

Kitchen top

Design and Installation Manual

Vers. 0/2020



LAPITEC



This manual has been designed with the aim of providing guidelines and helpful suggestions for the processing, installation and maintenance of **Lapitec®**.

The information contained herein reflects the highest level of technical-scientific and operational knowledge possessed by the manufacturer at the time of publication. You are therefore invited to consult the latest, most up-to-date version, which is always available in the download area of the website www.lapitec.com.

In any case, given that this is a natural sintered material, the user is advised not to limit themselves to the instructions provided in this document but rather to consult the vast technical-scientific and operational literature available on this subject, and to employ the services of professional experts for the various stages of processing and installation of the ceramic products.

In regards to the above, Lapitec S.p.A. shall not be held liable for any damage that may result during the application of the information and suggestions contained in this technical manual, insofar as considered merely information and suggestions, which must always be verified beforehand by the user.

Moreover, Lapitec S.p.A. reserves the right to make technical changes of any type without any prior warning and without direct communication to any parties.

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1. LAPITEC®

1.1/ CHARACTERISTICS

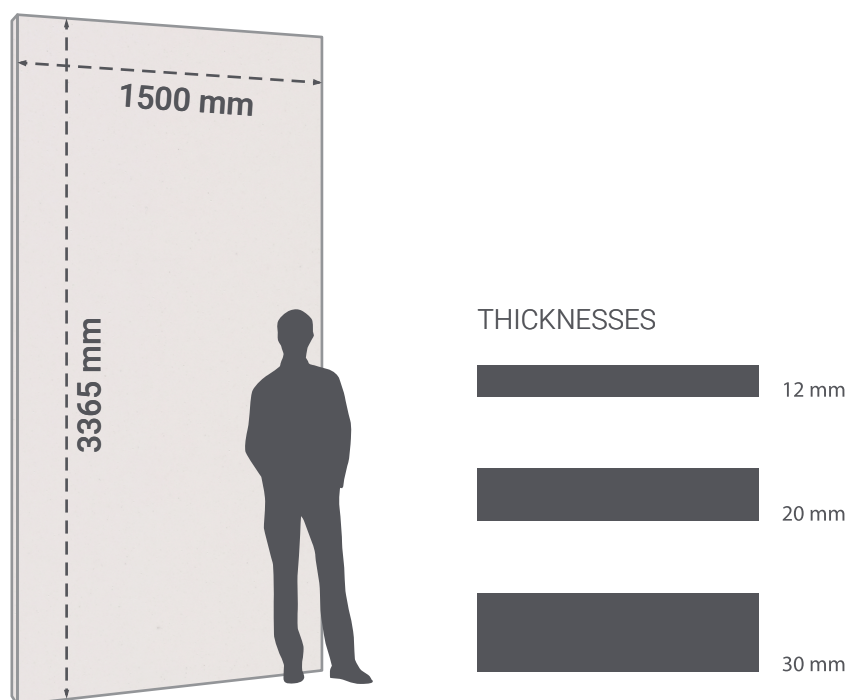
Lapitec® is a sintered stone, an innovative material produced in large slabs using an exclusively patented technology, which can be used for both indoor and outdoor applications.

Lapitec® sintered stone is resistant to wear, weather, UV exposure, heat, frost and absorption.




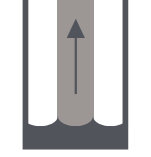
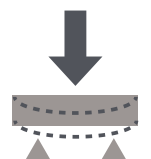


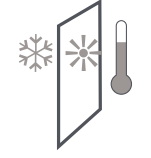
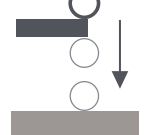


The different surface finishes of **Lapitec®** make it perfect for use on both floors and walls.

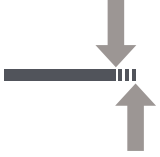

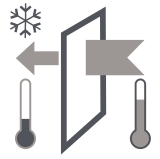
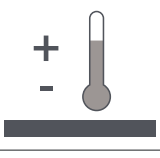


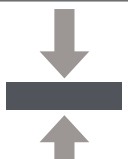
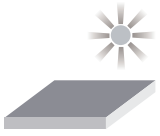

Lapitec® is compatible with a broad range of adhesives and binders, thus allowing it to be installed on various types of supports; it can be used without limits in different environments, including those that are particularly harsh (humidity, salinity, presence of aggressive pollutants...).

Standard dimensions



1.2/ TECHNICAL DATA SHEET

TECHNICAL SPECIFICATIONS		STANDARD	VALUE
	Standard dimensions	EN 14617-16	3365x1500 (12-20 mm) 3365x1460 (30 mm)
	Thicknesses	EN 14617-16	12 – 20 – 30 mm
	Density	EN 14617-1	2,4 kg/dm ³
	Water absorption	EN 14617-1	0.02%
	Flexural strength (R_{tf}) after 25 freeze-thaw cycles (R_{Mf}) after 20 thermal shock cycles (R_{sf})	EN 14617-2	55 N/mm ² 54.1 N/mm ² 54.3 N/mm ²
	Deep abrasion resistance	EN 14617-4	140 mm ³
	Frost resistance	EN 14617-5	Resistant
	Coefficient of thermal shock resistance (after 20 cycles)	EN 14617-6	0.9%
	Impact resistance	EN 14617-9	1.97 Joule (thickness 12 mm) 3.3 Joule (thickness 20 mm)
	Acid and alkali resistance	EN 14617-10	C4 - Resistant
	Coefficient of linear thermal expansion	EN 14617-11	$5.8 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$

TECHNICAL SPECIFICATIONS	STANDARD	VALUE
	EN 14617-12	A
	EN 13501-1	A1
	EN ISO 10456	1,3 W / m · °K
	EN ISO 10456	840 J/kgK
	EN ISO 10456	no value (dry) ∞ (wet)
	DIN 51130	R9 (Velvet) R10 (Vesuvio, Lithos, Dune) R12 (Urban) R13 (Fossil, Arena)
	ASTM C170	439 N/mm ² (dry) 483 N/mm ² (wet)
	DIN 51094	No variation
	EN 1925	0,006 g/m ² s0,5

Lapitec® is a fireproof material, classified A1. When exposed to fire it does not ignite, does not release fumes and does not spread flames.

Violent thermal fluctuations such as direct exposure to a flame may cause the material to break.



2. PRINCIPLES OF DESIGN

2.1/ INTERNAL ANGLES AND CUT-OUT

All the internal corners relative to a hole must have a minimum radius of 5 mm, internal corners referring to general geometry of the piece (e.g. L-shaped countertop) must have a minimum radius of 10 mm.

A higher radius confers greater structural resistance to the finished product (see figure 1), otherwise any corner not rounded creates a point of stress on the countertop (see figures 2, 3 and 4).

We also recommend creating a minimum radius of 5 mm in the presence of columns or elements that require cutting of the countertop.

$R \geq 5 \text{ mm}$
 $R 10 \text{ mm}$ for industrial kitchens

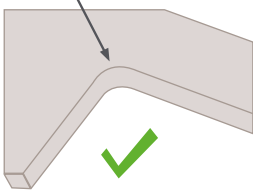


Figure 1

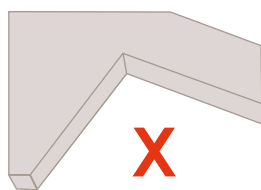


Figure 2

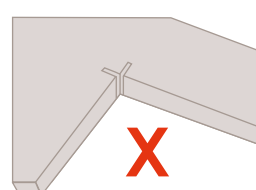


Figure 3

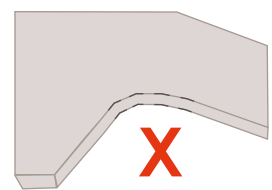
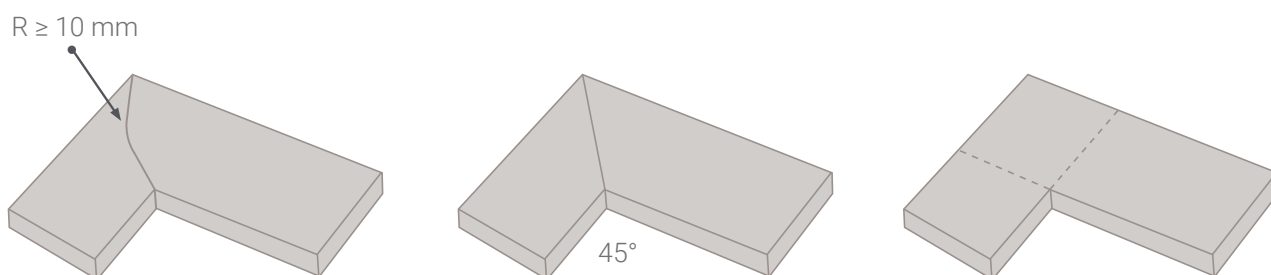


