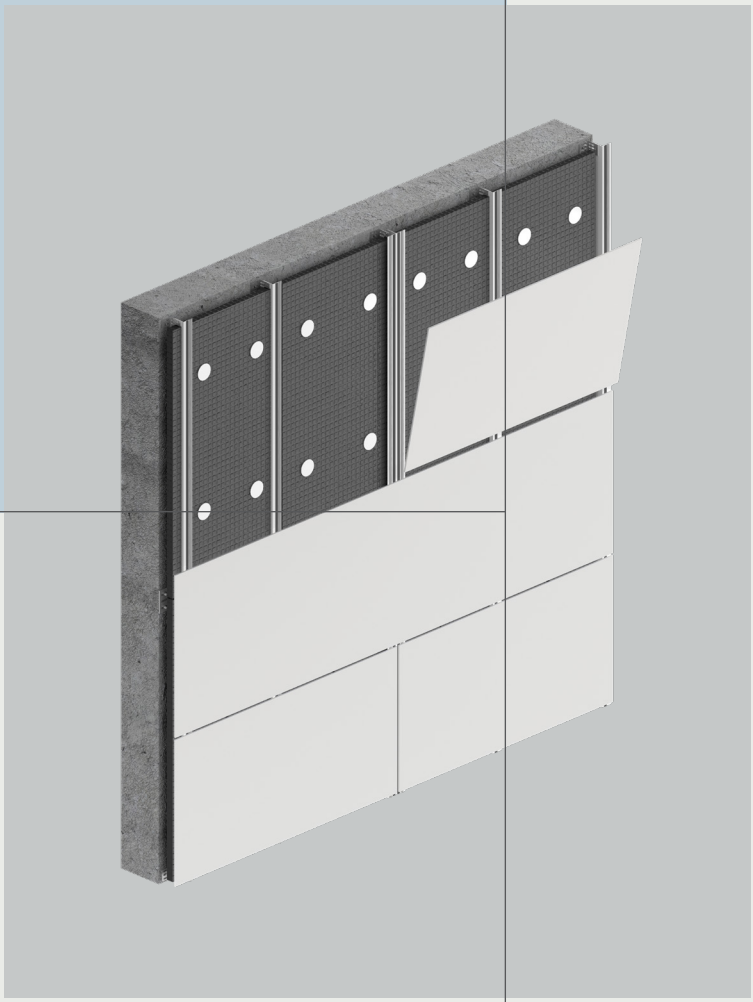
COSENTINO

DKC
Façade system
Chemical anchor

COSENTINO® FAÇADES
DKC. CHEMICAL ANCHOR



DEKTON

TECHNICAL
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Ventilated façades

The new requirements for energy savings and efficiency improvements in buildings have contributed to the fact that the façade is not only the skin and the external image of the building, but has become a vital element in improving its efficiency.

Some of the benefits of Dekton® ventilated façades are the following:

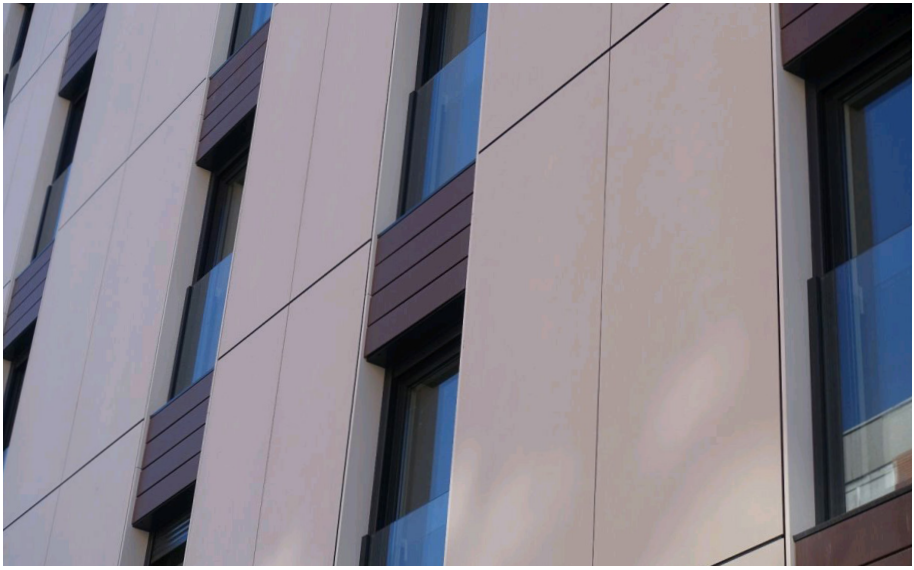
→ Excellent thermal insulation.

