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# TECHNICAL CATALOG

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## EXTERIORS

CONCEALED  
FASTENING  
WITH  
HANGING HOOKS

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**Prodema**  
NATURAL WOOD BEAUTY

**PRODEX**



EDITION N° 3

01/2020

SPECIFIC Catalog FOR

USA & CANADA

It is necessary to follow all of the instructions contained within this technical catalog to ensure the successful installation of **PRODEX** panels and maintain a valid warranty.

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

The updated version of this catalog 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 50°-70° F (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.

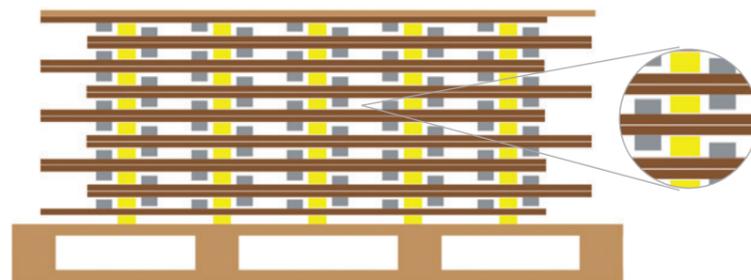
- **PRODEX** panels cannot be stored vertically, only in a horizontal position on a pallet with supports < 31 1/2" (800mm) in distance. Improper storage can result in warping of panels.

- 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 23 5/8" (600mm).



- 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 31 1/2" (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.

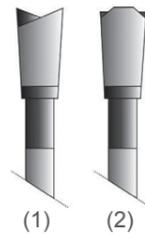
#### A. SAW

##### 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:

	BLADE DIAMETER	TEETH (z)	SPEED (rpm)	BLADE THICKNESS	TYPES OF TOOTH
Static circular saw	12"	80	4000-6000	1/8"	Flat, trapeze, alternate and all their combinations
	10"	80	4000-6000	1/8"	
Manual circular saw	17.5"	30	3000-3500	3/32"	



##### 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 1-2cm 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: 4m/min.

It is very important to avoid overheating of the equipment. 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 fabrication options. Not all of them are compatible with the material.

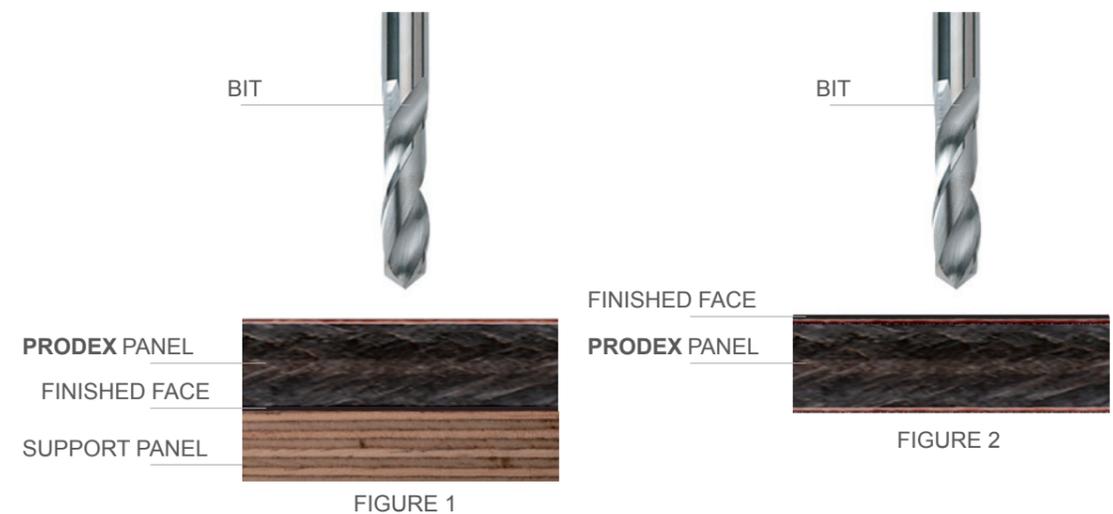
• **Waterjet Cutting:** this system is compatible with the **PRODEX** panels, however, it is advisable to carry out a test beforehand to adjust the parameters.

