

## TECHNICAL DOCUMENT

# HOW TO USE WOOD-BASED PANELS AS WALL FINISH

**SONAE**   
**ARAUCO**  
Taking wood further

This leaflet is part of a set of publications developed by Sonae Arauco to promote the use of wood-based panels as wall and ceiling finishes.

These applications are an integral part of many construction solutions, offering different levels of performance with regard to fire, acoustic and structural protection, as well as contributing significantly to the appearance and quality of the places where they are used.

Many of these applications are integral solutions and the preparation and installation must be carried out by specialist technical teams.

This leaflet is not intended to be a comprehensive technical manual for the installation of wood-based panels as wall finishes, as new solutions are always appearing within each finish system, particularly in terms of fixing systems. Even with this constant evolution, we believe that the content of this publication may help architects and designers to better understand some of the technical solutions possible.

# CONTENTS

---

<b>INTRODUCTION TO TYPES OF FINISH</b>	<b>04</b>
<b>FINISH WITH DIRECT GLUING</b>	<b>05</b>
WALL PREPARATION	05
INSTALLATION	06
<b>DIRECT FINISH WITH VELCRO</b>	<b>08</b>
WALL PREPARATION	08
INSTALLATION	08
<b>DIRECT FINISH WITH METAL PROFILES</b>	<b>10</b>
WALL PREPARATION	10
INSTALLATION	10
<b>DIRECT FINISH WITH BATTENS</b>	<b>14</b>
WALL PREPARATION	14
INSTALLATION	14
<b>SELF-SUPPORTING FINISH</b>	<b>16</b>
WALL PREPARATION	16
INSTALLATION	17

## INTRODUCTION TO TYPES OF FINISH

Wood-based panel finish systems are used for finishing the inside of exterior walls and for interior walls. In the first situation, this is a technique often used in remodelling buildings, thus promoting an improvement in the thermal and acoustic performance of the existing construction elements, in addition to the important aesthetic component.

There are several types of finishes, depending on how they are attached to the existing construction element. They can be applied directly (using glue or strips of Velcro on an auxiliary metal profile structure or on wooden battens) or

self-supporting, where a self-supporting structure identical to that used on the partition walls is used or, in more specific cases, ceiling profiles.

The self-supporting finish system can be subdivided into two types: either secured to the support element or completely independent of the construction elements it is being used on.

The self-supporting system has the advantage of permitting an insulation layer in the space between the panels and the existing construction element.

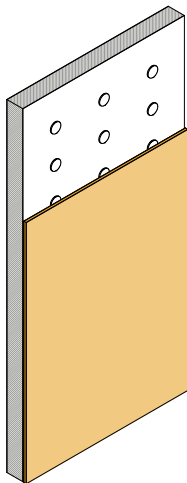


FIGURE 1: Finish with direct gluing

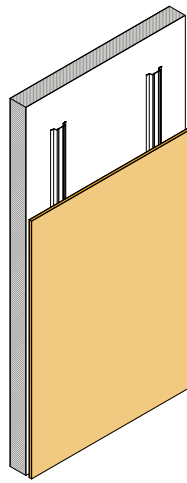


FIGURE 2: Direct finish with profile

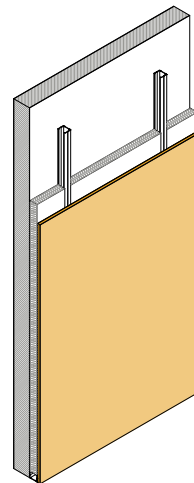


FIGURE 3: Self-supporting finish

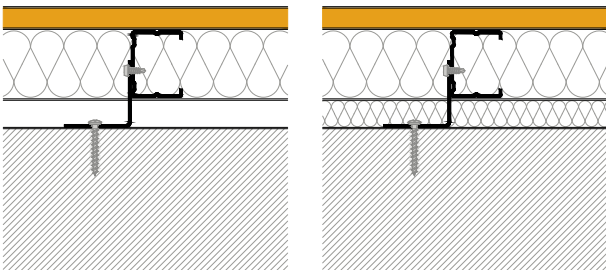


FIGURE 4: Finish attached to the support element

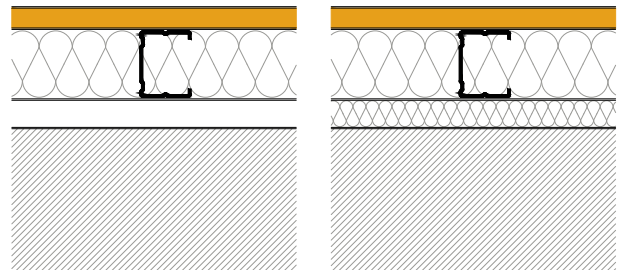


FIGURE 5: Finish independent of the support element

The system recommended depends mainly on the condition of the existing wall and the insulation required. Other factors, such as thickness limitations or fire

resistance or thermal insulation properties, may also be resolved through correct selection of the decorative finish panel.



## FINISH WITH DIRECT GLUING

---

### WALL PREPARATION

---

Before installing the panel on a cement or brick wall, remove all dirt, dust and debris from the wall. A clean surface strengthens the connection between the panels and the wall.

Cracks or holes must be caulked to ensure insulation and avoid unwanted pests getting into the house. High quality latex or acrylic inside the caulking is ideal for filling in these areas.

Consider the need for applying a sealant on the entire surface for additional insulation and to prevent external humidity from penetrating the wall. There are several types of cement sealants available on the market, produced by different manufacturers. They are easy to apply using an ordinary garden sprayer or a paint roller.

It is important to seal the brick or cement wall to prevent humidity from penetrating the surface and causing the panels to deteriorate or become warped.

