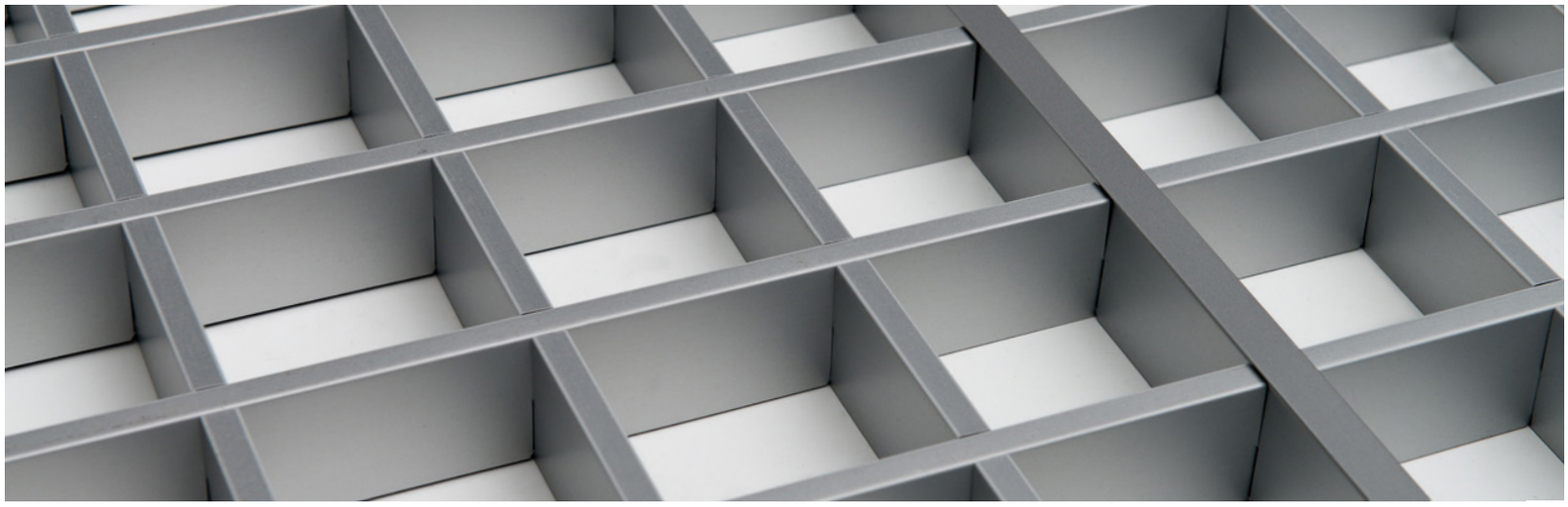


Milan Open Cell
/THU

The Milan open cell makes it possible to create a setting in which light plays a key role in creating shadows. The wide selection of colours and variations offers a wealth of finish options.

The 600x600 mm open cell modules are designed to be mounted directly onto an exposed structure composed of removable false ceiling T15 profiles. This system is designed to ensure that the open cell and FTD structure have the same finish and colour, ensuring that the modules blend in seamlessly with the colour of the structure; in models with 15 mm ribs, they also have the same width, creating a sense of complete visual continuity.

The Milan open cell system is as easily accessible as any supported panel system, with each individual module being accessible in a matter of seconds.

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THU/ **Milan Open Cell**

DOCUMENT INFORMATION

DOCUMENT VERSION
Version 01 / 01-07-26

LATEST VERSION

To view the latest version of this document, scan this QR code.

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INFO/ **Milan Open Cell**

GENERAL DESCRIPTION

The Milan open cell is made of pre-lacquered aluminium with a height of 38 mm and a rib width of 15 mm. There is also a version that is 40 mm high, with a rib width of 10 mm. The system forms 600x600 mm panels, with the internal square size varying by model.

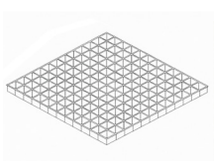
The open cell modules are inserted into a structure composed of primary and secondary T-shaped profiles that are 15 mm wide. The structure is supported by the upper framework via hanger parts and threaded rods that are fixed to the primary profiles.

There is a wide range of open cells. Interior: 50 (12x12 squares), 60 (10x10), 75 (8x8), 86 (7x7), 100 (6x6), 150 (4x4) and 200 mm (3x3 squares). The open cells are assembled at the factory.

