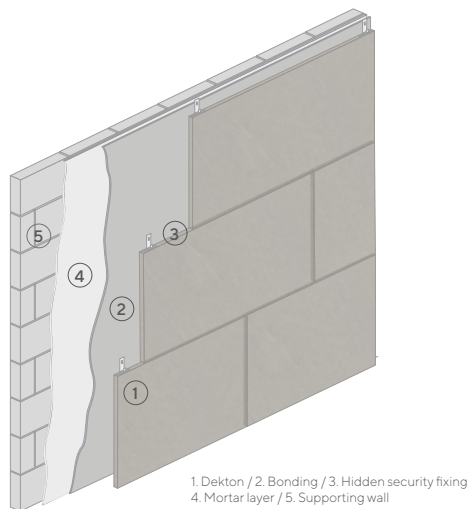

Glued facade

Installation manual

 **DEKTON®**
designed by **COSENTINO**

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This document from Cosentino details the work guidelines and best practices for the application of Dekton® cladding with glue on facades.

Once Dekton® is selected as the cladding material of choice, there are a number of factors that guarantee the success of a glued facade:

- Correct choice of support, adhesive and joint filling materials.
- Implementing an entire cladding project, including the layout and sizing of the joints.
- Proper assessment and preparation of the fixing background.
- Correct placement, according to execution techniques and respecting the application instructions supplied by the product manufacturers.

Characteristics and Formats

Thanks to its high performance, when correctly installed, Dekton® is an ideal material for installing outdoors on vertical walls, ensuring proper function.

The right format and thickness of Dekton® will depend on local regulations and project requirements and will need to be verified by those undertaking the project.

Full slab format	320 x 144 cm
Thickness (cm)	0.4 ⁽¹⁾ - 0.8 - 1.2
Finishes	Smooth, Textured or Polished

(1) 4 mm. thickness incorporates 300 g/m² glass fibre mesh with epoxy resin and is called Dekton® Protek.

With Dekton®, you can customize pieces for your project depending on the design, starting with a full slab.

The recommended formats in cm. to maximize the use of Dekton®, starting with a full slab, are as follows:

Formats (cm)	No. of Pieces
71 x 71	8
71 x 106	6
71 x 142	4
71 x 159	4
71 x 320	2
106 x 142	3
142 x 142	2
142 x 159	2

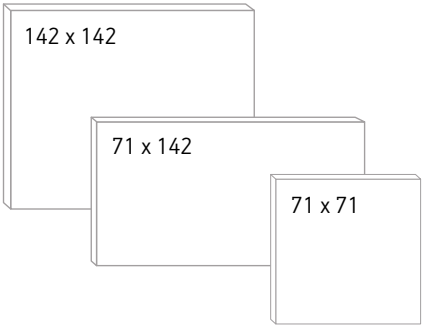
Note: This is assuming a 3-mm wide cutting wheel.

	106x142	142x142	142x159	
71 x 71	71 x 106	71 x 142	71 x 159	71 x 320

Floor and Glued Facade (Matte Edge)

Minimum waste
formats (cm)

- 71 x 71
- 71 x 142
- 142 x 142
- 79 x 143
- 106 x 71
- 106 x 143
- 159 x 71
- 159 x 143



NOTE: Any other size is possible below full slab.

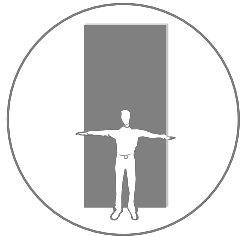
UltraThickness

0.4 cm, 0.8 cm, 1.2 cm



UltraSize

Up to 320 X 144 cm



System Components

Thanks to its high performance, when correctly installed, Dekton® is an ideal material for installing outdoors on vertical walls, ensuring proper function.

The right format and thickness of Dekton® will depend on local regulations and project requirements and will need to be verified by those undertaking the project.

In a general way we can distinguish:



Structural Support

This is what supports the facade system, so it is necessary to ensure it is adequate and in good condition to withstand the mechanics as a whole. The suitability of the fixing background in question must always be checked beforehand and must be:

- Healthy and free of cracks.
- Treated and stable throughout.
- Mechanically resistant to support the loads and their use.
- Dry, clean and without loose pieces.



Adhesive

This is used to form the connection between the piece and the support.



