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# TECHNICAL CATALOG

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## EXTERIORS

**CONCEALED  
FIXATION  
WITH ADHESIVE**

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**Prodema**  
NATURAL WOOD BEAUTY

**#Prodema**





EDITION N° 13

04/2018

SPECIFIC CATALOGUE FOR

EUROPE  
ASIA  
AFRICA  
OCEANIA  
CENTRAL AND SOUTH AMERICA

For the satisfactory installation of **PRODEX** panels, it is necessary to follow all the instructions contained within this technical catalogue, without exception.

For technical queries, alternative installation systems, etc., we recommend contacting **Prodema** ([prodema@prodema.com](mailto:prodema@prodema.com)).

The updated version of this present guide can be found on the **Prodema** website.



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# 1 PRIOR TO INSTALLATION OF THE PRODUCT

## 1.1 RECEIPT OF MATERIAL

Verify condition of package:

- In the case of visible damage, leave details on the transporter's delivery note.
- In the case of hidden damage, notify within 72 hours.

No claims will be accepted for transport damage if any of these instructions are not followed.

## 1.2 HANDLING AND STORAGE



- **PRODEX** panels must be stored in a closed and climate controlled area, at an ambient temperature of 10–25° C and with an air humidity of 30–70%.

- It is recommended to store **PRODEX** panels in their original packaging until the time of installation. In the case of having to repackage any panel, this should be done under the same conditions as the original packaging.

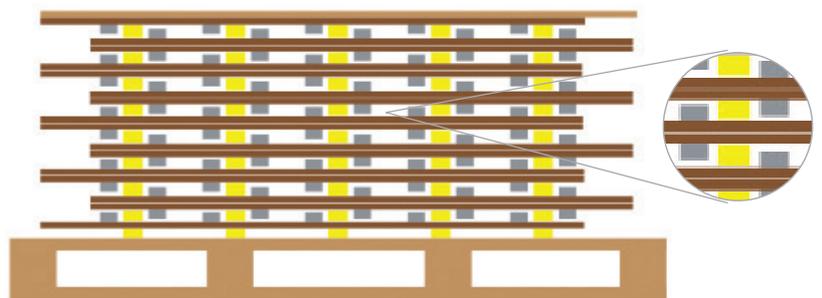
- Once the packaging has been opened, it is recommended to remove only those **PRODEX** panels that will be installed immediately. The remaining panels must then be stored under the same conditions in the original packaging.

- **PRODEX** panels cannot be stored vertically, only in a horizontal position on a pallet with supports < 800mm in distance. Improper storage can result in warping of panels.

- The floor supporting the pallet must be free of material and debris that may affect the stability of the pallet.



- During transport, **PRODEX** panels must be properly secured as they easily slide when stacked, resulting in damage. They must always be placed horizontally on a flat surface.



- It is recommended to avoid exposure of both sides of the **PRODEX** panel to different humidity and temperature conditions. When

**PRODEX** panels have been fitted with fastening elements (such as clips for a concealed installation), they must be stored face to face; back to back, using wood or plastic supports placed between panels at a maximum distance of 600 mm.

- These instructions also apply to cut panels.

### 1.3 RANDOM POSITIONING OF PANELS

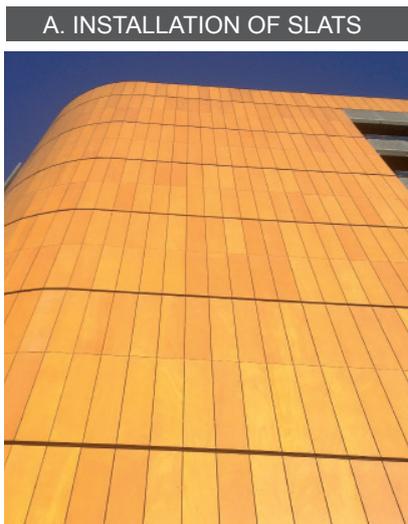
**PRODEX** panels, are manufactured with natural wood and therefore will exhibit variations in tone. Prior to fabrication and installation, it is recommended to mix panels to achieve an even distribution of tones throughout the facade. The steps to follow are detailed below:

1. Number all the pallets 1, 2, 3, etc., - The pallets must be stored throughout the fabrication / installation process in accordance with the requirements described in section 2.2.
2. Open pallet No. 1 and remove two panels - Place these two panels on a flat pallet, with a maximum distance of 800mm between supports.
3. Turn over the third panel from pallet No. 1 without removing it from the pallet.
4. Close pallet No. 1 and store it respecting the packaging conditions in section 2.2.
5. Repeat the same process with the other pallets, selecting them in a random order until 10 to 20 panels have been removed. For example, if there are 20 pallets, remove panels from numbers 1, 8, 13, 15 and 20, or other random order.
6. Mix the 10 to 20 panels that have been removed and install them within 2 to 3 hours from the time the first panel was removed.
7. Repeat the first six steps until all the panels have been installed.

#### PANEL MODULE SIZE

Depending on the module size selected for the façade, the aesthetic result in the majority of cases summarized as the following two options:

- A. Installation of slats.
- B. Installation of full size panels or large modules.



Natural wood will always show variations in tone from panel to panel. This variation of color between panels is more obvious when installing large size panels (photo on right). However, the difference in color will be minimized when smaller size panels are used (photo on left). This is most notable only in the Rustik and Pale colors. If you wish to see less color variance, a control sample must be sent with material order. We will then do our best to produce panels that are more homogeneous in color, although there will always be variations.

## 1.4 FABRICATION

### 1.4.1 CUTTING RECOMMENDATIONS

Panels need to be squared before cutting begins.

Cuts made to the exterior panels must be performed using tools with a material hardness of K - 05 and K - 01 (Tungsten carbide / Widia), be well sharpened and avoid overheating at all times.

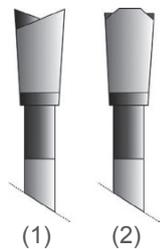
#### A. SAW

##### Types of Saw and Blades:

Circular saw blades for wood made from hard material (Widia tip) or blades designed for HPL (high pressure laminate) panels.

