Uniflair Access Floor

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1. Premise

The TR structure is specifically designed for technical areas such as Data Centres, server rooms, electrical panel rooms, control rooms, and is characterized by the pedestals' high load performance and positioning flexibility.

These properties are due to the combination of long and short crossbeams that are secured to flat or crossed heads with hammer bolts and nuts. By suitably exploiting the long crossbeams, bridges can be created to cross cumbersome systems such as pipes or raceways, or screed interruptions such as trap doors or recessed conduits. The crossbeam "C" profile allows pedestals and reinforcement crossbeams to be freely placed where loads are concentrated, achieving virtually unlimited single load capacities. The ability to place short crossbeams in the panel impression lets you create perimeter support points near walls, without having to cut or alter pedestals. Lastly, reinforced frames can be created using double-height crossbeams that create a base perfectly connected to the floor. The free arrangement of pedestals also allows you to use special format panels, also limited to specific areas such as hallways.

Indications on the most common cases are found in the manual. However, the wide flexibility of the structure lets you create many other solutions suited to specific cases.

2. Component description

The technical room structure is fully made of galvanized steel, with under-head regulation, and includes the following elements:

- support foot with galvanized surface finish (yellow) and height adjustment made up of:
  - 100mm diameter circular base, 2mm, thick, equipped with stiffening ribs and holes for any mechanical floor anchoring;
  - variable length pipe based on floor height and securely fastened to the base, available in the following versions: external diameter 24mm and thickness 2mm; external diameter 26 mm and thickness 3mm;
  - M20 threaded rod, securely fasted to the head with an M20x10mm nut to lock the final height;
  - 120x120mm and 5mm thick flat head, shaped with radial slots to position and secure the crossbeams;
- connection crossbeams that are positioned over the foot heads, made up of an open "C" profile with bends at the bottom to increase bending performance. Available in versions:
  - profile for 600x600mm, section 40x40mm and 2mm thick, lengths 558mm (tolerance +2/-0mm) and 2400mm (tolerance -4/0mm);
  - double profile 840x80mm) for special uses, for dimension or mechanical features (bridges, UPS support frames, switchboards, etc.)
- black polyethylene conductive corner gasket (PE), dimensions 49x49mm and thickness 1.5mm, with anti-diamond function and connection teeth for centring and connection, to be placed at crossbeam intersections. Top equipped with 4 blade teeth for panel positioning and centring;
- black extruded plastic crossbeam gasket, dimensions 547x40mm and thickness 1.5mm, with anti-diamond function and air seal, to be simply pressed onto the crossbeam.
- bolt with M8x25mm hammer screw and anti-rotation flanged nut, to secure the crossbeams to the feet heads. To tighten, use the nut to create a highly rigid and stable structure.

All the described parts are free of burrs or other sharp elements, hazardous during handling and assembly and possible causes of damages to parts (sheaths, wires, etc.) under the floor.

The nominal heights, pitch, adjustment field and axial working load of the single support feet in the available model range are indicated in table 1.

**Warning:** add panel, crossbeam and head gasket thickness to the indicated heights to obtain the finished floor height.

<table>
<thead>
<tr>
<th>Table 1 - Available models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal support height</strong></td>
</tr>
<tr>
<td>[mm]</td>
</tr>
<tr>
<td>from 225 to 925 (pitch 50mm)</td>
</tr>
<tr>
<td>from 975 to 1175 (pitch 50mm)</td>
</tr>
</tbody>
</table>

(1) The break load is obtained by multiplying the axial working load by the safety coefficient equal to 2.
The yield and weight of the single components are indicated in table 2.

<table>
<thead>
<tr>
<th>Component</th>
<th>Piece yield/m²</th>
<th>Weight [g/piece]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support foot</td>
<td>3.3</td>
<td>from 970 to 2070 (55g increase)</td>
</tr>
<tr>
<td>Crossbeam L = 558mm</td>
<td>3</td>
<td>1200</td>
</tr>
<tr>
<td>Crossbeam L = 2400mm</td>
<td>0.9</td>
<td>5200</td>
</tr>
<tr>
<td>Head gasket</td>
<td>3.3</td>
<td>5</td>
</tr>
<tr>
<td>Bolt (M8x25mm hammer screw and flanged nut)</td>
<td>13.2</td>
<td>20</td>
</tr>
</tbody>
</table>