Dekton®

Ultra-compact high-performance coating for outdoor vertical cladding: durable, with high mechanical resistance, low absorption and hygrothermal expansion, with a wide range of finishes and low maintenance.

Laying Surface

The laying surface is the layer on which the Dekton® fixing adhesive will be placed or, failing that, the visible side of the structural support if it allows it. The best results will depend on a perfect surface and review of conditions.

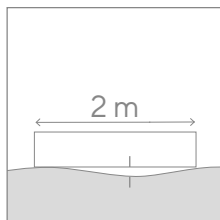
The supporting wall can be of two types:

- Traditional "wet" construction consisting of brick or ceramic block or concrete, which may be structural or an enclosure between the pillars and slabs of an independent structure.
- Dry construction using a grid system of profiles or strips covered internally and externally by panels designed for ceramic cladding installation.



Flatness

The deviation in flatness of a fixing surface must be measured with a rigid rule of 2m in length, and must be less than 3mm for 8 and 12mm Dekton® thicknesses and less than 1.5mm for 4mm Dekton® thicknesses. In the case of traditional supports (e.g. brick, block), it is necessary to apply the mortar to regularize the support.



Curing Time

Wait a minimum of 7-10 days per cm. of thickness to avoid possible subsequent damage to the covering due to the effect of the retraction of the support. Installing Dekton® without meeting with this condition would void the product warranty (only for cementitious base support).



Dimensional Stability

The dimensions of the support must be constant or have variations within reasonable limits over the course of time. In order to avoid the effects of retraction in concrete supports, it is necessary to wait about 1 month from starting the project before proceeding with the installation of Dekton®.



Mechanical Resistance

The laying surface must be able to withstand the operating loads, the permanent weight of the covering and the stresses of the laying system without breakage or damage. It must reach a minimum mechanical resistance to flexion, indicated by the application standard, in order to be able to withstand the stresses to which it will be subjected once the covering is laid.



Water Sensitivity

Water-sensitive supports may require a waterproofing primer.



Surface Finish

In the case of very smooth and slightly absorbent supports, it is necessary to increase roughness. In the case of crumbling supports, a hardening primer must be applied or the entire surface must be removed until the support is sound.

All of this is to guarantee values of adherence and internal cohesion that comply with applicable regulations.



Clean surface

Before applying the adhesive, the surface must be dry and free of dust or other elements. If the surface is exposed to the sun, or is very absorbent, it is advisable to wet it first.

Adhesive

With regard to the bonding or adhesive material, it is essential to consult with the selected local supplier prior to installation and to faithfully follow their product recommendations and application instructions.

The basic rules to be observed are as follows:

1

Use of Cementitious Adhesives

Class C2 (improved) and S2 (highly deformable) cement adhesives must be used.

Application type	Dekton®	Dekton® Protek*
Fixed façade	C2S2	R2

*Dekton Protek is the mesh product line.

An improved cementitious adhesive as described below will suffice for the installation of Dekton®. **For the installation of Dekton Protek* it is necessary to use a resin-based R2 adhesive.** (According to standard UNE EN 12004).

Information on adhesive suppliers can be found in Annex 1.

2

Placement of Pieces

Placement using the double gluing technique (support and back of the piece) parallel to the short side of the piece.

This technique has several advantages:

- It allows for a greater distribution of stress by ensuring the maximum possible contact surface (> 90%) between the support and the adhesive and the adhesive and the piece.
- It avoids the formation of efflorescence by preventing the eventual stagnation of rainwater on the surface of the tile.
- For the same reason, it avoids the possibility of detachment due to ice formation.
- It should always be applied with a toothed trowel. Its geometry has to be defined according to the format of the piece, the support and the type of adhesive.

3

Adapting the Right Adhesive

Adapting the right adhesive according to the environmental conditions of the project:

- In windy, hot and/or dry conditions, choose a class E adhesive, with extended open time.
- In cold conditions, with risk of frost at night, choose an optional class F, fast-setting adhesive.
- In periods of climatic instability, with risk of rain, choose an optional fast-setting class F adhesive or protect the tile.

4

Elastic Sealing of Joints

To protect the upper edges of the coating against the penetration of rainwater by the elastic sealing of joints with carpentry and the arrangement of specific construction elements, such as copings, water droppers, etc.