• **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 Speed Recommendations:

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

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

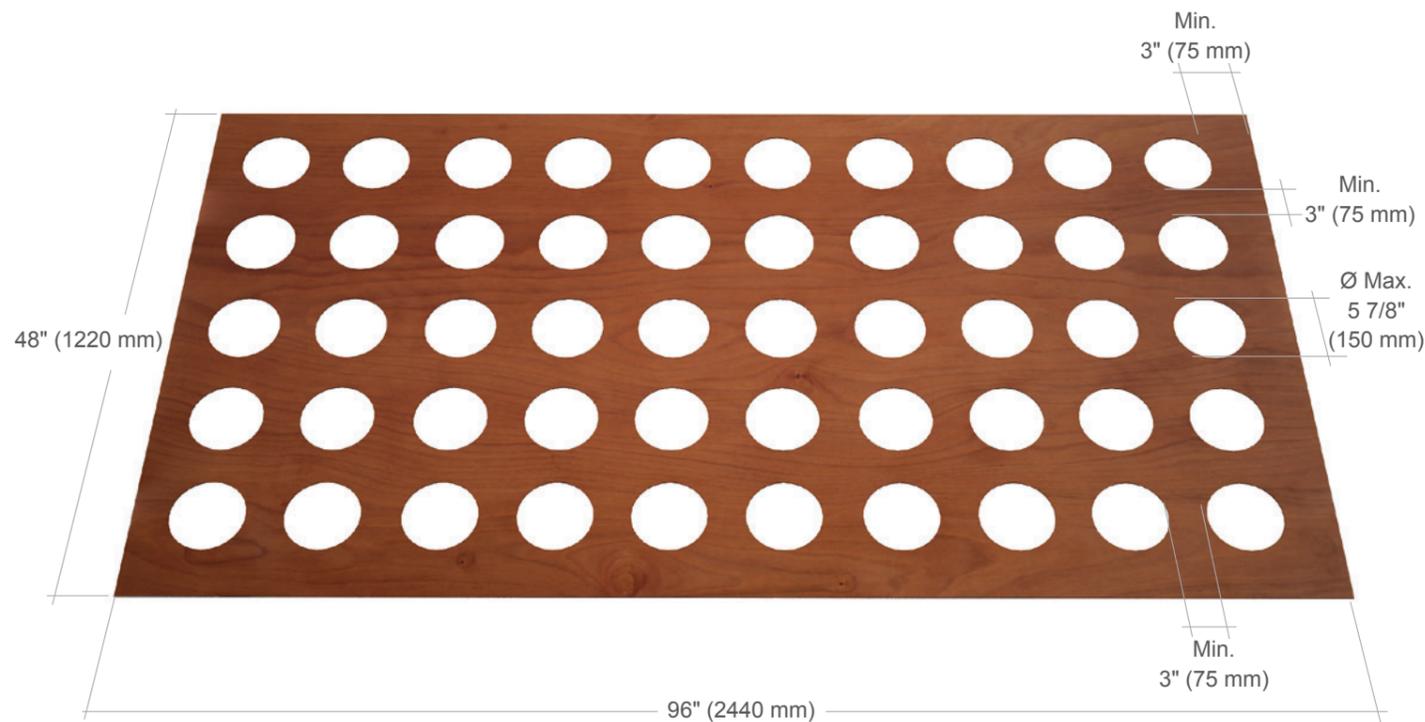
### 1.4.3 PERFORATION RECOMMENDATIONS

There are a series of limitations and requirements to consider when fabricating **PRODEX** panels for use on exteriors.

It is important to note that every perforation increases the percentage of exposed edges to UV and moisture conditions. This makes the panel more vulnerable, so we recommend the following parameters to ensure the panel's stability.

1. The fabrication must be performed by a professional using the appropriate tools.
2. If the percentage of the perforation pattern is > 20%, contact **Prodema** for recommendations.
3. All types of perforation patterns will require a solid 3" (75 mm) border along the perimeter of the panel.
4. The distance between perforations must never be less than 3" (75 mm).
5. If the fabrication consists of perforations, the maximum diameter of each may not be greater than 5 7/8" (150 mm).
6. The maximum panel openness must not exceed 30%.

When the panel requires custom fabrication as herein described, the consent of the **Prodema** technical department must be obtained.



### Cracks Due to Stress

If the panel needs to be perforated for aesthetic or functional reasons (ventilation outlets, installation of signage, lighting, etc.) it is very important to follow the recommendations below to avoid cracking of the panel due to excessive stresses.

#### OPENINGS, GROOVES, ETC.:

If you need to cut openings, grooves, etc., it is very important to avoid leaving sharp edges. The corners on openings should be softened by cutting the largest possible radius, a minimum of 5mm.



#### GROOVES ON THE EDGE:

It is likely that on some occasions, and always with the approval of the **Prodema** Technical Department, machining will be required to add a groove on the edge of the **PRODEX** panels (for a Clapboard facade installation for example). In these cases, it is also very important to avoid sharp edges and attempt to maximize their size, with the recommended minimum being 1/16" (1mm).