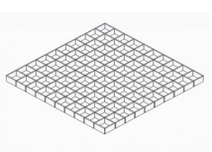
Item	Material	Width-Thickness	Surface	Size (mm)
primary T15 profile	steel	15/-	smooth	15x38x3700 mm
secondary T15 profile	steel	15/-	smooth	15x38x600-1200 mm
Milan Open Cell	aluminium	595x595/0.4 mm	smooth	38-40x595x595x10-15 mm

CUSTOMISATION

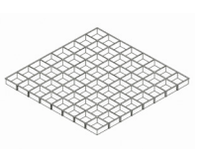
cell size



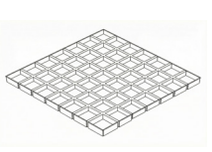
50x50 mm (12x12)



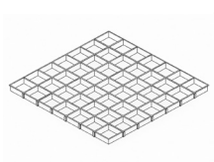
60x60 mm (10x10)



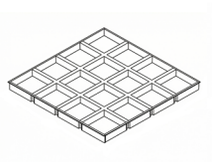
75x75 mm (8x8)



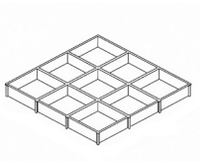
86x86 mm (7x7)



100x100 mm (6x6)



150x150 mm (4x4)



200x200 mm (3x3)

standard colours

Silver 9006

White 9010

Black 9005

Other sizes, colours and perforation rates available on request.

RAW MATERIALS

Characteristics of the raw materials

Product formed by cold rolling, manufactured from 0.40 mm aluminium sheets. The parts have a pre-lacquered polyester finish with a coating thickness of 25 microns in black, white and silver. This type of finish is highly resistant to corrosion and offers excellent durability (gloss and colour retention). Open cell grids can be supplied in any other colour, subject to specific supply conditions.

PERFORMANCE

Key Characteristics	Performance Features	Harmonised Technical Specifications
Reaction to fire	A1	UNE-EN 13501-1:2019
Asbestos content	None	-
Durability	Class B	UNE-EN 13964:2016

PROPERTIES

Reaction to fire tests at AFITI (UNE-EN 13501-1:2019)

4205T20-2 ALUMINIUM test. Result Euroclass A1. Non-combustible product (no contribution to fire).

Acoustic absorption and insulation

Ceilings with Milan open cell modules do not have acoustic properties as they are merely for decorative and aesthetic purposes. However, it is possible to place mineral wool panels with an acoustic veil or any other material with absorbent properties on top of the open cell grids to acoustically fit out the area and/or hide the facilities inside the upper framework.

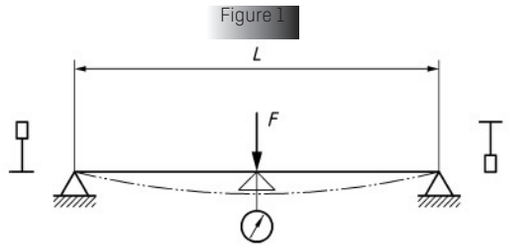
Reaction to fire tests at AFITI (UNE-EN 13501-1:2019) T15 and T24 substructure

4292T21 test. Result Euroclass A1. Non-combustible product (no contribution to fire).

Mechanical tests at AIMME (UNE-EN 13964:2006)

Load-bearing capacity test report S07-00098. Bending and suspension tests for the T24-38, T24-33 and T15 hanging systems: The system is mounted on a T-profile system for a removable technical ceiling using the recommended suspension method shown in the diagram (Figure 1). A load test is also carried out to measure bending deformation in accordance with section 5.2 of the standard (Figures 2, 3 and 4), comprising 10 bending tests with a span length of 1200 mm for a Class 2 deflection (L/300 = 4 mm).

Figure 1



a) T-section in the positive position

Legend

F Load

L Span

- T24-38 primary profile, 3.7 m, height 38
- T24-38 secondary profile, 1.2 m, height 38
- T24-38 secondary profile, 0.6 m, height 38

Bending test data (T24-38):

- Maximum permissible permanent deflection = 0.20 mm
- Average permanent deflection = 0.13 mm
- Flexural rigidity (EI) (Class 2) = $1.59x10^9$ N·mm^2
- Permissible bending moment (Class 2) = $2.65x10^4$ N·mm

- T24-33 primary profile, 3.7 m, height 33
- T24-33 secondary profile, 1.2 m, height 33
- T24-33 secondary profile, 0.6 m, height 33

Bending test data (T24-33):

- Maximum permissible permanent deflection = 0.20 mm
- Average permanent deflection = 0.13 mm
- Flexural rigidity (EI) (Class 2) = $0.95x10^9$ N·mm^2
- Permissible bending moment (Class 2) = $0.88x10^4$ N·mm

- T15 primary profile, 3.7 m
- T15 secondary profile, 1.2 m
- T15 secondary profile, 0.6 m

Bending test data (T15):

- Maximum permissible permanent deflection = 0.20 mm
- Average permanent deflection = 0.11 mm
- Flexural rigidity (EI) (Class 2) = $1.32x10^9$ N·mm^2
- Permissible bending moment (Class 2) = $1.14x10^4$ N·mm