5

Plan for Security Laying with a Mixed Adhesive-Mechanical Anchoring System

For Dekton® it is considered imperative, in accordance with certain international regulations, **to provide for safety installation with a mixed adhesive-mechanical anchoring system**, to be chosen in relation to the weight of the piece, the height of the cladding and the project conditions.

In short, in order to obtain the required results with large-format pieces, specific high-tech materials must be used for bonding and grouting, and specific installation methods and techniques must be employed. You must always have the support and guarantee of the supplier of the adhesive system.

Joints

A fundamental part of a cladding system is the pattern of laying joints and the arrangement of the movement joints.

Never use jointless or butt joints for cladding.

Due to its low rate of expansion of $6.3 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$ (according to UNE EN ISO 10545-8) Dekton® could be installed with minimum laying joints of 3 mm.

However, in all project applications, the current application standard, complete design of the cladding (including the arrangement and size of the joints) and the instructions from the adhesive supplier (depending on the climatic conditions of use and the size of the pieces) will prevail with regard the widths of:

Laying Joints between Pieces

Depending on the conditions of the project, a minimum joint **of 3 mm** (always with technical support on site from the adhesive supplier) **or a standard joint of 5 mm could be used.**

Cladding Expansion Joint

To avoid **the accumulation of stress due to the expansion and contraction** of the cladding. This is marked in maximum regular areas (in m²) or in maximum lengths of separation between joints in linear metres (e.g. according to conditions, minimum thickness 8 mm, every 16 m² or 4 linear metres).

Perimeter Motion Joint

joined with other perpendicular walls or with horizontal floors and elements (e.g. eaves, upper floors...)

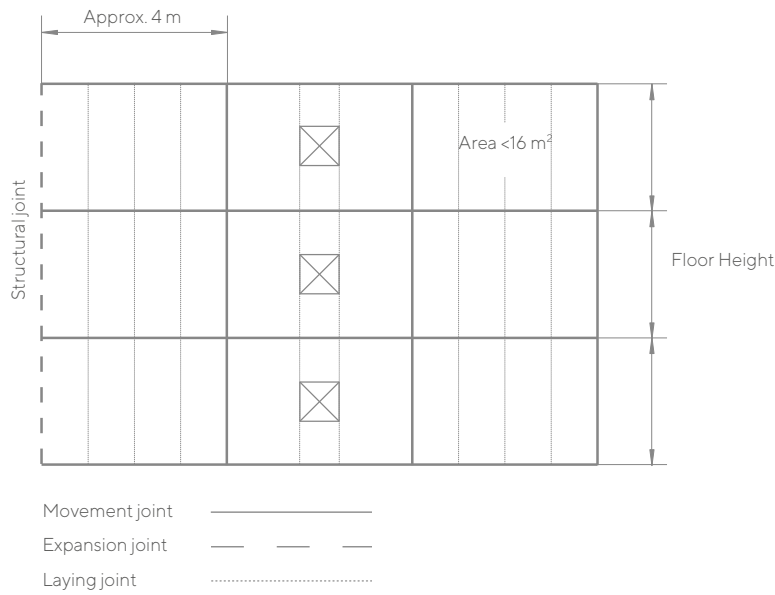
E.g. Arrangement of cladding expansion joints in 4 x 4 m modules, respecting building expansion joints according to the structural project. Movement joints should be provided at the edges of the slabs, change of plane and at any movement joints in the support.

Structural Movement Joints

Which will be respected by the cladding both in its location and in its sizing.

The recommended joint material in outdoor applications should be at least **CG2WA for cement-based systems and RG for resin-based systems** (according to EN13888).

Diagram of joints on cladded facade



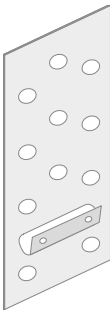
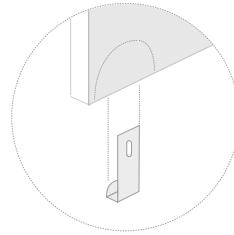
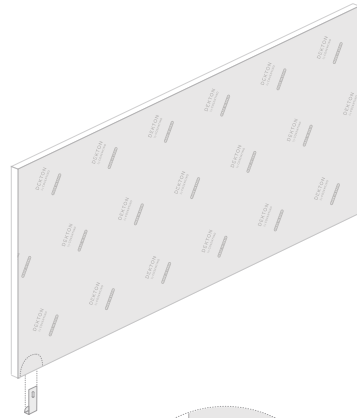
Mechanical Safety Fixing

For Dekton® it is considered imperative, in accordance with certain international regulations, **to provide for safety installation with a mixed adhesive-mechanical anchoring system, to be chosen in relation to the weight of the piece, the height of the cladding and the project conditions.**

Its use is necessary, given that even if the adhesive cement is applied correctly, it is not easy to predict the stresses that the pieces will have to resist due to project site or due to changes in temperature and expansion, seismic movements and other factors.

