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# 4mm Facades

Application Guide

DEKTON® SL | M

designed by COSENTINO

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**This Document includes guidelines and best practices for the application of Dekton® 4mm in both ventilated and direct adhered facades.**

# DKC

## Ventilated facade system chemical anchoring

The design of the ventilated facade system, as with any system, will need to be completed according to the calculations of an engineer and in compliance with all building codes and regulations, applicable to the facade project.

It is important to add reinforcements for the facade system in areas that are subject to impact and high traffic areas. Such as down to grade, outside corners, and junctions of jambs with facade plane.

This can be done by adding reinforcement profiles in both the interior and exterior corners and by increasing the number of profiles, thus reducing the span between attachments to Dekton® 4 mm. system support.

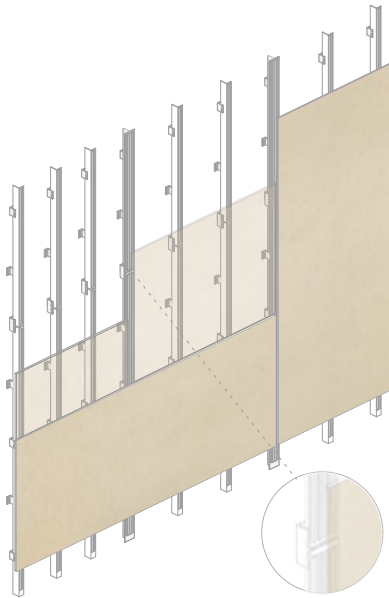
Outside open corner  
with hidden profile.



Outside open corner  
with visible profile.



Outside butt joint corner  
with hidden profiles



## Recommendations: Chemical anchoring system

When installing Dekton® Protek 4 mm on a ventilated facade, it is important to follow all of the instructions:

- The profile on which it is to be glued must always be in a vertical position, suitably plumbed and free of tension.

- A panel must be fixed to at least two vertical profiles. Depending on the size of the panel and the conditions of the project. The number of profiles needed to fix the panel will be predetermined.

- Precise positioning of the panel on the vertical profile of the facade is important.

- The application temperature of the adhesive system must be respected (it is usually between +5°C/+35°C (40-95°F)).

- Adhesive systems must be complete and supplied by a single manufacturer, according to their technical application instructions.

They are usually applied, in a general way, in the following steps:

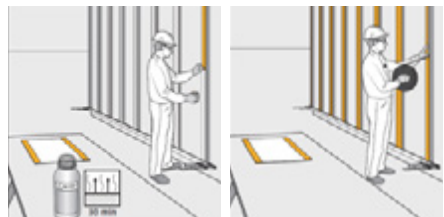
### 1. Profile Treatment and Dekton® Treatment.

Both the profile and the Dekton® surface must be clean, dry and free of dust, grease and oil. Primers, adhesion promoters and cleaners specified by the adhesive system supplier should be used.



### 2. Application of the double-sided tape.

The tape must be applied along the entire length of the profile in a parallel manner, always vertically and without removing the protective film once it has been attached to the profile.



### 3. Application of the adhesive.

The adhesive is applied in the form of a vertical triangular bead using the pre-cut nozzle indicated by the supplier. The height, width, and distance from the bead to the tape is indicated by the supplier. The width of the profile must be sufficient to respect all distances to the edge and between components..



### 4. Placement of the panel.

The protective film is removed from the double-sided tape. Position the panel as indicated by the layout, without touching the tape and then press it until it touches the tape. The panel should be set within the maximum time indicated by the adhesive supplier (e.g. 10 minutes). Spacers may be required to mark the joint between panels..



## General observation on application, execution and control of work

- Do not prime or bond in case of heavy rain or high moisture content (e.g. closed fog).
- Avoid risk of condensation on profiles and panels. Profile temperature must be above dew point.
- Follow the recommendations for application temperatures, drying times, and application of each component.
- We recommend having a daily report of the work with information about the installed panels, weather conditions, constructive solutions, and system used (components).
- It is recommended that the installation be completed by companies that have had proper training on this type of system. For a list of these companies, please contact Cosentino.