Figure 2

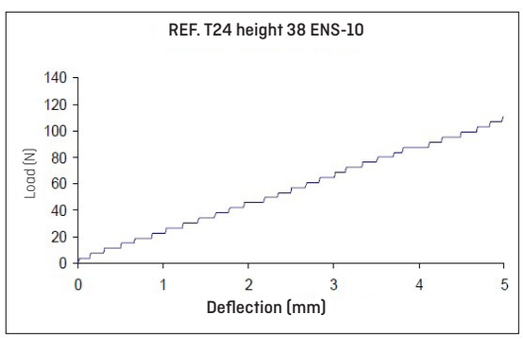


Figure 3

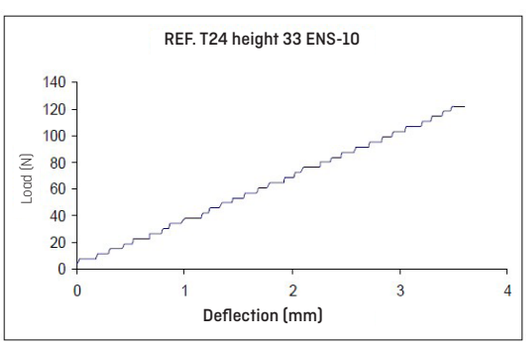
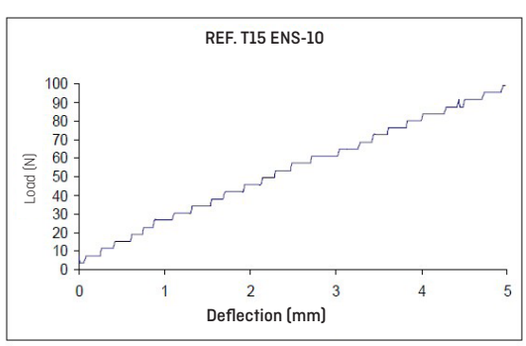


Figure 4

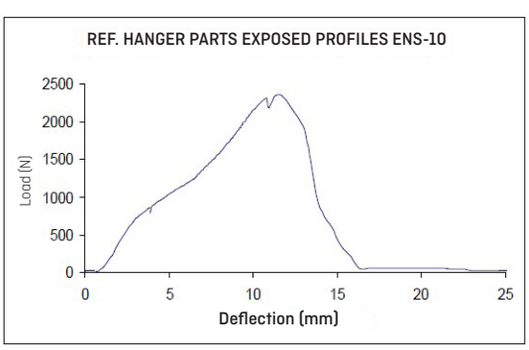


Suspension test data (hangers):

- Mean ultimate load=2196 N / Allowable load=679 N (69.2 kg) (Figure 5).

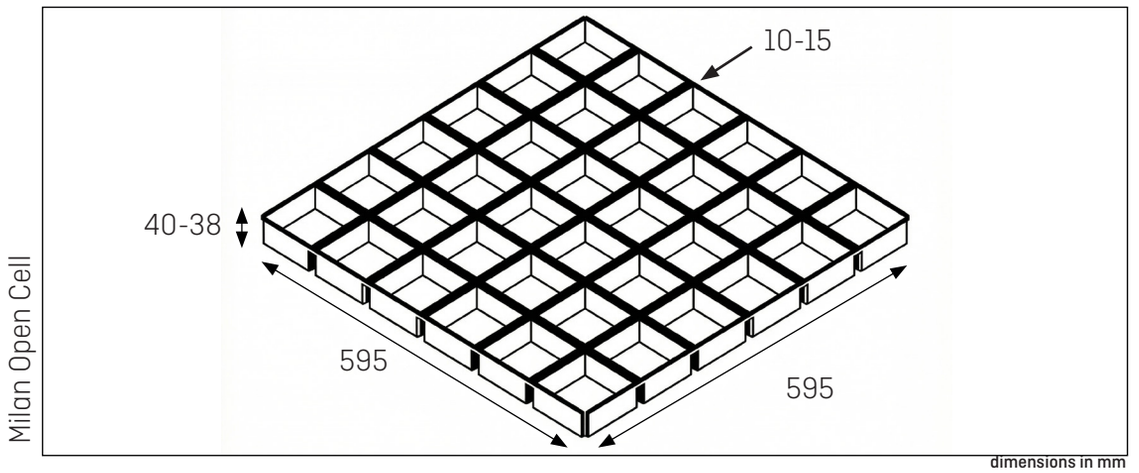
Given that the maximum tributary area per hanger is 1.44 m², the maximum suspension force per hanger for this system is 48 kg/m² for the T24-38 and T15-38.