Figure 4

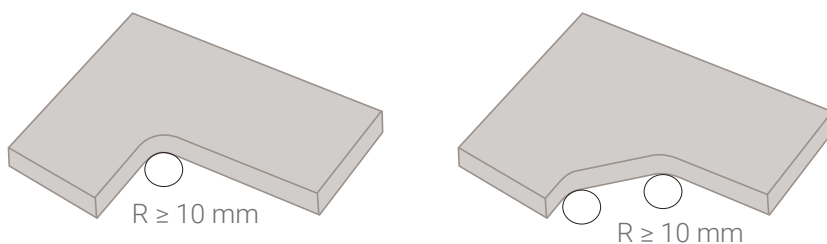
2.2/ L-SHAPED TOP

In the case of L-shaped kitchens, we provide several suggestions so as not to compromise the structural resistance of the material, thus avoiding undesirable breakages.

It is recommended to divide the top and L-shape into multiple sections to avoid 90° angles in a single piece.

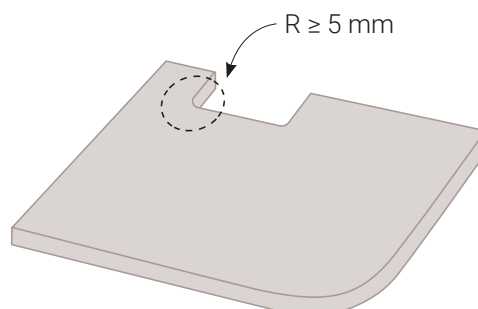


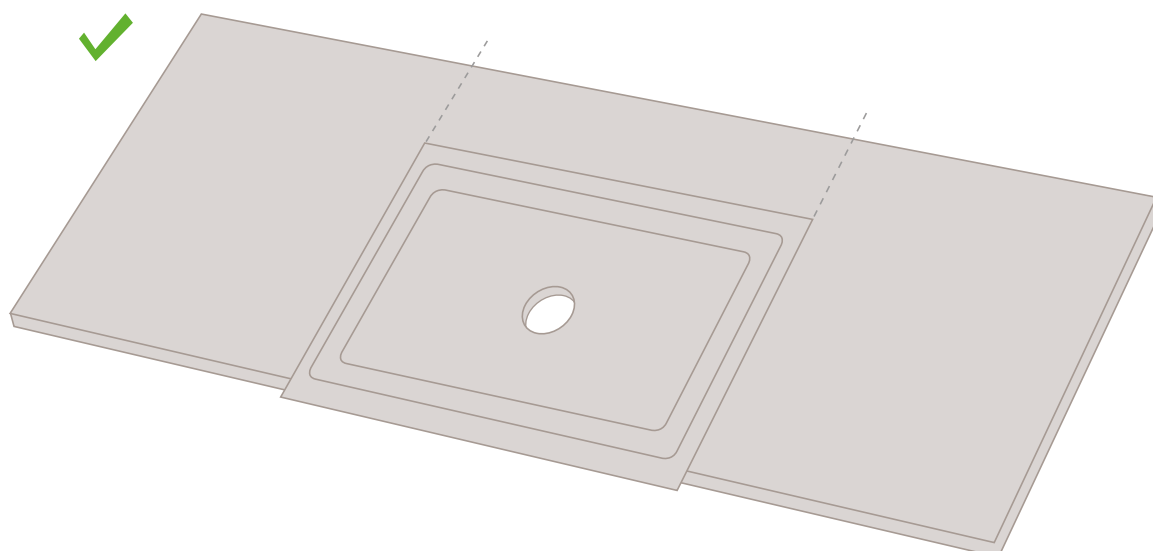
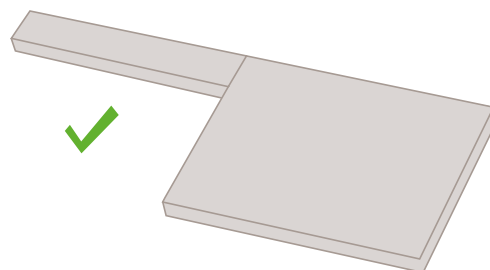
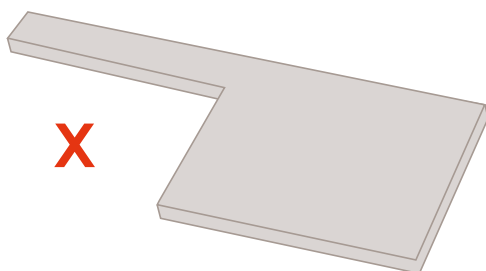
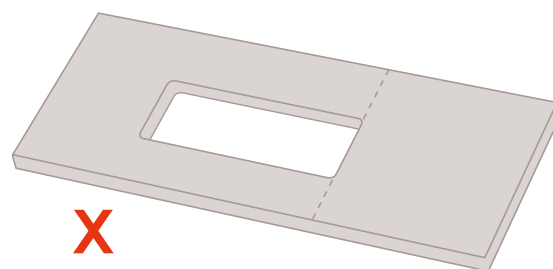
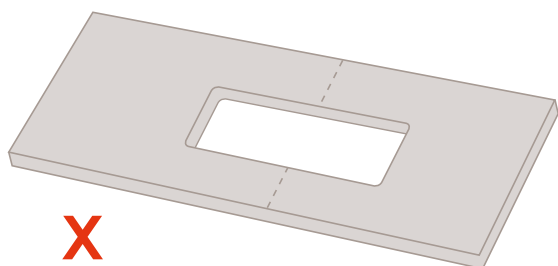
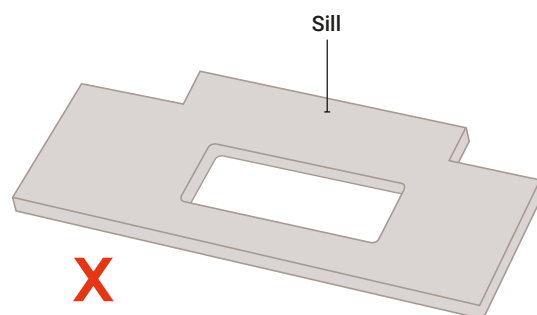
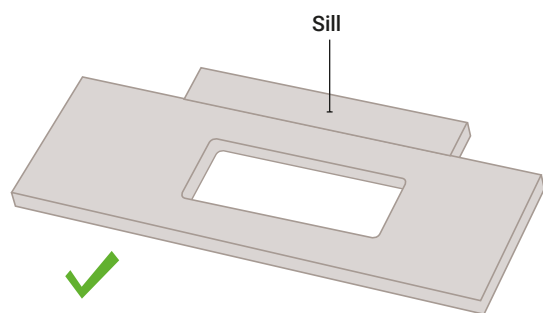
L-tops comprised of a single piece must have a minimum bend radius of 10 mm. It is also important for the underlying cabinets to be levelled and in perfect condition prior to installing this type of top.



2.3/ SPECIAL CASES

Remember to observe a minimum radius of 5 mm in correspondence with columns.