## 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 are 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.

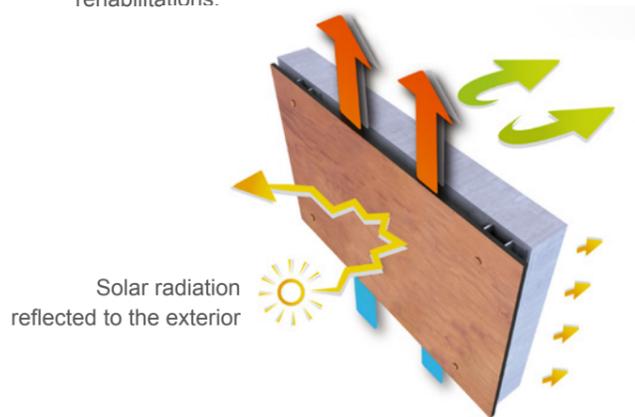
- It offers a good diffusion of water vapor from within the building to the exterior.
- The ventilated façade generates a constant ventilation of air and prevents there being any stagnation of humidity or the insulation from becoming damp.
- Reduces thermal bridges to a minimum.

#### • 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.



Interior insulation of the building in the event of exterior changes of temperature

Low transmission of temperature into the interior of the building

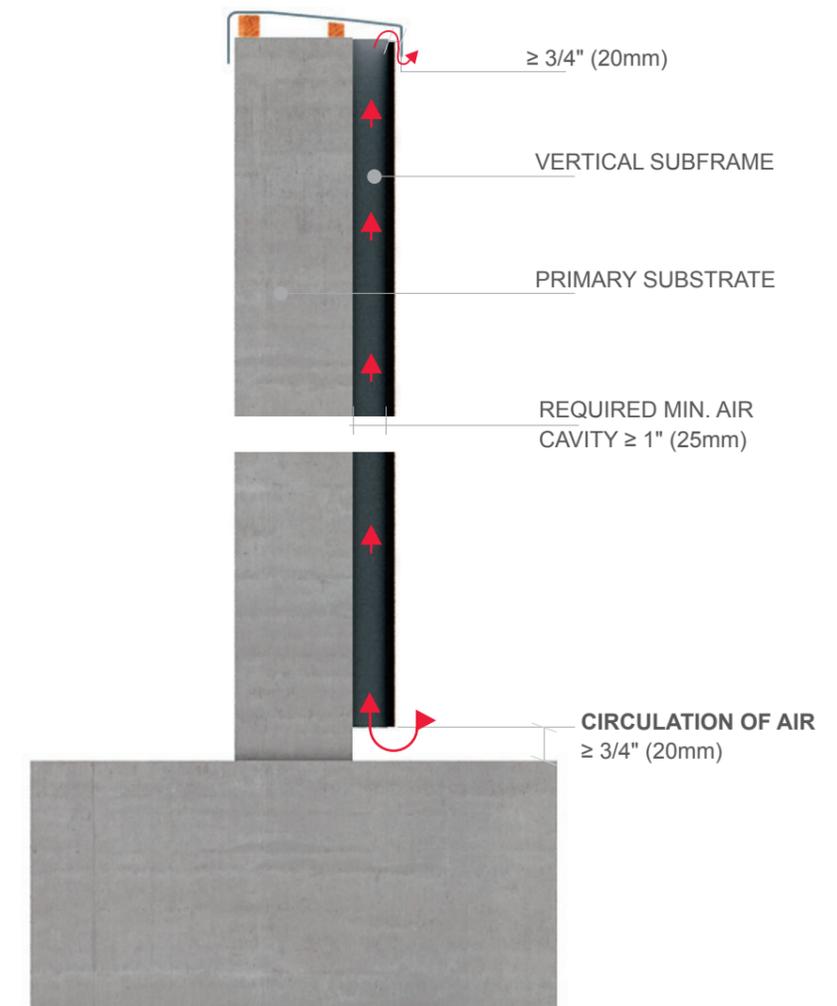
In the summer, or during hot spells, the sun shines on the **PRODEX** panels instead of on the building. This solar radiation heats the air in the air chamber generating a "chimney" effect due to the change in its density. This generated ventilation avoids the accumulation of heat on the façade, which 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.

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

- The air flow cavity behind the panel must be a minimum of 1" (25mm).
- Leave a minimum opening of 3/4" (20mm) 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 channels, the percentage of openness is directly related to the channel depth. Perforations must allow 3/4" (20mm) minimum air flow.