An insulation alternative for cases where it is possible to have a larger final wall thickness is to glue an insulating panel to the cement or brick. The wood-based panels are then fixed to this.



## INSTALLATION

1. Adhesive glue in tubes is the easiest to work with. The tubes are fitted to the caulking guns so the glue can be applied easily.
2. Generic construction glue should not be used to install the panels, as there may be surface leaks causing streaks and giving the panel a poor appearance.
3. The most suitable glues are Polyvinyl Acetate (PVA).

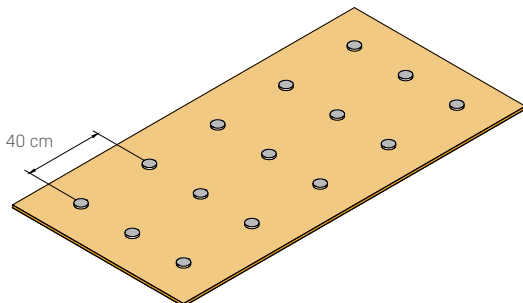


FIGURE 6: Glue on the panel

7. Installing a section of wood-based panel normally implies cutting it to adjust it to the height of the wall.

4. The adhesive glue may be applied to the panels or directly on the support.

6. The glue points must be no more than 40 cm from each other, but we recommend a shorter distance on the perimeter of each board in order to reinforce this area. (fig. 6)

6. If you choose to apply the glue in strips, these should be 10 cm wide and 40 cm away from each other.

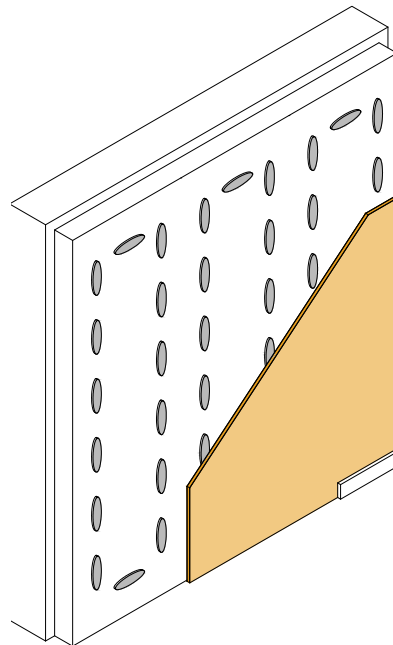


FIGURE 7: Gluing to the wall

8. After cutting the panel to size, apply dots of glue of the same size on the back. (fig. 7)

9. Position the panel next to the wall, place two wooden shims on the floor, rest the panel on them up to the ceiling and push them into place. (fig. 8)

10. Use a level to ensure the panel is straight before installing additional sections.

11. The space left by the shims at the bottom can be filled with polystyrene.

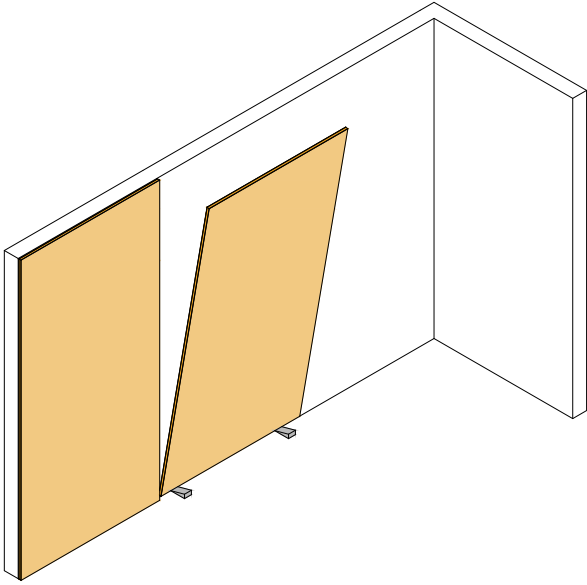


FIGURE 8: Positioning the panel

12. Panels with mortised edges or splines can be used, so that the joint between them is perfect.

13. At corners, the most common method is to overlap the panels. (fig. 9)

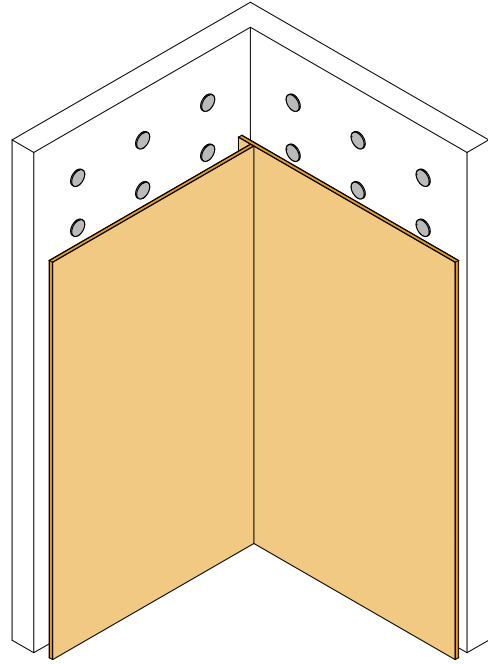


FIGURE 9: Corner fitting

14. For this type of installation, the wood-based panels must be between 12 and 19 mm thick.

If they are any thicker, the weight of the panels could be too much for the gluing system.



## DIRECT FINISH WITH VELCRO

---

This solution is effective for situations where the panels need to be removable for later access to parts of the wall where the finish will be (for example for access to concealed electrical wiring or for rewiring).

There is another advantage if double-sided panels are used (e.g. panels with a melamine or veneer finish). If the exposed side of the panel is damaged, the Velcro can be removed from the inside, a Velcro strip placed on the damaged side and the panel reversed and re-attached to the Velcro strips on the wall.