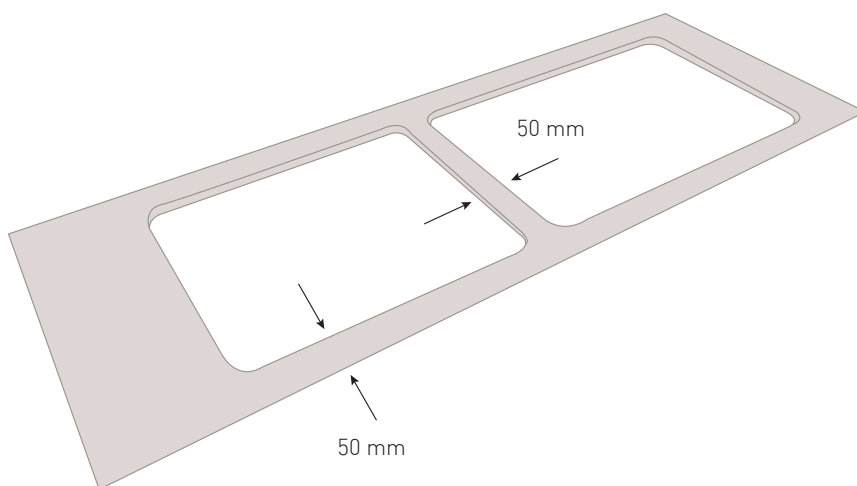




2.4/ MINIMUM DISTANCE BETWEEN EDGE AND CUT-OUTS

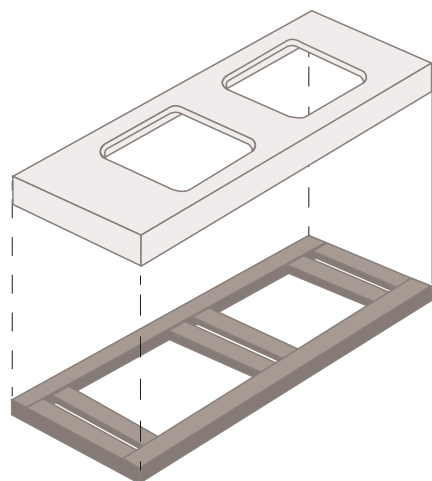
The minimum recommended distance between the **Lapitec®** top and sink is 50 mm.

NB: when applying silicone to seal the hob, the surface of the **Lapitec®** top must be protected using adhesive tape.

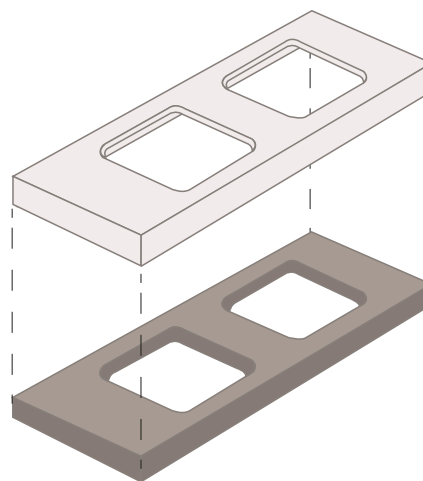


2.5/ RECONSTRUCTED TOP REINFORCEMENT

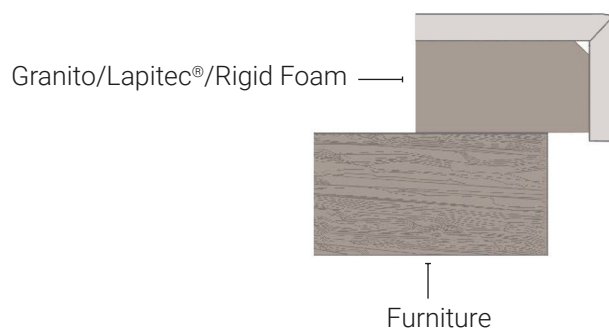
Based on the **Lapitec®** thickness used and the configuration of the top, it is recommended to properly support the top with a **Lapitec®** reinforcement, or with material having the same expansion coefficient (e.g. granite, **Lapitec®** or Rigid Foam).



Support with crossbeams



Solid support

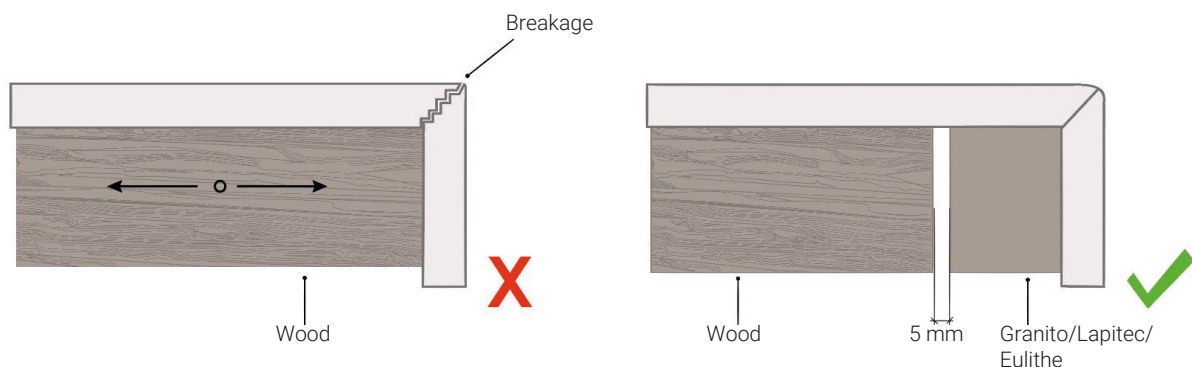


2.6/ OUTDOOR APPLICATIONS

In outdoor applications in the presence of lamination or 45° bonding, it is recommended to support the lintel with material having the same thermal expansion coefficient (granite, Lapitec, Rigid Foam...).

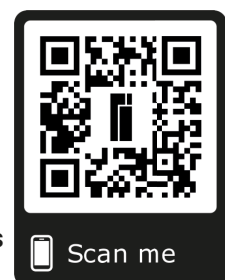
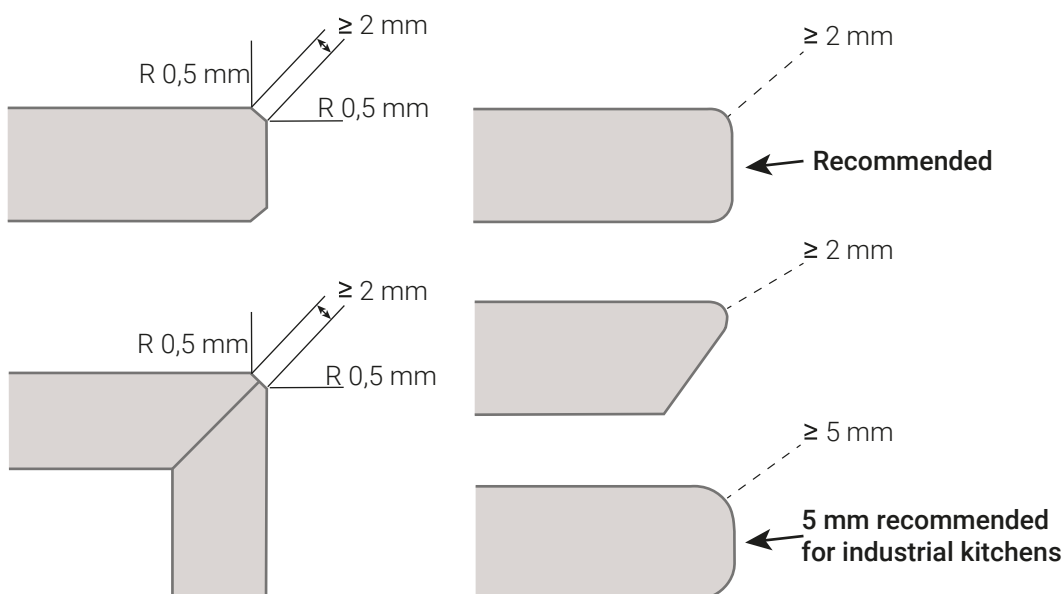
Therefore, the adhesive bond between the two pieces should not be supported with wood, which when exposed to the sun and weather may expand or swell, subsequently exerting pressure on the bonded parts and causing their detachment.

Moreover, it is recommended to maintain a gap of at least 5 mm between the wood and the top in order to absorb any thermal expansions.