Parameters for saw blades according to tool type:

DIAMETER (mm)	TEETH (z)	SPEED (rpm)	BLADE THICKNESS (mm)	TYPES OF TEETH
300	48	4000-6000	3,2	Alternating inclined teeth (1) and trapezoidal teeth. (2)
250	40 / 48	4000-6000	3,2	
190	30	3000-3500	2,2	



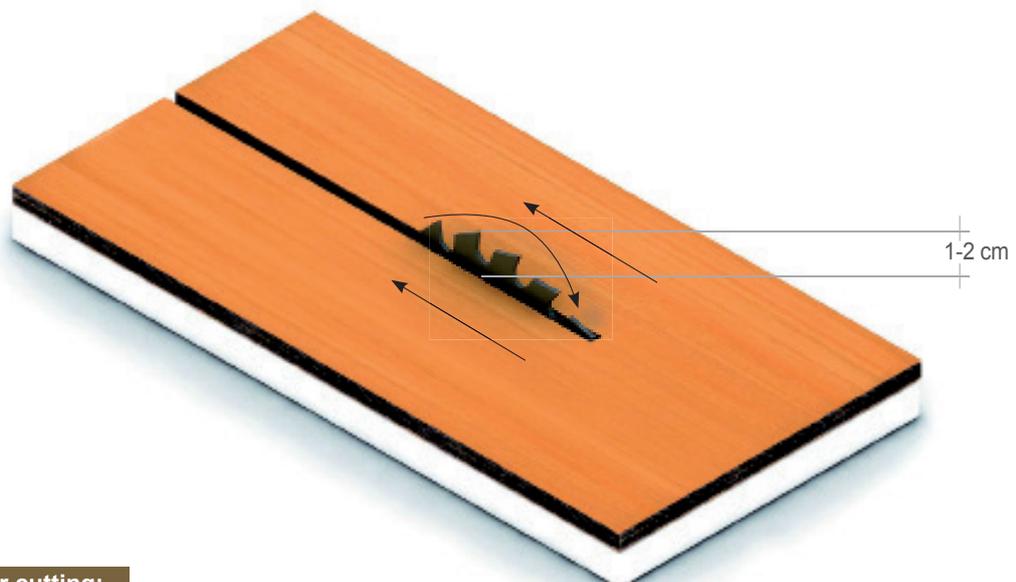
##### Positioning the Panel

The saw blade must always begin cutting on the front side (face) of the panel.

- Table saw: the front face of the panel must be face up.
- Manual saw: the front face of the panel must be face down.

##### Height of cutting Blade:

In order to obtain a clean cut, we recommend the height of blade to be 1–2 cm above the panel face.



##### After cutting:

After fabrication (cutting, drilling, sanding of edges, if required), no other treatment for finishing or protection is required. Rough edges may be smoothed out with sand paper.

## B. CNC

The **PRODEX** panel can be fabricated with computerized numeric control (CNC) machines. Ensure that bits are always well sharpened.

### Recommended Speeds:

- Cutting speed: 16,000 rpm.
- Feed speed: 4 m / min.

It is very important to avoid any overheating of the machine. The above recommended speeds must be monitored throughout the fabrication process to ensure optimal results.

## C. ALTERNATIVE SYSTEMS

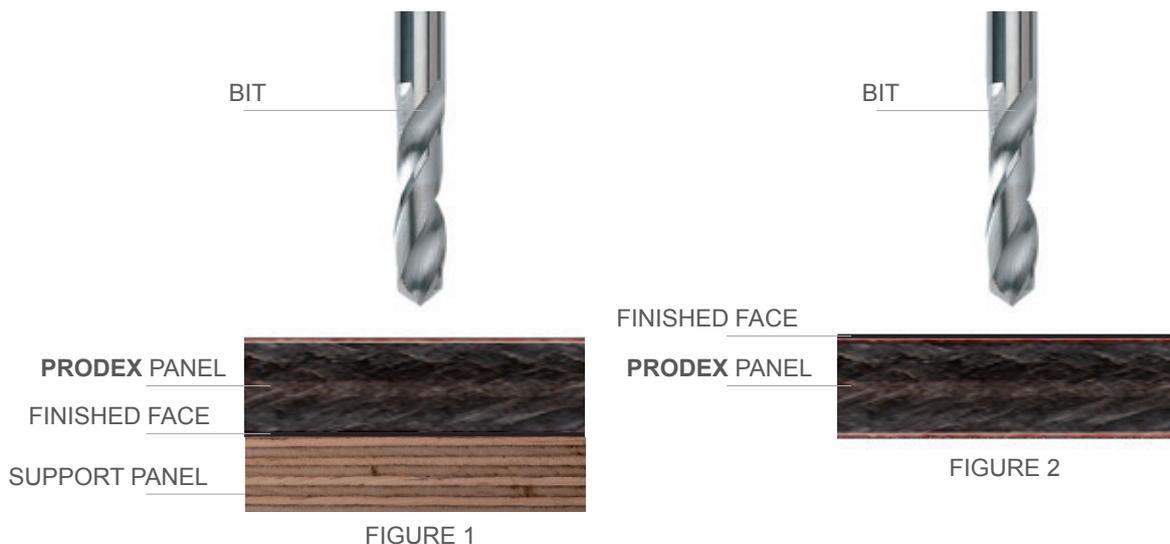
Apart from the already mentioned systems, there are other machining options. Not all of them are compatible with the material.

- **Waterjet cutting:** this system is compatible with the **PRODEX** panels, however, it is advisable to carry out a test beforehand to adjust the parameters.
- **Laser cutting:** this system is not recommended for use on **PRODEX** panels as they blacken and burn the wood veneer.

### 1.4.2 DRILLING RECOMMENDATIONS

The **PRODEX** panels are drilled using hard metal drill bits or steel bits with tungsten carbide tips (Widia) with a cutting angle greater than 100°. Bits for perforating metal may also be used.