This type of finish is feasible even with standard panels (2750 x 610/1220/1830 mm) and larger Velcro strips. However, the use of small or medium-sized panels is the most common.

For a good finish using this method, the wall should be flat.

### WALL PREPARATION

---

Before installing the panel on a cement or plaster wall, remove all dirt, dust and debris from the wall, particularly the places the Velcro strips will be attached.

### INSTALLATION

---

The Velcro strips should be sized according to the weight of the panels to be used.

1. The characteristics of the Velcro and the recommendations for its attachment (normally by gluing) indicated by the manufacturers should be borne in mind.
2. For the most common types of Velcro on the market and, for example, for finished particleboard panels 16 mm thick, 600 mm wide and 2750 mm high, strips of Velcro measuring 100 x 50 mm spaced 200 mm apart are cut and applied.



3. On the wall, ensure that the Velcro strips (loop side) are placed along the panel joint lines.

4. Repeat the positioning of the Velcro strips when placing the strips (hook side) on the panels.

5. Normally, with this type of finish, the panels are in contact with the base (e.g. directly on the floor or on strips attached to the floor). A gap is then left at the upper part of the panels.

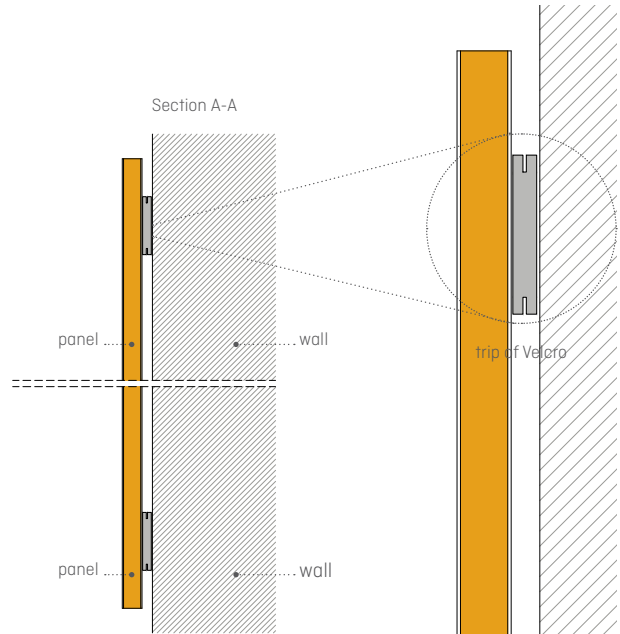
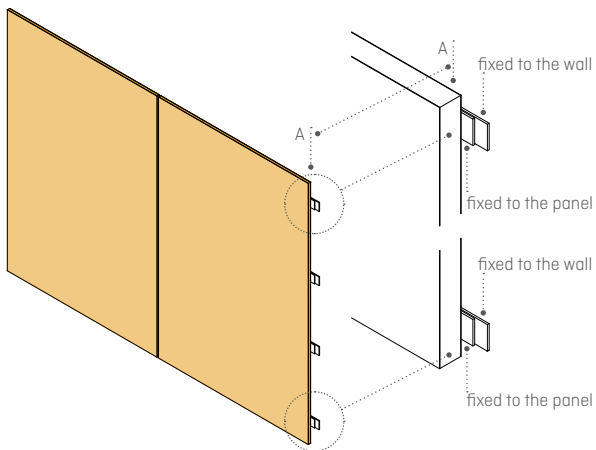