2.7/ EDGES OF THE TOP

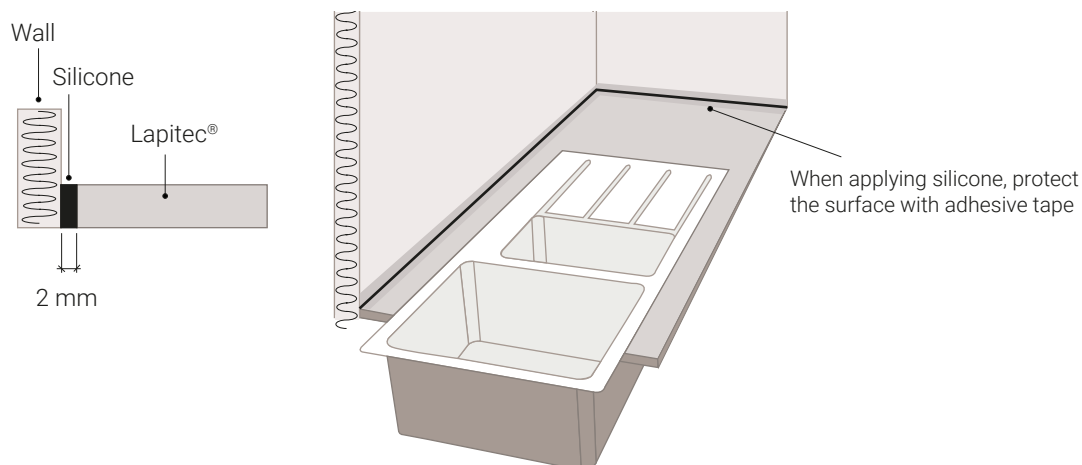
It is recommended to process the edges of the workpiece as indicated in the drawing. These instructions represent a good balance between aesthetics and functionality, while also guaranteeing a considerable reduction in the number of accidents with the product.



2.8/ MINIMUM WALL-SINK-HOB DISTANCE

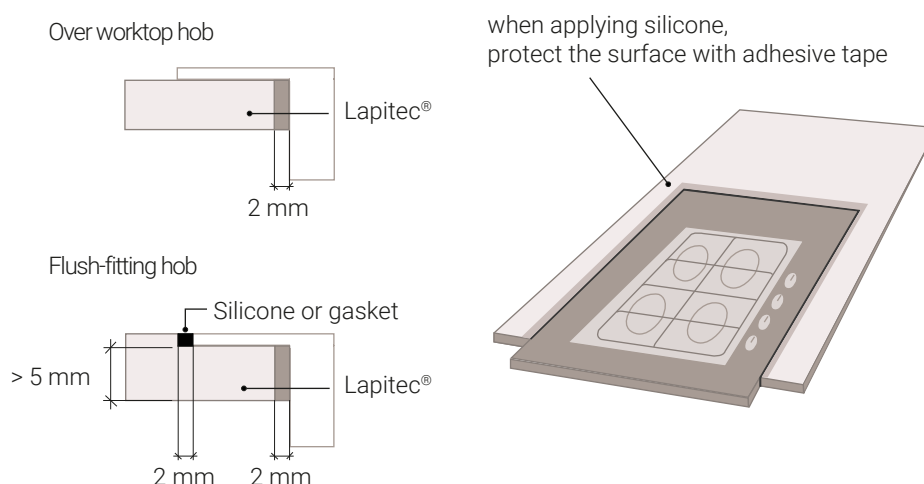
The minimum recommended distance between the **Lapitec®** top and the wall is 2 mm.

NB: when applying silicone to seal the hob, the surface of the **Lapitec®** top must be protected using adhesive tape.



The minimum recommended distance between the **Lapitec®** top and the hob is 2 mm. See the technical manual of the hob manufacturer to determine the minimum joint width between the hob and **Lapitec®**.

NB: when applying silicone to seal the hob, the surface of the **Lapitec®** top must be protected using adhesive tape.



5 mm for industrial kitchens

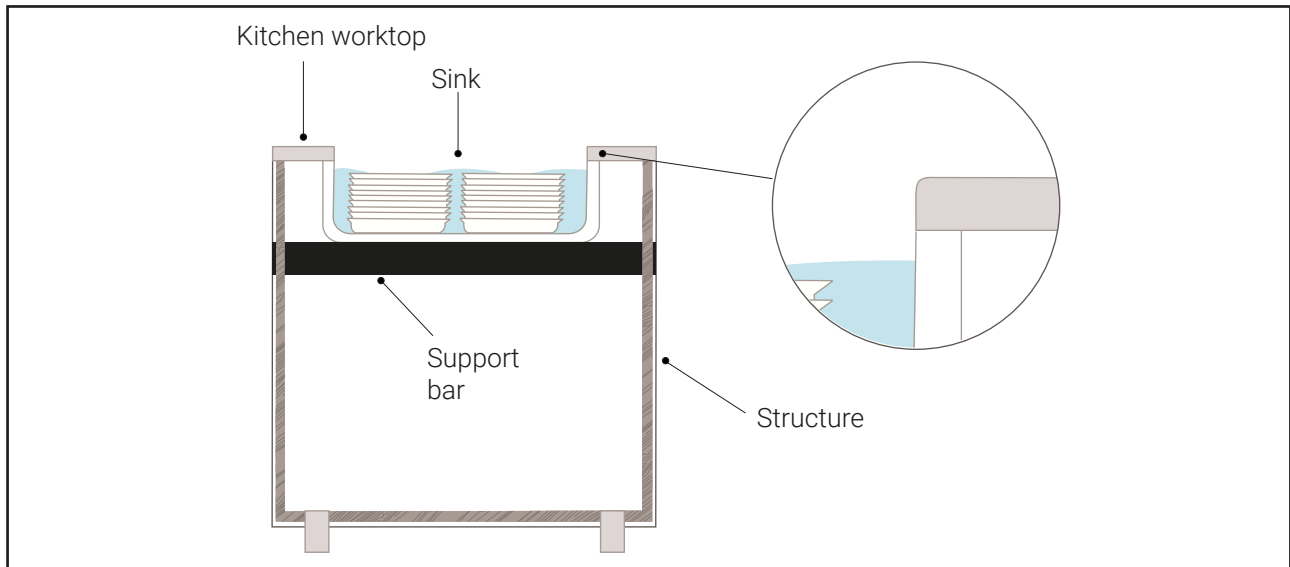
NB: the cooking elements must be supported with special bars.

Warnings

Between the **Lapitec®** top and the elements inserted therein, it is necessary to interpose a sealant able to compensate the varying thermal expansion due to daily use, such as silicone or other sealants supplied directly by the manufacturer of the household appliances.

2.9/ SINK SUPPORT

For large sinks, it is recommended to add a support bar to be secured to the structure on which the top will be placed. The weight of the sink full of water or materials used on a daily basis may cause the detachment of the sink and/or breakage of the top. To reduce the risk of chipping, it is recommended to align the sink with the top recess as shown in the diagram. In **Lapitec®** reconstructed sinks, it is recommended to use pieces with minimum thickness 20 mm.



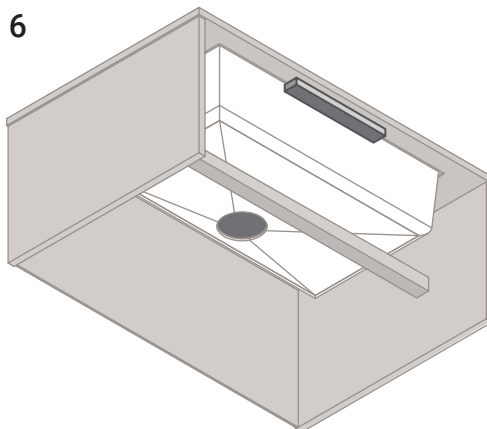
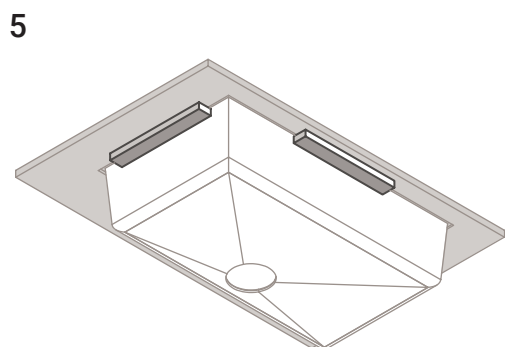
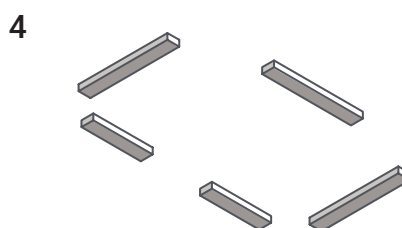
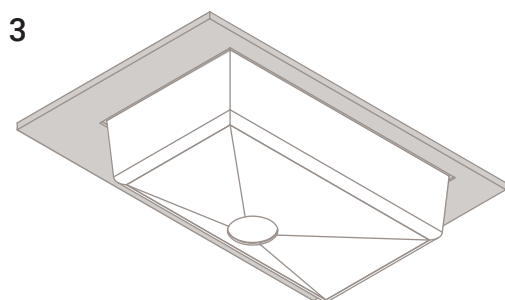
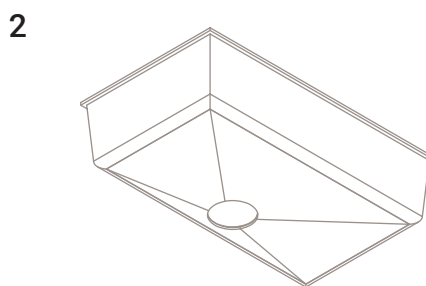
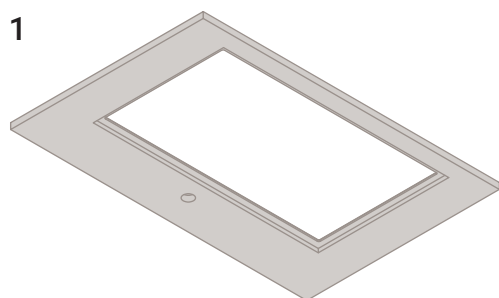
2.10/ ORION 105 AND ORION 130 SINK