→ Air gap. It eliminates all types of condensation and dissipates much of the energy absorbed by the outer layer.

→ Ultra-compact material with zero water absorption, which means high durability and very low maintenance.

→ Large format slabs up to 3200 x 1440 mm and a wide range of designs.

→ Ryanair Detached House - Dekton® Sirocco



→ Houses in the Sanatorio Blanco building (Oviedo, Spain)

Adhesive system

Adhesive system for ventilated façades with Dekton® Protek by Cosentino® slabs on exteriors.

It consists of:

→ Panel-Fix® elastic adhesive.

→ Panel-Fix® P202 adhesion promoter.

→ Panel-Fix® 451SW primer for the preparation of the gluing surfaces.

→ Panel-Fix® C double-sided tape.

Panel-Fix® elastic adhesive: One-component adhesive

Technical data	
Appearance	Thick paste
Colour	Black; White
Density at 20 °C	1.60 ± 0.05
Coulure (ISO 7390)	< 2 mm
Application temperature	+ 5 °C to + 35 °C
Skin formation time at 23 °C and 50 % RH	20 ± 10 min
Curing speed at 23 °C and 50 % RH	> 3 mm within 24 hours
Shore A hardness (ISO 868 – 3 seconds)	Env. 55
Modulus at 100 % elongation (ISO 8339)	> 1 MPa
Elongation at break (ISO 8339)	> 100 %
Tensile strength at break (ISO 8339)	> 1.8 MPa
Shrinkage (ISO 10563)	< 2 %
Time until the slab is glued	Immediate (right after applying the adhesive line)
Temperature resistance	- 40 °C to + 100 °C
Resistant to ultraviolet (UV) rays	Excellent
Storage conditions	9 months in hermetically sealed original packaging between + 5 °C and + 25 °C, protected from frost.

Panel-Fix® P202 promoter: Adhesion promoter for slabs and strips

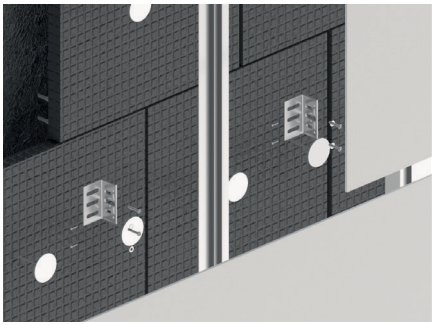
Technical data	
Description	Organic polysilane solution
Application	Promoter for substructure and slabs
Colour	Transparent
Viscosity	Extremely low viscosity (ca 1 mPa.s)
Density at 20 °C	Ca 0.80
Conventional solids content (EN 827)	97 %
Application temperature	+ 5 °C to + 35 °C
Specific data	Drying time 10 min
Storage conditions	12 months in hermetically sealed original packaging between 0 °C and + 30 °C, protected from sun and frost.
Product applicability (within 24 hours after opening)	> 100 %
Presentation	250 ml bottles; 1 L
Precautions	Extremely flammable. Consult the Safety Datasheet before use. Do not smoke and keep away from sources of ignition.

Panel-Fix® 451SW primer: Primer for strips and slabs

Technical data	
Description	Isocyanate-containing solution
Application	Promoter for substructure and slabs
Colour	Black
Viscosity	Viscosity at 20 °C (Ford cup Ø4 mm): 12 to 15 s
Drying time at 20 °C: 10 - 15 min	Ca 0.80
Density at 20 °C	0.95 ± 0.05
Conventional solids content (EN 827)	35 - 38 %
Application temperature	+ 5 °C to + 40 °C
Storage conditions	12 months in hermetically sealed original packaging between + 5 °C and + 25 °C, protected from sun and frost.
Product applicability (within 24 hours after opening)	> 100 %
Presentation	250 ml bottles; 1 L
Precautions	Extremely flammable. Consult the Safety Datasheet before use. Do not smoke and keep away from sources of ignition.

