

Deco Acoustic Panel
/THU

THU's **Deco Acoustic Panel** range is a high-performance acoustic cladding panel system composed of modular PET felt panels, suitable for use both as wall cladding and on vertical surfaces, as well as in removable technical ceiling systems, where it is mounted on T15 and T24 metal profiles.

Through different panel opening (module) size configurations across the various panel models – featuring standard or customised centre-to-centre distances, finish colours and embossed designs – you can create a wide range of creative combinations to decorate spaces with high technical requirements.

The panels are manufactured using PET (polyethylene terephthalate) boards, which are formed from a mixture of recycled fibres that are compacted and heat-treated. The primary profiles are made of pre-lacquered galvanised steel, while the linear decorative elements are made of natural wood or wood fibre boards.

The main characteristics of the recycled PET felt panels are high acoustic performance, a textile-like appearance and low specific weight; these, combined with the stability and strength of the pre-lacquered steel primary profiles, result in a system that is stable, functional, decorative, durable, easy to clean and high-performing.

When used in ceilings, the system's standout feature is its seamless appearance, whilst at the same time offering **easy access,** which allows you to quickly reach building services (lighting, electricity, air conditioning, etc.), facilitating any work in the ceiling cavity, from the simplest repairs and maintenance tasks to the complete replacement of systems.

Kingspan | THU ceiling solutions

THU/ **Deco Acoustic Panel**

DOCUMENT INFORMATION

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LATEST VERSION

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INFO/ **Deco Acoustic Panel**

GENERAL DESCRIPTION

THU technical ceiling system featuring modular acoustic panels formed by cutting sheets of recycled PET. The quanti version also features slats or linear elements made of natural wood or medium-density fibreboard (MDF). Using a THU metal profile structure, the entire acoustic technical ceiling system is suspended from a load-bearing element according to the needs and requirements of the project.

Item	Material	Width-Height / Thickness	Size (mm)	System	Regulations (raw materials)
T15-38 substructure (exposed)	steel	15 mm / 38 mm	3700-1200-600x38x15	Panel	VOC emissions, EN 16516 react. to fire, EN 13501-1 acoustic absorption ISO 354 susp. ceilings EN 13964
T24-38 substructure (hidden)	steel	24 mm / 38 mm	3700-1200-600x38x24		
Base	PET felt	9 mm	595x595 and 595x1195		
Wall	PET felt	9 mm / 12 mm	600x1200-1800-2400, 1000x1800, 1200x2400 and 1220x2800mm		
Screen	PET felt	9 mm / 24 mm	600-1000x1800 and 1200x2400		
Quanti	PET felt / MDF slats / wood veneer	9+9 mm	520x2440		

CUSTOMISATION

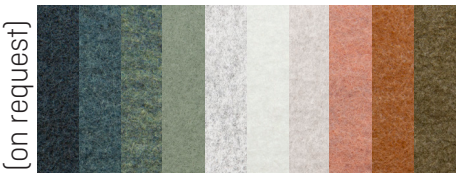
standard colours



special colours



special colours



batten colour



Quanti



Please enquire regarding other colours, patterns, special designs and embossing. 24 mm thickness on request.
*Heat-treated MDF slats with black edges and natural wood veneer.

RAW MATERIALS AND ACCESSORIES

Characteristics of the raw materials.

Our panel system is composed of acoustic panels made primarily from recycled PET (polyethylene terephthalate), a raw material that is processed from plastic waste (mainly food packaging). This waste undergoes a thermo-mechanical process to produce fibres which, when compacted and bonded together, form the final panels. It offers excellent fire resistance and moisture resistance, as well as resistance to the growth of microorganisms and outstanding sound absorption.

The quanti models feature wooden or MDF slats on top of the PET panels, adding the presence of natural material, as well as providing the intangible qualities of wood: design, warmth and texture.

The suspension substructure consists of profiles made from formed sheet steel, with the exposed surface finished with a minimum paint layer thickness of 25 microns. This type of finish is highly resistant to corrosion and offers excellent durability (gloss and colour retention). We can supply profiles in any other colour under special supply conditions.

PERFORMANCE

Key characteristics	Performance Features	Harmonised Technical Specifications
Reaction to Fire	B-s2,d0 (raw material) B-s1,d0 on request	UNE-EN 13501-1:2018
Maximum load-bearing capacity	1.14x10^4 N·mm (T15-T24 profile)	UNE-EN 13964:2016
Maximum load-bearing capacity	48 kg/m^2 (hanger)	UNE-EN 13964:2016
Sound absorption (raw material)	α_w = 0.25 (direct-to-support) α_w = 0.60 (50 mm plenum)	ISO 354:2004 ISO 11654:1998
Emissions (volatile organic compounds – VOCs)	Gold (raw material)	UNE-EN 16516:2017+A1:2020

RECYCLED MATERIAL

Up to 25% metallic material, at least 60% felt material.