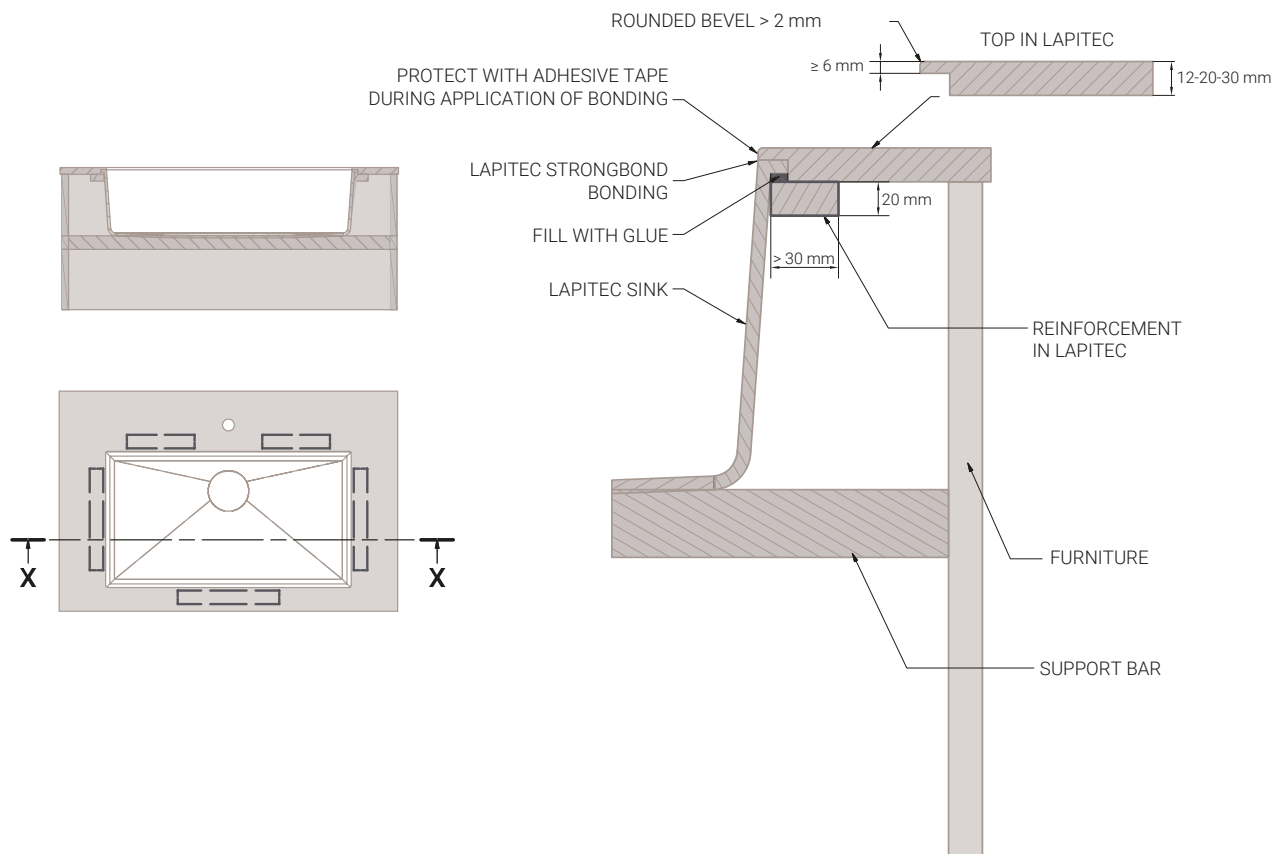
This is a special sink to be integrated with the Lapitec top, which allows a uniform and continuous effect between the two elements.

It is recommended to check the dimensions before making the cut-out on the top.

Detailed instructions are provided below in relation to how to proceed (see sequence of drawings).

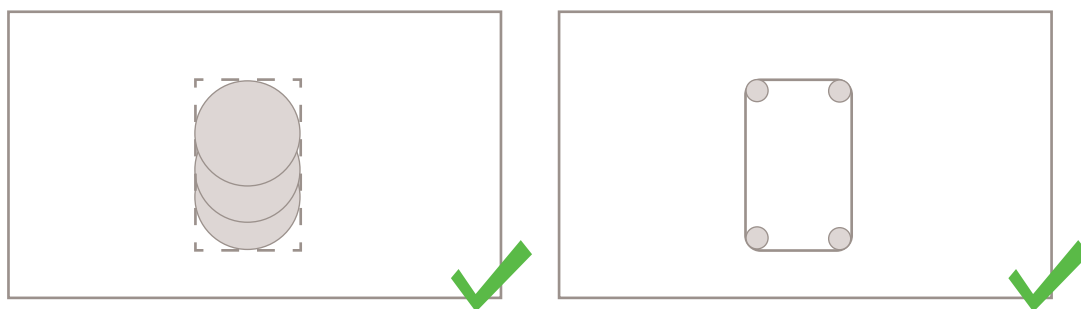
It is recommended to place reinforcements and fill with glue, and also to develop a support bar under the sink as described below.





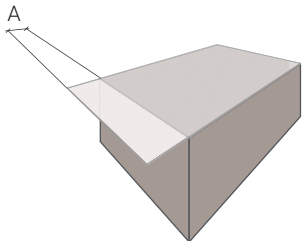
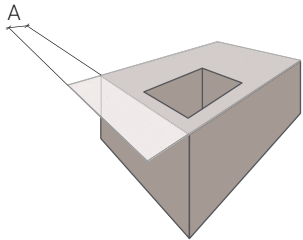
2.11/ ACCESSORY CUT-OUTS