Soltec® Panel-Fix® C double-sided tape: Double-sided adhesive tape

Technical data	
Description	Double-sided adhesive tape for the initial fixing of slabs until the adhesive has cured. The thickness of the tape ensures the minimum thickness of the adhesive for adequate mechanical properties.
Application	Initial fixing between the substrate (strip) and the slab
Colour	Anthracite Grey
Chemical composition	Closed cell polyethylene foam
Width	12 mm
Density	50 Kg/m³
Thickness (without protector)	3 mm + 10 %
Compressive strength at 10 % (ISO-3386-1)	20 KPa
Temperature resistance	- 20 °C to + 100 °C
Adhesive	Acrylic
Adhesive strength AFERA 4001 (N/25 mm)	15 ± 1.5
Protector	Silicone paper (white)
Storage conditions	24 months in its original packaging, well-sealed and protected from frost and direct sunlight, between + 10 °C and + 25 °C, and a relative humidity of 50 %. Low temperatures increase the risk of condensation, reducing the tack of the self-adhesive product.
Presentation	Boxes of 34 rolls, 20 m each
Precautions	The full strength of the system on the slabs is achieved solely and exclusively with the adhesive. The foam tape only fixes the system initially and temporarily. Do not perform long-term strength calculations taking into account the mechanical fixing of the tape. The tape must be applied along the entire length of the substructure.



→ DKC system details

General recommendations

→ The installation of Dekton® on façades requires qualified personnel.

→ Only professionals with proven experience are recommended for this type of work.

→ The instructions of the project management should be followed and the information contained in the technical data sheets or on the packaging should be checked before using any product.

→ It is essential to use the right tools for each type of work.

→ Occupational safety regulations must be observed.

Preparation of the substrate

→ Check that the substrate is stable, non-deformable and not at risk of cracking.

→ The substrate must have deviations of less than 3 mm per metre vertically and 10 mm every 2 metres horizontally.

→ Determine the final level of the façade, taking into account any projections, overhangs or any element that protrudes from the vertical of the façade.

→ Structural joints must be maintained and expansion joints must also be considered.

Air gap

→ The air gap should have a minimum clearance of 3 to 10 cm, to allow for natural upward convection behind the cladding.

→ The total effective area of ventilation openings will be 120 cm^2 per 10 m^2 of façade area between slabs.

→ The thickness and features of the thermal insulation will be defined according to the project.

Preparation and reporting of the structure

Aluminium substructure

→ Due to the wide variety of aluminium grades and treatments available on the market, prior laboratory testing is necessary, but in all cases they should consist of alloys of type 6060 or higher to ensure good adhesion of the surface pre-treatments to the substructure.

Wood substructure

→ The strips must be made of pine or spruce, flat and smooth, without roughness or particles that could easily detach from the strip and deteriorate the mechanical properties of the system.

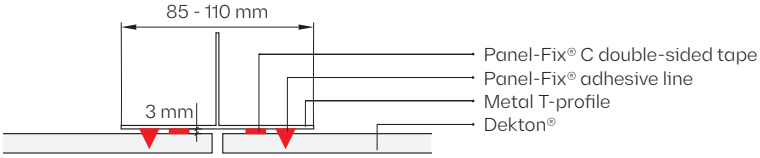
→ The maximum moisture content for wood strips must be 14 % (dry). The areas to be primed must be free of pre-treatments, grouts, paints and other primer residues.

→ To ensure that there is no tensile overload on the substructure due to expansion and contraction, a minimum slab spacing of 10 mm width (horizontal and vertical) must be maintained. When applying any of the system components, the temperature of the elements to be joined must be at least 3 °C above the dew point, to avoid condensation on the surface, and the relative humidity of the air must not exceed 75 %. On rainy days, do not apply any of the system components.

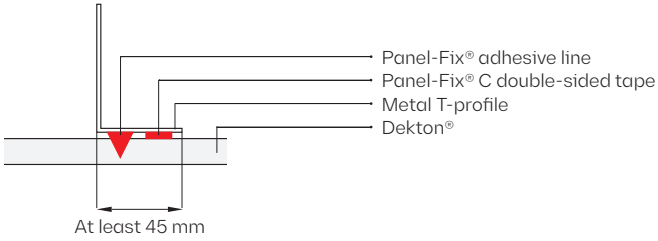
→ The strips must always be arranged vertically, regardless of the position of the slab.

