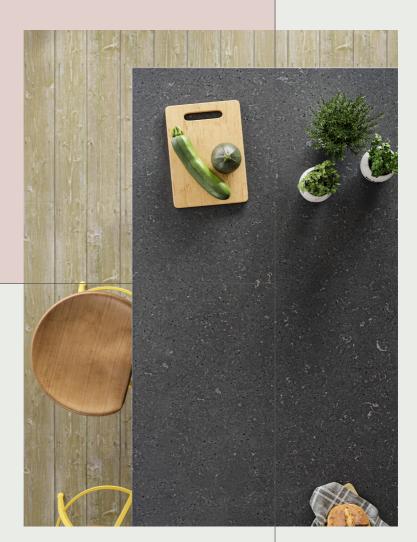
COSENTINO

# Countertops design & installation





silestone

TECHNICAL CONTENT

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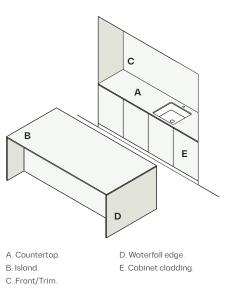
#### Design criteria

#### Available thicknesses

Silestone®, in addition to its numerous advantages (minimal maintenance, high resistance to stains and scratches, low liquid absorption rate, minimal joints, etc.), is available in a range of thicknesses that help to meet all the needs that may arise during the design of the kitchen.



The image below shows the different applications of the material in a kitchen:



#### Recommended thicknesses depending on the application

	12 mm	20 mm	30 mm
Countertop	•	•	٠
Island	•	•	٠
Front/Trim <sup>(1)</sup>	•	•	•
Waterfall edge <sup>(2)</sup>	•	•	•
Cabinet cladding(3)	•	•	•

→ ( ● ) Recommended; ( ● ) Allowable; ( ● ) Not recommended.

→ (1) It is considered to be a trim for a height of up to 200 mm [8"]. Beyond that, it is considered to be a front.

ightarrow ( 2 ) See section 'Waterfall edges' for further details.

ightarrow (3) See the Furniture Design & Installation Manual for more details on this application.

#### Slab formats

Depending on the color, Silestone $^{\circ}$  comes in 2 different slab formats. Therefore, you should check $^{*}$  the original dimensions when designing with our material.



→ (\*) See current portfolios or consult your local Cosentino® contact person.

## Guide to correct measurement

 $\rightarrow$  Fully fitted cabinets

Before taking detailed measurements, check that all cabinets are installed, properly leveled, in their final position.

→ Measuring tools





→ Laser tape

measure.



 $\rightarrow$  Order form templates

special features, barcode, etc.

Standardized templates including data such as: customer, color, edge type,



→ Tape measure.

→ Angle gauge.

→ Spirit level.

#### Random pattern

Some Silestone® products are created and designed to resemble natural stone. In nature, we can find stones of heterogeneous appearance that may include veins and areas of different tones and contrasts. The same goes for our materials, so it is very important to pay attention to the design and layout of the pieces before producing the material.

#### → Color identification

First of all, and based on all the Cosentino® technical documentation, identify the Silestone® colors with a heterogeneous background in the patterns.

#### $\rightarrow$ Layout of the pieces

Before cutting the different pieces that will make up the countertop, place the slab on the cutting table, clean it and make a layout of these pieces in which the tone and/or vein pattern is clearly identified.

In this way, you can match areas with similar characteristics in the joints between pieces, either by tone or vein pattern, and thus avoid differences between pieces of the same slab or production.

Below are two examples of how a Silestone® color can be laid out with a random pattern:

# 3 3 2

→ Lavout examples | Silestone® Ethereal Haze.

#### Recommended

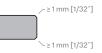
#### edges

Non-exposed edges

Those that go against the walls, in the joints of the countertop, etc.

No edge polishing is required. Simply smooth the edges, both top and bottom.