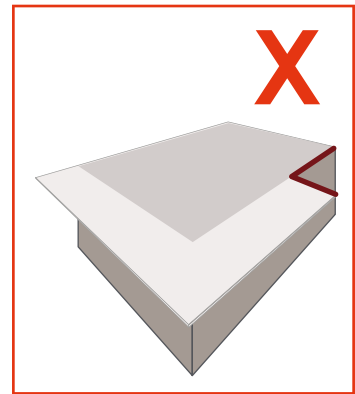
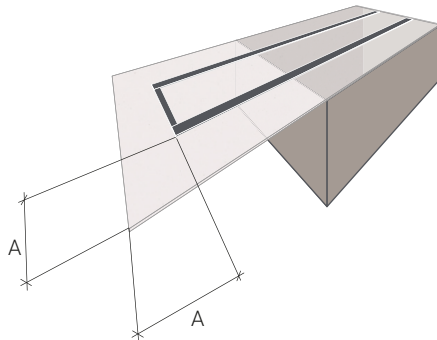
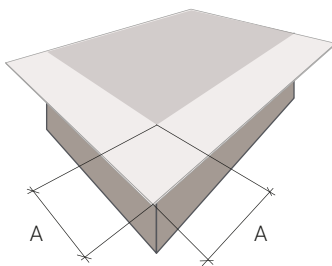
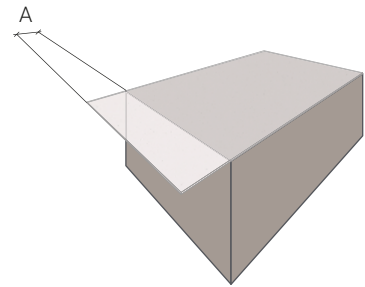
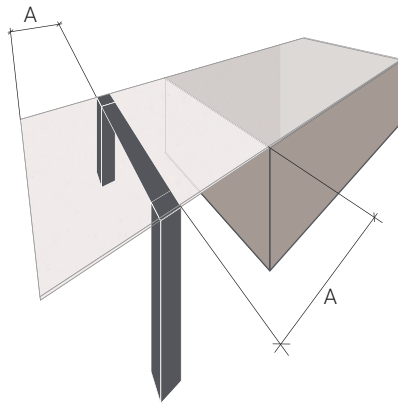
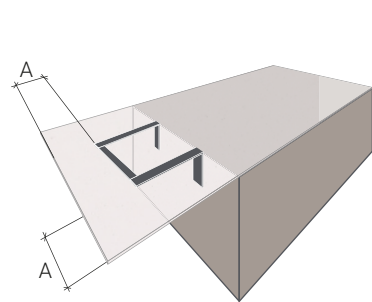
It is recommended to make circular cut-outs for accessories/switches as per the images shown below.



2.12/ OVERHANGS

When designing the top, it is a good idea to size the overhangs in accordance with the following table so as not to expose the workpiece to the risk of breakage during daily use.

	12 mm	Thicknesses 20 mm	30 mm	Drawing
Worktop with unsupported overhang	A <150 mm	A <350 mm	A <500 mm	
Worktop with cutout with unsupported overhang	A <90 mm	A <210 mm	A <300 mm	

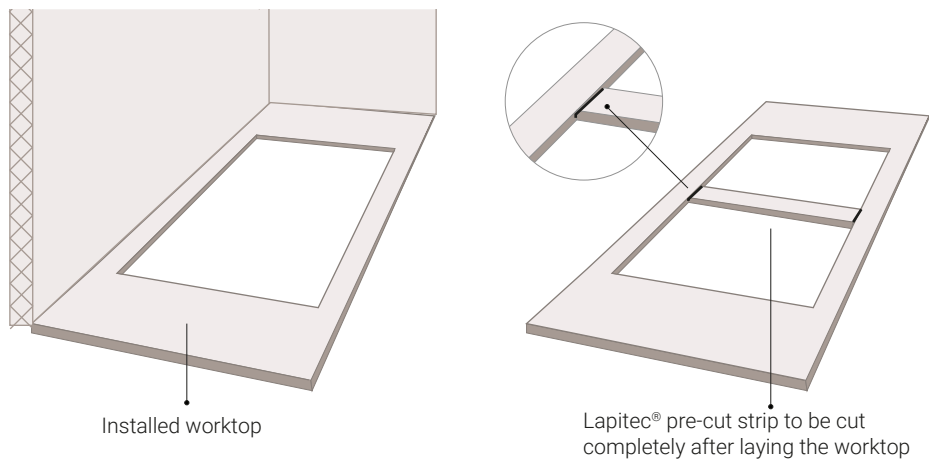


2.13/ LARGE CUT-OUTS

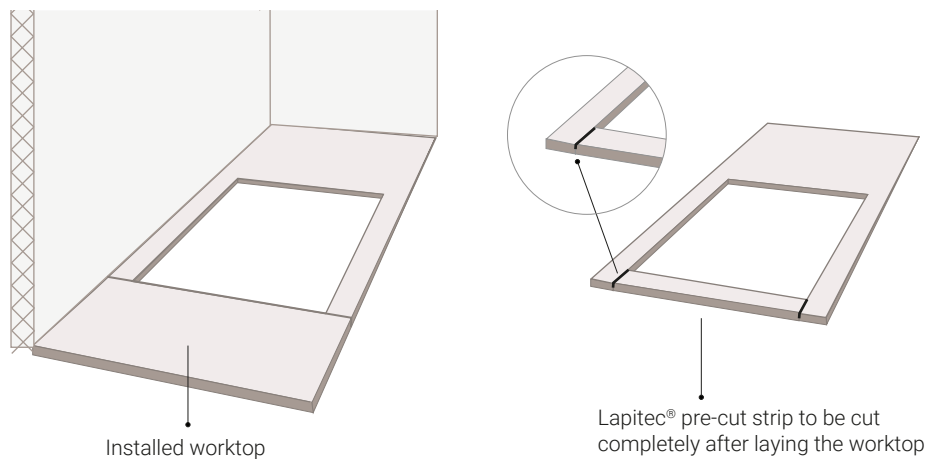
In the case of one or more large-sized cut-outs, or interrupted/open cut-outs, it is recommended to leave a strip of material to stiffen the top. The strip, already cut halfway into its thickness, will then be cut when installation is complete.

This will limit the possibility of breakage during handling and installation stages.

Case 1: large-sized cut-out



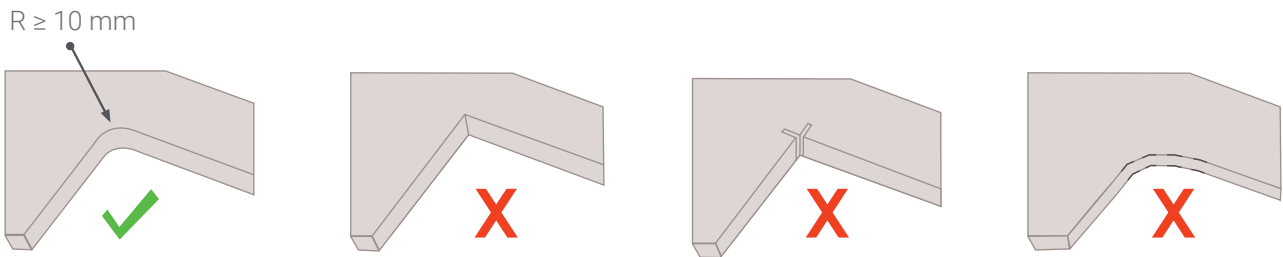
Case 2: interrupted sink cut-out



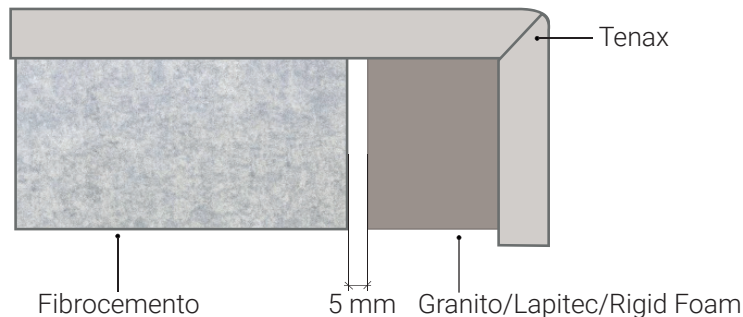
2.14/ OUTDOOR KITCHENS (BBQ)

When developing outdoor kitchen tops with incorporated grilles or barbecues, the same recommendations as above apply with a few additional measures described below.

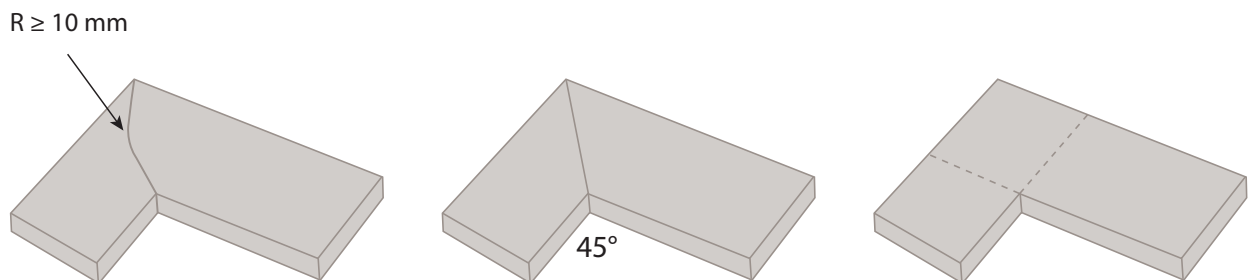
Avoid direct contact with metallic, cement-based or wooden materials as these have a much higher expansion rate with respect to **Lapitec®**. It is recommended to create a 5 mm gap and subsequently seal it with silicone to avoid infiltrations of water.