In order to avoid any splintering of the material to be drilled, it is best to use a support plate under the panel to obtain a clean hole (see figure 1). If a support plate is not used, the finished face of the panel will face up (see figure 2).



### Drilling Speeds Recommendations:

- Cutting speed: 16,000 rpm.
- Feed speed: 4 m / min.

NOTE: Only use as reference as these will vary according to each tool.

## 2 INSTALLATION OF THE PRODUCT

### 2.1 GENERAL CONCEPTS

#### 2.1.1 VENTILATED FAÇADES

**Did you know that...** the use of a ventilated façade is essential for the assembly of **PRODEX** panels?

To ensure the good performance of this type of panel, it is very important that the differences in humidity and temperature between both faces is minimal. The ventilated facade has several advantages over a conventional façade:

##### • Watertight to rain

The ventilated façade provides better water-tightness in the rain and stops the water from penetrating into the air chamber.

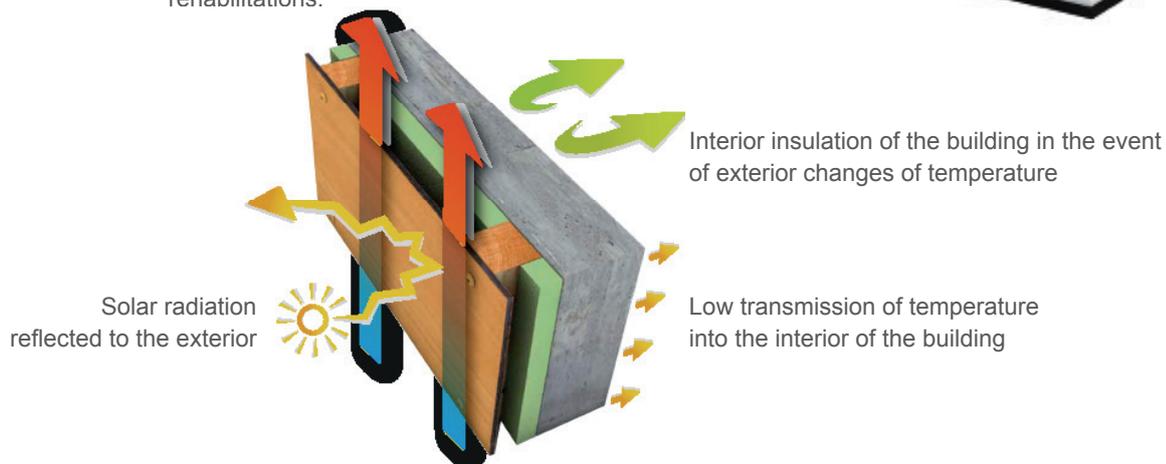
- It offers a good diffusion of water vapor from within the building to the exterior.
- The ventilated façade generates a constant ventilation of air and prevents there being any stagnation of humidity or the insulation from becoming damp.
- Reduces thermal bridges to a minimum.

##### • Improved acoustic insulation

##### • Thermal insulation

Generates an energy saving of up to 50%\* by absorbing less heat in summer and dispersing less heat in winter.

- Easy assembly and disassembly and a good solution for rehabilitations.



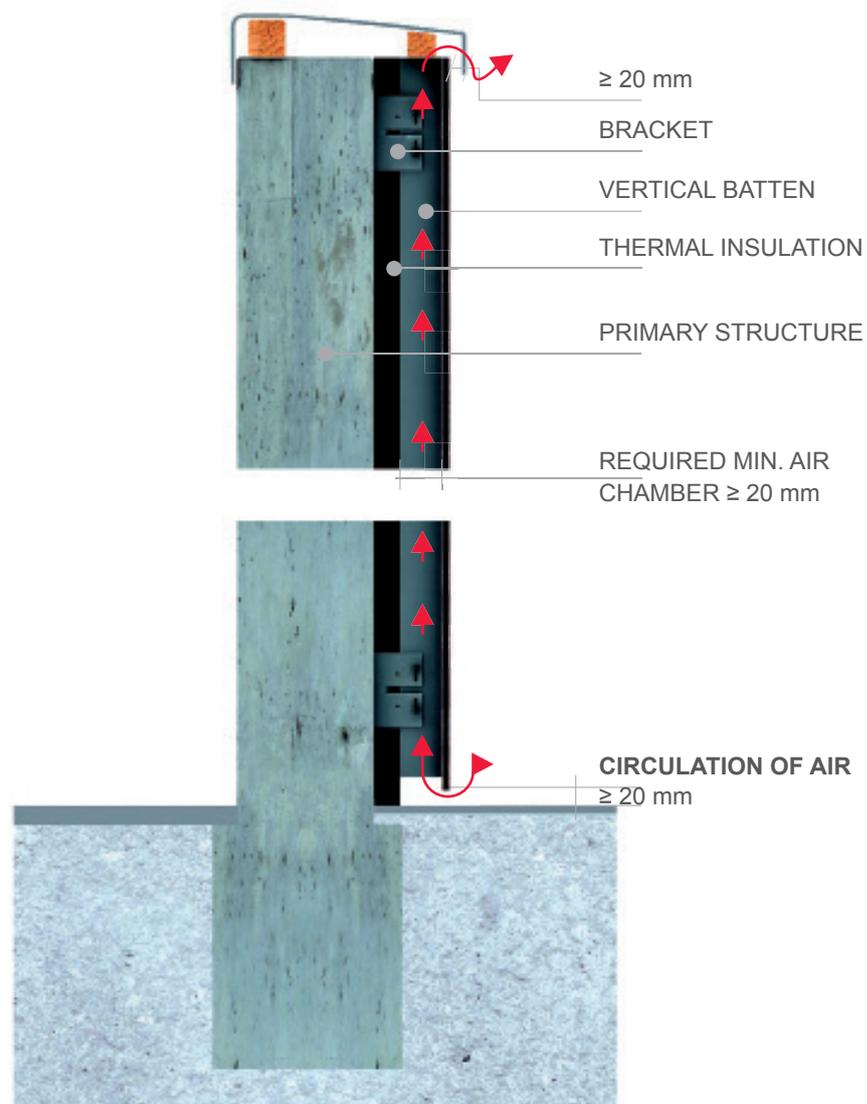
In the summer, or during hot spells, the sun shines on the **PRODEX** panels instead of on the building. This solar radiation heats the air in the air chamber generating a "chimney" effect due to the change in its density. This generated ventilation avoids the accumulation of heat on the façade, which together with the thermal insulation are the perfect combination to protect the building for atmospheric agents.