→ Unpolished flat



-1-3mm

≻1-3mm [1/32" - 1/8"]

Radius acc.

to thickness

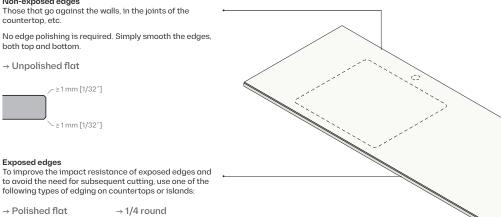
Angle acc. to thickness

- 3 mm [1/8"]

≻1-3mm

[1/32" - 1/8"]

[1/32" - 1/8"]





 $\rightarrow 1/2$  round

→ Knife

→ Mitered skirt



 $\rightarrow$  Round

→ Ogee

~1-3 mm

Full thickness

- Shape acc. to

manufacturer

- 3 mm [1/8"]

≻1-3mm [1/32" - 1/8"]

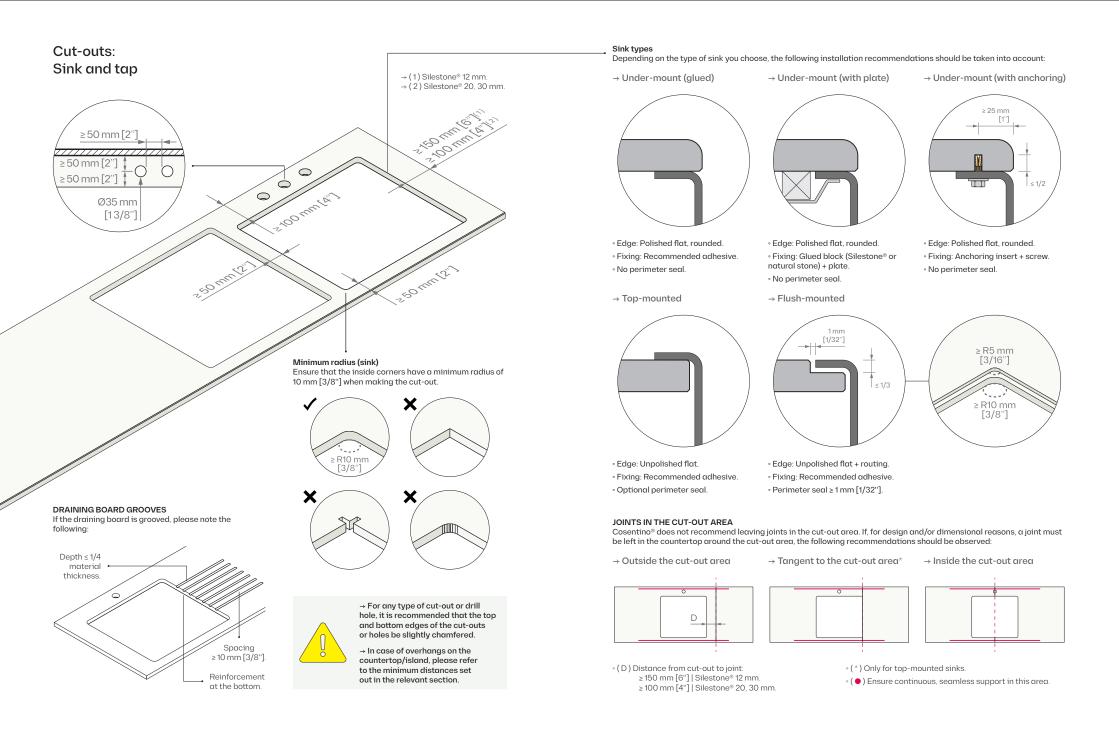
 $\rightarrow$  Double polished flat

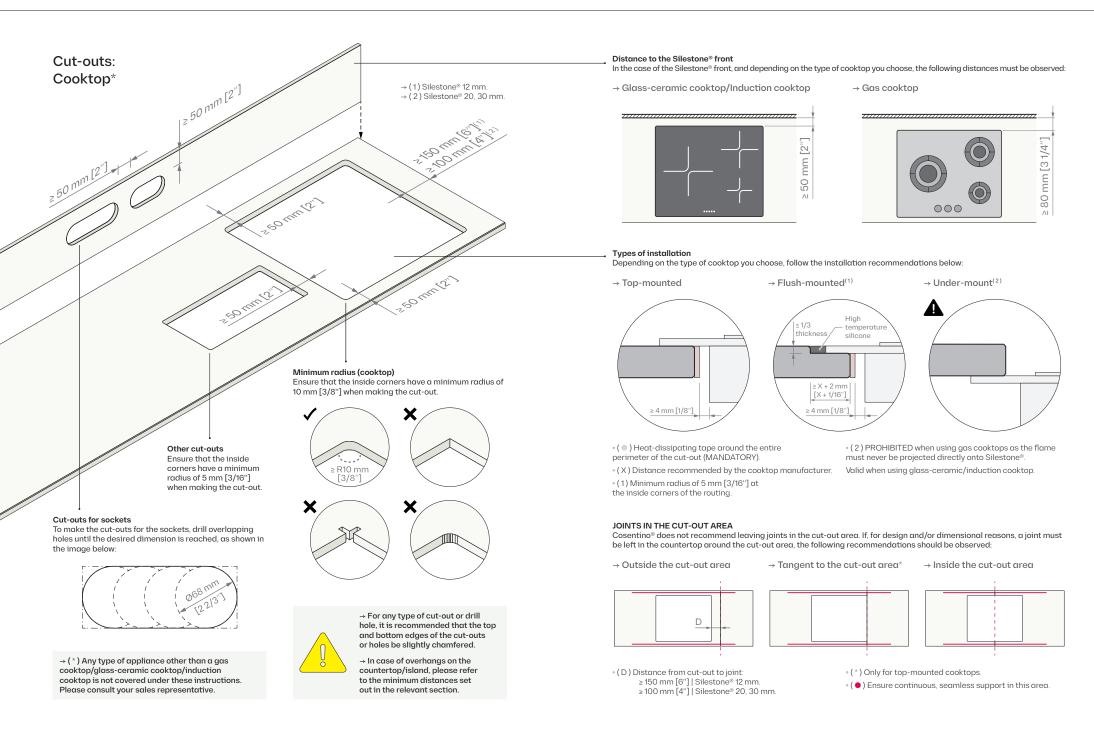
[1/32" - 1/8"]

#### **Edge recommendations** according to thickness

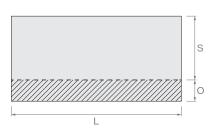
	12 / 20 / 30 mm
Unpolished flat	•
Polished flat	•
1/4 round*	•
1/2 round	٠
Round*	•
Knife	•
Ogee	•
Mitered skirt*	٠
Double polished flat	•

- → (●) Recommended; (●) Allowable.
- $\rightarrow$  (\*) Valid only for straight sections.

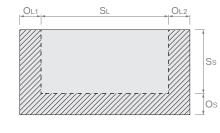




#### Island overhangs without cut-out/drill hole



1. Long side overhang				
	12 mm	20 mm	30 mm	
0	≤ 200 mm [8'']	≤ 600 mm [24'']	≤ 1,000 mm [39'']	
S		≥2·O		
L	≥ 600 mm [24'']			



4. U-shaped overhang			
	12 mm	20 mm	30 mm
OL1, L2	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']
SL	≥ 2 · (OL1 + OL2)		
Os	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']
Ss	≥2·Os		

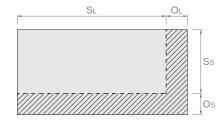
SL OL

#### 5. Partial overhang

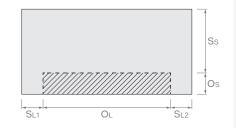
	12 mm	20 mm	30 mm
OL	-	≤ 1,600 mm [63'']	
SL	-	≥OL	
Os	-	≤ 500 mm [20'']	≤ 900 mm [36'']
Ss	-	≥Os	