Figure 5

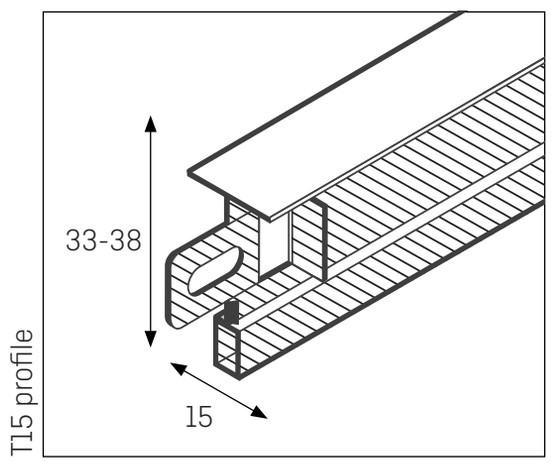


GEOMETRY

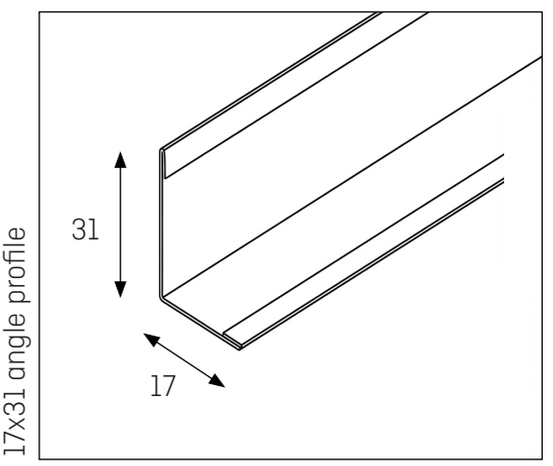
Bearing elements in standard mounting configurations



dimensions in mm



dimensions in mm



dimensions in mm

PERFORMANCE (distance between hangers 1 m)

Model	Type	Units by m²
Milan Open Cell	595X595 mm module	2.78 unit/m²
T15 system	T15 primary profile	0.84 lm/m²
	120 T15 secondary profile	1.68 lm/m²
	60 T15 secondary profile	0.84 lm/m²
	Hanger parts	1 unit/m²
	Module weight 0.690 kg	3.211 kg/m²