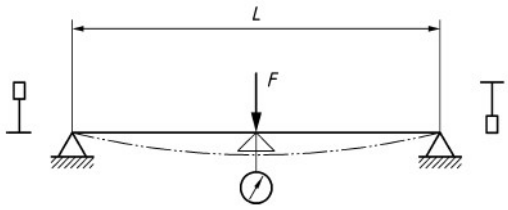


PROPERTIES

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: It 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

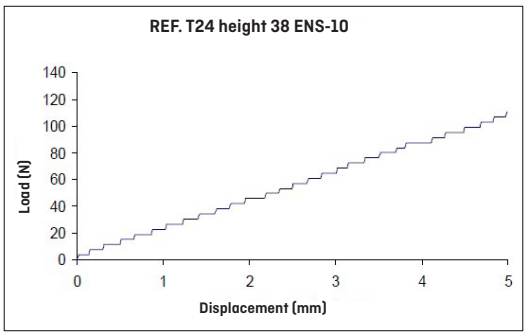


Figure 3

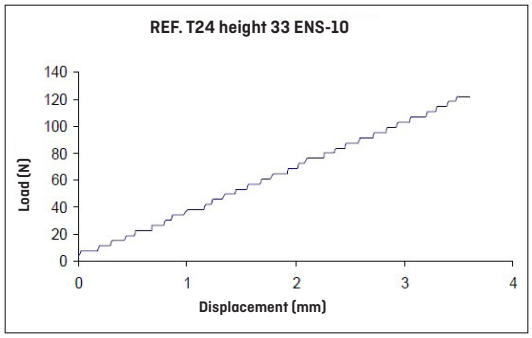
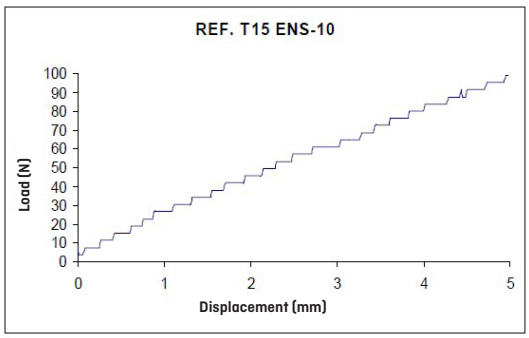


Figure 4

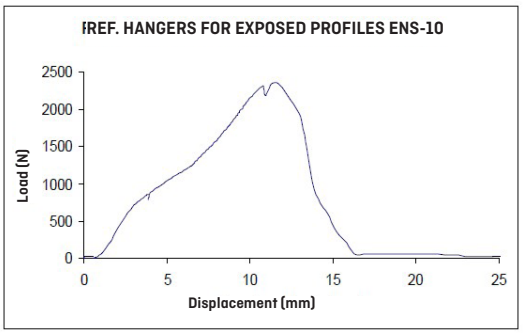


Suspension test data (hangers):

- Average maxium force load=2196 N / Permissible load=679 N (69.2 kg) (Figure 5).

Given that the maximum tributary area per hanger is 1.44 m^2, the maximum suspension force per hanger for this system is 48 kg/m^2 for the T24-38 and T15-38.

Figure 5



Reaction to Fire tests at AITEX (UNE-EN 13501-1:2018) felt raw material.
Test ref. 24AN0371 and raw material manufacturer's certificate. Euroclass B-s2,d0. A combustible product with a very limited contribution to fire, with a medium smoke emission quantity and rate, and which does not produce flaming droplets or particles. For further details, refer to the raw material technical data sheet. B-s1,d0 available on request.

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).

Volatile organic compound (VOC) emission testing at Eurofirms (UNE-EN 16516:2017+A1:2020)
Raw material testing and manufacturer's certificate 392-2023-00571401. Successfully meets the requirements of the "Indoor Air Comfort GOLD" labels.

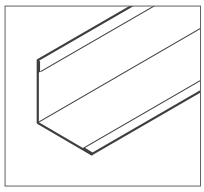
Acoustic Absorption Tests at Applus (UNE-EN ISO 354: 2004)
Tests ref. 22-3204656 and ref. 22-3204654 measuring sound absorption in a reverberation chamber for the raw material: 9 mm thick PET-type panels, either direct-to-support or with a 50 mm air cavity (plenum).