Refer to the EDM for system performance features.
In the event of need, special ventilation grates are available, made up as follows:

- 600x600mm dimension steel panel, made up of a 66x15mm link grate, with perimeter frame, available in two heights: 30mm and 38mm.
- Under-grate air control accessories
  - Steel shutter unit, with 4 pre-cut holes to regulate airflow.
  - Damper flow regulation unit
  - Active Floor forced ventilation unit

*Note: regulation units are directly installed on the structure.*
All system elements are packaged separately on pallets or in appropriately sized boxes. If components are supplied by a Schneider Electric distribution centre, their supply is by SKU, made up of:

<table>
<thead>
<tr>
<th>Description</th>
<th>SKU code</th>
<th>no. pieces</th>
<th>Dimensions [mm] and weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>40LAL panel</td>
<td>9FPA40LAL</td>
<td>48</td>
<td>Width 600 Length 1200 Height 1065 Weight 540</td>
</tr>
<tr>
<td>30KAL panel</td>
<td>9FPA30KAL</td>
<td>32</td>
<td>Width 600 Length 600 Height 1120 Weight 585</td>
</tr>
<tr>
<td>35KAL panel</td>
<td>9FPA35KAL</td>
<td>28</td>
<td>Width 600 Length 600 Height 1110 Weight 580</td>
</tr>
<tr>
<td>40LFL panel</td>
<td>9FPA40LFL</td>
<td>24</td>
<td>Width 600 Length 600 Height 1075 Weight 295</td>
</tr>
<tr>
<td>30KFL panel</td>
<td>9FPA30KFL</td>
<td>32</td>
<td>Width 600 Length 600 Height 1130 Weight 620</td>
</tr>
<tr>
<td>35KFL panel</td>
<td>9FPA35KFL</td>
<td>28</td>
<td>Width 600 Length 600 Height 1120 Weight 610</td>
</tr>
<tr>
<td>40LAV panel</td>
<td>9FPA40LAV</td>
<td>48</td>
<td>Width 600 Length 1200 Height 1090 Weight 560</td>
</tr>
<tr>
<td>30KAV panel</td>
<td>9FPA30KAV</td>
<td>32</td>
<td>Width 600 Length 600 Height 1155 Weight 605</td>
</tr>
<tr>
<td>35KAV panel</td>
<td>9FPA35KAV</td>
<td>28</td>
<td>Width 600 Length 600 Height 1140 Weight 595</td>
</tr>
<tr>
<td>40LFV panel</td>
<td>9FPA40LFV</td>
<td>24</td>
<td>Width 600 Length 600 Height 1100 Weight 305</td>
</tr>
<tr>
<td>30KFV panel</td>
<td>9FPA30KFV</td>
<td>32</td>
<td>Width 600 Length 600 Height 1165 Weight 640</td>
</tr>
<tr>
<td>35KFV panel</td>
<td>9FPA35KFV</td>
<td>28</td>
<td>Width 600 Length 600 Height 1150 Weight 620</td>
</tr>
<tr>
<td>Support head</td>
<td>9FST001</td>
<td>16</td>
<td>Width 580 Length 175 Height 175 Weight 12</td>
</tr>
<tr>
<td>Bolt</td>
<td></td>
<td>64, 32</td>
<td></td>
</tr>
<tr>
<td>Corner gaskets</td>
<td>9FST002</td>
<td>16</td>
<td>Width 580 Length 175 Height 175 Weight 20</td>
</tr>
<tr>
<td>Crossbeam gaskets</td>
<td>9FST003</td>
<td>4</td>
<td>Width 2400 Length 80 Height 80 Weight 20</td>
</tr>
<tr>
<td>Crossbeam L = 558mm</td>
<td>9FST101</td>
<td>16</td>
<td>Width 580 Length 175 Height 175 Weight 5</td>
</tr>
<tr>
<td>Crossbeam L = 2400mm</td>
<td>9FST104</td>
<td>16</td>
<td>Width 580 Length 305 Height 175 Weight 8</td>
</tr>
<tr>
<td>Support base H= 160mm</td>
<td>9FST105</td>
<td>16</td>
<td>Width 580 Length 305 Height 175 Weight 9</td>
</tr>
<tr>
<td>Support base H= 310mm</td>
<td>9FST106</td>
<td>16</td>
<td>Width 580 Length 305 Height 175 Weight 9</td>
</tr>
<tr>
<td>Support base H= 360mm</td>
<td>9FST107</td>
<td>16</td>
<td>Width 580 Length 305 Height 175 Weight 10</td>
</tr>
<tr>
<td>Support base H= 410mm</td>
<td>9FST108</td>
<td>16</td>
<td>Width 580 Length 305 Height 175 Weight 11</td>
</tr>
<tr>
<td>Support base H= 460mm</td>
<td></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Support base H= 510mm</td>
<td></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Support base H= 560mm</td>
<td></td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>
3. Site tools
Below is a list of the main site tools that are helpful and required for correct installation.