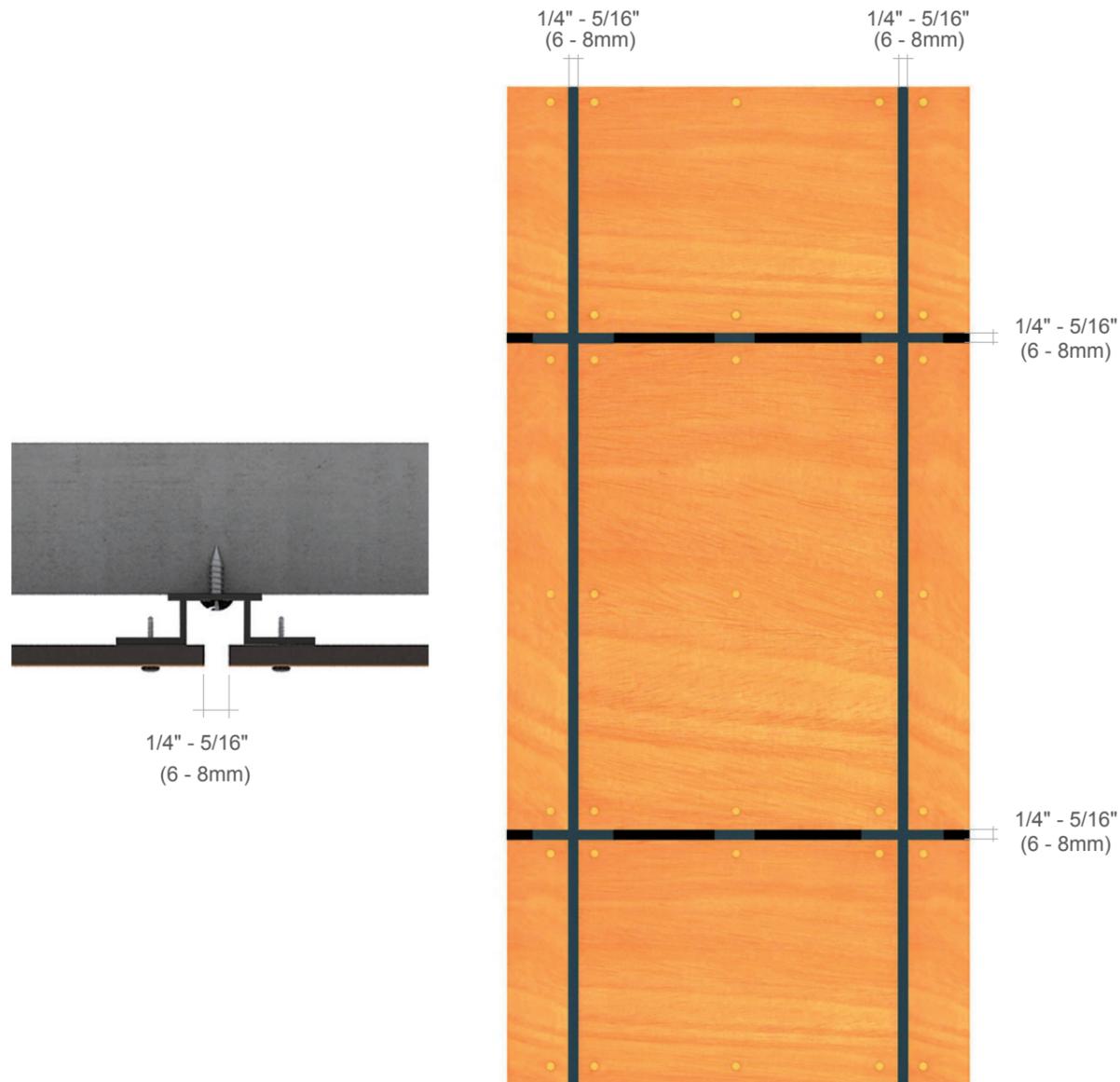
EXAMPLES:



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

### 2.1.2 EXPANSION JOINTS

A 1/4" - 5/16" (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

**PRODEX** panels require a ventilated air cavity for their proper performance. The subframe used to create this air cavity must be installed vertically and fastened to the substrate with fastening elements compatible with the materials used.

The subframing system must comply with local wind-load and building code requirements and 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 a galvanized steel or aluminum metal subframe. In coastal areas, we recommend using a stainless steel or anodized aluminium subframe.

**CMU - Concrete Wall**



**Stud - Wall**



**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.



**2.1.5 MINIMUM SUPPORTS PER PANEL**

**EXPOSED FASTENING**

A minimum of 3 supports are required per the diagram, unless the panel width, vertical or horizontal, is  $\leq 12"$  (305mm) for exposed.

Note: Ensure that the backside of the panel is supported by the widest surface area of subframe element.



INTERMEDIATE SUPPORT REQUIRED  
(only 2 rows of fasteners along edge of panel)

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(only 2 rows of fasteners along edge of panel)

**EXCEPTIONS**

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



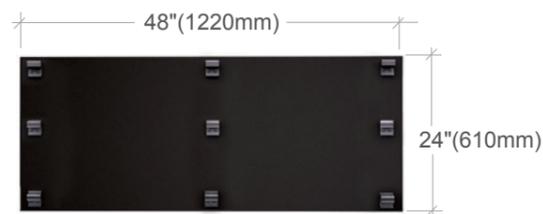
**EXCEPTIONS**

When the panel width falls within the specified dimensions (per diagram), only two hooks in that direction are required.



**CONCEALED FASTENING**

A minimum of 3 supports are required per the diagram, unless the panel width, vertical or horizontal, is 16" (305mm) for concealed.