Table 1 Sound Absorption Coefficient (SAC) (α_p)

Distance (mm)	125 (Hz)	250 (Hz)	500 (Hz)	1000 (Hz)	2000 (Hz)	4000 (Hz)	Weighted SAC α_w	CLASS
9 mm panel (direct-to-support)	0.00	0.05	0.15	0.35	0.70	0.95	0.25	E
9 mm panel (50 mm cavity)	0.10	0.30	0.60	0.95	1.00	0.95	0.60	C

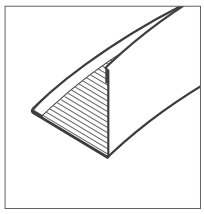
To achieve higher levels of acoustic absorption, it is recommended to use absorbent materials of greater thickness and/or density, placed on the upper side of the plenum or directly on top of the Deco Acoustic system. Increasing the plenum depth, where possible, will also improve acoustic absorption. Any additional materials must be within the load-bearing capacity of the ceiling installation.

T15 and T24 SUBSTRUCTURE MATERIALS



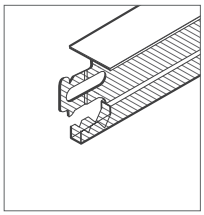
1) Angle profile

For points where the structure meets the wall or other constructive elements, the structure rests on a series of angle profiles that are placed around the entire perimeter of the enclosure at the height at which it is desired to place the metallic ceiling. All structure profiles that rest on these angle profiles are trimmed, if necessary, to the extent needed for their correct placement. The linear metres of angle profile needed for a given enclosure is equal to its perimeter.



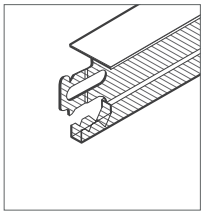
2) Flexible angle profile

Profiles for the perimeter support of the false ceiling. The flexible profile is an extruded angle profile made of PVC designed to adapt to the curvatures of the partitions or columns and its dimensions are 22 x 28 mm.



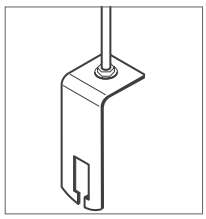
3) Primary profile

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.



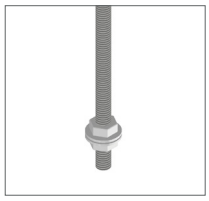
4) 1.2 m and 0.6 m secondary profiles

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 600 x 600 mm grid structure.



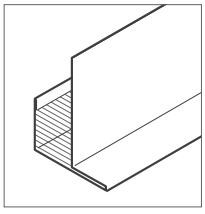
5) Hanger part

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.



6) 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.



7) Cornice profile

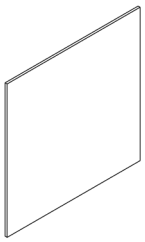
Pre-lacquered steel profiles designed to make it easier to connect spaces. Cornice profiles have dimensions of 13 x 33 mm (cornice profile 13) and 16 x 36 mm (cornice profile 16).

BASE PANEL MATERIALS

The Base model consists of a set of modular panels whose applications include general surface cladding and use as a cover panel in lay-in or suspended FTD removable ceilings, concealing the framework. The standard dimensions are:

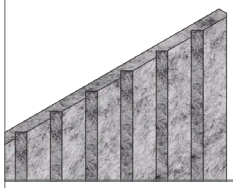
- 595x595 mm and 595x1195 mm for lay-in installation on T15/24, 9 mm thick (all products).

Blank base

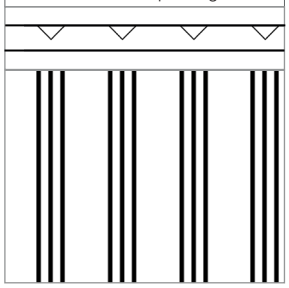


blank base
lay-in installation

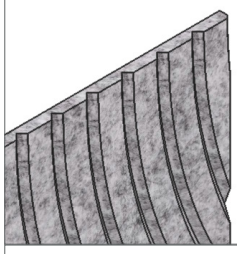
V line base



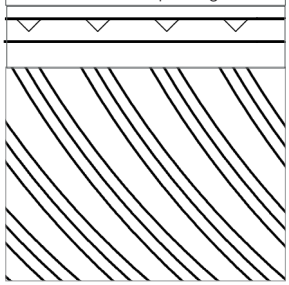
straight V-grooves
10 mm groove
30 mm spacing



V waves base



curved V-grooves
10 mm groove
30 mm spacing



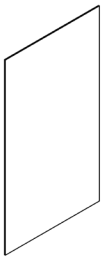
WALL PANEL MATERIALS

The Wall model consists of a set of modular panels designed for use in general surface cladding applications. The standard dimensions are:

- 600x1200 mm, 600x1800 mm, 600x2400 mm, 1000x1800 mm and 1200x2400 mm for installation using adhesive and/or mechanical fixings on a rigid vertical support.