Handle with suction cups to lift panels

Toolbox
Flooring for technical rooms with TR Structure

- Percussion drill
- Screwdriver
- Grinding wheel
- Laser level
- Coloured chalk
Circular saw

Shears to cut structure elements

Vacuum cleaner

Nylon cord to trace reference axes

Measurement accessories for linear distances
Flooring for technical rooms with TR Structure

- Dust-proof paint for screeds
- Base glue
- Floor protection
- Safety and area confinement signs
4. Safety and waste disposal
The processing of waste materials is regulated by legislative obligations which identify the competent figures. There are many process phases:

■ summary cleaning and stacking of waste materials: the floor is cleaned from installation scraps. All the cleaning materials and the packaging are stacked on the installation level at the collection point indicated by the works supervisor;
■ lowering of materials: the materials collected at the installation level are lowered using the lifting equipment of the construction site by authorized operators;
■ handling and stacking to the collection point inside the construction site: the materials are transferred from the collection point or lowered point to the designated construction site area, using the construction site transport by authorized operators;
■ shipping to disposal or reuse sites: materials are loaded on authorized transport means up to the point of disposal, recycling or reuse.

The installer must follow all the safety rules during the installation procedures in accordance with installation manual and country laws. The operators have to equip with all the mandatory safety device. All tools must be certified in accordance with country laws where the construction site is localized. Tools and equipment must be used only by the specialized operators.

The construction site waste have to be disposed in accordance with the environmental local laws. The product characteristics are reported in the technical data sheet.

5. Preliminary operations for floor installation
5.1. Design and layout check
The installer must check the design before starting work on site.

The design should include the position of machines and systems under the floor.

For better frame and long crossbeam layout, it should indicate:

■ the panel frame starting point and preferential long crossbeam direction;
■ frame profiles for perimeter air conditioning panels or machines to be created with double-height crossbeams;
■ concentrated load points, such as rack feet, which may require reinforcement pedestals and/or profiles;
■ the position of cumbersome systems that must be crossed using bridges with long crossbeams.

A floor installation network drawing is created with a dimensional survey.

In the absence of a layout, the network is positioned calculating the lesser waste, with the long crossbeam (2400 mm) parallel to the long side of the room, if possible avoiding small portions of perimeter panels.

Always avoid choosing whole panels on the perimeter walls since these are not perfectly linear and thus do not offer adequate contrast, and almost never ensure correct panel alignment. When possible, it is best to avoid side perimeter panels under 150 mm to avoid jeopardizing stability.

The preliminary execution of the quoted drawings, with floor layout, lets you check the exact quantity of materials required and the size of the perimeter panels, as well as providing the designer and system workers with support positions. Systems must be positioned without interfering with floor columns. There should be no systems in rigid conduits along the entire perimeter.
5.2. Trace the area to be floored

To facilitate system placement, you can trace the floor on the ground and mark support positions with coloured paint. This can be performed in different modules, but always in multiples of 600 mm (i.e. 600x600 mm - 1200x1200 mm - 1800x1800 mm, etc.) or following the design layout.

Once the floor grate is established, secure two taut and orthogonal wires just over the screed surface (Fig. 3)

With coloured chalk, using the orthogonal wires as a reference, traces parallel lines at the required distance from the module, until a grid is achieved (Fig. 4)
Fig. 3

Lastly, with paint, mark all traced line intersections (Fig. 5)

Fig. 4

5.3. Storage, installation and use conditions
For these aspects refer to the following instructions.

5.3.1. Storage and use conditions
On receipt of goods verify the integrity of the load and the packaging. The damaged pallets have to be replaced, ensuring the safety of cargo and people.