# Recommendations: Ventilated air gaps, joints, and insulation protection

The air gap, or air chamber, is an important feature in a ventilated facade system. For any water that does not drain down the back of the panels, it works as a pressure pillow to prevent water from reaching the insulation or the structural wall. It also helps eliminate any moisture from condensation.

The standard depth of the air gap is 20mm (3/4"). In some countries higher minimum air gap depths are required, so it is important that local codes and requirements are taken into consideration.

This is not something that I am familiar with. Usually rainscreen air gaps do not need to be larger than 20mm, no matter how high the building is.

General recommendations:

Building height	0-10m	10-20m	20-50m
Minimum chamber width	20mm	25mm	30mm

The type of joint used between the panels will also influence the depth of the air gap. Open horizontal joints will allow more air movement than closed joints and therefore deeper cavities should be considered when using sealing profiles in horizontal joints.

Joint width (mm)	Chamber width (mm)
5 - 10	20 mm (0,8")
10 - 15	50mm (2")

Just as the air chambers are ventilated from the top and bottom of the façade, it is also important to allow air to enter and exit over and under openings such as windows.

These openings need to be protected from birds and other animals entering the chamber that could damage the insulation, the chamber and even the supporting wall. This is normally achieved by placing a perforated profile at the start of the façade, with perforations of sufficient size to allow the entry and exit of air and to prevent the entry of small animals.

The top of the façade must allow the air to escape from the chamber and must also protect against the ingress of rainwater that could affect the insulation and the support.

Manufacturers of chemical anchoring systems tested with Dekton®:

Sika. Sika Tack Panel 50.

Innotec. Innotec bonding system ( Adheseal adhesive)

Bostik. Panel Tack HM

Soltec. Soltec Panel Fix.

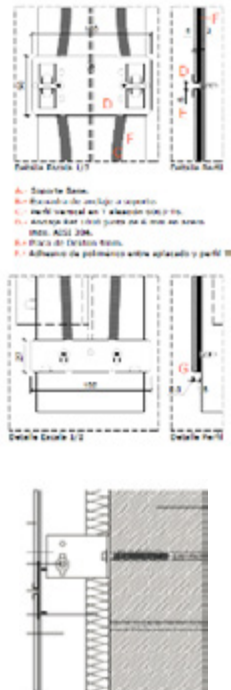
Louvelia. Louvelia Fix

Each manufacturer has its own technical documentation, including component data sheets, safety data sheets, adapted assembly instructions, system certifications, tests...etc.

## Safety recommendations chemical anchoring

There is the possibility, if indicated in the project, of incorporating mechanical safety fasteners for 4 mm parts.

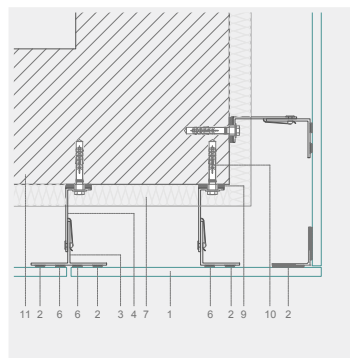
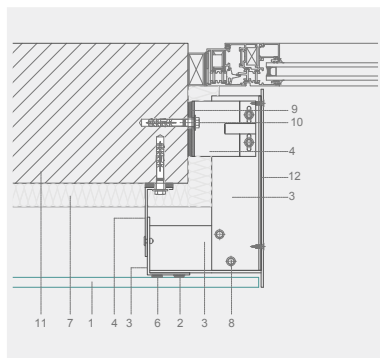
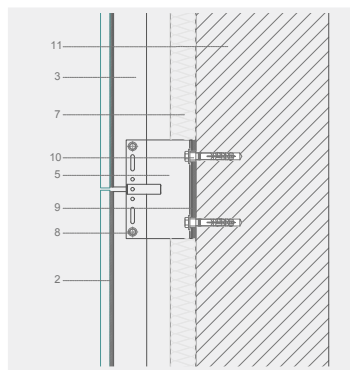
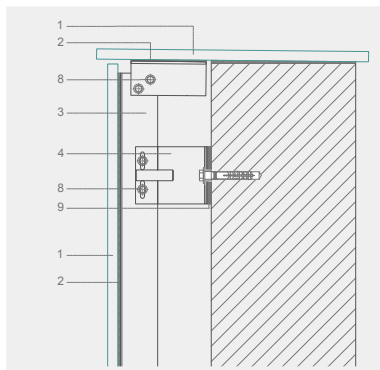
These elements are fixed to the profile system and their arrangement and fastening must follow the supplier's instructions.