3 rows of hanging hook required



3 rows of hanging hook required

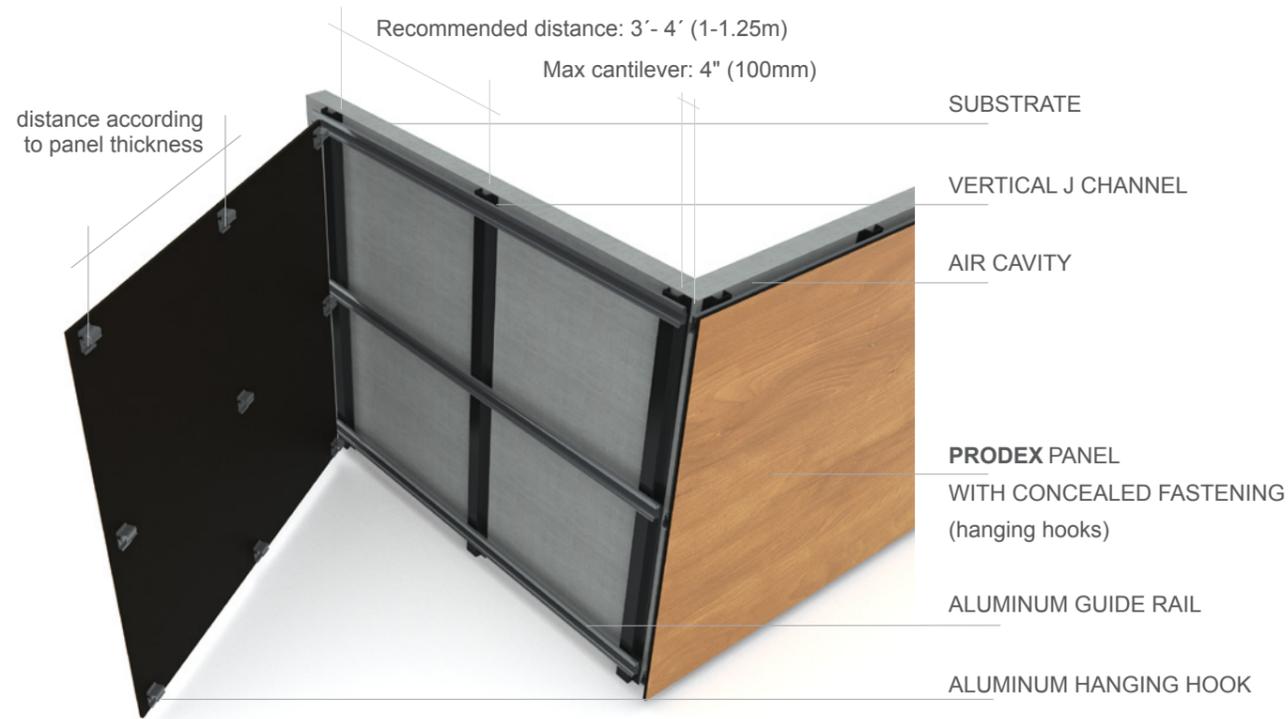
**2.1.6 TONGUE AND GROOVE AND COUNTERSUNK SCREWS**

**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.

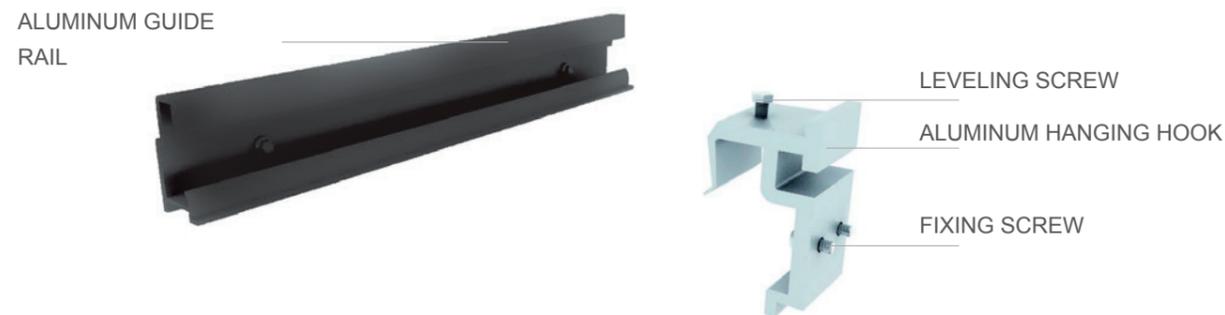


## 2.2 INSTALLATION SYSTEMS

### 2.2.1 PR-CF20: CONCEALED FASTENING WITH HANGING HOOKS



This system allows **PRODEX** panels to be installed with hardware that's concealed. This type of installation requires 3/8" - 1/2" or 9/16" (8,10, 12, or 14mm) thick panels.



The guide rail are horizontal and mounted over the primary aluminum vertical subframe. Two self-threading screws installed diagonally are used to fasten the guide rail to subframe.