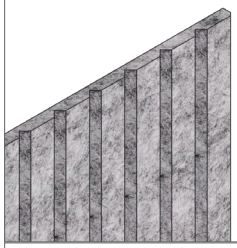
The standard embossing designs are as follows:

Blank wall

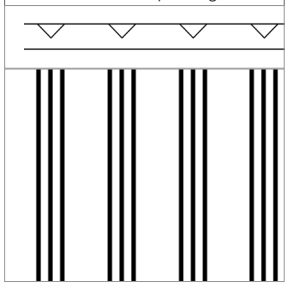


plain

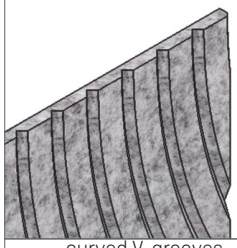
V line wall



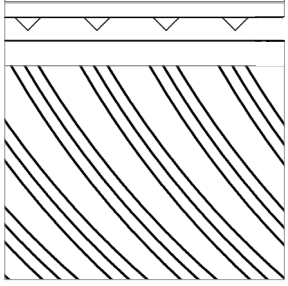
straight V-grooves
10 mm groove
30 mm spacing



V waves wall



curved V-grooves
10 mm groove
30 mm spacing



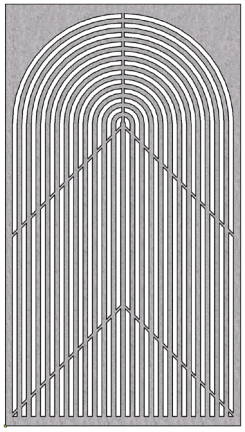
SCREEN MATERIALS

The Screen model consists of a set of die-cut PET felt panels, which can be used for vertical space partitioning, horizontal ceiling screening and general surface cladding. The standard dimensions are:

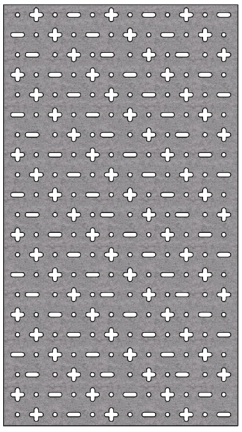
- 1000x1800 and 1200x2400 mm, 9 mm thick.

The standard designs, in addition to the plain panel and the wall/base versions, are as follows:

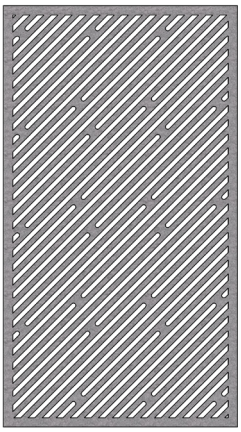
Arcs



Minusdotplus



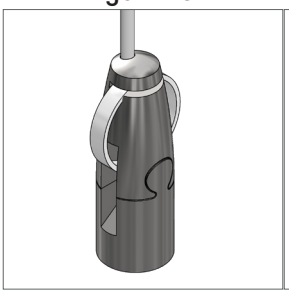
Diagon



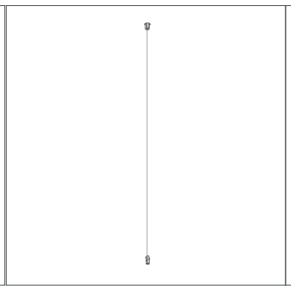
The recommended standard suspension system consists of the following components:

1 x Gripple Angel ALSF anchor + male lag screw (for fixing to Panel Screen)
1 x 2-metre Gripple cable
1 x ED6 decorative Gripple end cap (for fixing to support)

Angel ALSF



2 m cable



ED6 end cap



For vertical installation of the Panel Screen, use two Gripple Angel M6 upper hangers at the top, anchored to the support, and two units anchored to the lower support, acting as tensioners (optional).

For horizontal installation, with anchors on the short side, two units should be used at each end. If the anchors are fitted on the long side, we recommend using three units on each side.

QUANTI MATERIALS

The Quanti model from the Panel range consists of a PET felt backing panel with MDF slats and oak veneer recommended for use as cladding on vertical surfaces in interior spaces.