FIGURE 10: Construction detail for installing panels with Velcro

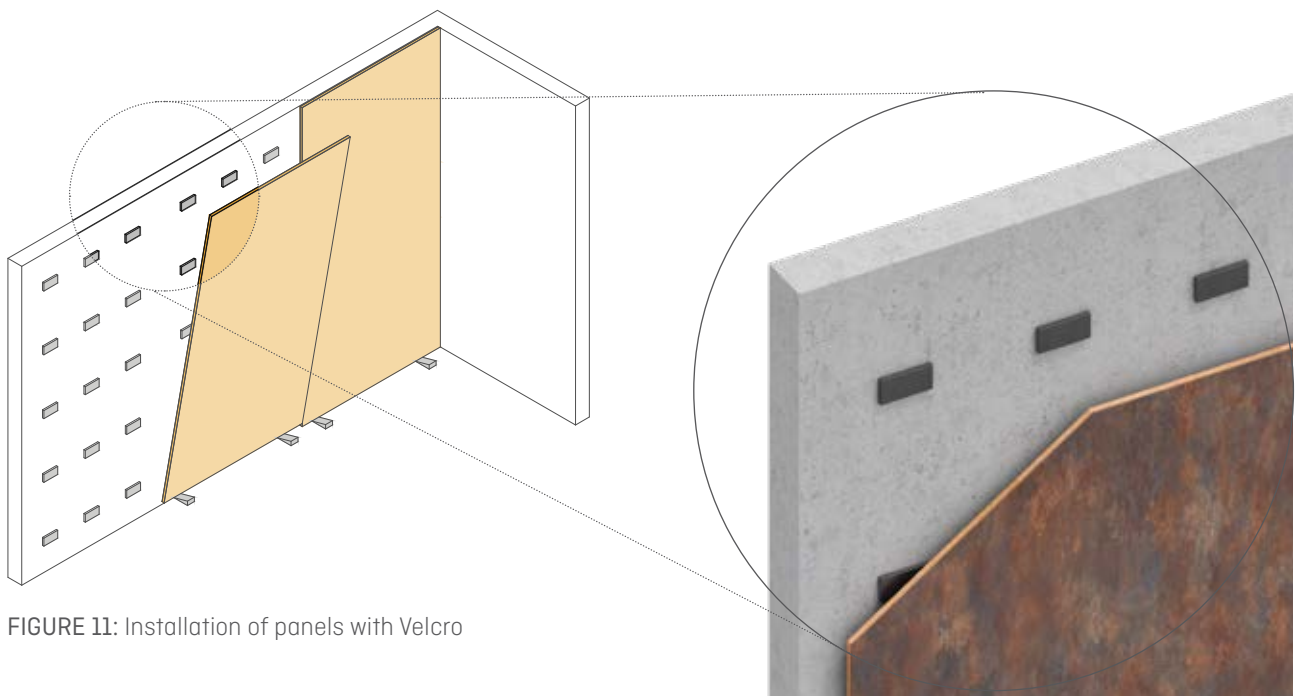


FIGURE 11: Installation of panels with Velcro



## DIRECT FINISH WITH METAL PROFILES

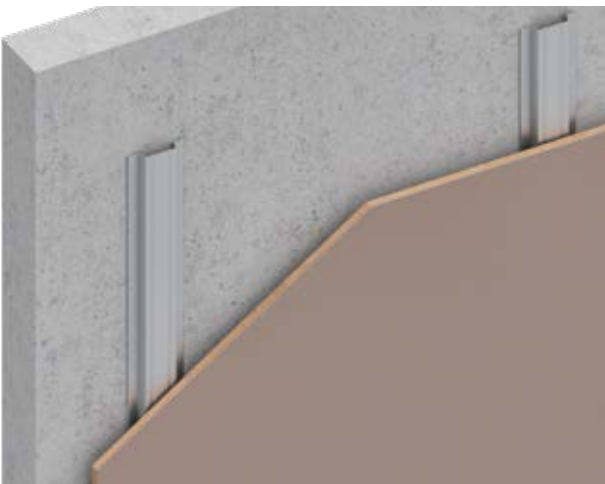
---

### WALL PREPARATION

---

This type of installation does not require special care in terms of surface cleaning of the wall.

However, the wall should be dry, not prone to condensation, be strong enough to hold screws and be flat enough to allow the panels to be positioned without causing unevenness.



### INSTALLATION

---

1. The screws and wall plugs to be used for attaching the metal profiles will depend on the nature of the material the wall is made from. For example, Assy screws by Wurth, or similar, and W-GS wall plugs by Wurth, or similar, can be used with plasterboard walls, or W-ZX, or similar, with cement walls.

2. The most commonly used metal profiles are Omega-type ones, with a depth suitable to the thickness of the panel (between 8 and 16 mm) if used with the flanges out, and suitable to the space/filling to be used between the wall and the panel if they are inside.

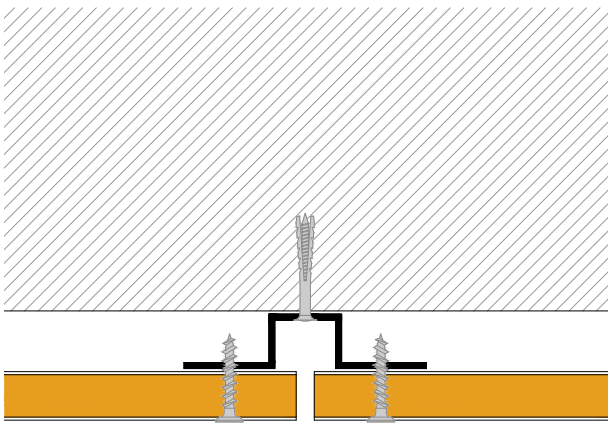


FIGURE 12: Interior profile

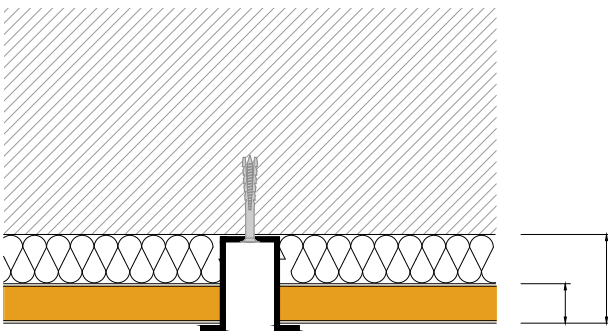


FIGURE 13: Visible profile

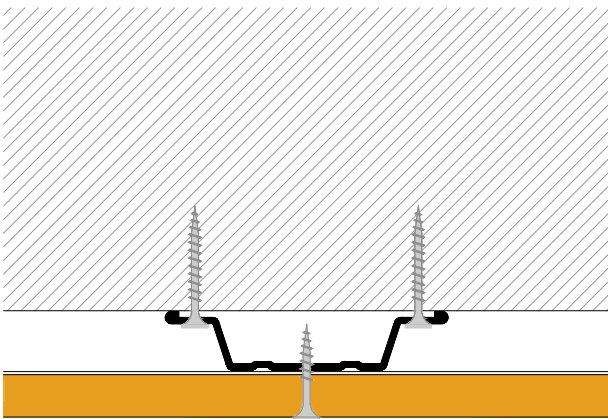


FIGURE 14: Double fixed interior profile

3. For the installation of the most common metal profiles (interior profiles), we recommend:

3.1. Spacing of 400 mm between profiles for fixing 8 to 12 mm panels or 600 mm for 16 mm panels.

3.2. Positioning on the vertical alignment defined during the support preparation phase. Attachment to the support must be suitable to the type of support and the

loads to be borne (weight of system and overloads). The support fixings should not be more than 600 mm from each other.