The handling must be performed by means adapted to the pallet size. Pallets must not be pushed or dragged and must be laid on flat surfaces, horizontal and solid.

The stacking is allowed only if provided by the manufacturer and following all the instructions given on the packaging and in the technical documentation.

Panels must be stored in dry and protected places with temperature between +10°C and +40°C and relative humidity between 40% and 75%, unless otherwise indicated by manufacturer.

It is always recommended to follow the production batches sequence and to separate panels type and finishing to simplify the collection operations and avoid tone differences during installation.
5.3.2. Site handling
The unloading of the truck must be done by suitable means and tools. The unloading area must be flat, smooth and must ensure suitable maneuvering space in respect of the safety regulations. Panels must be stored in a suitable place, protected from the atmospheric phenomena, immediately after unloading.
All lifting operations must follow the safety procedures and be performed by personnel authorized to use expected means and tools. The landing area must be free of obstacles at the installing level and provided with appropriate protections against the risk of falling. The below area must be cordoned off and closed to transit of vehicles and people.
In case of handling at the installation level, regular and flat paths must be provided, suitable for pallet truck passage, avoiding systems interferences to ensure the stability of the load and the safety of persons. The transition from one room to another must be kept free of obstructions.

Fig. 6 – Site handling.

5.3.3. Site conditions
The access floor must be stored in dry and protected rooms with temperature between +10°C and +40°C and relative humidity between 40% and 75%, unless otherwise indicated by manufacturer. If in the access floor plenum piping systems are expected with fluids at temperatures such as to provide temperature and humidity values outside the ones prescribed, it is recommended to suitably insulate the heat sources and to provide a suitable ventilation in order to go back to normal conditions.
The masonry work, including finishing works, must be completed and should not release moisture in the environment. The residual moisture of the building materials must not exceed 2%.
The rooms must be equipped with windows and doors.
The slab must be flat, firm, dry and free of cracks, without dips, bumps and insulated from moisture through time. The flatness is assessed by metal rigid straight with square or rectangular section, length 2 m, settled on the slab in any direction, also in the perimeter areas. The flatness is suitable for installation when in any of the measuring positions the difference in height is less than 2 mm. Before installation the slab must be clean and free of wastage materials.
6. Floor installation
6.1. Screed preparation
We recommend treating the screed with suitable dust-proof paint, generally vinyl or polyurethane; its purpose is to secure the screed surface and avoid the subsequent formation of dust. Paint is always recommended and becomes essential when the supports are glued or when the under-screed plenum is used for air conditioning distribution. To paint correctly without wasting product, clean and accurately dry the screed in advance (Fig. 8). Paint should be applied with a roller or brush, including the vertical part of the walls under the floor (Fig. 9). When finished, let the paint dry for the time indicated by the manufacturer before entering the painted rooms.

Note: make sure dust-proof paint is compatible with the support glue.

6.2. Installation procedure
6.2.1. Installation axis positioning
Installing the floor starts with positioning the two orthogonal starting axes as previously agreed with the Work Supervisor (D.L.) and/or as indicated in the design drawings or layout previously traced on the floor.
The operation is performed at the centre of the room, securing a pair of taut, orthogonally crossed nylon wires to the walls, at a height just above the floor.
To determine the orthogonality (90°) of the two wires, apply the Pythagorean theory, or more simply the "3-4-5" formula: starting from the intersection of the two references, mark 3 m on one wire and 4 m on the other; the diagonal between the two points should be 5 m. Use the maximum side dimensions possible, since the longer the diagonal, the lesser the margin of error (Fig. 10).

Fig. 10

6.2.2. Structure installation

Phase A
Starting from the intersection of the two orthogonal wires, start installing the first four 600x2400mm modules (9 pedestals, 6 long crossbeams and 6 short crossbeams) making sure the structure is aligned with the wires (Fig. 11).
The crossbeam assembly sequence on the pedestal heads is as follows:

- approximate column adjustment to the finished floor height (HPF less the panel thickness less the crossbeam thickness);
- approximate positioning of pedestals at tracing points;
- alignment of crossbeams on heads, being sure to partially tighten screws at the end of the crossbeams (Fig. 12 and 13).