→ The strips must be straight and smooth, and must be positioned parallel to ensure even stress distribution. The distance between the strips must be sufficient to avoid compression between them when expansion (at least 10 mm) occurs and thus avoid overloading the fixing system. For this information, consult the manufacturer for the technical specifications of the slab. At the same time, possible movements of the substructure due to temperature changes must be taken into account. It is necessary to maintain free air circulation at the top and bottom of the slabs to avoid overheating of the slabs.

Strips shared by two slabs: Width 85 - 110 mm



Simple strips: Minimum width 45 mm



Both Panel-Fix® adhesive and Panel-Fix® C tape must be applied along the entire length (height) of the slab in a continuous line.

→ Uncompressed width of the Panel-Fix® adhesive line: 10 mm.

→ Panel-Fix® C tape width: 12 mm.

Slab installation

Strips

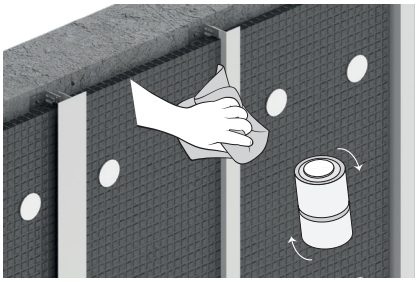
1. Surface activation

Shake the Panel-Fix® P202 promoter bottle several times.

If you notice that the Panel-Fix® P202 promoter has turned into a paste, has changed colour or is uneven, replace it with another bottle of Panel-Fix® P202 promoter that is in perfect condition.

Apply a thin layer of Panel-Fix® P202 promoter on the substrate (strip) using a disposable cellulose paper, rubbing from top to bottom (not in a circle) as many times as necessary, until it stops staining and always in the same direction.

Discard the paper with each new application.



2. Allowing for evaporation for 10 minutes

3. Priming

Shake the primer bottle until a homogeneous mixture is obtained.

If you notice that the primer has turned into a paste, has changed colour or is uneven, replace it with another bottle of primer that is in perfect condition.

Apply the primer with a clean, uncontaminated brush along the entire surface in contact with the adhesive; the primer must be applied from top to bottom (not in a circle).

Apply a single coat. Once dry, do not apply another coat on top.

4. Allowing for evaporation for 15 minutes

Do not apply Panel-Fix® P202 promoter or Panel-Fix® 451SW primer if the system is not to be applied within the timescales specified in this dossier.

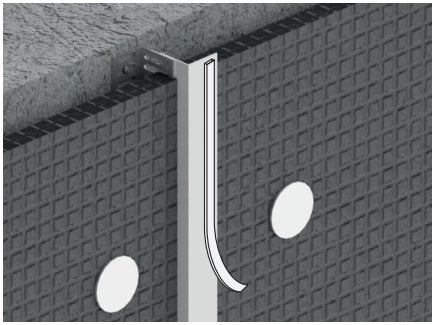
Under no circumstances should surfaces be treated with Panel-Fix® P202 promoter or Panel-Fix® 451SW primer overnight.

Application times, temperature and humidity conditions must be observed in order to obtain a correct result of the system.

5. Applying the tape

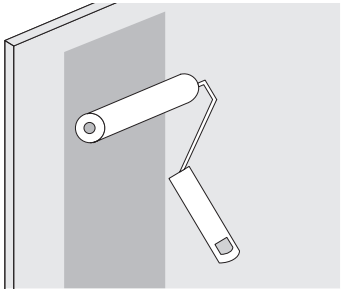
Apply the tape along the entire length (height) of the strip in a continuous line and press down firmly, ensuring that the entire height of the slab will be in contact with the tape.

Do not remove the protective tape at this stage.



6. Treatment on Dekton® slab

Repeat Steps 1 to 4 on the Dekton® slab: P202 promoter + 451SW primer.



7. Applying the adhesive

Apply a 10 mm wide, 8 mm high line of Panel-Fix® adhesive parallel to the tape (on the strip) longitudinally and in a continuous line, using a triangular nozzle supplied with the system.