In winter, or during cold spells, the ventilated façade acts as a heat accumulator, given that the air chamber assists in the thermal stability of the system. This ventilated façade construction system together with the thermal insulation prevents the loss of heat of the building.

\* Depending on which direction the building faces, the insulation used and the numbers of doors, windows, etc.

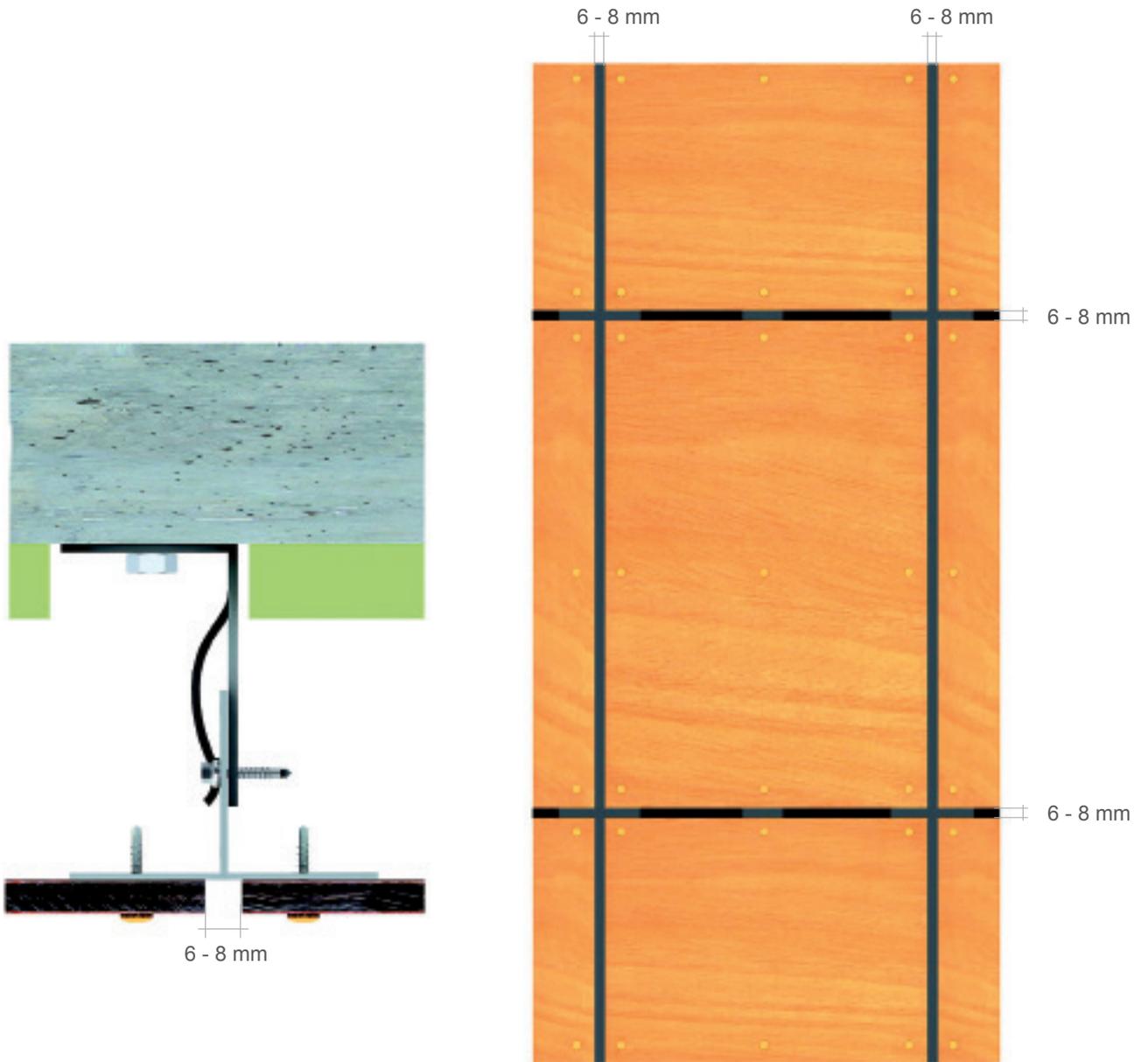
**Did you know that...** a ventilated facade require unobstructed, continuous air flow for proper performance?

- The air flow cavity behind the panel must be a minimum of 20 mm. Note that national or local regulations must be respected (refer to section 1.1).
- Leave an opening of 20 mm at the top and bottom part of the façade, as well as at door and window openings. This is critical to ensure required air flow .
- The subframing used to create the air flow cavity must be installed in a vertical direction. If conditions require horizontal battens, these will require weep holes allowing 20cm<sup>2</sup> / m on facades up to a height of 1m and 50 cm<sup>2</sup>/m on facades at a height of over 1 m.