The use of a safety fixture prevents the piece from falling if it becomes detached from the support, allowing time for repair.

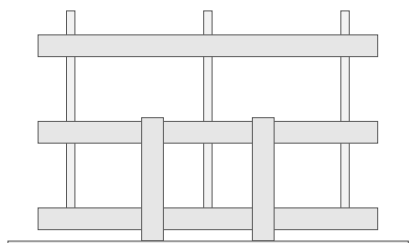
There are different type of suppliers of this type of fixture, depending on the thickness of the pieces, with machining on the edge for 12 mm thickness or on the back of the Dekton® piece for 8 mm thickness (as required).



Project preparation

Palletizing and transfer of the material

To facilitate collection on site and transfer, **Dekton® pieces are supplied vertically in specifically designed wooden frames or boxes**, all shrink-wrapped to avoid sudden movements.



For the handling of the pieces on site, appropriate safety measures must be taken to remove and move the pieces one by one, using the necessary means of support. It is especially important to use suitable suction cups depending on the size and weight of the piece. We recommend glass-type suction cups with suction pump.

Cutting of construction pieces

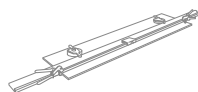
Cosentino may supply cut to size pieces.

However, to make adjustments on the project site, simple cutting, drilling and machining can be carried out on site using appropriate tools. This will allow you to reposition pieces, resolve corners, joints with pillars, etc.

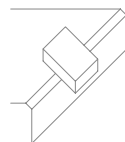
On-site cutting is possible using dry cutting machines. We recommend the use of polishing blocks to micro-bevel the pieces.



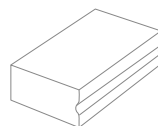
On-site
correction of
measurements



Dry cutting



Microbevel 1mm



Polishing Wedge

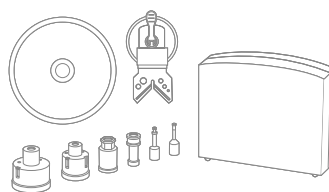
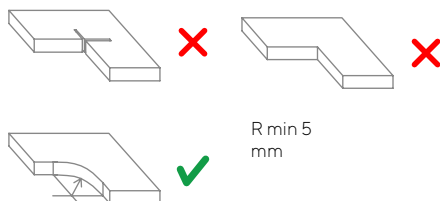
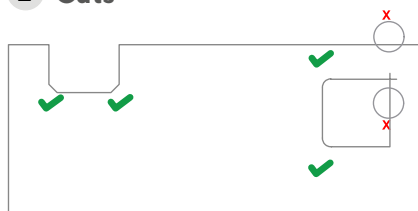
Mortises

For pieces with mortises or corners, it is necessary to make drills with minimum radius of 5 mm. before cutting.

1 Drilling



2 Cuts



Approved disc and bit

Tools for Installation

See Dekton® Cutting Manual for basic processing recommendations as well as recommended tools:

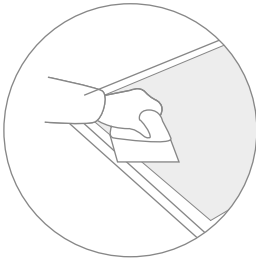
 <p>Levelling system</p>	 <p>Work bench</p>	 <p>Dry cutting</p>
 <p>Approved disc and bit</p>	 <p>Polishing wedge</p>	 <p>Mixing machine</p>
 <p>Mixing trowel</p>	 <p>Toothed trowel</p>	 <p>Plastic bucket</p>
 <p>Levelling kit</p>	 <p>Leveller</p>	 <p>Suction cup</p>
 <p>Level</p>	 <p>Grouting kit</p>	 <p>Cleaning sponge</p>

Laying and Adhesion of Pieces

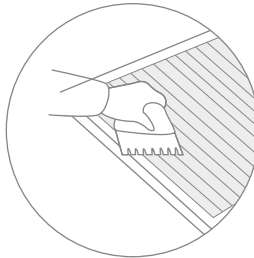
Laying of pieces must always be done considering the characteristics of the adhesive: open time, life span, maximum application thickness... as well as the manufacturer's indications.