	2. Short side overhang			
		12 mm	20 mm	30 mm
	0	≤ 200 mm [8'']	≤ 600 mm [24'']	≤ 1,000 mm [39'']
	S	≥ 2 · O ≥ 600 mm [24"]		
	L			



3. L-shaped overhang			
	12 mm	20 mm	30 mm
OL	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']
SL	≥ 2 · OL		
Os	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']
Ss		≥2·Os	*



#### 6. Overhang between supports

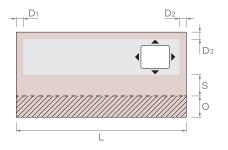
	12 mm	20 mm	30 mm
OL	≤ 1,000 mm [39'']	≤ 2,000 mm [79'']	≤ 3,000 mm [118'']
SL1, L2*	≥ 100 mm [4'']	≥ 50 mm [2'']	
Os	≥ 200 mm [8'']	≤ 800 mm [311/2"]	
Ss	≥Os		

 $\rightarrow$  ( \* ) Below these values, it is considered to be '1. Long side overhang'.

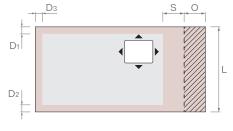
 $\label{eq:constraint} \begin{array}{l} \rightarrow (\ O \ ) \ Overhang; (\ S \ ) \ Support; (\ L \ ) \ Overhang \ length; \\ (\ O_L \ ) \ Long \ side \ overhang; (\ O_S \ ) \ Short \ side \ overhang; \\ (\ S_L \ ) \ Long \ side \ support; (\ S_S \ ) \ Short \ side \ support. \end{array}$ 

→ Maximum concentrated static load = 100 Kg [220 lb].

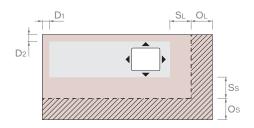
#### Island overhangs with cut-out/drill hole



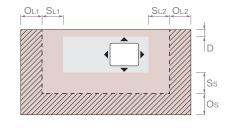
	12 mm	20 mm	30 mm
0	≤ 200 mm [8'']	≤ 600 mm [24'']	≤ 1,000 mm [39'']
S	≥O		
L	≥600 mm [24'']		
D1, 2	≥ 150 mm [6'']		
D3	≥ 100 mm [4'']		



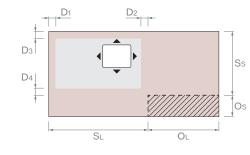
	2. Short side overhang				
		12 mm	20 mm	30 mm	
L	0	≤ 200 mm [8'']	≤ 600 mm [24'']	≤ 1,000 mm [39'']	
	S	≥O			
	L	≥ 600 mm [24'']			
	<b>D</b> 1, 2	≥ 100 mm [4'']			
	D3	≥ 150 mm [6'']			



3. L-sh	3. L-shaped overhang			
	12 mm	20 mm	30 mm	
OL, S	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']	
SL, S	≥ OL, S			
D1	≥ 150 mm [6'']			
D2	≥ 100 mm [4'']			

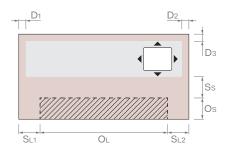


4. U-shaped overhang				
	12 mm	20 mm	30 mm	
OL1, L2	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']	
<b>S</b> L1, L2	≥ OL1, L2			
Os	≤ 200 mm [8'']	≤ 500 mm [20'']	≤ 900 mm [36'']	
Ss	≥Os			
D	≥ 100 mm [4'']			



#### 5. Partial overhang

	12 mm	20 mm	30 mm
OL	-	≤ 1,600 mm [63'']	
S∟	-	≥OL	
Os	-	≤ 500 mm [20'']	≤ 900 mm [36'']
Ss	-	≥Os	
<b>D</b> 1, 2, 3, 4	-	≥ 100 mm [4'']	



 $\rightarrow$  ( \* ) Below these values, it is considered to be '1. Long side overhang'.

