher**:
  These areas won't need sportive performances: 15 mm thick (foam thickness) wood panels is used instead of foam sheets.
- **Areas concerned by telescopic seating opening:**
  These areas have to be protected from long time loads.
  Complementary to rolling tracks which will be added under wheels to protect the flooring, areas of foam panels corresponding to the tread surfaces of the rolling tracks may be replaced by 9 mm thick wood panels.
  If telescopic seating placement or rolling tracks placements are not known, 9 mm thick wood panels can be 40 cm wide and positioned spaced-apart from 1 m edge to edge.

  These reinforcements are position in the direction of the opening.

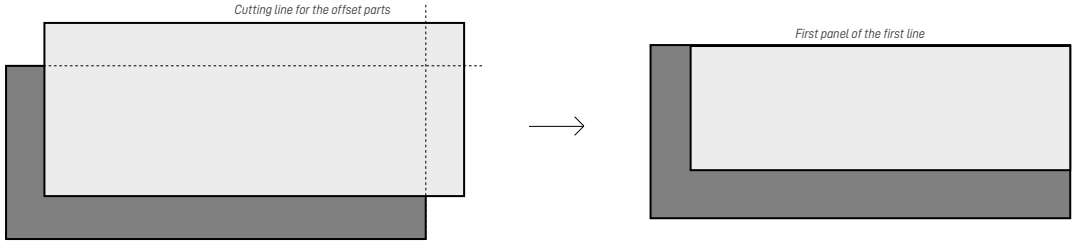


4.3 PANEL INSTALLATION

4.3.1 - Installation requirements
An edge clearance of at least 2 cm is required around the sub-construction.
This can be done by using wedges that will be removed after installation.
The wedges can be put in throughout the installation, where required.
After the floor covering has been installed, the edge clearance can be hidden using a ventilated skirting.

The panels to be cut must retain at least 1/3 of their size in length and width.

To prevent panels from not aligning correctly at the edges, the offset part of the surface board must be cut.
E.g. for the first panel of the first line:

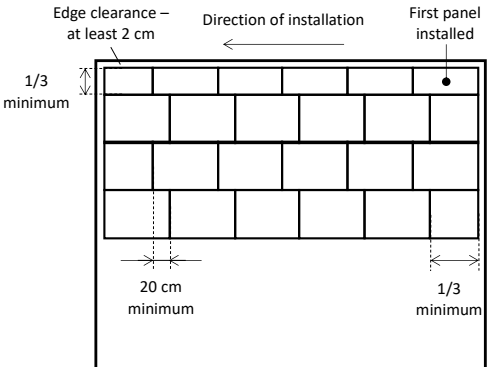


Gerflor

INSTALLATION OF THE SUBFLEX SUB-CONSTRUCTION

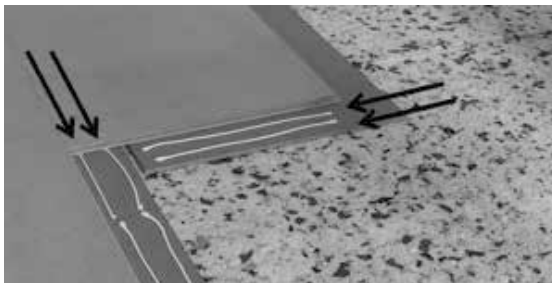
Particular attention must be paid when installing the first two lines. We therefore recommend installing the sub-construction in the width of the room to reduce the length of the panel lines.

- *It is essential that the panels on the first line are correctly aligned to make installing the following lines easier and to avoid gaps between panels.*
- *When installing the second line, check regularly that no gaps have appeared between the panels on the first line when adjusting the edge-to-edge parts.*
- We recommend leaving at least 20 cm between two panel edges.
- As you progress, identify the positioning of anchor points on the panels.

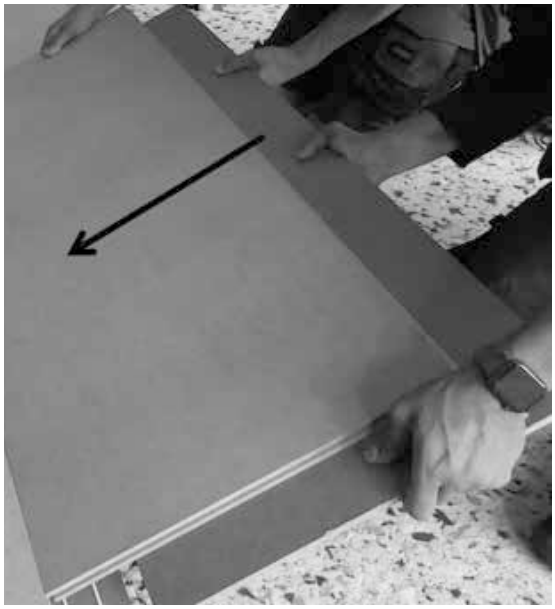


4.3.2 - Panel installation method

1. Before installing a panel, apply 2 glue lines, 5 mm in diameter, to the overhangs on the lower boards of the panels already connected:
   - 1 line along the connection systems,
   - 1 line along the edge.