3.3. Double fixings on each profile (on both flanges) and staggered.

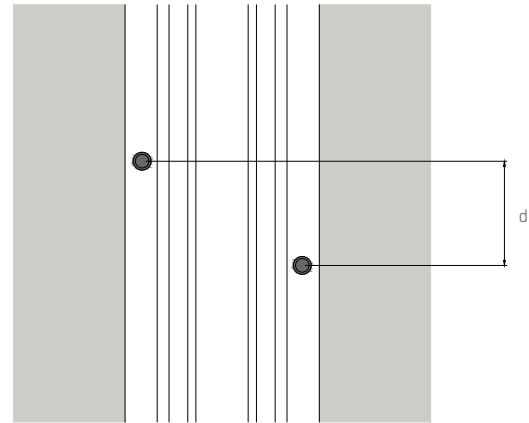


FIGURE 15: Fixing metal profiles

3.4. With metal profiles, positioning the end pieces at the floor and ceiling level is fundamental for a good finish with these systems, as it allows the panels to be correctly fitted to baseboards and ceiling moulding. These end pieces can be segments placed between the vertical profiles or a continuous profile, in which case the vertical profiles stay between them.

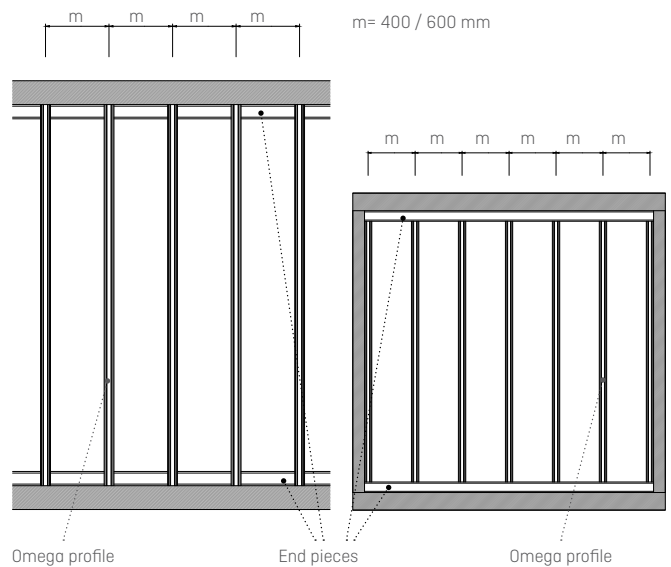


FIGURE 16: Applying end pieces

3.5. Reinforcement of the metal structure in corners or at partitions, without interrupting the modulation defined for the finish system.

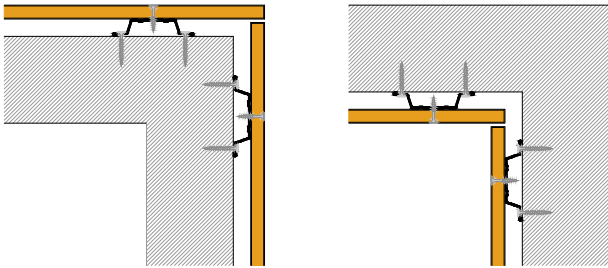


FIGURE 17: Reinforcing the structure in corners

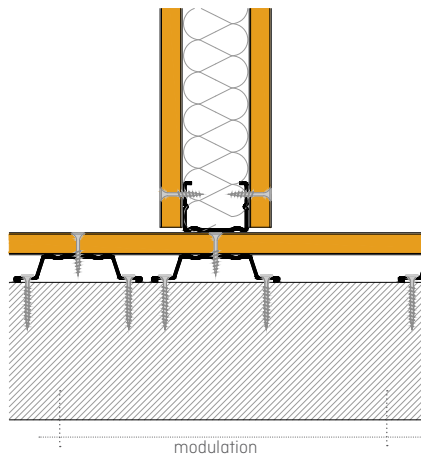


FIGURE 18: Reinforcing the structure at partitions

3.6. Application of vertical profile sections at the top of door openings and above and below window openings, without interruption to the modulation of the finish system, in such a way that the panel joints are always located over a metal profile.

3.7. Application of profiles (vertical and horizontal) around openings and at vertical alignments on each side (frames), all around the finish, regardless of the geometry of the panels that are going to be installed later. If the height of the opening coincides with the height of the wall to be finished, this recommendation does not apply.

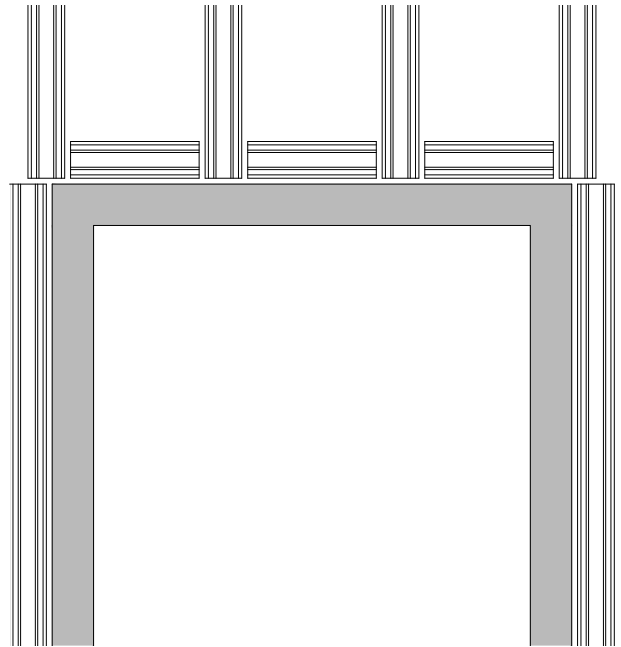


FIGURE 19: Application of profiles at openings

4. There are also recommendations to be followed for correct installation of the panels:

4.1. Application of the panels vertically, spaced at least 10 mm from the floor, to ensure that there is no direct contact with possible humidity.