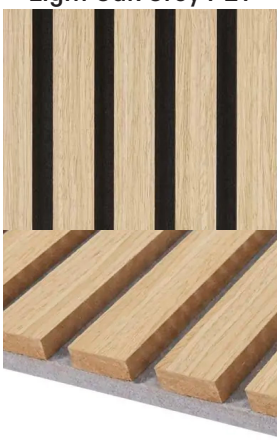
- Panel dimensions 2440x520x18 mm:

- Longitudinal dimension 2440 mm (in the direction of the slats, which in a standard installation is the height)
- Transverse dimension 520 mm (perpendicular to the slats, which in a standard installation is the width)
- Thickness 18 mm: 25 mm wide and 9 mm thick slats (black MDF board) + 9 mm thick PET backing panel made from recycled fibres.

Light Oak



Light Oak Grey PET



Oiled Oak



Walnut



Black Oak



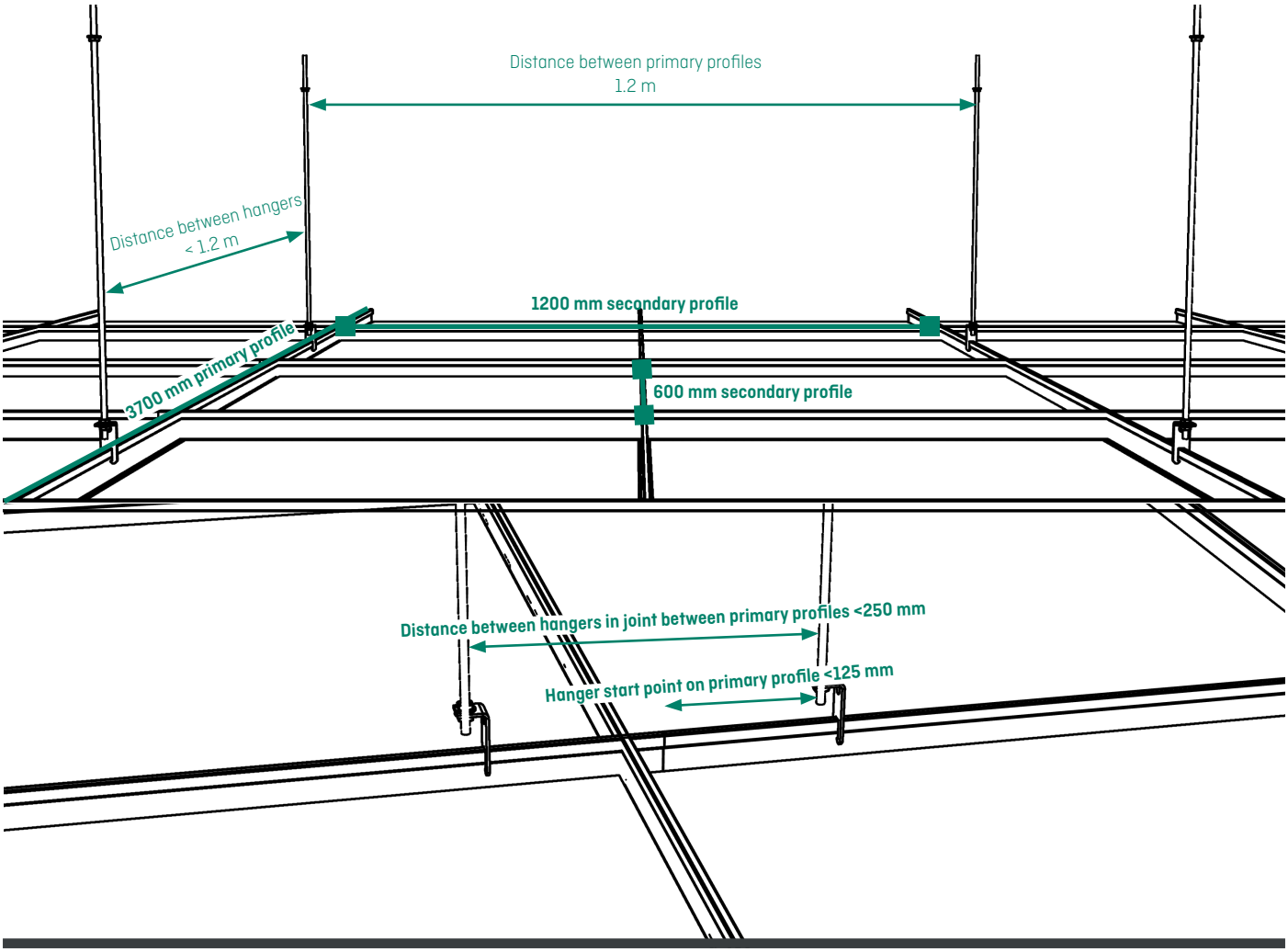
INSTALLATION/ **Deco Acoustic Panel**

CEILING INSTALLATION PROCESS

The substructure onto which the Deco Acoustic Panel system's ceiling modules are mounted consists of profiles from a removable technical ceiling system (also called an FTD removable false ceiling) and comprises primary profiles measuring 3.7 m and two types of secondary profiles measuring 1.2 m and 0.6 m (T15-38 and T24-33). The primary profiles are the load-bearing elements that support the entire system, which is suspended vertically from the upper support element (the building structure). A threaded rod acts as the suspension bracket for this vertical fixing and is anchored using a anchor that is suitable for the structural element's material. The primary profile is placed along the longest side of the ceiling, spaced up to 1.2 m apart whilst maintaining a parallel configuration. The threaded rod is secured to the primary profile using the specific THU suspension bracket and secured with a double nut and washer – one set on the upper side and another on the lower side – securing it in a level position once the primary profile structure has been properly levelled.

In terms of maximum distances between elements, the following spacing requirements must be met during installation:

1. The distance between primary profiles is dictated by the system and must be 1.2 m; the distance between 1.2 m primary profiles and the distance between 0.6 m secondary profiles is determined by the slots in the web of the profiles themselves; in both cases it is 0.6 m.