E.g. Possible safety hook diagram seen Dekton® thickness 4 mm.



## Type details



1. Dekton
2. Adhesive
3. Vertical Profile
4. Secondary Separator

5. Fastening bracket
6. Double-Sided Tape
7. Thermal Insulation
8. Self-propelled Screw

9. Rupture of Thermal Bridge
10. Mechanical Anchoring
11. Supporting Wall
12. Aluminium Jamb

Projects completed with Dekton® 4mm:

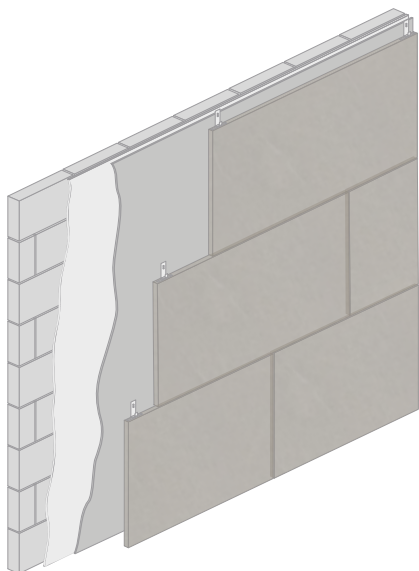
- Building 28 Santorio Blanco homes in Oviedo (Spain). 1700 m<sup>2</sup>. Dekton Edora.
- Housing in Nieuwpoort (Belgium). 460 m<sup>2</sup>. Dekton® Nayla.

# DKB

## Direct adhered facade system

In order to execute a direct adhered facade with Dekton®, a series of previous factors must be taken into account::

- Correct choice of support, bonding and joint filling materials.
- Carrying out a complete project of the cladding, including the arrangement and dimensioning of the joints.
- Proper evaluation and preparation of the substrate.
- Correct placement, following the appropriate execution techniques and respecting the application instructions of the product manufacturers.



## Recommendations: direct adhere facade application

When installing Dekton® on a as a direct adhered facade, it is important to follow a series of instructions:

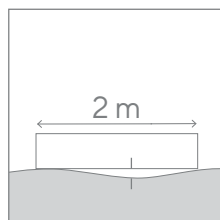
### A. Support:

It must be verified that the support on which Dekton® is going to be adhered has a series of characteristics:

- Healthy and without cracks.
- Cured and stable in dimension.
- Mechanically resistant for the loads it will support and its use.
- Dry, clean and no loose parts.

### B. Planning

The deviation from planarity of a fixing surface should be measured with a rigid rule of 2 m length and should be less than 1.5 mm for 4 mm Dekton® thickness. In the case of traditional substrates (e.g. brick, block), it will be necessary to apply a layer of mortar to regularise the substrate.



### C. Adhesive:

It is important to consult with the supplier of the chosen adhesive and to follow their recommendations regarding the product and its application conditions.

For the adhering of Dekton® Protek on the façade, it is generally necessary to use type R2T adhesives according to EN 12004 and ISO 13007-1. Depending on the selected supplier, it will be possible to use a cementitious adhesive type C2. Up to a format no larger than 100 x100 cm. If panels will be larger than this, it will be necessary to go to an R2T type adhesive.