1 Double Gluing

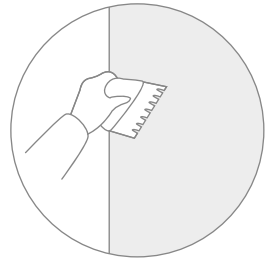
Laying should be done using the double gluing technique (adhesive on the piece and on the support) guaranteeing perfect adhesion to the pieces and avoiding the formation of gaps. The adhesive is first spread on the support with the smooth part of the trowel, then combed with the notched part, parallel to the short side of the piece. Never apply the adhesive by "sticking" or "pinching".



Application diagram with trowel



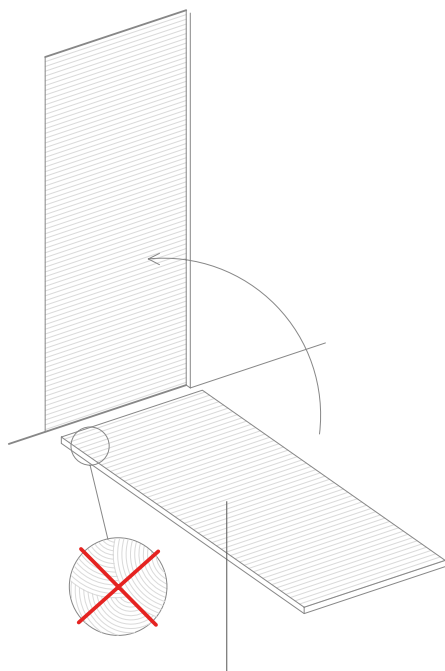
Application diagram with toothed trowel on the piece



Application with toothed trowel on the wall

2 Toothed Trowel

It should always be applied with a **toothed trowel to define its geometry according to the format of the piece, the support and the type of adhesive**. In parallel grooves between support and piece.



Double gluing:

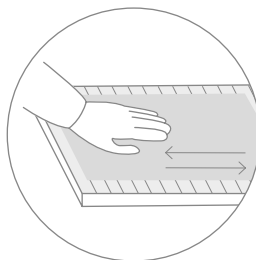
Use the toothed trowel tool.

Parallel lines.

Address: Parallel cut side of the piece.

3 Sliding Movement

To allow air to be released and better contact between the piece and the support, **reversible sliding movement must be employed**. Set it in its final position, moving it perpendicular to the direction of the grooves the equivalent of the width of the trowel and return it to its final position respecting the width of the marked joint.

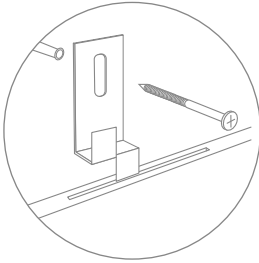


4 Use of Crosses

In order to respect the stipulated joint width, **the use of crosses** is recommended and the edges should always have a micro bevel.

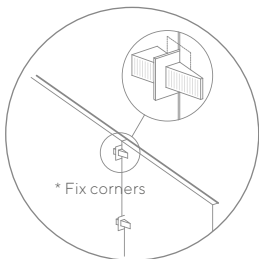
5 Mechanical Safety Fixing

The mechanical safety fixings will fit into the slots made on the edge of the plate for 12 mm thickness or on the back side of the plate for 8 mm thickness, using MS polymer-type mounting adhesive and will be conveniently fixed to the support. All of this should be done following the manufacturer instructions.



6 Auxiliary Systems

The use of auxiliary systems to improve the final levelling of the cladding is recommended, such as levelling wedges, ensuring regular thickness of the adhesive layer of at least 3 mm.

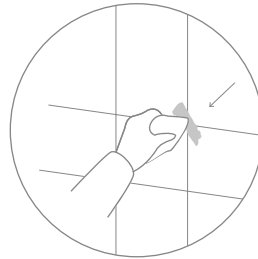


7 Grouting Material

When filling the joints, the appropriate grout should be chosen and applied according to the manufacturer's instructions. It is advisable to use a rubber trowel of the appropriate hardness to the width of the joint to extend the material diagonally to the direction of the joints.