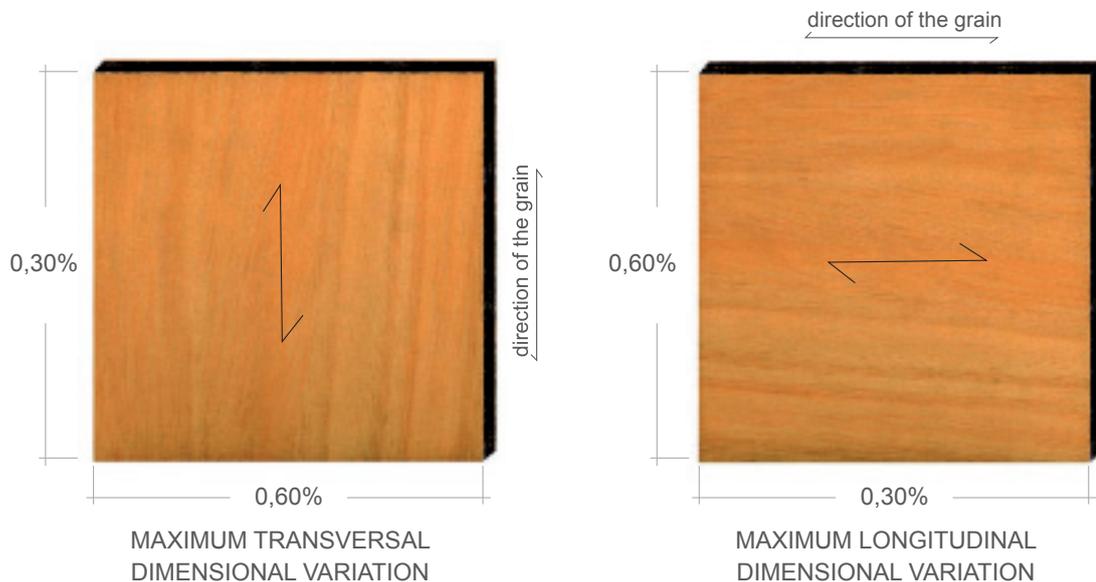
### 2.1.2 EXPANSION JOINTS

A 6–8mm expansion joint between panels is required. The joint allows the **PRODEX** panels to expand and contract as the material reacts to fluctuating temperature and humidity conditions.



### 2.1.3 DIMENSIONAL STABILITY

**PRODEX** is finished with a natural wood veneer and will experience dimensional changes due to temperature and humidity fluctuations. The maximum dimensional variation in a longitudinal direction is 0.30% and 0.60% in a transversal direction. These small dimensional variations do not affect either the aesthetics or the performance of the panels. Therefore it is very important to take into account the expansion joints indicated by **Prodema**.



**PRODEX** is resistant to vapor, water, snow and ice. However, we do not recommend submerging panels permanently or for extended periods of time in any of these conditions as a darker color may appear along the edges of the panel surface.

#### 2.1.4 SUBFRAMING OPTIONS

Due to **PRODEX** panels requiring a ventilated façade for their installation, the battens used as a subframe must be installed vertically. The fastening of the battens to the substrate must be done using fastening elements suitable for the material used.

The subframing system must comply with local wind-load and building code requirements.

The installation method, thickness, and dimension of the panel will also be taken into consideration. Lastly, the components of the subframing system must be protected against corrosion, regardless of the material or type of installation.

##### Metal Subframe

In rainy or humid areas it is advisable to use galvanized steel or aluminum metal battens. In coastal areas, we recommend using stainless steel or anodized aluminium battens.

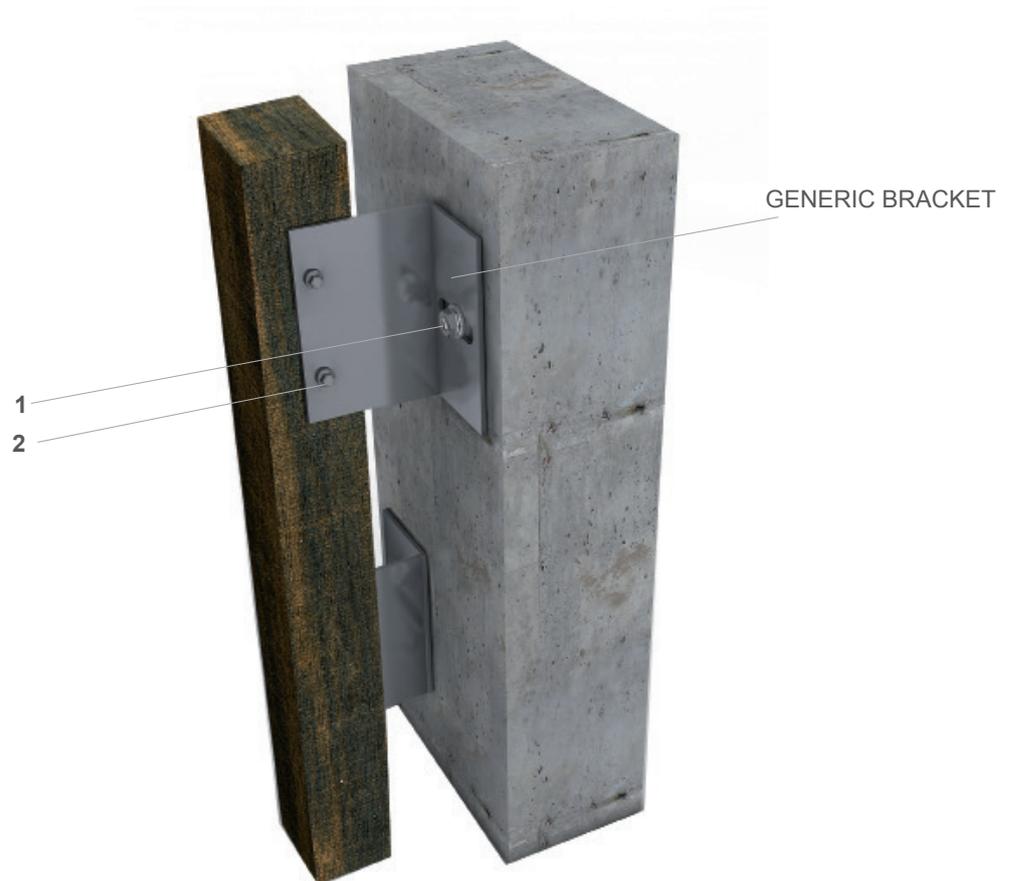


- 1 The brackets are fixed to the substrate using screws and their corresponding sleeve (steel or nylon).
- 2 The batten is fixed to the brackets using austenitic stainless steel self-drilling screws.