Phase B
After aligning the structure with the axes, perform the remaining operations:

- fine tune the crossbeam alignment with the main axes indicated by the nylon wires;
- using a laser level and referring to the site quota, level the structure (Fig. 14).
- fully tighten the head/crossbeam coupling screws, apply at least 20Nm torque (Fig. 15).
Phase C
Complete the assembly of all whole modules, supports and crossbeams, being careful to secure them to size 600x600mm (Fig. 16).

Phase D
Accurately insert all gaskets, first on heads and then on crossbeams (Fig. 17).

6.2.3. Panel installation
Phase A
Place the first panel with one of the corners perfectly matching the intersection of the two orthogonal wires. Next, place a second panel next to the first, keeping the alignment with the orthogonal references. Continue installing 2 rows of panels, make sure they securely rest on the four corners and are perfectly aligned. Pay special attention to planarity, orthogonality and relative and absolute alignments (Fig. 18).

Note: for directional covers, place panels in the direction of the covers according to the design or the customer's instructions.
Phase B
In floor installations with height over 500 mm or in panel rooms, we recommend you fasten supports to the screed with glue (Fig. 19). To achieve stability, alignment, planarity and an even surface of all panels, it is important not to stress the floor during installation for at least 8 hours after applying glue, corresponding to the minimum time necessary for sufficient adhesion. Alternatively, expansion dowels can be used for anchoring (Fig. 20).

Phase C
Continue structure and panel installation in parallel rows, being sure to continuously monitor orthogonality, modularity, planarity and the arithmetic finished floor height (Fig. 21 and 22).
6.2.4. Perimeter areas

Cut the perimeter crossbeams to the correct size. Secure them to the heads with the relevant screws and, with a level, position all supports at the necessary height. The crossbeam that runs along the wall can be positioned on the head of the supports in an offset position, exploiting the head side slot.

Cover the supports and crossbeams with the relevant gaskets. Crossbeam gaskets should be cut to the right length, while the two fins should be cut in the head gaskets, parallel to the wall.

Complete the floor by cutting the perimeter panels to size. To guarantee efficient contrast, adjustments must perfectly follow the perimeter wall shape. Do not use indelible pencils. In this phase, be careful that the portion of the panel to be placed near the wall is free of defects.

*Note: when cutting and marking panels, be careful of cover direction.*

With a ruler, determine the size and position of any fittings required to insert systems, columns, etc. Cut the panel with care. On the border of the wall perimeter, compensate empty spaces with the specific sealant adhesive gasket (typically made of non-decaying, anti-condensation closed cell EPDM rubber based material, with excellent air, dust, water and noise proof properties).

Install the cut panels (Fig. 23 and 24).

*Fig. 23 - Perimeter completion diagram on side parallel to 588mm long crossbeams*
Note: to eliminate the release of small quantities of dust from the cutting surface, a protection can be applied to the part of the panels cut on site using waterproof paint.

6.2.5. Panel Cutting

This section explains the recommended procedure to cut Uniflair Access Floor panels around perimeters or wherever a cut is needed. Panels are usually a combination of different materials (covering, core and backing), and it's important to choose the proper cutting tool to achieve the best installation results.

Table 1 – Panels cutting table

<table>
<thead>
<tr>
<th>Backing</th>
<th>Calcium Sulphate</th>
<th>Chipboard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Whole panel: cut with circular saw (widia blade)</td>
<td>Whole panel: cut with circular saw (widia blade)</td>
</tr>
<tr>
<td>Covering</td>
<td>Backing: cut the steel sheet with cut-off grinder</td>
<td>Backing: cut the steel sheet with cut-off grinder</td>
</tr>
<tr>
<td>Bare, Aluminium, Laminate, Vinyl, Linoleum, Rubber, Carpet, Natural wood</td>
<td>Remainder: cut with circular saw (widia blade)</td>
<td>Remainder: cut with circular saw (widia blade)</td>
</tr>
<tr>
<td>Ceramic, Stoneware, Reconstituted stone, Natural Stone</td>
<td>Finishing: cut with circular saw (diamond blade)</td>
<td>Finishing: cut with circular saw (diamond blade)</td>
</tr>
<tr>
<td>Core</td>
<td>- Covering: cut the steel sheets with cut-off grinder</td>
<td>- Core: cut with circular saw (widia blade)</td>
</tr>
<tr>
<td></td>
<td>- Remaining: cut with circular saw (diamond blade)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Remaider: cut with circular saw (widia blade)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: All cuts must maintain the original edge inclination angle of the panel which is approximately 4°. This helps the laying of the panels on the perimeter.
The Table 2 matches each material with the proper cutting tool. Stand cutting machines ensure more safety and precision to the cut, they can be integrated with a portable round saw for small trimming or when multiple cutting tool is required by the panel.