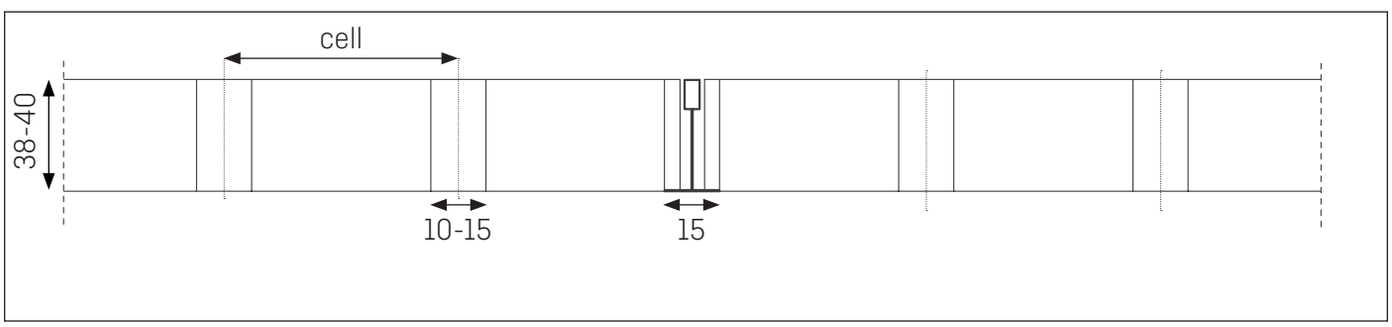
ASSEMBLY/ **Milan Open Cell**

ASSEMBLY PROCESS

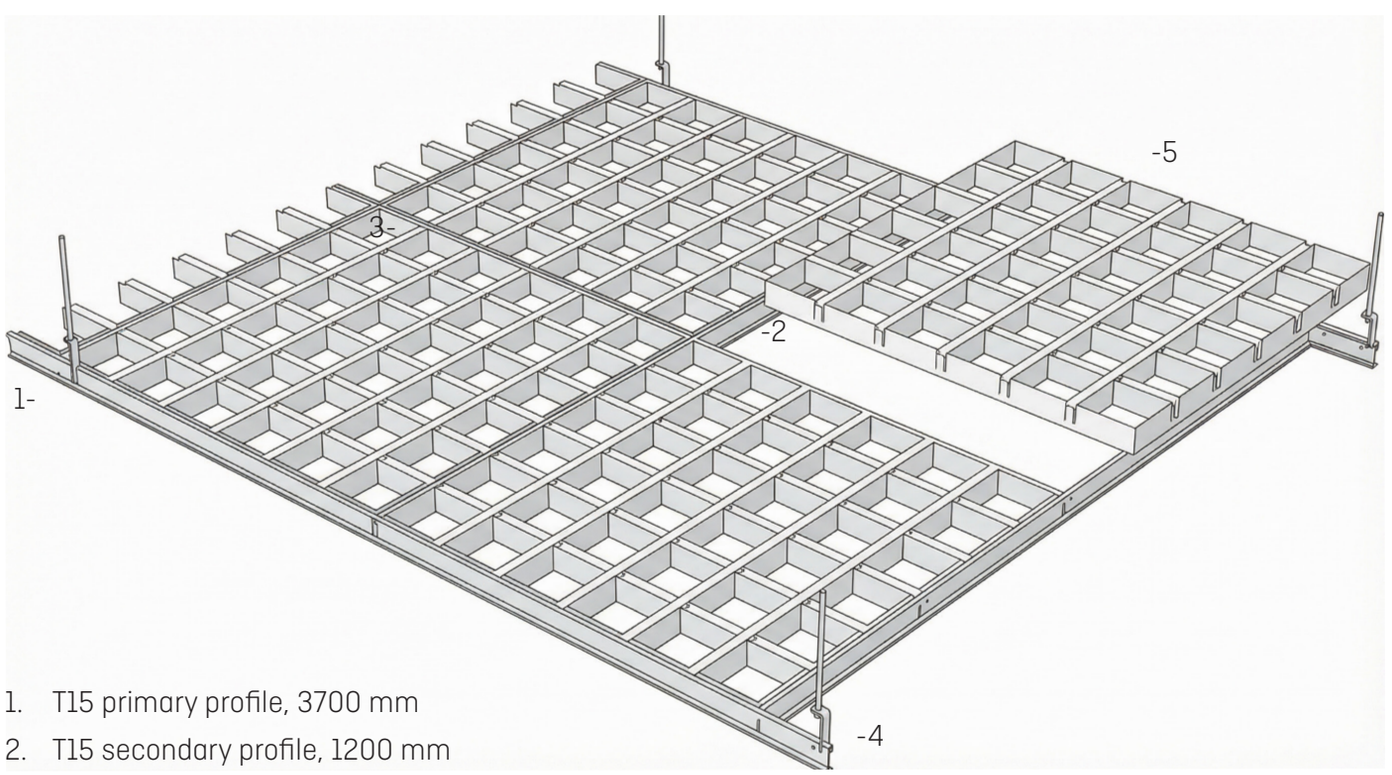
The Milan open cell system is installed on a T15 ceiling system, with modules supplied pre-fitted and assembled to ensure that their installation is identical to that of any traditional panel or element supported by a 60x60 removable false ceiling (FTD) system. The installation can therefore be divided into two steps:

1. Step A. T15 FTD system.
2. Step B. Installation of the Milan open cell.

Once installed, the grid has the selected cell size, with the T15 ribs and the grid's structure providing a seamless solution. 15 mm-thick ribs blend in perfectly with the overall design. In any event, each module is accessible and removable at any point.



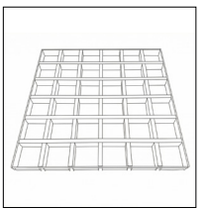
Top assembly view (Assembly A+B)



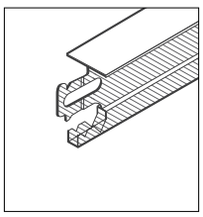
1. T15 primary profile, 3700 mm
2. T15 secondary profile, 1200 mm
3. T15 secondary profile, 600 mm
4. Hanger part + M6 rod, T15 system
5. Milan open cell module

MATERIALS

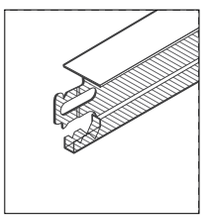
Bearing elements, add-ons and accessories in standard mounting configurations



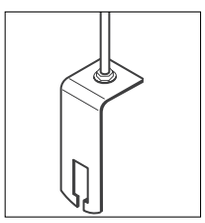
1) Milan open cell
Main components of the ceiling made of 0.4 mm-thick aluminium, with external dimensions of 595x595 mm (width and length). Heights of 40 mm or 38 mm for rib widths of 10 mm and 15 mm respectively.



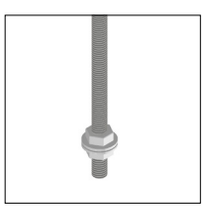
2) 3.7 m T15 primary profile
The primary profiles are the main elements of the structure as it is on these that the hanger parts and the threaded rods that are fixed to the upper framework are placed. Primary profiles are 3.7 m long and like the rest of the structure profiles, are made of galvanised steel and the visible side is lacquered.



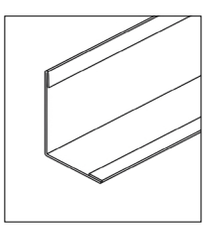
3) 1.2 m and 0.6 m T15 secondary profiles
The 1.2 m secondary profiles are placed perpendicular to the primary profiles while the 0.6 m secondary profiles are placed perpendicular to the 1.2 m profiles, forming a 600x600 mm open cell grid structure.



4) Hanger part
Composed of an angled metal part that is placed at the beginning of the primary profiles. The assembly is completed with a threaded rod (M4 or M6) and nuts to attach it and adjust the height.