### Hanging hooks installation

The hanging hooks are fastened to the backside of the panel. As the **PRODEX** material is very hard, a blind perforation must be made before fastening the panel screws. It is highly important to clean the holes before screw in the screws.

These are the different attachment methods for the hanging hooks:

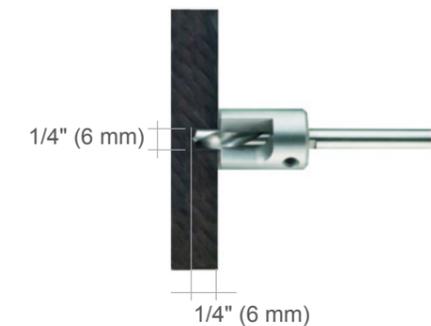
#### 1 TU-S fixing system:

The hole must have a diameter of 6 mm and must be also 6 mm deep. There way, it is highly important to use a depth locator, see Section 6.4.1 for Accessories. **This attachment system is only valid for 8 mm panels:**

##### PERFORATED DEPTH



##### PRE-DRILLING



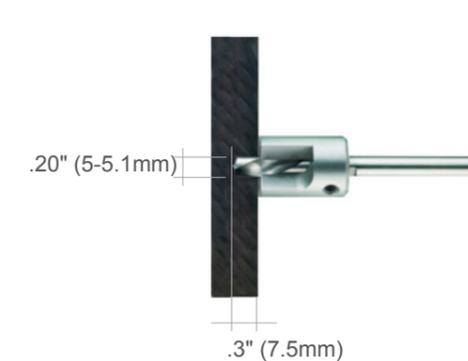
#### 2 TB-A TX 30 screws:

The hole must have a diameter of 5-5.1 mm and must be 1.5mm deeper than the screw once adjusted. This attachment system is valid for panels **10 mm - 14 mm panels:**

##### PERFORATED DEPTH

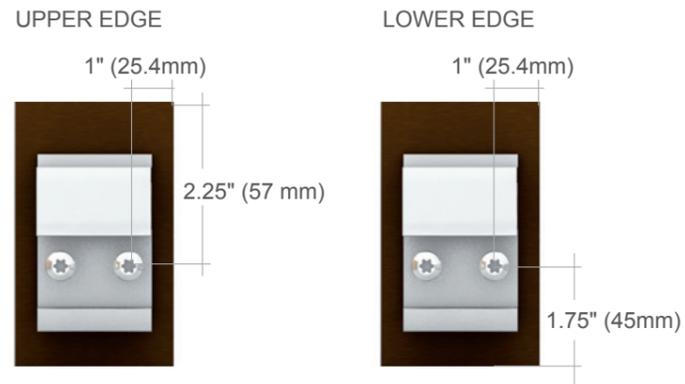


##### PRE-DRILLING



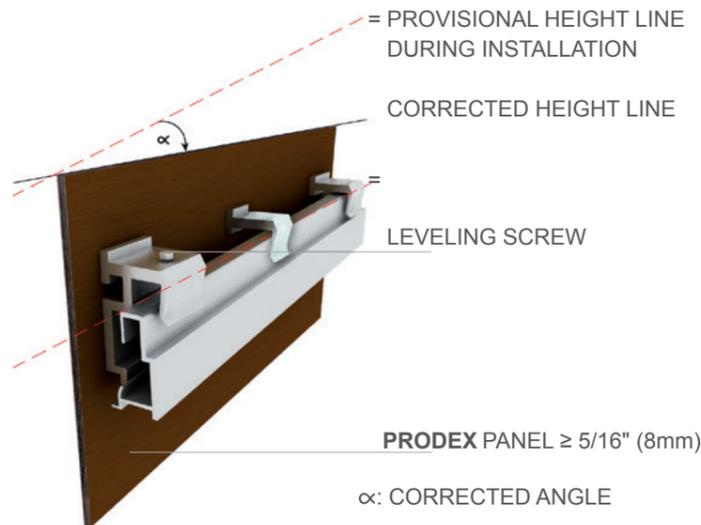
### Positioning

The required distances from screw to panel edges are detailed below.



### Leveling Panels

The main difficulty with installing panels with a guide rail is aligning the panel height. You can add a leveling screw to the hanging hook to assist with leveling the panel height.

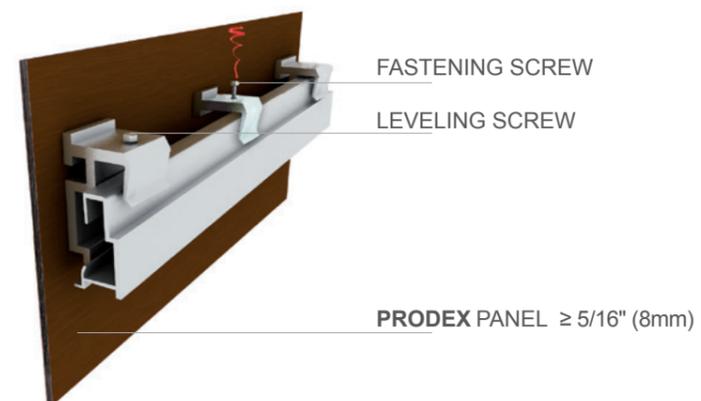


### Securing Panels

Once the panels have been leveled, a fastening screw is added to secure the panel in place and prevent lateral movement.