2. The spacing between hangers must be less than 1.2 m, with the recommended distance being 1 m.
3. A hanger part must be placed within 125 mm of the start or end of the batten or primary profile.
4. Maximum distance of 250 between hangers in the joint between two primary profiles (one on each profile).

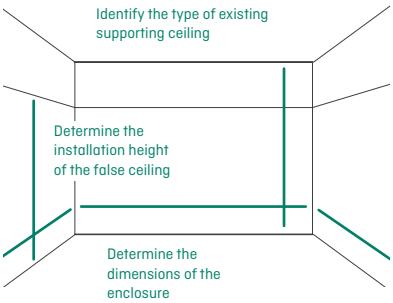


SUBSTRUCTURE INSTALLATION PROCESS

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:

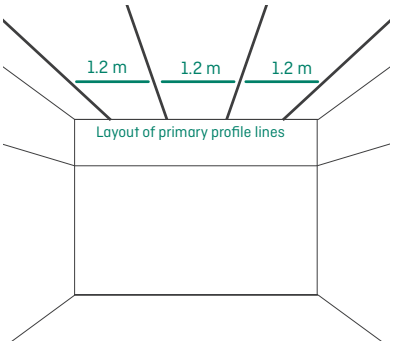
1) Identify the type of upper support used (concrete, steel, etc.) to adapt the fixing elements to it. Calculate the dimensions of the enclosure to be covered and determine the height at which the ceiling will remain. Mark the height at which you want to place the ceiling on the walls (along the entire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

1



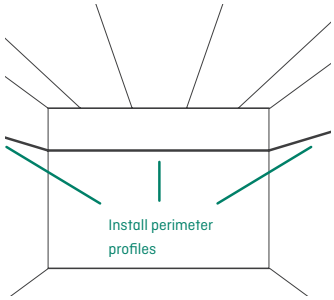
2) On the ceiling, mark the lines along which the primary profiles will run and therefore where the hangers will be installed to support them. Position the parallel profiles at 1.20 m intervals along the longest side of the room. A symmetrical layout with respect to the central axis of the enclosure 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.

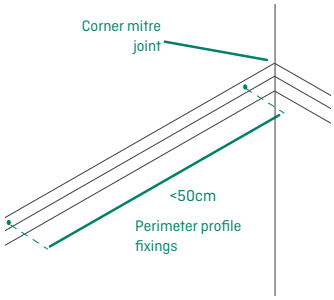
2



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.

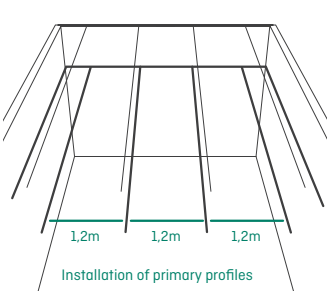
3

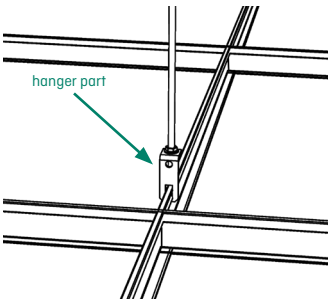


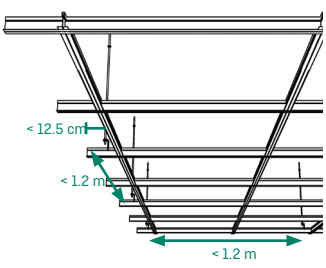


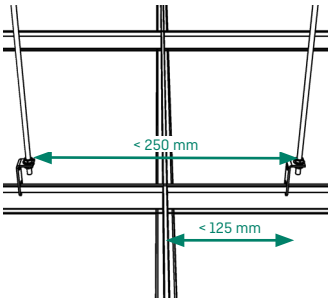
4) The primary profiles are mounted following the layout lines. Anchor the hangers to the upper support according to the type and material of the chosen support. For each primary profile there must be at least one hanger part less than 25 cm from the wall or from the joints between primary profiles. 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