<table>
<thead>
<tr>
<th>Material</th>
<th>Cutting Machine</th>
<th>Cutting Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare, Aluminium, Laminate, Vinyl, Linoleum, Rubber, Carpet, Natural wood</td>
<td>Dry Tile cutter for angle cuts (use wet mode when cut Ceramic + Calcium sulphate)</td>
<td>Widia blade</td>
</tr>
<tr>
<td>Ceramic, Stoneware, Reconstituted stone, Natural Stone</td>
<td>Or portable round saw (small cut/finishing/other trimmings)</td>
<td>Diamond blade</td>
</tr>
<tr>
<td>Chipboard / Calcium sulphate</td>
<td></td>
<td>Widia blade</td>
</tr>
<tr>
<td>Steel</td>
<td>Grinder</td>
<td>Cut-off wheels disc</td>
</tr>
</tbody>
</table>
The Table 3 explains some helpful tips during cutting phase.

<table>
<thead>
<tr>
<th>Material</th>
<th>Procedure</th>
<th>Cutting Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Panel</td>
<td>The best way to cut off a whole panel is to cut each faces leaving some millimetres on the core, then separate the panel breaking it by hand.</td>
<td>Check the material recommendations</td>
</tr>
<tr>
<td>Steel sheet</td>
<td>Steel sheet may worn other type of saw during the cutting phase of the core. Create clear zone to operate by make two cut alongside the real cutting line and then strap off the band of steel sheet. Now you can cut the core more easily.</td>
<td>Steel Grinder</td>
</tr>
<tr>
<td>Chipboard</td>
<td>Please be sure to cut chipboard with proper blade this avoid any undesired smoke and burn.</td>
<td>Check the covering and the backing recommendations</td>
</tr>
<tr>
<td>Calcium sulphate</td>
<td>Calcium sulphate produces dust during cutting phase, prefer wet mode cutting when the covering allows for that.</td>
<td>Check the covering recommendations</td>
</tr>
<tr>
<td>Covering</td>
<td>When covering and core require different blades (e.g. ceramic with chipboard) the cutting depth can exceed the covering not more than few mm.</td>
<td>Check the material recommendations</td>
</tr>
</tbody>
</table>

6.2.6. Special cases

One of the greatest advantages of using the TR structure is high installation flexibility, which can meet and resolve various special cases that require a different structural element layout than that used for the standard floor module.

Below are some of the most frequent cases.

6.2.6.1. Bridging systems

Under-floor interferences may be larger than the floor module (typically 600mm). In this case, the 2400mm long crossbeam must be placed perpendicular to the systems to be bridged and then the supports should be moved next to the systems, exploiting the possibility that their heads can be connected at any point on the overhead crossbeam (Fig. 25).

Note: please consider that load capacity is reduced when the distance between two supports along the same crossbeam is increased.
6.2.6.2. Perimeter zones with obstacles

Systems that prevent supports from being positioned along walls are often placed along perimeters, as indicated in the standard installation diagram. For encumbrances up to a maximum of 150mm, simply move the last row of supports and relevant crossbeams from the wall to avoid the interference, securing them along the orthogonal crossbeam before the panel corner.

6.2.6.3. Single reinforcements

When racks or, in general, highly concentrated loads are placed on the floor, a single reinforcement may be required. It can be created with an additional pedestal, which the structure allows you to connect to the standard link through an additional crossbeam and two connection plates (Fig. 27). The latter can be created like the support head plate.