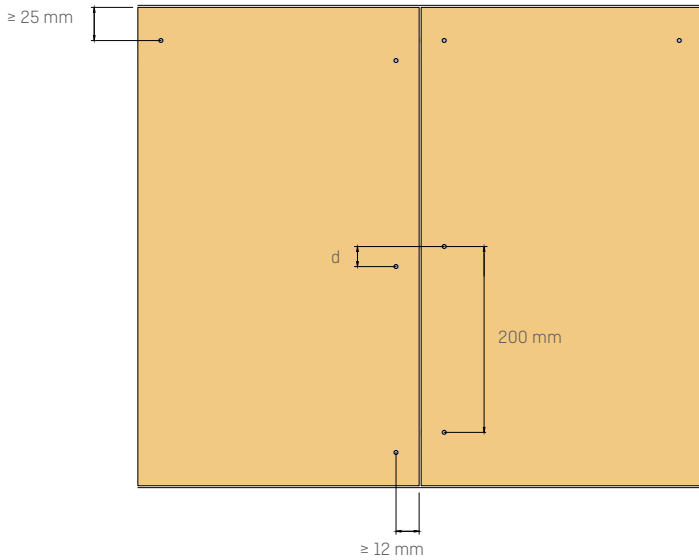


FIGURE 20: Fixing the panels to the metal profiles

4.2. Attaching the panels to the metal structure of all profiles using screws spaced no more than 200 mm apart (MDF panels should be pre-drilled at a diameter 1 mm less than the diameter of the screw) or using double-sided adhesive tape. (fig. 20)

4.3. Installation of panels in flag form whenever there is a need to go around openings.

This configuration makes it possible for the board joints to be staggered, not coinciding with the vertical alignment of the openings (frames). They should be at least 300 mm from these.

4.4. If it is not possible to follow the previous recommendation, a panel the width of the opening, or the width corresponding to the distance (between axes) of the metal profiles, can be installed above or below (for windows), immediately after those delimiting the opening.

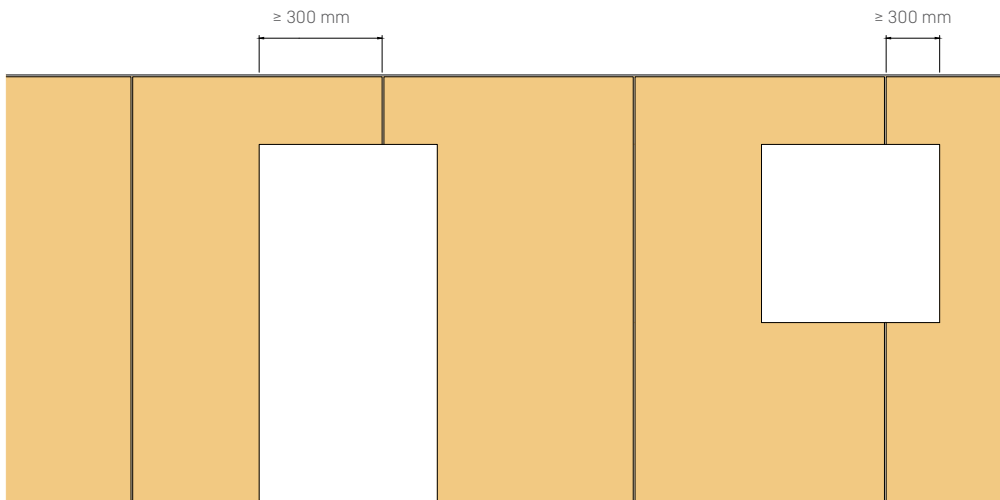


FIGURE 21: Going around openings with direct metal profile finishes



## DIRECT FINISH WITH BATTENS

---

### WALL PREPARATION

---

This fixing solution does not require special care in terms of surface cleaning of the wall.

However, the wall itself must be dry, not prone to condensation and be strong enough to hold the screws.

This is the installation method recommended for walls that are not quite flat, as this can be compensated by adjusting the thickness of the battens.

### INSTALLATION

---

1. The screws and wall plugs to be used for attaching the wooden battens will depend on the nature of the material the wall is made from.

For example, Wurth AW or similar screws and Wurth W-ZX, W-UR8 or similar wall plugs can be used for cement walls.

2. The most commonly used wooden battens are treated pine laths, with a section of 40 x 20 mm.

3. After cutting the finished particleboard or MDF, according to the modulation defined for the finish, these should be edged.

4. One of the most commonly used techniques includes opening a double space all along the inside longitudinal edge of the first and last panels and on both longitudinal edges of the intermediate panels.

5. The width of the opening should be the same as the thickness of the spline to be used (usually 4 mm) and the depth should be 5 mm larger than the width of the spline.