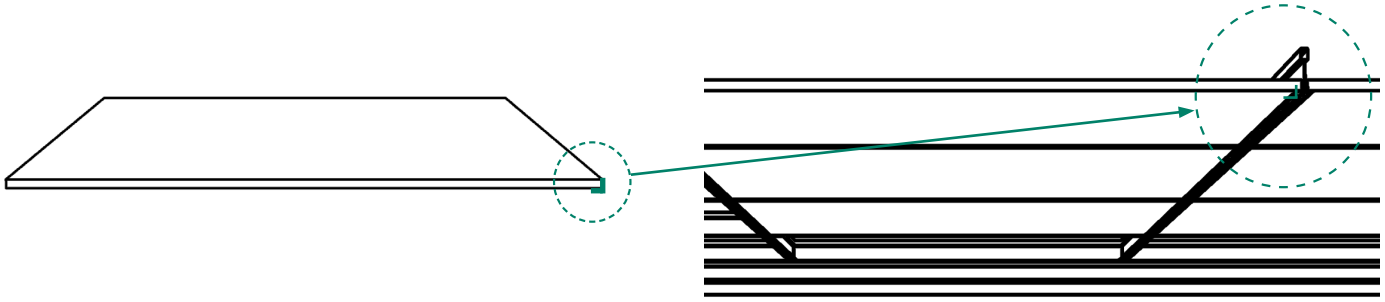


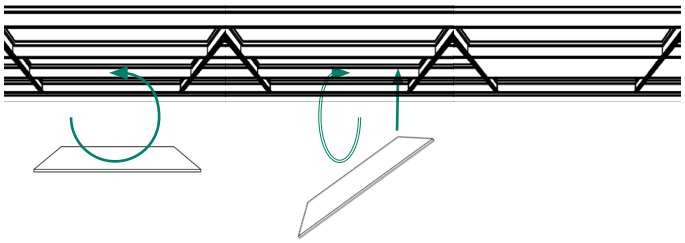




Now refer to the page describing the installation of the relevant model.

BASE PANEL INSTALLATION PROCESS

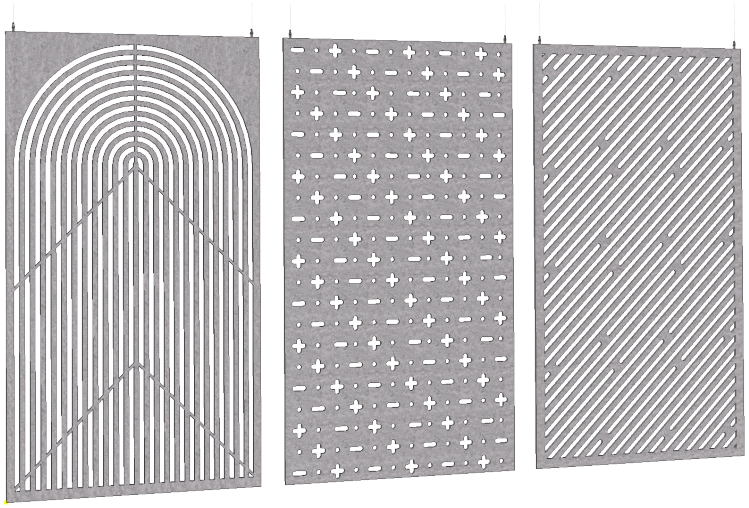




5) Installing the Base panel. After unpacking the unit, approach from the underside of the substructure, rotate it and insert it so that it extends beyond the level of the supporting substructure. Next, lower the piece until it is completely flat, resting on all sides, with no gaps or unevenness at the edges.