The final texture and curvature will be set on the joint using a pointing trowel or equivalent tool. In some cases, flexible stainless steel spatulas or extrusion guns can be used to apply the grout.

Tilt the rubber trowel 45 degrees.



Maintenance & Cleaning

After the installation of Dekton®, the surface usually shows traces of film or small accumulations of cement, lime, silicone, epoxy, etc.

It is **therefore necessary to do a final clean up which will leave the Dekton® surface clean whilst not damaging the grouting material.**

For this purpose, there are specific products on the market with acid solutions for the removal of cement and epoxy residues, etc.

You should use the recommended cleaning products and apply them according to the manufacturer's recommendation.

For maintenance, we recommend wet cleaning with a neutral detergent with high cleaning power, avoiding acids and abrasives.

For more information, see our manual: *"Dekton® Ultracompact Surfaces Cleaning and Maintenance Manual for Facades"*.

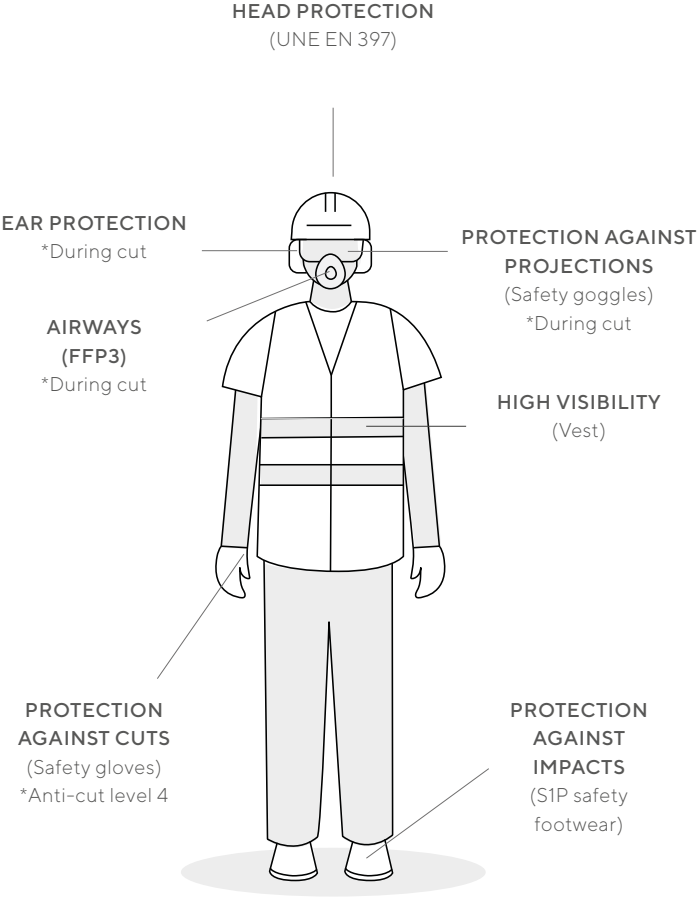
Health and Safety

Risks associated with handling and transport

Dekton® manufacturers and installers must comply with all laws and regulations relating to workplace health and safety as well as the information contained in this Guide. During the transportation and handling of Dekton® materials, risks such as knocks, cuts, skeleto-muscular strains, or crush or impact injuries can occur due to incorrect handling. Please follow the safety instructions detailed in this guide.

Risks associated with processing and modification

Processing can involve the risk of cuts, crush or projection injuries, exposure to high noise levels or chemical substances such as free crystalline silica dust. For more information about these risks and the measures to prevent them, please consult the Safety Information Sheet as well as the *Best Practice Guide* that Cosentino has published. If you do not have this information, please ask your supplier.



Glueing and Grouting

Consult Cosentino for an updated and detailed list of adhesives and grouts recommended by each manufacturer according to application, type of substrate and tile size.

The instructions illustrated in this document and the related advice should be understood for informative purposes and cannot reflect all the contexts found in a project. Before beginning a project, all Dekton application points should be checked according to this manual, as should applicable building regulations, good building practices and the suppliers guidelines.

Cosentino may not be held responsible for the material supplied if it has not been installed according to the guidelines in this manual. For questions or additional information, please visit the website www.dekton.com or contact Cosentino, S.A.



COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
= ISO 14001 =

* Find information on NSF-certified colours at www.nsf.org

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