6. The surface of the spline should have the same design or an aesthetically similar pattern to the panels.

7. For installing the laths, we recommend:

7.1. Spacing of 400 mm between battens for fixing 8 to 12 mm panels or 500 mm for 16 mm panels.

7.2. Filling any gaps between the wall (support) and the back of the batten with polyethylene foam.

7.3. Positioning on the horizontal alignment defined during the support preparation phase.

7.4. The fixing must be suitable to the type of wall and the loads to be borne (weight of system and overloads).

7.5. The fixings should not be more than 500 mm from each other.

7.6. Simple fixing in the centre of the laths with countersunk screws/wall plugs.

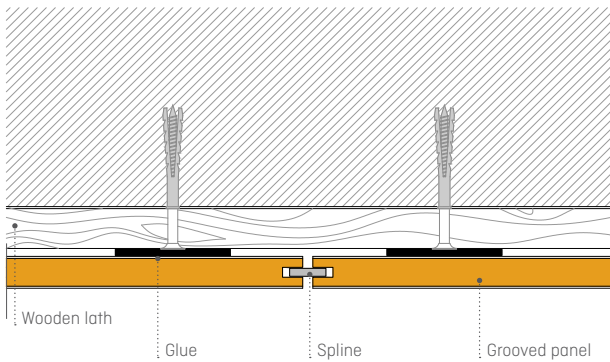


FIGURE 22: Detail of the finish system with laths (seen from above)

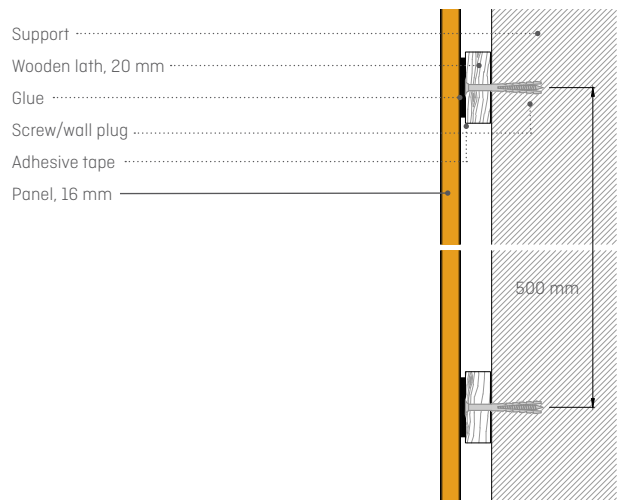


FIGURE 23: Detail of the finish system with laths (seen from the side)

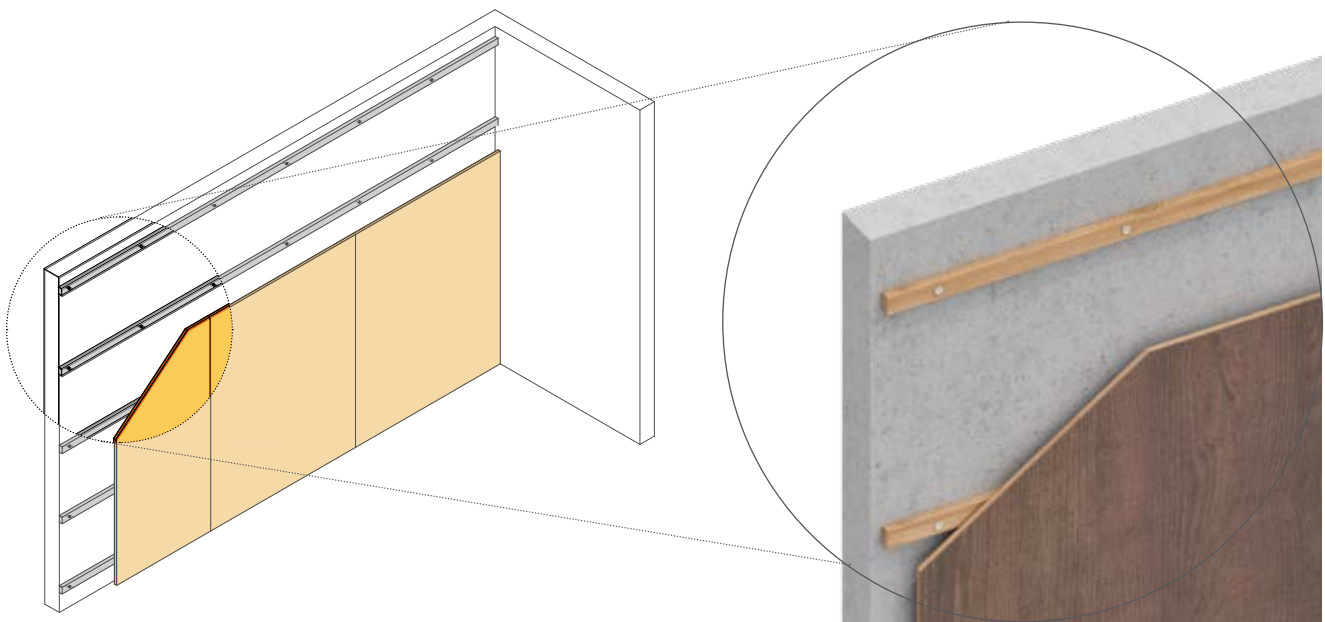


FIGURE 24: Installation of laths



## SELF-SUPPORTING FINISH

---

### WALL PREPARATION

---

This type of installation does not require special care in terms of surface cleaning of the wall, nor does the support need to be flat. The wall itself must be dry, not prone to condensation and be strong enough to hold the screws.

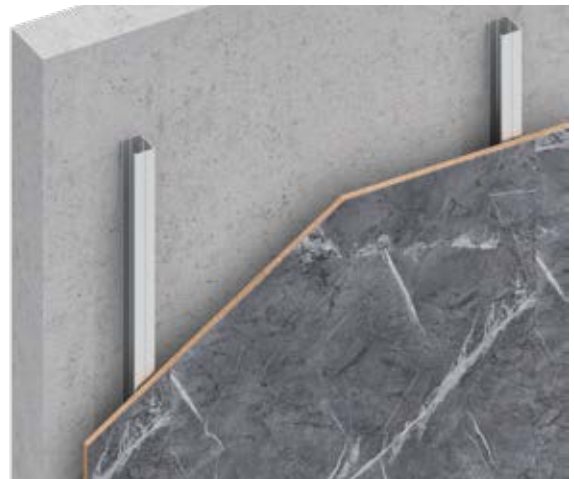
It is the ideal system for refurbishing deteriorated walls or improving acoustic, thermal and fire protection characteristics. It is a system consisting of metal profiles and wood-based boards.