### Wood Subframe

This type of subframe requires treated wood. A PVC or closed cell polyethylene foam seal is required between the batten and backside of panel to act as a moisture barrier.

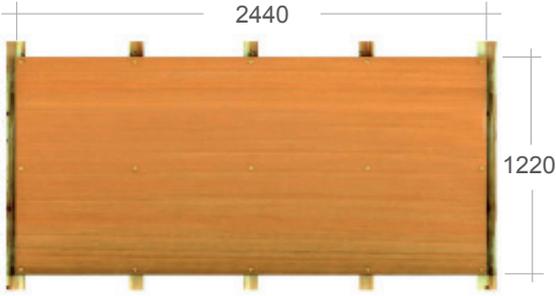
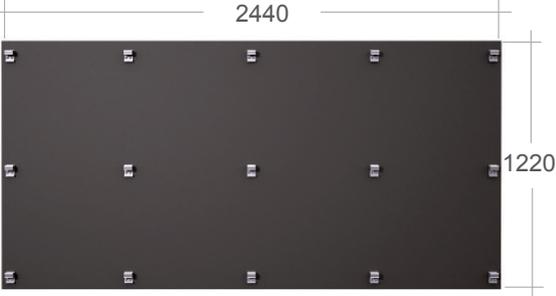
If needed, the generic bracket can be used to resolve irregularities in surface alignments.



- 1 The brackets are fixed to the substrate using screws with their corresponding sleeve (steel or nylon).
- 2 The batten is fixed to the brackets with screws for fastening to wood.

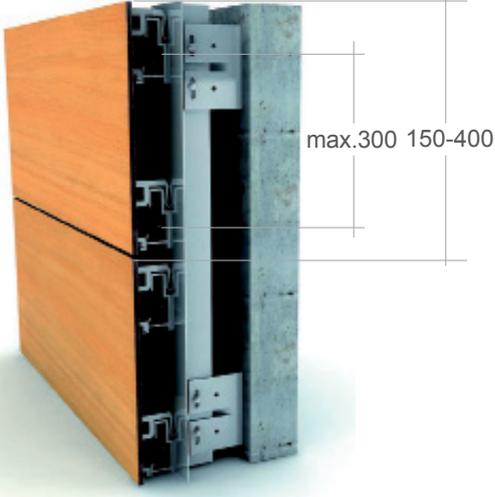
**2.1.5** MINIMUM SUPPORT POINTS PER PANEL

The panel should be supported by the maximum surface area of sub-frame element, regardless of the system. A minimum of 3 supports, vertically and horizontally are required per the diagram.

PANEL DIMENSIONS	EXPOSED FASTENING
Applicable to all panels except in the case of exceptions	
	<p data-bbox="911 801 1214 835" style="text-align: center;"><b>CONCEALED FASTENING</b></p> 

When the panel width falls within the specified dimensions (per below diagram), only two support points are required.

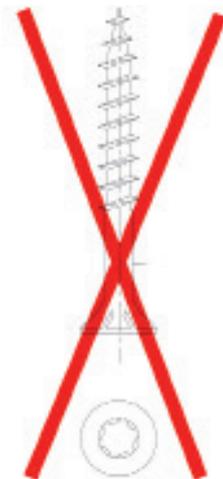
**EXCEPTIONS**

PANEL DIMENSIONS	EXPOSED FASTENING	CONCEALED FASTENING
EXPOSED FASTENING Pieces from 100 to 300 mm		
CONCEALED FASTENING Pieces from 150 to 400 mm		

PANEL DIMENSIONS	EXPOSED FASTENING	CONCEALED FASTENING
EXPOSED FASTENING Pieces from 300 to 600 mm		
CONCEALED FASTENING Pieces from 400 to 600 mm	<p>INTERMEDIATE SUPPORT BATTEN REQUIRED (only 2 rows of fasteners along edge of panel)</p>	<p>3 rows of hanging hook required</p>

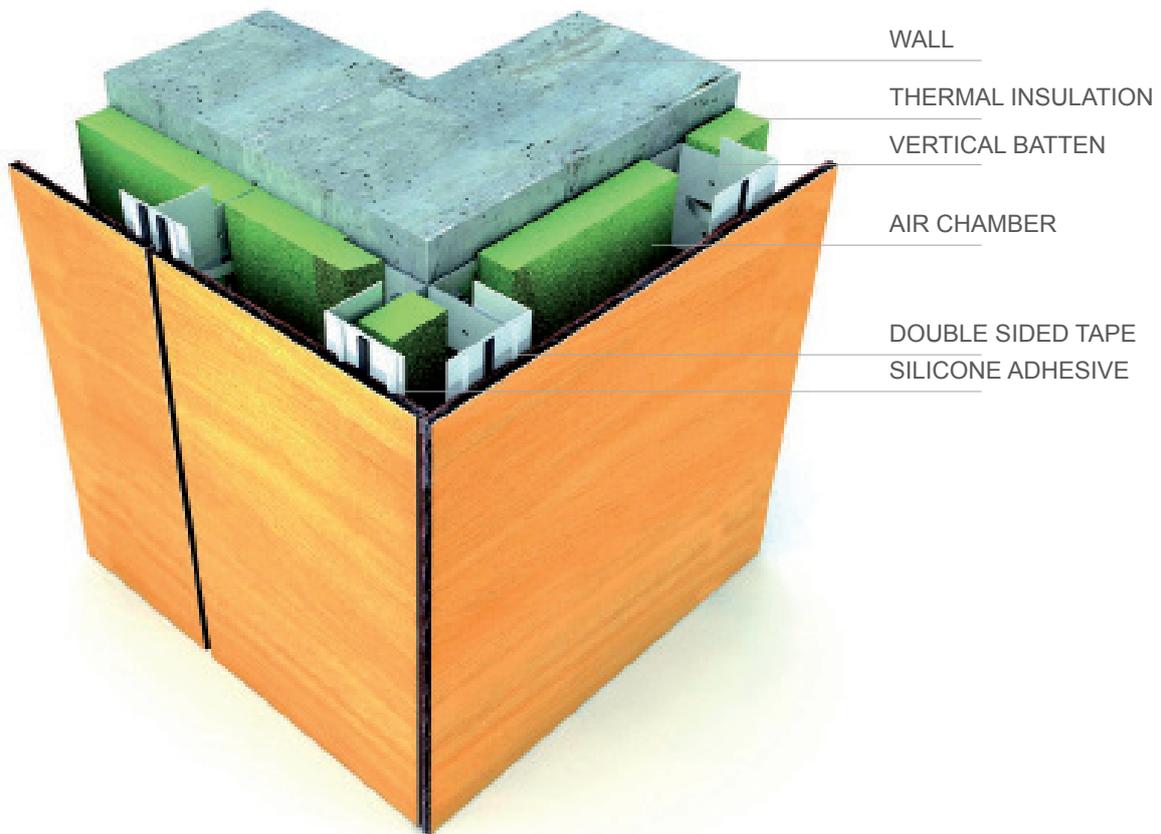
### 2.1.6 TONGUE AND GROOVE AND COUNTERSUNK SCREWS