 $\label{eq:constraint} \begin{array}{l} \rightarrow (\ O \ ) \ Overhang; (\ S \ ) \ Support; (\ L \ ) \ Overhang \ length; \\ (\ O_L \ ) \ Long \ side \ overhang; (\ O_S \ ) \ Short \ side \ overhang; \\ (\ S_L \ ) \ Long \ side \ support; \ (\ S_S \ ) \ Short \ side \ support; \\ (\ D_1 \ ), \ (\ D_2 \ ), \ (\ D_3 \ ), \ (\ D_4 \ ) \ Distance \ from \ cut-out \ to \ joint. \end{array}$ 

→ Maximum concentrated static load = 100 Kg [220 lb].



	12 mm	20 mm	30 mm
OL	≤ 1,000 mm [79'']	≤ 2,000 mm [79'']	≤ 3,000 mm [118'']
SL1, L2*	≥ 100 mm [4'']	≥ 50 mm [2'']	
Os	≤ 200 mm [8'']	≤ 800 mm [31 1/2'']	
Ss	≥Os		
<b>D</b> 1, 2	≥ 150 mm [6'']		
D3	≥ 100 mm [4'']		



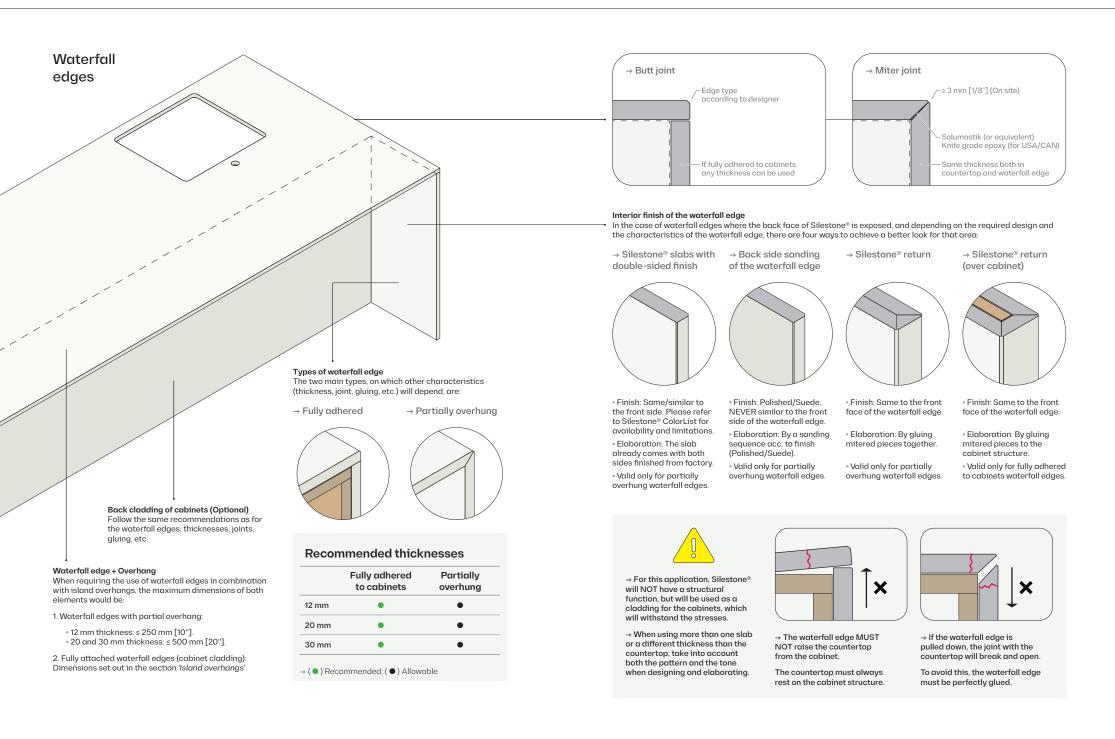
→ Reduce by half the values of overhangs and supports for the following colors: Alpina White 08, Blanco Maple 14, Desert Silver, Sienna Ridge 12, and the Stellar series.