6.2.6.4. Frames with extra profile

If switchboards or racks that rest on a dedicated frame instead of directly on the floor are positioned on the floor, a special support can be integrated directly in the floor structure. The support frame is constructed using profiles twice as tall as those used for the standard floor, dimensioned and positioned near rack supports. The corners of the frame thus created are then placed on 4 floor supports, connecting the crossbeams on the internal side of the heads and therefore coupling a normal height crossbeam on the external side. This frame is then connected to standard floor modules using custom cut crossbeams. The floor edge is completed with custom...
6.2.6.5. Cross bracing

Some floor zones may need to be made especially stable in the horizontal direction. This is because the perimeter wall resistance cannot be relied upon or because specific load passage areas or areas subject to heavy horizontal loads need to be reinforced. In this case, a cross bracing is used made up of a metallic pipe similar to the standard floor support. This is secured to the tip of the support and support screed with expansion dowels. For correct installation, the cross bracing is positioned on the support head without fully tightening the eye lock screws. The cross brace is only locked on the screed and the eye tightened once the correct support position has been verified.

6.2.6.6. Grounding

In some cases, floor grounding connections are expressly required. This is done by connecting the structure head to the grounding mains using a cable with suitable section. The head is connected by a cable terminal eye, secured on one of the screws used to couple the head plate and crossbeams.

Note: the number of supports to be connected varies according to the instructions in single specifications.
6.3. Accessories
Floor installation is completed by means of numerous accessories, depending on specific needs.

6.3.1. Ramp
A ramp can be inside or outside the floor. It is made up of a tilted surface with a standard non-slip "one hundred groove" black rubber lining and an underlying steel frame. Usually, the ramp connects the offset between the fixed and floating floors. However, in some cases the ramp can be used to connect two zones with floating floors of different heights. The gradient is regulated by local laws and according to the space available, and therefore according to customer specifications.

For an internal ramp, once the position where the ramp is to be installed is set, panels must be cut to create the housing compartment. A stop is then placed against the edge of the panel that acts as a side riser and secured to the screed with dowel screws and common metal corner brackets, the height of which is proportionate to the stop. The metallic frame is then secured on the back of the ramp (Fig. 31).

Note: ramps for small offsets can be made of integrated wood frames.

The assembled ramp is then inserted in the previously created compartment with the lateral side stops. It is then height-adjusted using the threaded frame feet and secured to the stops with
wooden screws inserted under the floor. Alternatively, it can be anchored to the floor with dowel screws (internal ramp, Fig. 32).

It is best to check the efficiency of the brackets, the cuts and the corner and stop coupling, as well as the screw torque. For an external ramp, the stops are secured under it, close to the side parts (Fig. 33).

6.3.2. Step
Steps can be inside or outside the floating floor. They are used to connect two floors on different levels. Steps are covered with non-slip "one hundred groove" black rubber lining. Following construction criteria, the step must have a 30cm foot support space (tread) and an average height between treads of 17cm (riser). This data is subject to change according to the height to be exceeded or according to customer requests. For internal steps, once the position is established, panels must be cut to create the compartment to insert them in the floor. At this point, a stop that acts as a riser against the panel edge is positioned and secured to the screed with dowel screws and common metal corner brackets, the height of which is proportionate to the stop (Fig. 34).
The step is then rested against the stop and secured from underneath the floor with common wooden screws. The closing stops must be installed at the exact floor height; they are equipped with an aluminium corner guard, to be secured with simple wooden screws on the stop thickness, aesthetically completing it (Fig. 35).

6.3.3. Aeration vents
In a rack room, cooling air is generally conveyed to the front of the rack or in specific positions. For this purpose, specific metallic grate panels, sized 600x600mm, are available and exchangeable with standard floor panels, guaranteeing complete modularity and flexibility for the floating floor solution (Fig. 36). Any airflow regulation or shutter accessories in the Schneider Electric solution are placed over the structure, independent of the overlying grate.
6.3.4. Electrical accessories

When wires or various systems must be passed from the under-floor plenum to the part over the floating floor, specific accessories that allow for the passage of these systems are used to minimize air loss. These are accessories that can be installed directly on site but that require the host panels to be cut. If pre-cut panels were not ordered, this work must be completed during installation.

Note: please remember that it is best to cut all floor elements in a room other than the one that houses the installation, to prevent the creation of dust and processing scrap.

7. Floor completion and delivery

Once each single room installation is completed, the floor must be generally cleaned of dust and work scraps before protective surfaces or linings, if foreseen, are applied and before other work or system interventions are performed.