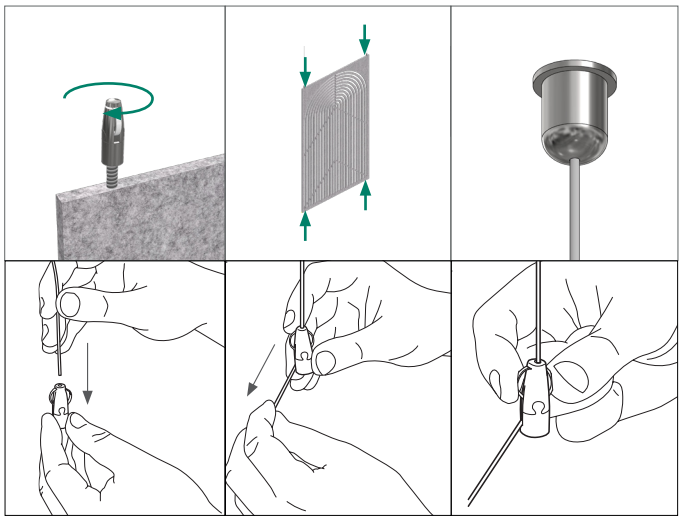
5

SCREEN PANEL INSTALLATION PROCESS



5) Installing the Screen. After unpacking the unit, screw the Gripple Angel hangers – with their M6 threaded rods – into the suspension side and into the wood thread on the edge of the Screen felt panel. Two units at the top ends and, optionally, two units at the bottom ends.
It must be secured to the upper support using a suitable anchor and screw, and the cable that will be fed through the Gripple Angel hanger must be suspended using the decorative end cap. This suspends the Screen, ensuring that it is level with the length of cable. The lower Gripple Angel hangers must be tensioned to prevent swaying and movement.

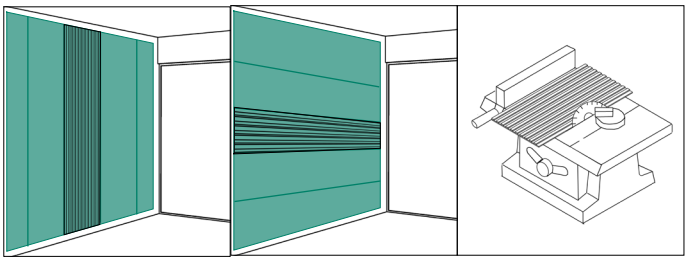
5



WALL PANEL + QUANTI PANEL INSTALLATION PROCESS

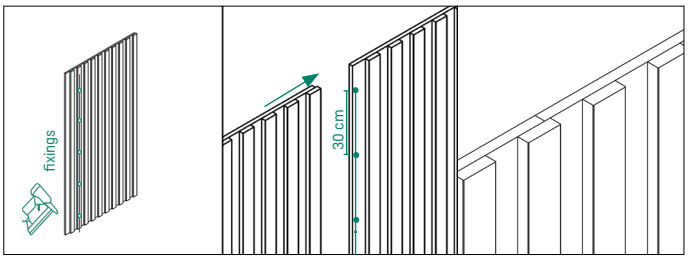
5) Setting out Wall / Quanti panels. These elements are used to clad vertical surfaces or walls, and can be oriented either vertically or horizontally. It is advisable to mark out the position of the joints according to the width of the panel and to adjust the starting and finishing panels to these measurements by cutting them with a table saw to achieve a finish that is identical to the original finish. Also adjust lengthwise cuts if the area that is going to be clad is smaller than the size of the panel.

5



6) Installing Wall / Quanti panels. The panels must be secured every 30 cm using mechanical fasteners such as staples, nails or flat-head sheet metal screws, inserted along the joint between two panels; these will be concealed when the next panel is laid on top. This can be combined with an adhesive suitable for the support, applied to the rear of the panel.

6



PREREQUISITES FOR INSTALLATION

- THU products must be stored indoors and must not come into direct contact with water. They must never be stored outdoors or partially outdoors.
- THU products are installed during the last phase of construction, meaning once all enclosures and facilities have already been put 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) 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

- Box of (*) units of Base panels measuring 595x595 mm and 595x1195 mm.*please enquire
- Box of (*) units of Wall panels measuring 600x1200 mm, 600x1800 mm, 600x2400 mm, 1000x1800 mm and 1200x2400 mm. *please enquire
- Box of (*) units of Quanti panels measuring 600x1200 mm, 600x1800 mm and 600x2400 mm *please enquire
- Box of (*) units of Screen panels measuring 1000x1800 mm and 1200x2400 mm, 9-24 mm thick. *please enquire

THU'S RESPONSIBILITY

- THU guarantees the quality of the products supplied and shall accept product returns when these have defects or do not arrive to the customer in good conditions for reasons attributable to THU. However, complaints regarding the delivery must be made within eight (8) calendar days following the receipt of the material either at the customer's warehouses or the site indicated for that purpose. After this time, the material is considered to have been checked and accepted by the customer. Under no circumstances shall THU be liable for damage to the material the customer may cause due to erroneous or improper use. THU will also not be held liable or bear any costs arising from damage caused by a permanent modification to any system components (cutting, drilling, painting, etc.).
- Orders for materials manufactured with specific characteristics requested by the customer may not be refunded, amended or cancelled without cause attributable to THU.

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.

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