**Prodema** does not allow installing tongue and groove panels for exterior façades. This system is fastened using countersunk screws that prevent the panels from moving, and furthermore, they are only screwed in around the perimeter of the female joint and not the male; which is insufficient for the proper functioning of the **PRODEX** panels according to our recommendations.



## 2.2 CONCEALED FASTENING WITH ADHESIVE

Concealed fastening with adhesive consists of a primer, silicone adhesive, and double-sided tape applied to the vertical subframe. Each panel must have at least three supports.



This type of installation requires 8, 10 or 12mm thick panels.

**This installation method requires precision. The adhesive manufacturer's instructions must be followed to ensure the systems' performance.**

THICKNESS (mm)	DISTANCE BETWEEN FASTENINGS (mm)
8	≤ 400
10 - 12	≤ 600

## INSTRUCTIONS: ADHESIVE INSTALLATION

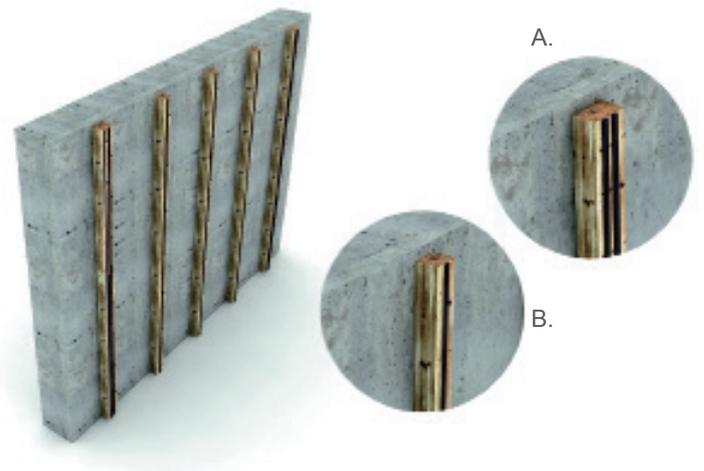
1 Clean the **PRODEX** panel only in areas receiving the adhesive. Use a brush, air gun, or solvent supplied by adhesive manufacturer.

2 Sand the batten on the surface area that will make contact with the panel. Wood or aluminum battens must be sanded free of dust and dry. Steel battens are not sanded to prevent damage on the oxide protection, but must be cleaned with proper degreaser.

3 Shake the primer well before use and apply to the clean and dry adhesion areas of the panel and batten. Note: Apply primer only to material that will install within a six hour period. A specific primer must be used for each material (wood, metal, etc).

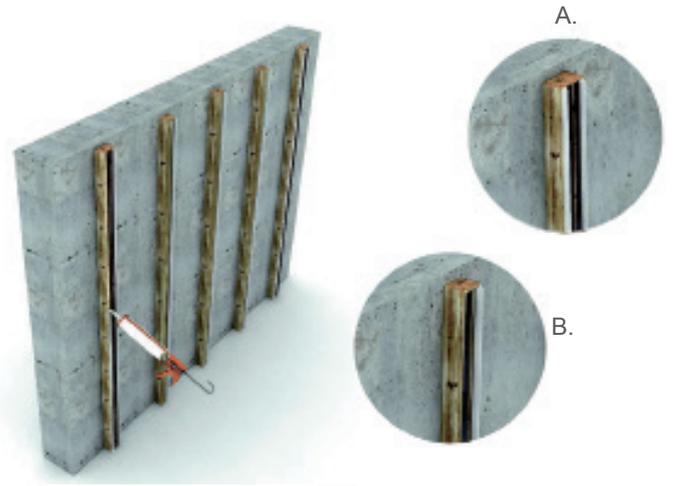
4 Each primer will have a minimum / maximum drying time. Follow product manufacture's drying instructions and continue with adhesive.

5 Intermediate battens (B) will require one double-sided tape line along one edge and full length of batten. Battens used to support adjoining panels (A) require 2 double-sided tape lines, applied at center, along full length of battens.