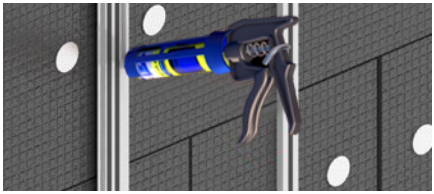
Panel-Fix® adhesive is applied using a manual or pneumatic extrusion gun.

Once the cartridge is opened, the product must be applied within 24 hours.

During polymerisation, avoid contact with uncured silicone and polyurethane.

Apply the adhesive line when laying the slab.

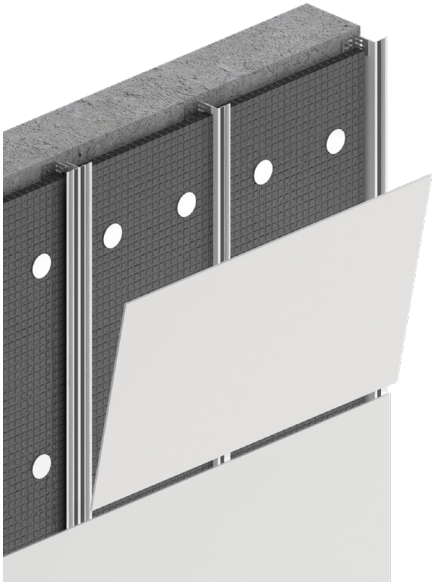
In case of high temperatures or high humidity, the adhesive may form a skin within a few minutes and may not adhere properly to the slab after polymerisation.



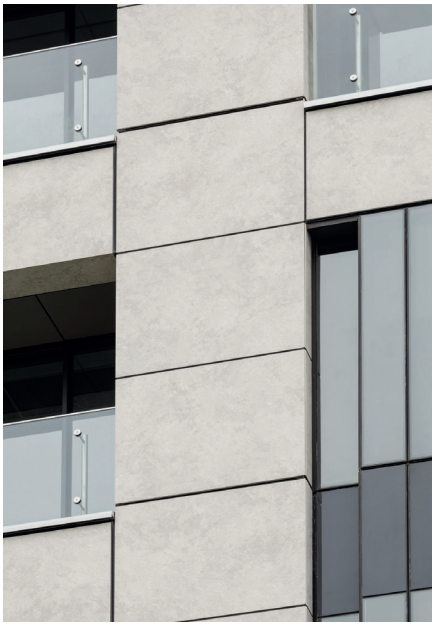
8. Remove the protective paper from the tape

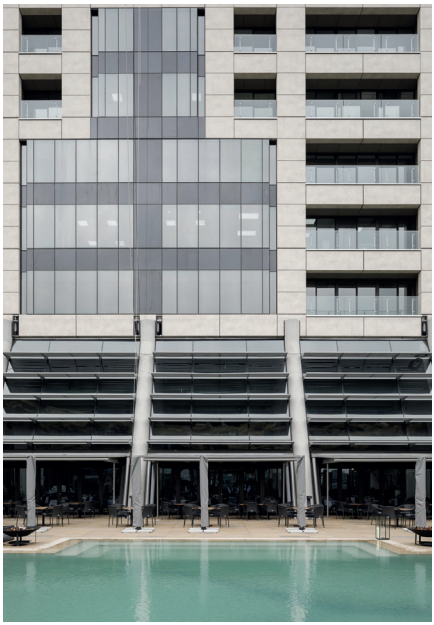
9. Laying the slab

Lay the slab in place and ensure that it is correctly positioned, as once it comes into contact with the tape, its position cannot be changed.