### D. Joints

A fundamental planning part of a cladding system is the weave of tile-to-tile joints and the arrangement of expansion joints. Never use seamless joints for cladding. Due to its low coefficient of expansion of  $6.3 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$  (according to UNE EN ISO 1054-8), Dekton could be installed with minimum placement joints between pieces of 3mm on the interior, and 5mm on the exterior. However, each project needs to follow the standards and specifications suggested by the adhesive manufacturer and/or your local tile standards associations (e.g. TCNA for North America). Each project needs to be considered individually, based on weather and other climate conditions that might affect the building.

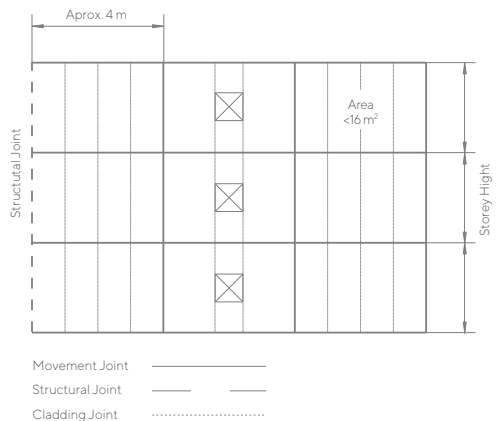
1. Joints between pieces: Depending on the conditions of the project, a standard joint of 5 mm should be used. With approval by the adhesive supplier a minimum joint of 3mm on the interior, and 5mm on the exterior, could be used on certain project conditions.

2. Cladding Expansion Joint: To avoid the accumulation of stress resulting from the expansion and contraction of the cladding. It is necessary to add an expansion joint in large areas (typically  $16 \text{ m}^2$ ) or in maximum lengths of separation between joints in linear meters. (typically 4 linear meters).

3. Perimeter movement joint: meets other perpendicular walls or floors and horizontal elements (e.g. eaves, overhangs, balconies...).

4. Structural Movement Board: Which will be respected by the cladding both in situation and in dimensioning.

General diagram of facade joints



## E. Mechanical safety fixing

For large format panels, it is often necessary, depending on local and international standards, to provide a mechanically attached safety-clip in addition to the mortar. How many safety clips are necessary depends on the panel weight, the height of the application, and the project specific conditions.

The reason why mechanical safety clips are important, even if the adhesive is applied correctly, is due to the possible settling of the building, temperature changes, possible seismic movements, and other potential issues.

The use of a safety fixture prevents the part from falling off the building, giving time for repair.

There are different types of suppliers of these mechanical fixings, which for Dekton® 4 mm are placed on the perimeter and are visible to do their function correctly.

## Cutting and handling

The material can be supplied cut to size from Cosentino or cut on site with the recommended tools and accessories.

Dekton® 4 mm is easy to cut on site dry with any cutting system for large format pieces available on the market.

It is not advisable to cut pieces in L or U shape in general and especially when the slenderness of any of the resulting arms may facilitate their breakage.

To make holes, we recommend a pre-drill with a minimum radius of 10 mm for smoothing edges and subsequent cutting with a recommended cutting system.

For more detailed information and health and safety issues, please refer to the Dekton® direct adhered Facade Installation Manual and the Dekton® Slim Application Guide.

In case of doubt or need for additional information consult Cosentino.

The instructions contained in this document should be understood as informative and cannot reflect all the contexts found on site. Before starting the construction work, all Dekton® application points must be checked according to this manual, the applicable regulations and good building practice and application indications of the suppliers involved.

Cosentino will not be responsible for the material supplied that has not been installed following the indications of this document. For any consultation or additional information please consult the website [www.cosentino.com](http://www.cosentino.com) or contact Cosentino S.A.



\* Learn about NSF certified colors through [www.nsf.org](http://www.nsf.org)

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