→ If more than one cut-out/drill hole is made, the minimum distance between them shall be 100 mm [4"].

#### It is possible to make a cut-out/drill in this area.

1. Long side overhang

Do not make cut-outs or drill holes in this area.

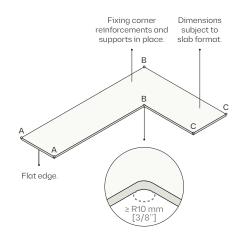


# Other considerations

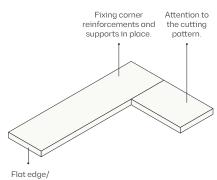
#### $\rightarrow$ L-shaped countertop

For this type of countertop, make sure that the support points (A, B, C) are at the same height. In the event of slight variations in height, a support base should be placed on the ribs of the unit by means of continuous 5 mm [3/16"] neoprene or elastomer strips.

#### For one-piece L-shaped countertops:



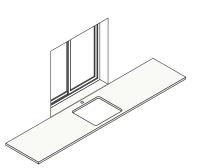
For multi-piece L-shaped countertops:



Flat edge/ miter edge.

#### $\rightarrow$ Window sill

At this meeting point where a continuous, through support cannot be ensured, leave a joint gap between the countertop and the sill piece (best solution) and fill it with silicone of the same color as the countertop.



→ Resolution WITH joint.

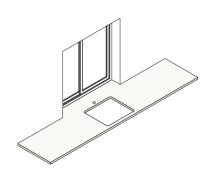
Alternatively, should having a seam not be the desired option, the following must apply:

• The support must be continuous, through and of the same material (e.g. wood) below both the countertop and the sill piece.

 Leave a perimeter gap ≥ 3 mm [1/8"] and fill with silicone.

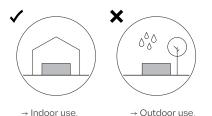
 Make appropriate radius (≥ R10mm [3/8"]) at all internal corners.

• Valid for 12, 20 and 30 mm thickness.



 $\rightarrow$  Indoor use of Silestone® only

Silestone<sup>®</sup> is only recommended for indoor use, for any of its applications: countertops, furniture, flooring, etc. Under no circumstances should this material be installed for outdoor countertops.



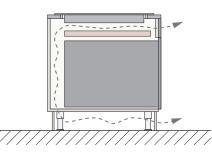
lignoon oooktopo

→ Appliances: cooktops, ovens, dishwashers, etc.

A. COOKTOPS: Install a heatdissipating insulating tape around the entire perimeter of the cut-out.

B. OVEN/DISHWASHER: Install insulation between the appliance and the countertop to prevent heat transmission by conduction and convection. Optionally, include insulation with a metallic finish to prevent heat transmitted by radiation.

**C. VENTILATION:** Sufficient space should be left under the countertop, and necessary elements (e.g. grilles) should be placed to allow for adequate ventilation.



# Installation criteria

#### On-site adjustments

Ideally, the entire process should be carried out in the workshop, with the appropriate machinery, after a thorough measurement at the installation site.

However, minor adjustments can be made on site, both to the countertop and the cladding, following specific recommendations.

 $\rightarrow$  Straight cut with disc and water supply

This type of cutting can be made on site, for any thickness, subject to the following requirements:

• Use cutting tools recommended by Cosentino®.

• Always cut with water supply.

• Sharpen the tool regularly.

After cutting, use a polishing block to remove sharpened edges.

 $\rightarrow$  Drill holes

The holes can be drilled on site, e.g. to make cut-outs for sockets (overlapping holes Ø68 mm [2 2/3"]).

Drill the holes on a flat surface of lower density than Silestone<sup>®</sup> (e.g. wood) to avoid any chipping.

It is recommended that larger drill holes and cut-outs are made in the workshop.

→ Resolution WITHOUT joint.