→ The Leonardo tower (Johannesburg, South Africa) - Dekton® Gada



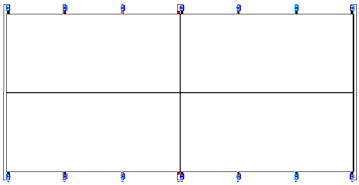


Materials required

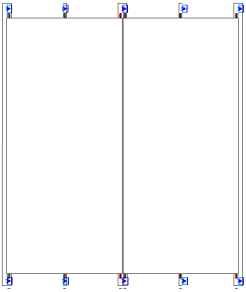
Per linear metre: laying the substructure with strips every 40 to 50 cm		
Panel-Fix® cartridge	Triangular line 0.8 x 10 mm	~ 44 ml/m, 290 ml cartridges
Panel-Fix® 451SW primer	Width 50 mm	~ 7.9 ml/m, 1000 ml bottles
Panel-Fix® P202 promoter	Width 50 mm	~ 2 ml/m, 1000 ml bottles
Panel-Fix® C tape	Width 12 mm	1 m/m
Per m²: laying the substructure with strips every 40 to 50 cm (an area of 100 m²)		
Panel-Fix® cartridge	Triangular line 0.8 x 10 mm	50 cartridges
Panel-Fix® 451SW primer	Width 50 mm	3.5 x 1 L bottles
Panel-Fix® P202 promoter	Width 50 mm	1.5 x 1 L bottles
Panel-Fix® C tape	Width 12 mm	15 x 20 lm rolls

Placement patterns

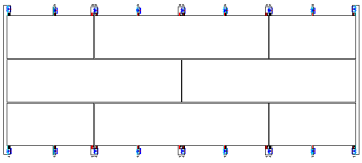
Straight pattern with horizontal cladding



Straight pattern with vertical cladding



Staggered pattern with horizontal cladding

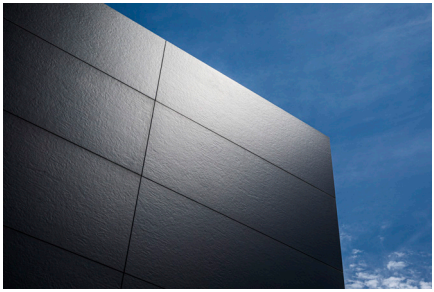


System materials and accessories

Dekton® Protek by Cosentino® slab

Cosentino® supplies ultra-compact Dekton® slabs in various thicknesses (4, 8, 12 and 20 mm) with formats of up to 3200 x 1440 mm, reinforced on the back with a fibreglass mesh that improves the bending strength of the slab.

Its very low water absorption, resistance to unfavourable weather conditions, resistance to freezing and thawing and colour stability over time make Dekton® an excellent solution for all types of façades.



Thickness	4 mm	8 mm	12 mm	20 mm
Weight	10 Kg/m²	21 Kg/m²	32 Kg/m²	52 Kg/m²

→ House in Sant Gregori (Girona, Spain) - Dekton® Sirius

Design recommendations

Design recommendations and recommended wind loads

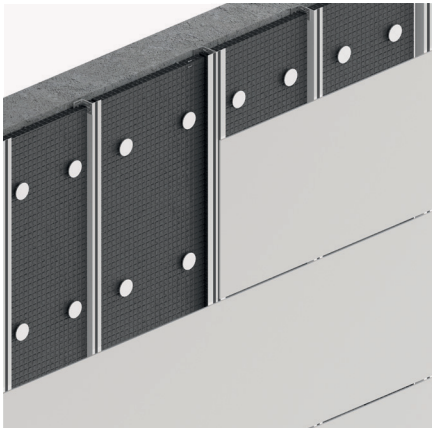
→ The dimensions of the perpendicular substructure depend on the façade construction. The distances between profiles and their width are determined by the load they must support both by suction and by the weight of the Dekton® slab itself.

→ The distances specified in this document are for information purposes only and shall be validated by the system provider.

→ The recommendations and wind loads shown in this manual are based on tests carried out in external laboratories using a 3200 x 1440 mm slab with a double line of adhesive on each of the vertical profiles.

Wind load

Thickness [mm]	Orientation	Max. distance between profiles [mm]	Test result [Pa]	Safety factor	Result [Pa]
8	Vertical	722	7,000	1.5	4,666
4	Horizontal	640	1,800	1.5	1,200