**6** A. Apply a bead of adhesive on each side of double-sided tape on batten used to support adjoining panels.

B. Apply a bead of adhesive alongside double-sided tape on intermediate batten.

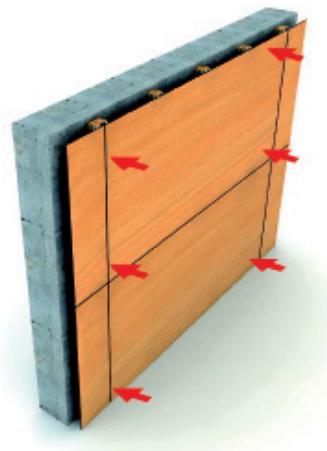


**7** Remove the protective tape from the adhesive tape.

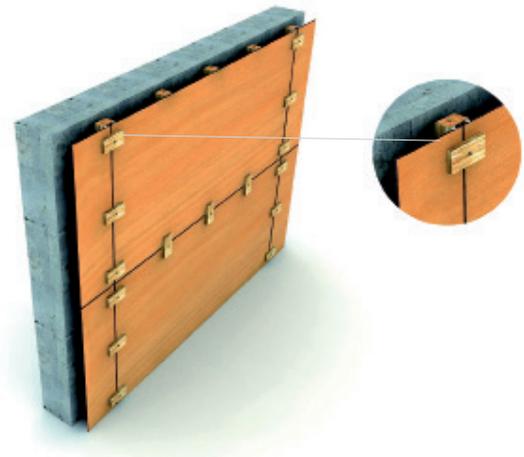


**8** Wait 10 minutes after the adhesive application and carefully position the panels.

Do not place excessive force as this can smear the adhesive bead, resulting in an uneven facade. The tape will hold the panel in position until the adhesive cures.



**9** Clamps are required to hold the panel in place until the adhesive polymerizes. These clamps must be placed every of 200–300 mm beginning at panel edge.



## 3 POST-INSTALLATION

### 3.1 REMOVING THE PROTECTIVE SURFACE

The **PRODEX** panels are protected by a special film on the finished side. The protective film, applied at the factory must be removed from the panel surface as soon as the product has been installed. Never try to remove the film from the reverse side as this is not a protective film and is necessary for the stability of the panel.

Never leave an installed panel, or one exposed to the elements, with its protective film in place for more than 2–3 hours. This will prevent the film from leaving residue on the panel surface and avoid having to remove it using special products. It will also prevent the panel from warping.



### 3.2 CLEANING

- It is difficult for dirt to adhere to the **PRODEX** panel surface.
- If the surface becomes dirty or there are remains of the protective film adhesive, this can be cleaned with lukewarm water mixed with a liquid detergent using a soft cloth. Do not rub the surface when dry.
- Never use abrasive detergents.
- In the case of more resistant grime, the panel surface may be cleaned with a soft cloth (un-dyed) dampened with benzene-free petroleum ether (40–60°C, light naphtha).
- Never use cloths or sponges with abrasive cleaning or sanding products, as this may damage the surface of the product.
- Nor should aggressive solvents such as acetone, ethyl acetate, MEC, nail polish, etc., be used, as these may cause permanent damage by partially or completely dissolving the protective film surface or cause cracks, which may not be evident at first glance. These products must not be used on the reverse face of the panels either.
- Surface drying is best performed using an absorbent, lint-free cloth.



- It is recommended to perform a cleaning test on a small area of the material for the purpose of verifying the efficacy of the procedure, and only then proceed with the remainder of the surface.
- There is no method for repairing scratched or dented panels.
- The use of solvents or chemical cleaning products must always be done according to the corresponding health and safety rules.

### 3.3 MAINTENANCE

- **PRODEX** panels do not require maintenance. In the case of dirt, refer to the Cleaning section.

### 3.4 REPAIR

- Natural wood is a delicate material. There is no prescribed repair method for **PRODEX** panels. Damaged panels must be replaced with new ones.

## 4 REMOVAL INFORMATION

### 4.1 REMOVAL

- The **PRODEX** product forms part of a ventilated facade system, the main components of which (aluminum, steel, wood and plastic) are easily separable and recyclable.

### 4.2 WASTE MANAGEMENT

- Reuse: reuse of the **PRODEX** panel for other applications with different requirements is encouraged.
- Recycling: the cellulose fibers of the core and the thermostable wooden sheet can be recycled. Recycling possibilities include its use for filler material for wood-based panels for construction use.

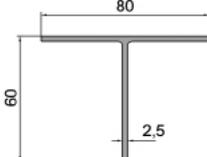
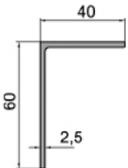
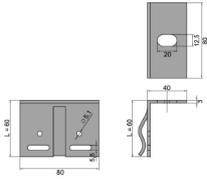
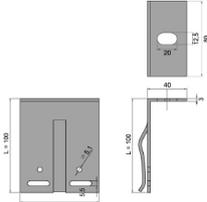
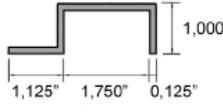
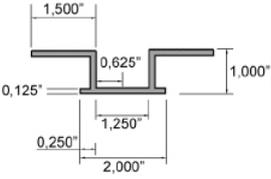
Dumping at landfill sites: the specifications that regulate and manage construction and demolition waste shall be followed, as well as any applicable local regulations. Disposal in industrial incinerators can also be considered.

- Sub-construction: the wood, aluminum or steel profiles may be reused for their original use, or recycled if the buildings have been carefully deconstructed.

# 5 ACCESSORIES

## 5.1 GENERAL ELEMENTS FOR THE PRIMARY SUBFRAME

### 5.1.1 ALUMINUM:

REFERENCE	DESCRIPTION	MATERIAL / FINISH
PRAS001BRU	 <p>T profile 60/80 3000 mm long</p>	Aluminum 6063 / Rough T5
PRAS002BRU	 <p>L profile 60/40 3000 mm long</p>	Aluminum 6063 / Rough T5
PRAS003BRU	 <p>L 60 Bracket</p>	Aluminum 6060 / Rough T5
PRAS004BRU	 <p>L 100 Bracket</p>	Aluminum 6060 / Rough T5
PRAS005BRU <i>(only sold in the USA)</i>	 <p>Modified J profile 146" (3708 mm) long</p>	Aluminum / Mill
PRAS005AND <i>(only sold in the USA)</i>	<p>Modified J profile 146" (3708 mm) long</p>	Aluminum / Black anodized
PRAS006BRU <i>(only sold in the USA)</i>	 <p>Inverted HAT profile 146" (3708 mm) long</p>	Aluminum / Mill
PRAS006AND <i>(only sold in the USA)</i>	<p>Inverted HAT profile 146" (3708 mm) long</p>	Aluminum / Black anodized



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