7.1. Acceptance criteria

During the conformity inspection of the work acceptance it is good to refer to objective guidelines. Furthermore, the occurrence of subsequent accidental facts after acceptance of conformity, such as damages resulting from processes on the unprotected surface, handling of loads exceeding the expected capacity load, extreme temperature and humidity conditions, flooding, access to the floor
by panels removal, wrong cleaning of the finishing and the panels, from which the decay of the conformity compliance criteria follows, especially integrity, alignment, flatness and sealing, they are not attributable to the product itself or the installation.

The main aspects to be verified are:

- integrity of the finishing;
- tonality and color uniformity of the finished floor;
- finish floor height (FFH);
- panels flatness and correct leveling between them;
- alignment and squareness of panels and joints;
- stability and correct installation of the panels on the structure;
- perimeter containing and finishing;
- compression between adjacent panels;
- correct application of the design requirements about the attenuation of airborne and impact noise;
- correct application of the design requirements about the plenum air containment under the floor;
- check the electrical properties of the floor.

In order to certify the inspection, a standard form can be filled out with the items listed above and all main data. Below is an example of this form.

<table>
<thead>
<tr>
<th>Site information</th>
<th>Name</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Acceptance criteria</th>
<th>Evaluation</th>
<th>Note</th>
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<tbody>
<tr>
<td>Integrity of the finishing</td>
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<tr>
<td>Tone</td>
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<tr>
<td>Finish floor height (FFH)</td>
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<tr>
<td>Flatness</td>
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<tr>
<td>Alignment</td>
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<td>Stability</td>
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<tr>
<td>Perimeter containing</td>
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<tr>
<td>Compression</td>
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<tr>
<td>Acoustic</td>
<td>☐ Yes ☐ No</td>
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<tr>
<td>Plenum air containment</td>
<td>☐ Yes ☐ No</td>
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<tr>
<td>Electrical properties</td>
<td>☐ Yes ☐ No</td>
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<table>
<thead>
<tr>
<th>During the verification have any non-compliance been observed?</th>
<th>☐ Yes ☐ No</th>
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<tbody>
<tr>
<td>Have they been solved or has a solution been defined?</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>The customer has been informed</td>
<td>☐ Yes ☐ No</td>
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Comments

Composition of audit team

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
<th>Signature</th>
</tr>
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<tbody>
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<td>3</td>
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</tbody>
</table>

Review data:
7.2. Protection

The finished floor inspected by the customer must be kept free of damage due to other work later performed on its surface.

The most common protections are:

- Single protection: layer of nylon or non-woven fabric film to protect the surface from simple footprints, dust and light.
- Double protection: layer of non-woven fabric film and additional layer of chipboard panels to protect the surface from heavy-duty workloads.
- Catwalks: wooden guides positioned over the non-woven fabric to distribute heavy loads transported with wheeled trolleys.

Only when work is completed can the protection be removed and cleaning performed according to the instructions (see chapter 6.4).

Note: there is no protection against floating floor flooding and unsuitable environmental conditions. Therefore, all the instructions regarding the use of liquids and observance of thermal-hygrometric conditions remain applicable, even with protections installed, according to that indicated in the documentation enclosed in original packaging.

7.3. Maintenance and correct use of the access floor

To avail of the flexibility and accessibility of the floor it is very important to perform a correct maintenance in order to keep it in good conditions through time. Therefore the maintenance operations must be performed in compliance with the following guidelines:

- the opening and reclosing of the raised floor must be performed correctly, avoid breaking the corners and the edges of the panels, raising and lowering vertically the panels by a suitable tool (depending on the upper finishing), without dragging and bumping the panels among them;
- if it is necessary to access to the plenum under the floor it is recommended to remove a minimum number of panels. It is recommended an alternated removal of the panels and as much as possible to avoid removing perimeter ones;
- the removed panels must never be placed directly on the surface of the surrounding panels. It's always advised to interpose a protective layer (cardboard, nylon, etc.) between the surfaces of the panels;
- before repositioning the panels make sure that all structure’s gaskets are positioned correctly and there are no fragments or foreign objects on the panel supporting surfaces;
- the load or materials handling on top of the access floor is recommended using a manual traction pallet truck on appropriate boardwalks to distribute the load, being careful not to exceed the maximum allowed loads listed on product specifications;
- for any modification of the floor, it is recommended to contact specialized operators. Anyway, the specific instructions provided by the manufacturer must be respected.