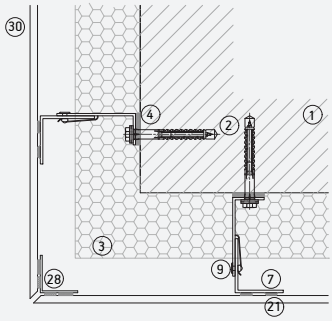


→ DKC system details

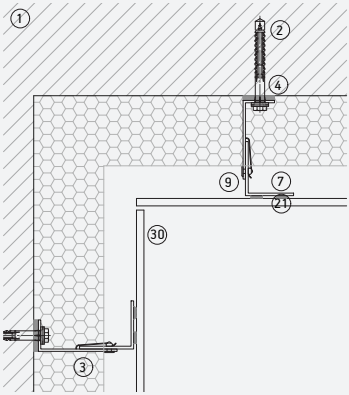
DKC system details

DKC horizontal section

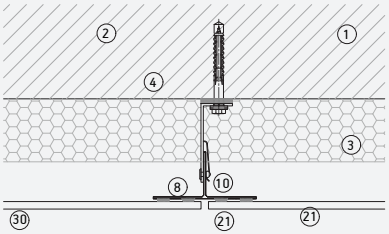
Mitred external corner



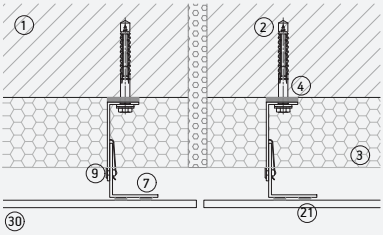
Internal corner



Vertical joint



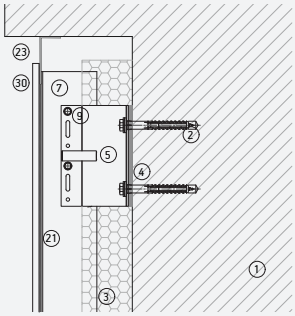
Vertical expansion joint



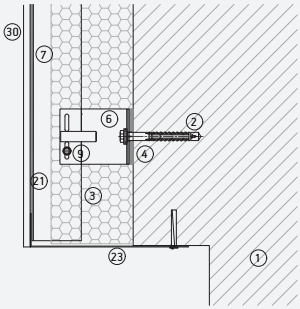
1. Supporting wall
2. Anchor bracket
3. Insulation
4. Insulating layer
5. Fixed bracket
6. Adjustable bracket
7. L-shaped profile
8. T-shaped profile
9. Self tapping screw
10. Rivet
11. Undercut anchor
12. Horizontal rail
13. C-shaped hanger
14. Adjustable C-shaped hanger
15. Bottom/top edge profile/clip
16. Intermediate edge profile/clip
17. Bottom/top visible clip
18. Intermediate visible clip
19. Interior back clip
20. Exterior back profile
21. Chemical fixing system
22. Security fixing
23. Ventilation profile
24. Lintel
25. Jamb
26. Window sill
27. Top coping
28. Corner profile
29. Bonding adhesive
30. Dekton® Protek

DKC vertical section

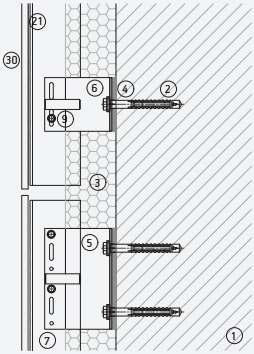
Upper detail



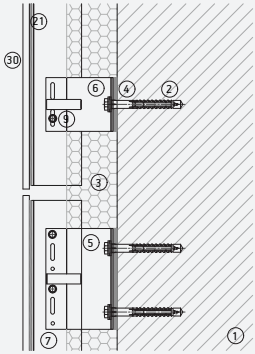
Bottom detail



Horizontal joint



Joint between profiles



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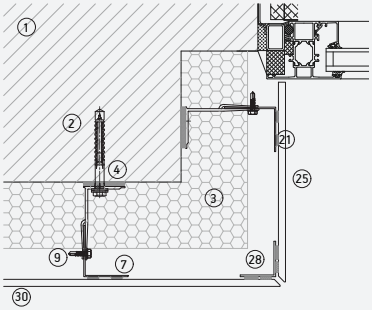
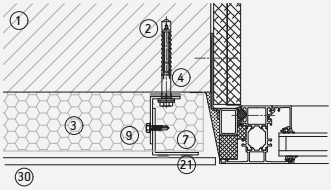
DKC sections