5) Hanger rod
A 6 mm metric (M6) threaded rod inserted into an anchor that is suitable for the surface of the upper support and secured with a washer and nut. Suspension using a rod provides very high vertical stability, minimising movement in this direction. It is fixed to the hanger by means of a double nut plus upper and lower washers.



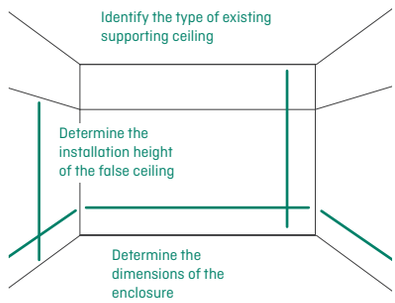
6) 17x31 angle profile
Additional profile for perimeter support, either used as a lateral starting profile or as a mounting support.

T15 STRUCTURE INSTALLATION PROCESS

Once the required installation conditions have been met (enclosures and installations are complete and have been cleaned), the ceiling is installed by following the steps below:

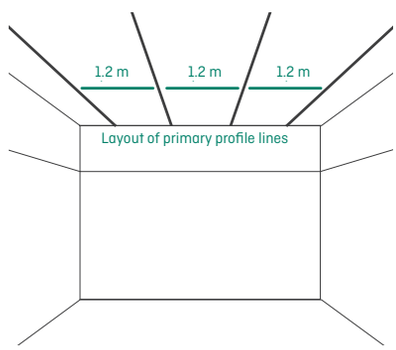
1) Identify the type of upper support used (concrete, steel, etc.) to adapt the fixing elements to it. Calculate the dimensions of the enclosure to be covered and determine the height at which the ceiling will remain. Mark the height at which you want to place the ceiling on the walls (along the entire perimeter of the enclosure). This can be done using a chalk line or any type of laser level.

1



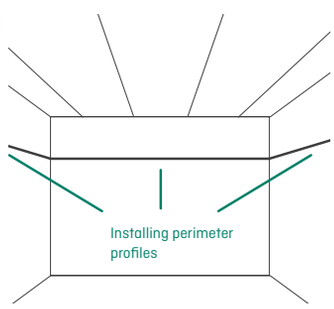
2) On the ceiling, mark the lines along which the primary profiles will run and therefore where the hangers will be installed to support them. Position the parallel rows at 1.20 m intervals along the longest side of the room. A symmetrical layout with respect to the central axis of the enclosure is recommended, so that the end pieces can be cut to the same size. For this purpose, you should align the primary profile with the centreline.

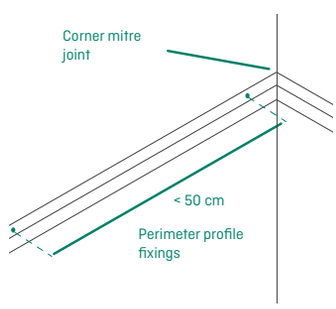
2



3) Begin placing the angle profiles around the perimeter. (The use of corner profiles is optional). This type of profile is screwed to the wall with a spacing between screws of up to about 50 cm. The underside can be clad with a piece of the desired size from the same Deco Acoustic panel (on request), which will be secured to the profile using mechanical fasteners (screws) or chemical fixings (grab adhesive). Joints between angle profiles are finished by cutting the ends at a 45° angle.

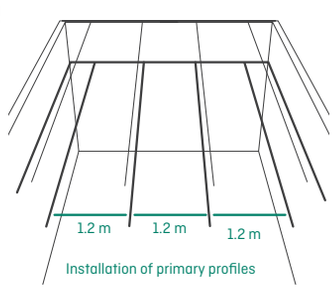
3

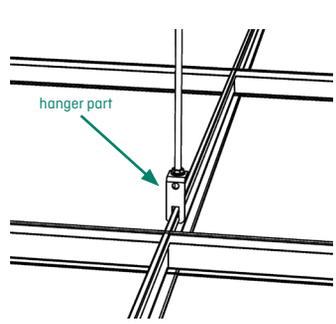


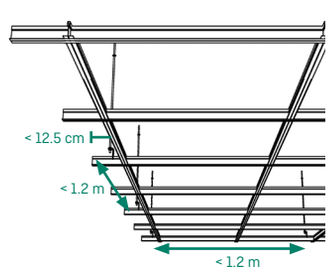


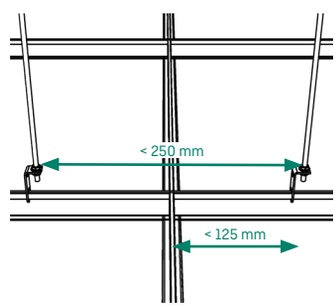
4) The primary profiles are mounted following the layout lines. Anchor the hangers to the upper support according to the type and material of the chosen support. For each primary profile there must be at least one hanger part less than 25 cm from the wall or from the joints between primary profiles. The spacing between hanger parts should be 1.2 m. Once all the primary profiles have been installed, level them and the 1.2 m and 0.6 m secondary profiles. Installation can be carried out without 1.2 m secondary profiles, if the primary profiles are installed 0.6 m apart and joined directly to the 0.6 m secondary profiles. Once the entire primary-secondary system has been installed, make sure that the level of the whole system has not been affected.