This system can also have an extra layer of insulation inside to improve acoustic and thermal characteristics.

The advantages of this solution:

- Any kind of wall can be refurbished: damp, uneven, etc.
- The installations are hidden in the chamber formed with the wall.
- Finished decorative solution.

- Its composition allows different levels of acoustic and thermal insulation to be obtained, according to the needs of each case.





## INSTALLATION

1. Install the upper and lower channels, fixing them to the ceiling and floor with screws and ensuring they are straight. (fig. 25)
2. A joint guaranteeing waterproofness should be placed below the lower channel.

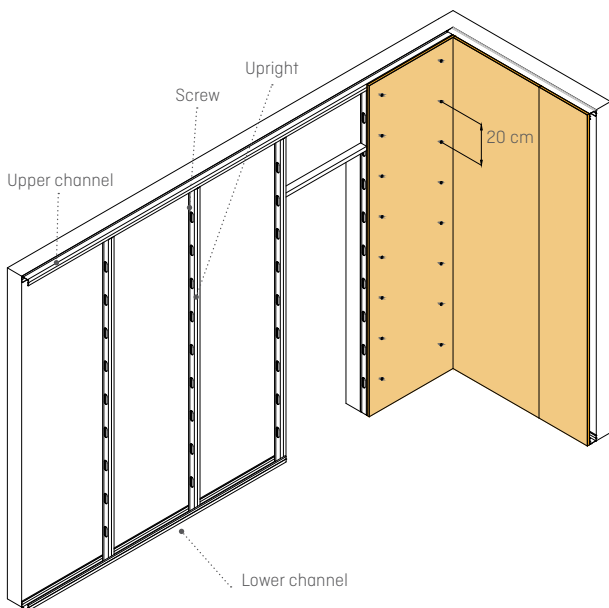


FIGURE 25: Self-supporting finish diagram

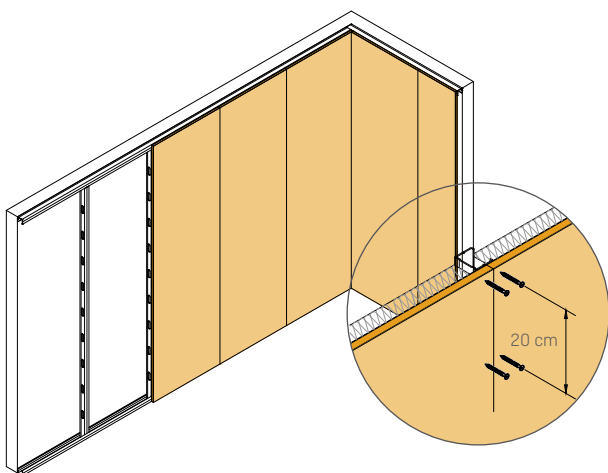


FIGURE 26: Fixing the panel to the upright

3. The distance between the fixing points of the channels should not be more than 600 mm.
4. Position the uprights by inserting them into the channels.

5. If it is necessary to use mineral wool as a vapour barrier, it should be placed against the wood-based board or, alternatively, install directly the wood-based board.

6. The uprights that have to be fixed to the channels should be screwed on using metal/metal screws.

7. Cut the wood-based boards 1 cm shorter than the height from floor to ceiling.

8. Fix the panels to the uprights and channels using wood/metal screws or glue them. In this case, double-sided adhesive tape is the most practical option.

9. Use an upright with an L-profile, near the end upright, to build/reinforce the corners. (fig. 27)

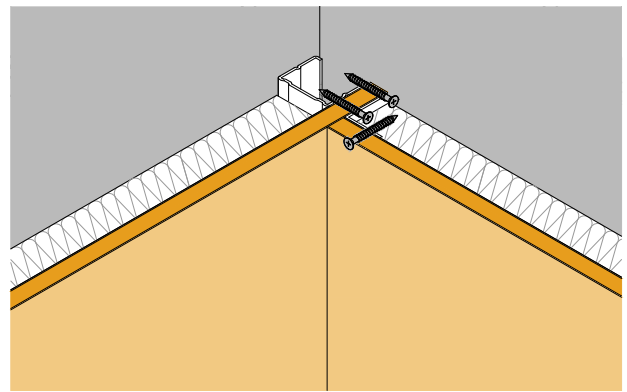


FIGURE 27: Corner detail

10. The wall finish should be carried out in such a way as to cover it all, from floor to ceiling and, if the project includes suspended ceilings, these will be installed later. (fig. 28)

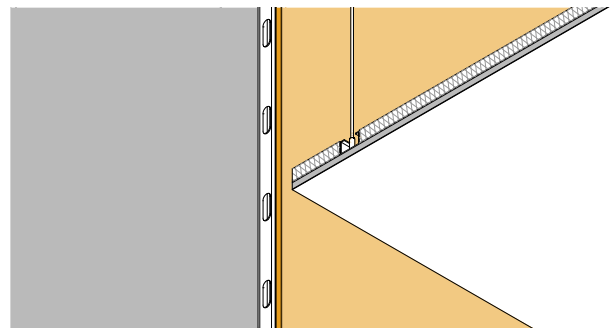


FIGURE 28: Detail of suspended ceiling installed later

[www.sonaearauco.com](http://www.sonaearauco.com)

**SONAE**   
**ARAUCO**  
Taking wood further