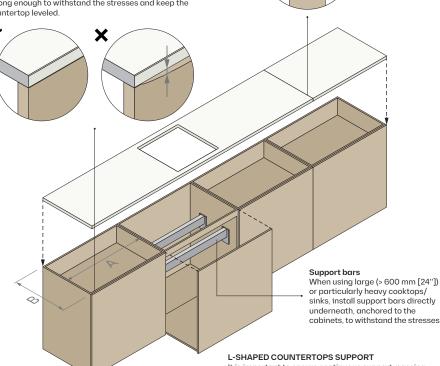
#### Supports and reinforcements

→ Flat-edge countertop

#### Support

This is the part of the cabinet that bears the countertop, transmits the loads and keeps it stationary and stable.

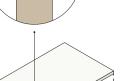
The countertop must always rest completely on the cabinet structure which must be made from a material strong enough to withstand the stresses and keep the countertop leveled.



It is important to ensure continuous support, passing through the corner area, for this type of countertops, especially when they are resolved in one piece.

#### **Distance between two supports**

	12 mm	20 / 30 mm	
А	≤ 900 mm [36'']	≤ 1,200 mm [48'']	
В	≤ 700 mm [27 1/2'']		



Support between joints

a cabinet support.

If possible, when a joint is to be left in the

countertop, it should be placed just above

sinks, install support bars directly underneath, anchored to the cabinets, to withstand the stresses.



→ Countertop with miter edge (skirt)

REINFORCEMENTS IN CUT-OUTS

Reinforce the surrounding area when the cut-out has large dimensions and/or when it is placed on

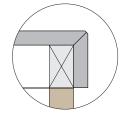
countertops with a 12 mm thickness and/or with skirt.

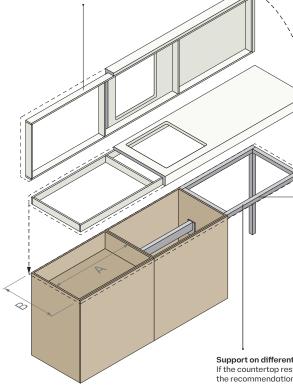
#### Reinforcement

It is the complementary part that makes a vulnerable area stronger and more resistant (e.g. in cut-outs and miter skirts).

It should be made from Silestone® or a material with similar physical properties (e.g. natural stone). Furthermore, it should be glued in such a way that the countertop plus the reinforcement work as a whole.

Reinforcements must be placed in line with the load-bearing structure on which the cabinets are mounted. They are required on countertops with miter edges, both for reinforcement and leveling, and near cut-outs to increase rigidity.





Metal structure It must be sufficiently

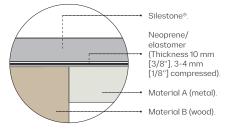
sturdy and stable to ensure continuous support of the countertop.

The support of the countertop on the metal structure should be ≥100 mm [4''].

The attachment to the other units (wood) shall always be done by mechanical fixing.

#### Support on different materials

If the countertop rests on two different materials, follow the recommendations below:



9. Sockets

It is recommended to make the

cut-outs for the sockets before

installing the front piece.

#### Installation process and recommendations

#### 1. Before starting

Protect anything that could be stained or damaged, and make sure that the support area is clean and free of objects.

#### 2. Dimensions

Check the dimensions of the cabinets and of the cut pieces of the countertop, as well as the dimensions of the cladding/trim.

#### 3. Supports and reinforcements

Check that the distances and recommendations set out for the chosen Silestone® thickness are observed.

4. Cabinets

Check that the cabinets are correctly leveled. If not, adjust the level accordingly, depending on the type of cabinet chosen.

#### 5. Top flatness Check that the cabinet top is completely leveled, as the countertop must fully rest on the cabinet structure.

#### 6. Adhesive

Apply the recommended adhesive to the top edges of cabinets or reinforcements, taking care not to stain the rest of the unit.