4

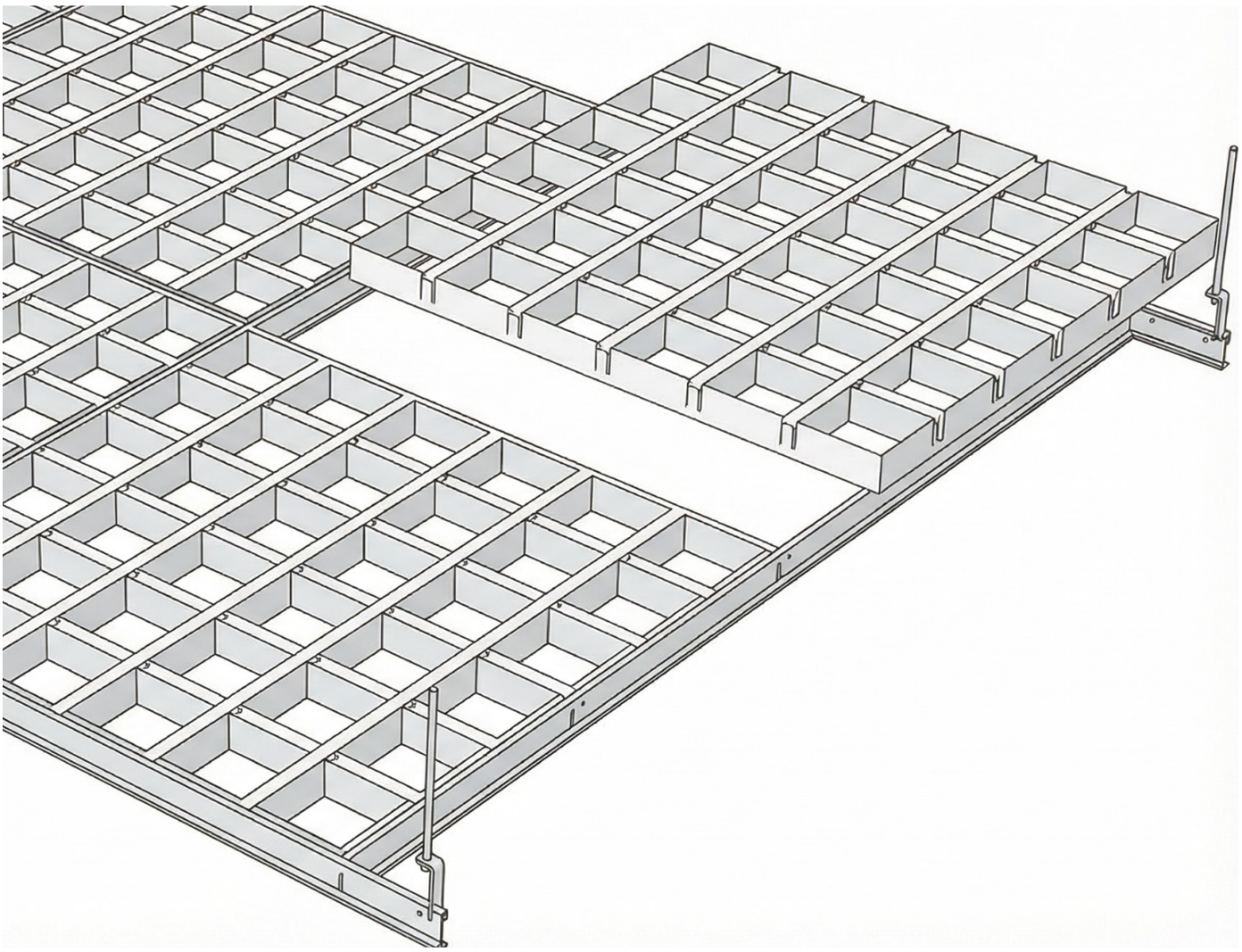






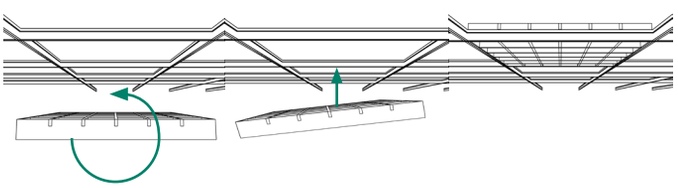


OPEN CELL MODULE INSTALLATION PROCESS



5) Installing the open cell module. After unpacking the grid unit, approach from the underside of the substructure, rotate it and insert the module above the substructure's support line.