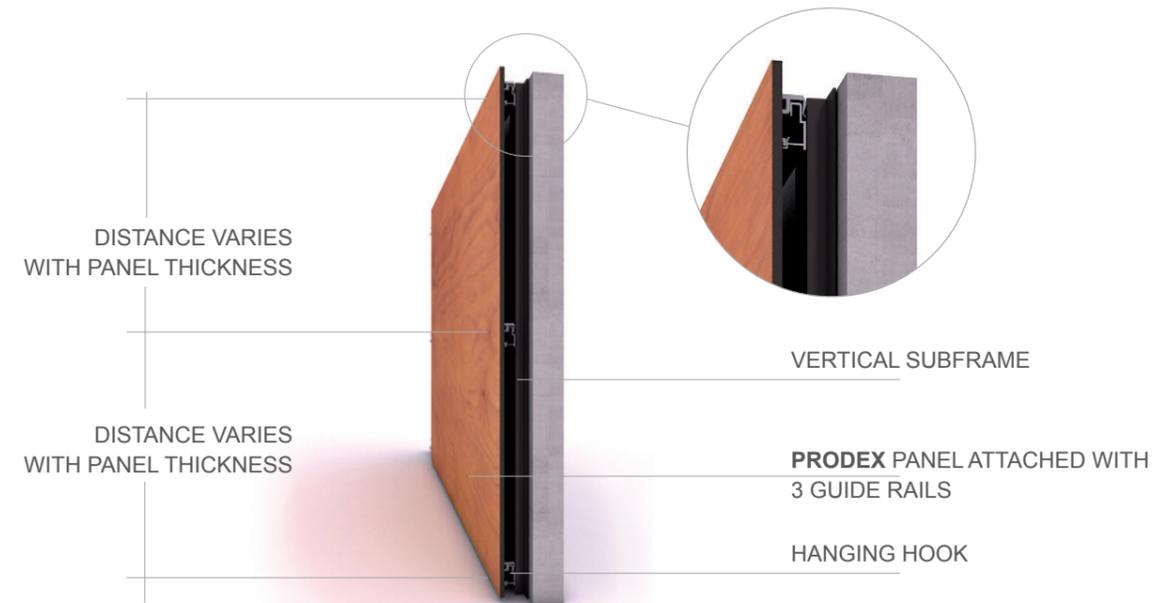
The fastening of panels or pieces must be performed once they are correctly leveled and in their definitive position.

Fastening is carried out by inserting an austenitic stainless steel self-drilling screw and fastening the upper central clip of each panel or piece to the horizontal guide strip.



### Installing the Horizontal Guide Rails

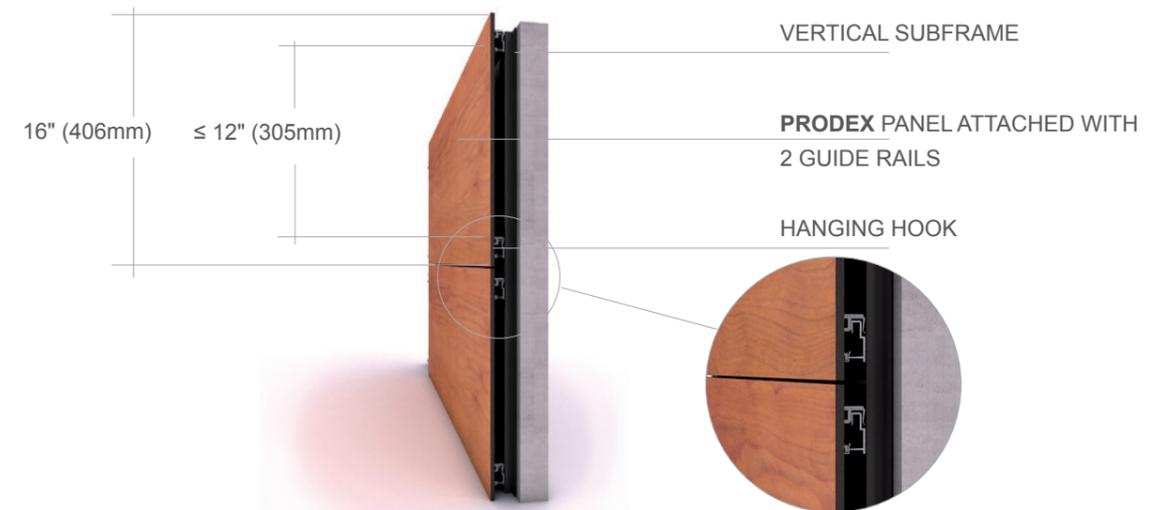
The aluminum guide rails are installed horizontally over the vertical subframe following the distance on the table below. Each panel must have at least three guide rails (exception below).