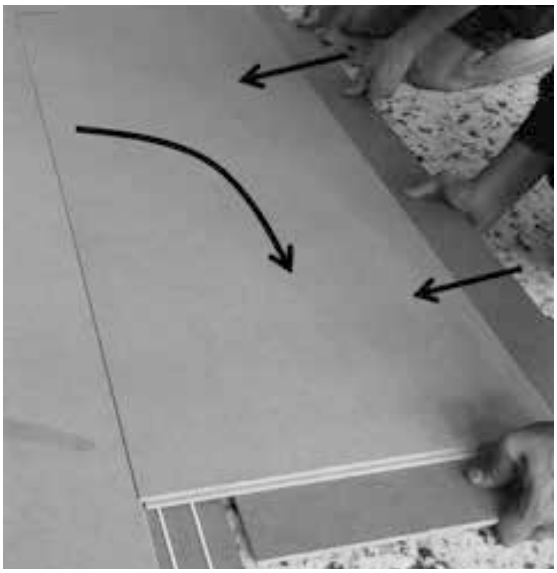
2. Hold the panel to be connected at 45 ° and fit it into the «fold/down» click system.



For a perfect panels fitting, it be may helpful to apply a load located near to the junction of the 2 panels of the previous line..

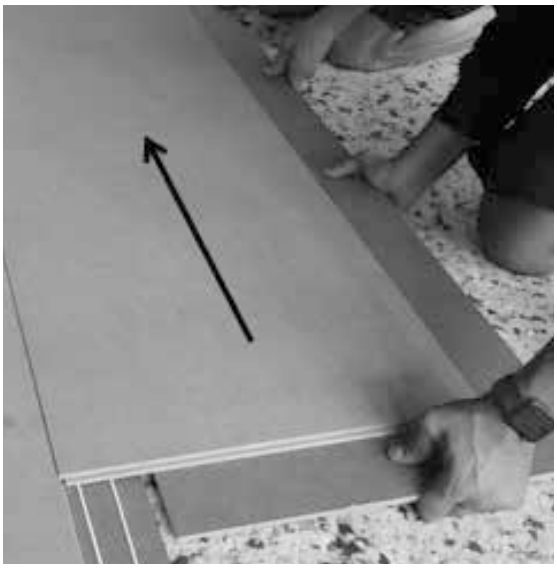
If difficulty to fit panels between each other, check that "fold/down" click system is not damaged or blocked.

3. Lower/push the panel without pressing it to the foam.

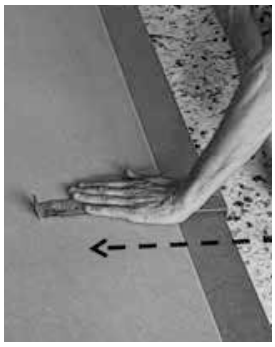


INSTALLATION OF THE SUBFLEX SUB-CONSTRUCTION

4. Slide the panel as close as possible to the previously installed panel and lower the panel onto the foam.



5. Clamp the length of the panel to the previous row using the pull bar and the mallet. The panels must be edge-to-edge.

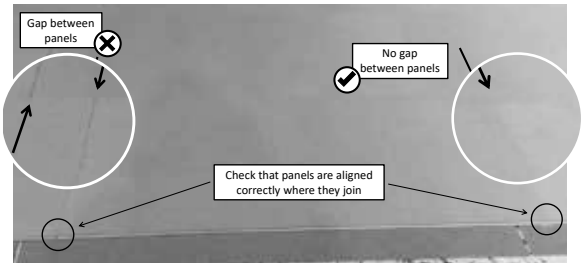


Place the pull bar support against the edge of the lower board so as not to damage the connection system.

6. Clamp the width of the panel onto the previous panel and tap it in with the mallet. The panels must be edge-to-edge.

Place the pull bar support against the edge of the lower board so as not to damage the connection system.
For a perfect panels fitting, it be may helpful to apply a load located near to the junction of the 2 panels previously installed.

7. Visually check that there are no gaps between the panels. Check visually and by touch that the alignment between the panel installed and the panel previously installed is perfect.



4.3.3 - Sub-construction finish

Flaws on panel surface boards (broken corners, impacts, damaged edges, etc.) must be treated with flexible patching compound used for preparing wooden surfaces as TEC 900 DSP (HB Fuller).

If there are any gaps bigger than 0.3 mm between the panels, they must also be treated in the same way.

Anchor points can be cut into panels using a router.

The entire sub-construction needs to be fine sanded (80 – 100 grit) to ensure optimal rendering and to prevent spectrum phenomena: remove potential unevenness at panel joints and in areas treated with flexible patching. Vacuum the entire surface thoroughly.

5. FLOOR COVERING IMPLEMENTATION

5.1 Panel priming

Apply an aqueous dispersion primer for wood surfaces that is suitable for bonding the floor covering to the entire surface of the panels.

5.2 Floor covering installation

The steps, techniques and methods for installing floor coverings on underlayers remain unchanged:
- Acclimatize the floor covering,
- Position the floor covering,
- Apply glue to primed sub-construction: simple gluing with glue according to the supplier's recommendations,
- Attach the floor covering after the setting time,
- Unroll the floor covering,
- Groove edges of the floor covering,
- Hot welding,
- Trimming,
- Finishes; vented cove base (code S140; 10 skirtings of 1,22 m) can be used to cover the edge clearance of 20 mm. It has to be bonded on the wall.

The Installation Guideline for glue-down installation of the Taraflex floors concerned is Installation Guideline 701, available on our website www.gerflor.com.