5





PREREQUISITES FOR INSTALLATION

- THU ceiling products must be stored indoors and must not come into direct contact with water. They must never be stored outdoors or partially outdoors.
- THU Perfil removable ceilings are installed during the last phase of construction, once all enclosures and building services are in position.
- The area where the ceiling is to be installed must be clean and free from obstacles that might hinder the installation process.
- It is recommended that products NOT be kept in storage for more than 3 months.

STORAGE AND INSTALLATION

- The components of any THU system must be stored in dry, well-ventilated areas, away from heat sources and protected from direct sunlight and rain.
- THU products are tested and approved for indoor use, without direct exposure to the elements or to the fluctuations in temperature/humidity associated with the outdoors.
- Only install when the building (or the relevant area of the building) is wind and watertight, when all traces of moisture have disappeared, and when the environmental conditions are suitable, i.e. the temperature (15°C to 25°C) and the humidity (35% to 70%).
- Once installed, each element must be free of all traces of packaging, protective film, surface markings or handling marks.

MAINTENANCE AND CLEANING

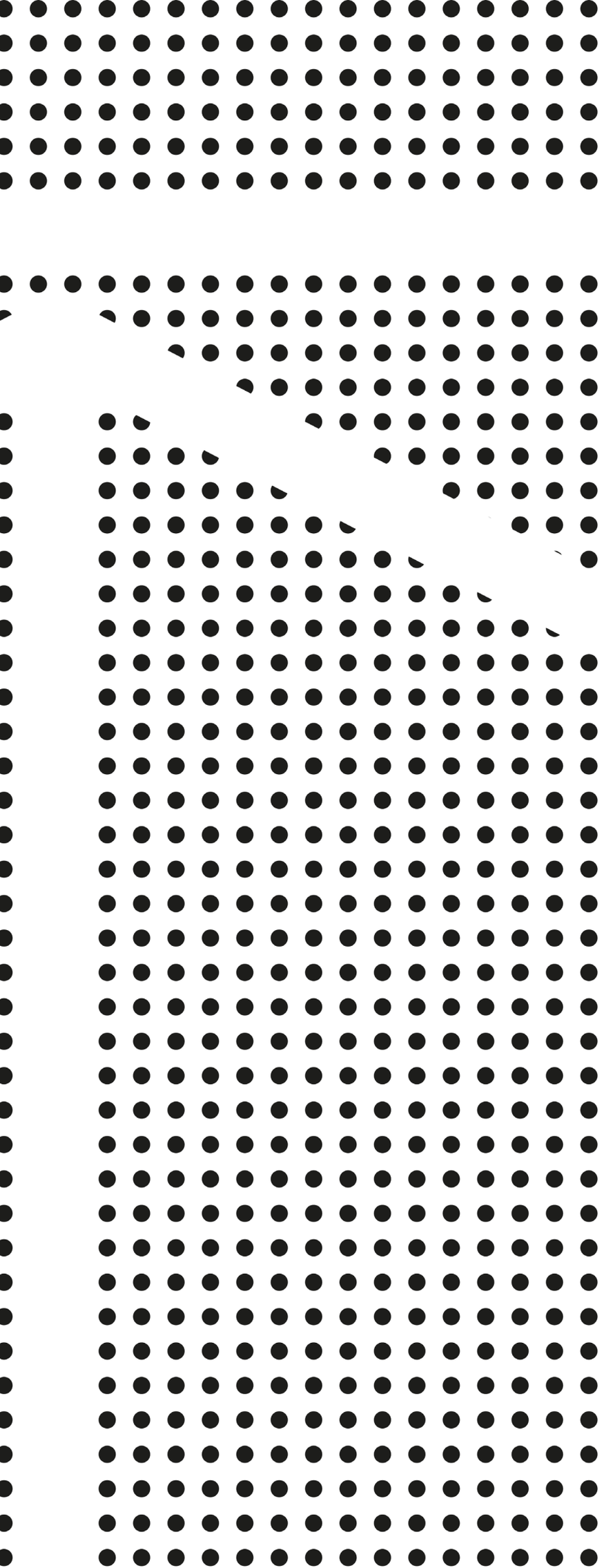
- Only clean with soapy water (neutral soap without added waxes or polishes) and rinse.
- Do NOT use solvents or degreasers.
- Use a soft cloth to wipe any excess water from the surfaces, taking care not to damage the surface of the product.

SUPPLY

- Open cell with 10 mm rib, height 40 mm -> 12 units/box, 144 units/pallet
- Open cell with 15 mm rib, height 38 mm -> 13 units/box, 156 units/pallet

WASTE MANAGEMENT

- To ensure the correct management of waste, contact an authorised waste management company, use the on-site storage points indicated by the site management and/or place the waste in the public waste containers provided for cardboard, plastic, glass and general waste.



Kingspan | THU ceiling solutions

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