EXCEPTION:

When the panel width is 6"-16" (152-406mm), two guide rails are sufficient. The distance between the axis of the rails must always be  $\leq 12"$  (305mm).

• Refer to section 3.1.5 for channel requirements.



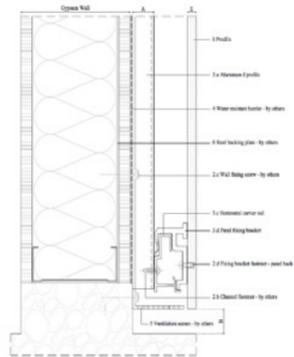
THICKNESS	DISTANCE BETWEEN HANGING HOOKS
5/16", 3/8" (8, 10mm)	$\leq 24"$ (610mm)
1/2" (12mm)	$\leq 32"$ (813mm)
9/16" (14mm)	$\leq 40"$ (1016mm)

• Refer to section 3.1.5 for hanging hook requirements

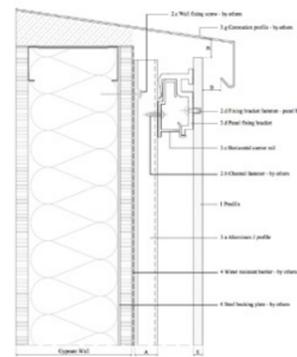
## 2.3 INSTALLATION DETAILS

### 2.3.1 PR-CF20: CONCEALED FASTENING WITH HANGING HOOKS

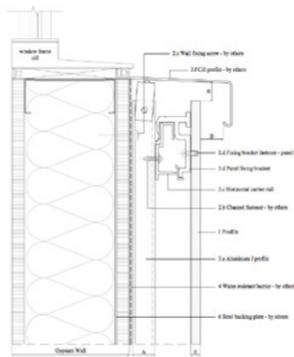
#### Base Ventilation



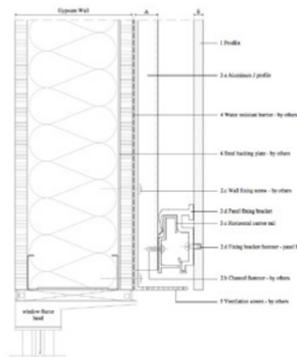
#### Head Ventilation



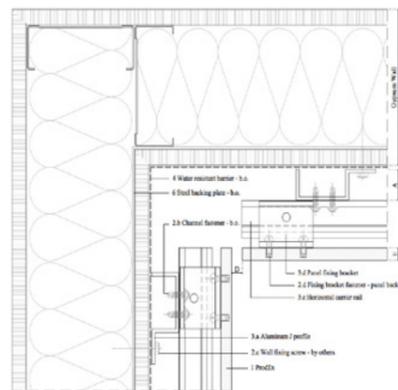
#### Window Sill



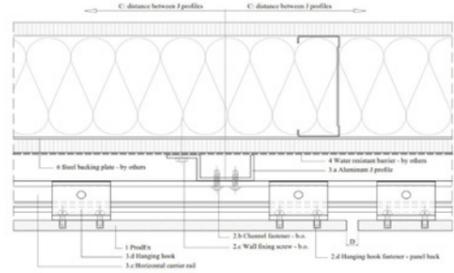
#### Window Head



#### Inside Corner



#### Vertical Joint



## 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 (104°-140° F, 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.

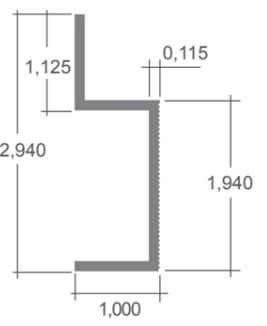
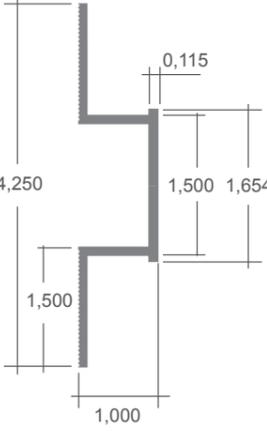
Dumping at landfill sites: the specifications that regulate and manage construction and demolition waste shall be followed, as well as any applicable local regulations. Disposal in industrial incinerators can also be considered.

- 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 ELEMENTS FOR THE EXPOSED FASTENING SYSTEM

#### 5.1.1 SUBFRAME

REFERENCE	DESCRIPTION	MATERIAL / FINISH
PRAS005AND		J - Channel 10' (3048mm) long Aluminum / Black lacquered
PRAS006AND		HAT - Channel 10' (3048mm) long Aluminum / Black lacquered



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# Prodema

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NATURAL WOOD BEAUTY

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## TECHNICAL CATALOG

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