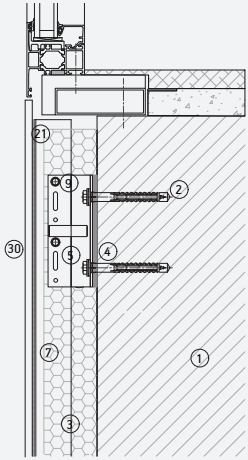
Dekton® jamb



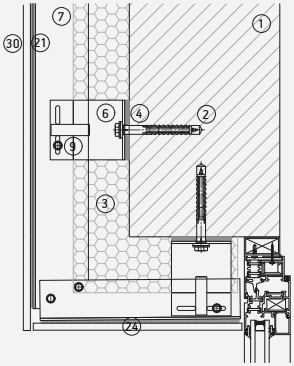
Window section without jambs



Window without sill



Dekton® lintel



1. Supporting wall
2. Anchor bracket
3. Insulation
4. Insulating layer
5. Fixed bracket
6. Adjustable bracket
7. L-shaped profile
8. T-shaped profile
9. Self tapping screw
10. Rivet
11. Undercut anchor
12. Horizontal rail
13. C-shaped hanger
14. Adjustable C-shaped hanger
15. Bottom/top edge profile/clip
16. Intermediate edge profile/clip
17. Bottom/top visible clip
18. Intermediate visible clip
19. Interior back clip
20. Exterior back profile
21. Chemical fixing system
22. Security fixing
23. Ventilation profile
24. Lintel
25. Jamb
26. Window sill
27. Top coping
28. Corner profile
29. Bonding adhesive
30. Dekton® Protek

Health and safety

Risks associated with handling and transport

Operators and fitters dealing with Dekton® must comply with all laws and regulations relating to occupational health and safety in workplaces, as well as the information contained in this Guide.

During transport and handling of Dekton® materials, risks such as bumps, cuts, musculoskeletal disorders, entrapment or blast injuries can occur due to incorrect handling.

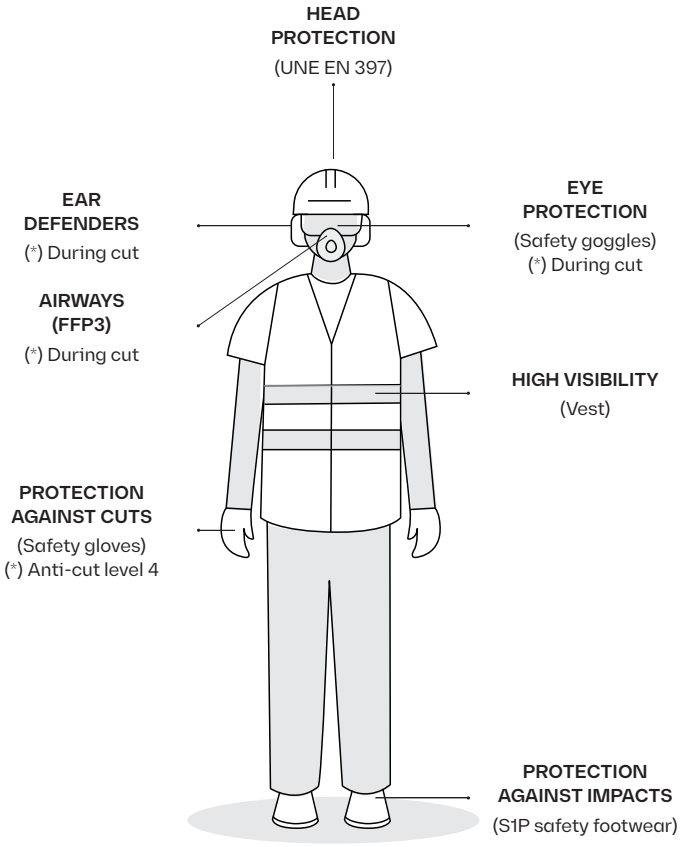
Always follow the safety instructions contained in this Guide.

Risks associated with manufacturing and transformation

The manufacturing process can involve risks such as cuts, blast injuries, entrapment, exposure to high noise levels and exposure to chemicals such as free crystalline silica dust.

For more information about these risks and measures to prevent them, 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.


HEAD PROTECTION
(UNE EN 397)
EAR DEFENDERS
(*) During cut
AIRWAYS (FFP3)
(*) During cut
EYE PROTECTION
(Safety goggles)
(*) During cut
HIGH VISIBILITY
(Vest)
PROTECTION AGAINST CUTS
(Safety gloves)
(*) Anti-cut level 4
PROTECTION AGAINST IMPACTS
(S1P safety footwear)

COSENTINO®

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

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