#### 7. Placement

≥ 3 mm

Place the countertop pieces on the cabinets once they have been leveled and adjust their position. Leave a perimeter joint of at least 3 mm [1/8"] in all areas of contact with the vertical wall, and fill the visible areas with silicone. Check that the countertop is fully supported with a gauge.

> 8. Joints between pieces Minimize the size of joints between pieces by using leveling suction cups and the recommended adhesive (Solumastik or a silicone in the same color as the countertop). Use masking tape to protect the surface.

#### OVEN/DISHWASHER INSTALLATION

Place an insulating panel between the appliance and the countertop, and ensure adequate ventilation inside the cabinet.

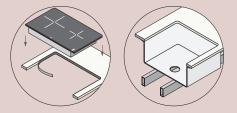
#### COOKTOP AND SINK INSTALLATION

**COOKTOP:** The installation should be carried out according to the type of cooktop chosen. The distances to the cladding should be observed. If this is not possible, this area should not be clad in Silestone<sup>®</sup> but in another material (e.g. steel).

**SINK:** The installation should be carried out according to the type of sink chosen.

**IMPORTANT:** Always install the cooktop with a heat-dissipating insulating tape around the entire perimeter of the cut-out.

When placing large (> 600 mm [24"]) or particularly heavy cooktops/sinks, install support bars directly underneath, anchored to the cabinets, to withstand the stresses.



#### 10. Front/Trim\*

 a. Put the front in place and adjust if necessary.
b. Apply the recommended adhesive/mastic which ensures a rigid fixation, and glue the piece to the substrate which will support the entire load of the front.

 $\rightarrow$  (\*) For gluing of fronts, follow the recommendations of the Silestone® Interior Wall Cladding Quick Guide. For gluing of trims, simply apply silicone beads.

#### **11. Perimeter seal** Apply the recommended silicone

(or grout) to all necessary joints according to the manufacturer's instructions.

#### 12. Final cleaning

It is important to carry out a final site cleaning as soon as possible to remove any residue from the installation process.

Use Clean-Colorsil, isopropyl alcohol, or ethanol (NEVER use solvents or acetone). Use microfiber cloths or paper (NEVER use scouring pads).

#### WATERFALL EDGES (OPTIONAL)

Install the waterfall edge by gluing it to the cabinet according to the type of joint chosen (butt/miter) and using adhesives/mastics that ensure a rigid fixation, so that the waterfall edge does NOT have a structural function.

→ Always use tools and adhesives recommended by Cosentino<sup>®</sup>.

→ Follow the appliance manufacturer's installation recommendations for proper ventilation under the countertop.

 $\rightarrow$  Failure to properly follow the instructions in this *Manual* may result in material breakage.

#### Health & safety

Operators and fitters dealing with Silestone® materials, must comply with all applicable occupational health and safety laws and regulations.

Always take the necessary occupational safety measures to meet the requirements of local regulations. This *Guide* is not an exhaustive document or a substitute for the relevant laws and regulations, and is provided for information purposes only.

Safety measures will depend on the specific conditions of each job.

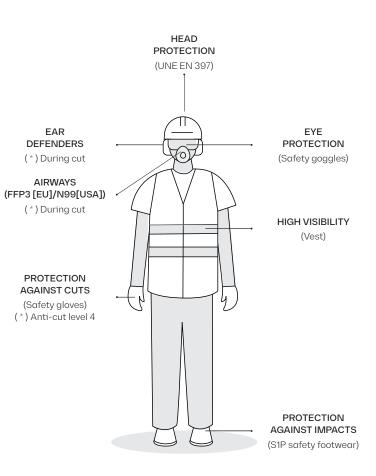
# Risks associated with handling and transport

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

# 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.

Before processing the product, consult the Silestone® Safety Data Sheet and the Good Practice Guidelines available upon request from Cosentino® or on the website osh.cosentino.com.



#### COSENTINO

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 $\rightarrow$  These certificates apply to Dekton® and Silestone®

 $\rightarrow$  Find information on NSF-certified colors at www.nsf.org

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