In the case of lintels or lamination, use glues designed for outdoor use, selecting the type based on the atmospheric conditions in the place of installation. Tenax has developed three types of glue: Strongbond, Frozenbond and Firebond. (see specific instructions in paragraph 4.6 ASSEMBLY USING ADHESIVES).



In the case of an L-shaped kitchen (with or without apron/lamination) in order not to compromise the strength of the workpiece and to avoid any breakages, the same recommendations given for indoor kitchen worktops apply.

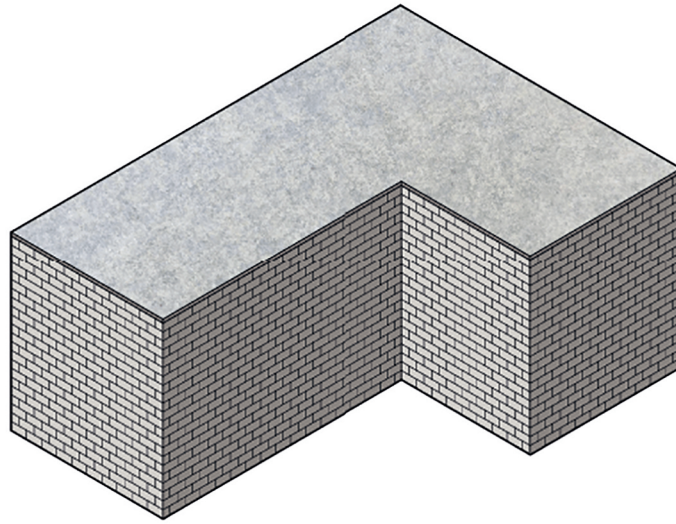


Avoid the creation of L-shaped profiles composed of a single piece.

It is essential that the support base on which the **Lapitec®** top will be placed is flat, level and structurally solid. It is therefore recommended to prepare a total support developed across the entire surface of the workpiece, whether 12, 20 or 30 mm. **Lapitec®** suggests using fibre cement panels suitable for outdoor use of at least 12 mm, properly secured to the underlying support. Then check for flatness.

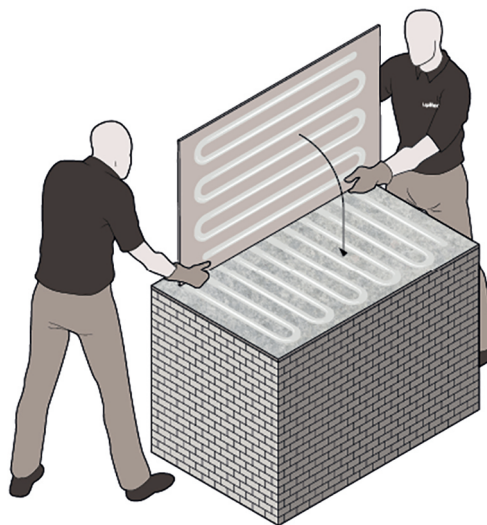
If the underlying structure is not sufficiently solid, add supporting bars between the modules.

Avoid the use of marine-grade plywood.



The **Lapitec®** top must be glued onto the support using polyurethane adhesives: avoid cement-based or epoxy adhesives that may be too rigid and unable to adapt to the high temperatures the top might reach (as recommended by the manufacturers of the adhesives).

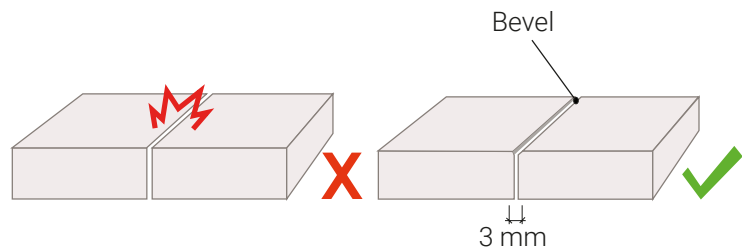
Apply the adhesive using the back-buttering technique across the entire surface (on **Lapitec®** and fibre cement panel).



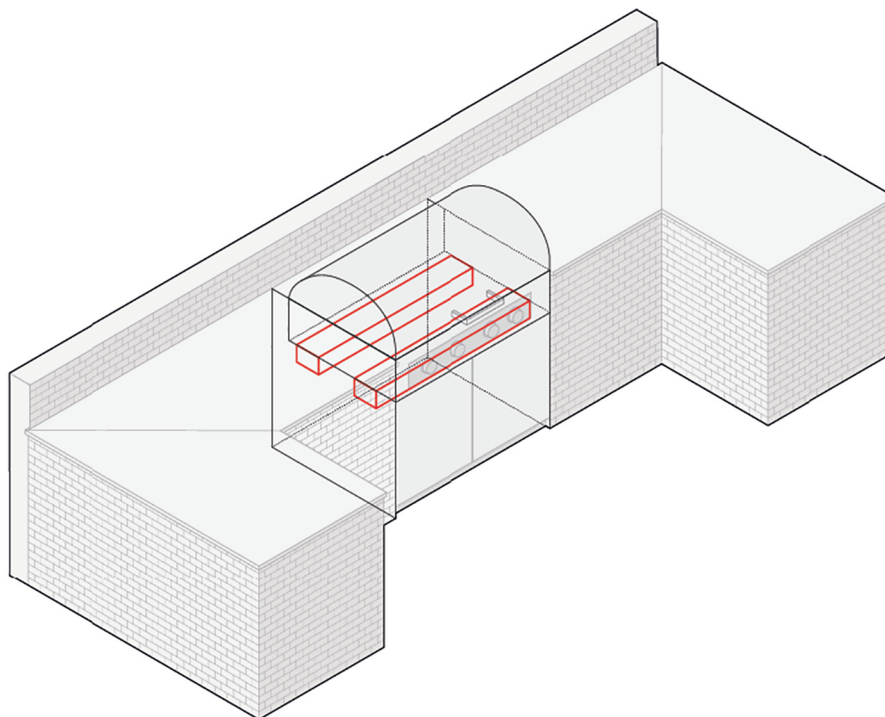
The handling and laying of the processed workpieces is a very delicate stage, both when performed at the factory and when assembled on-site.

The workpieces should always be handled with proper care, paying attention to sharp edges. To avoid chipping during the laying stage, it is recommended to protect the edges of the pieces that will be placed alongside each other using protective tape, and to position them using a suction handling system.

Given that the surface is exposed to significant thermal fluctuations, create joints with minimum width 3 mm. Then fill the joint with matching silicone.



Lapitec® recommends the weight of the barbecue not be borne directly by the surface, but rather supported with an appropriate support. This will stop the weight from weighing on the edge of the top.

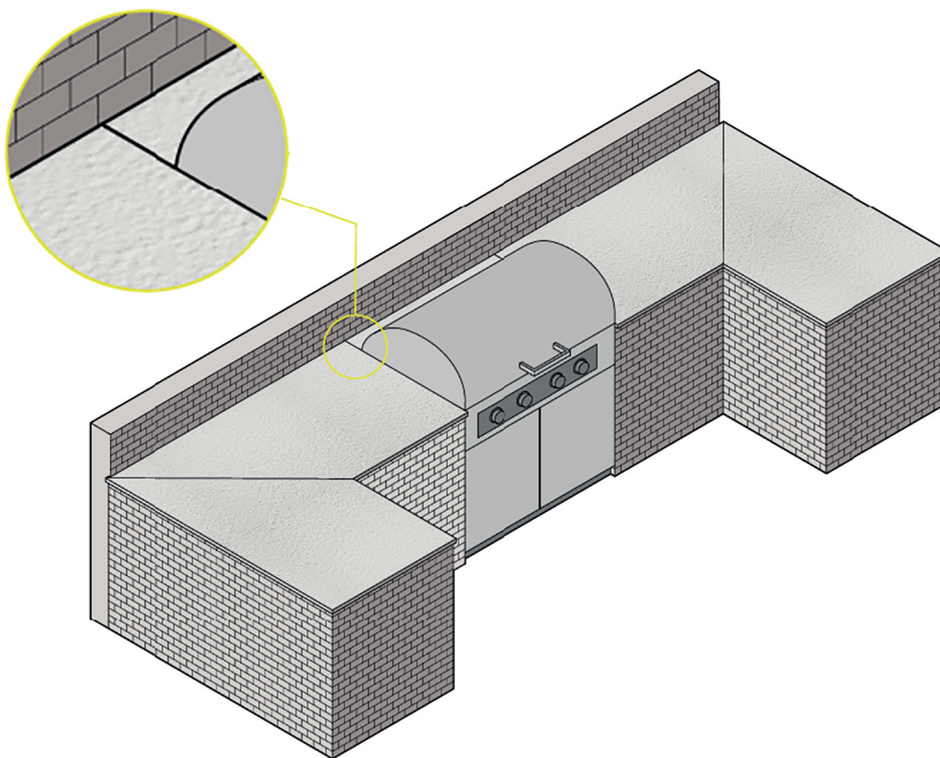


In the presence of one or more of the following specific conditions:

- Kitchen top placed against the wall
- Support base not flat or compliant with **Lapitec®** specifications
- Thermal expansion gap less than 5 mm
- Bend radii less than 10 mm
- Glueing not carried out according to **Lapitec®** specifications
- No BBQ support bar

Create joints with minimum width 3 mm as shown in the figure below, dividing the workpiece into multiple sections.

Then fill the joint with matching silicone, given the surface will be exposed to significant thermal fluctuations.





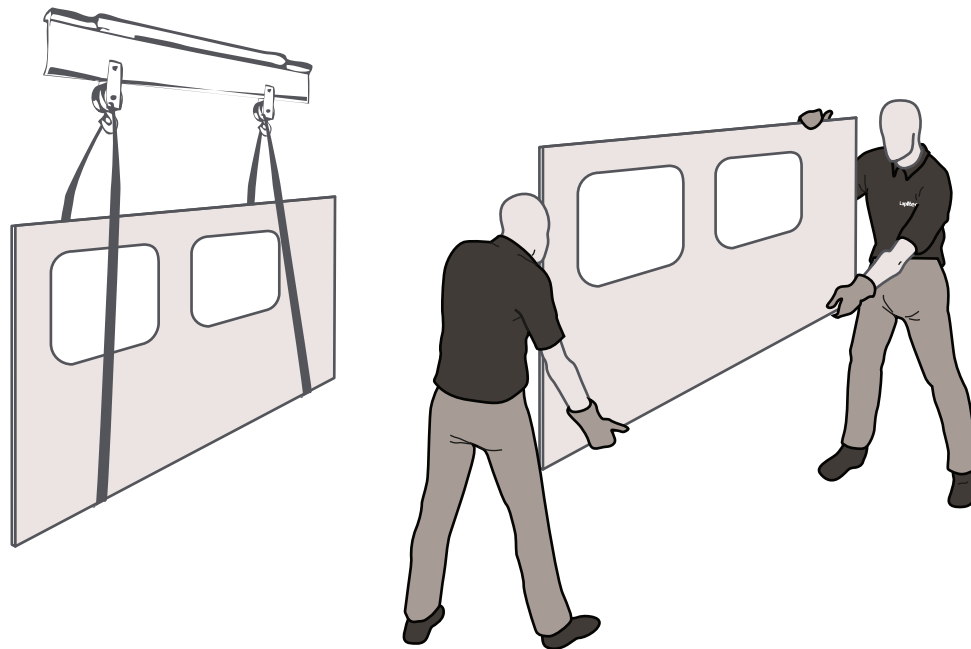


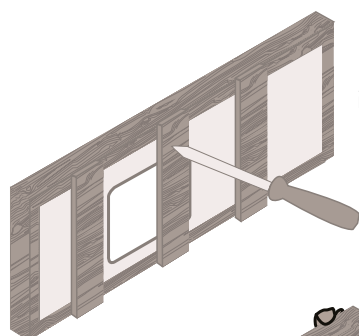
3. LAYING

3.1/ ON-SITE HANDLING

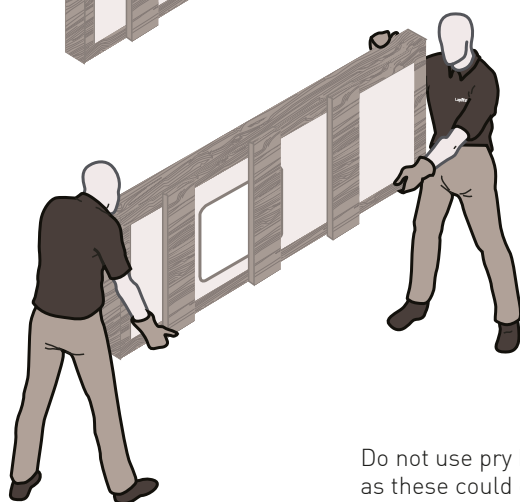
In all cases in which the workpiece must be handled or transported, whether manually or using belts and suction cups, it must be maintained in a vertical position as shown in the drawing below.

If the workpiece has cut-outs, these must always be facing upward.



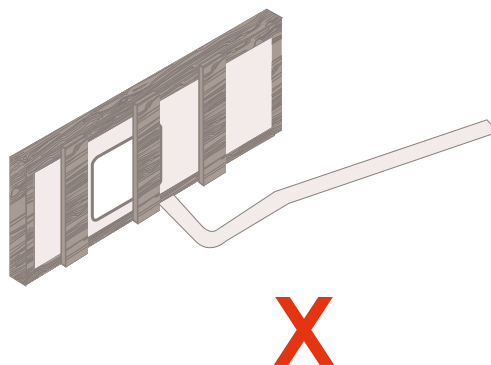
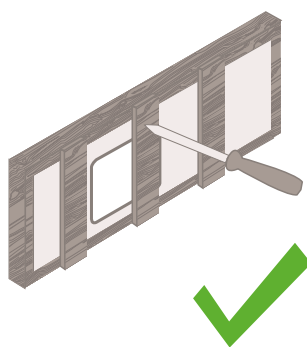


Make sure the timber crate is securely fixed



Keep the workpiece in a vertical position during transport

Do not use pry bars to open the crate as these could damage the surface of the product



3.2/ PRE-LAYING

It is essential that the support base on which the **Lapitec®** top will be placed is flat, level and structurally solid. The majority of breakages during assembly and after laying can be attributed to an irregular, unsuitable support or the presence of debris or processing residue.

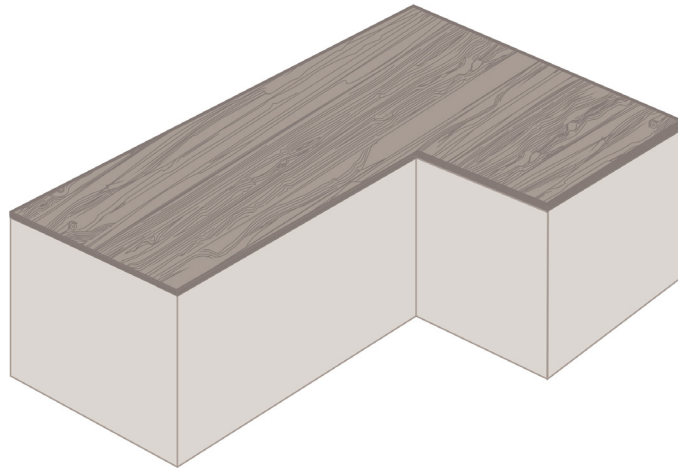
The surface of the top must lie perfectly on the support, any unsupported points may cause the fragility of the workpiece.

It is therefore wise not to apply isolated dabs of silicone, but rather to spread the adhesive across the entire support surface and ensure it completely adheres to the top.

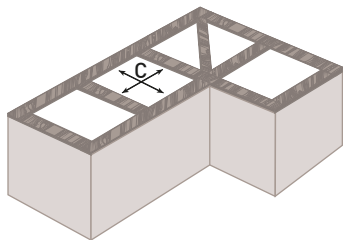


For tops with thickness 12 mm, it is recommended to provide a total support developed across the entire surface of the workpiece for greater stability. Therefore, use marine-grade plywood with a minimum thickness of 20 mm, which supports the top across the entire area.

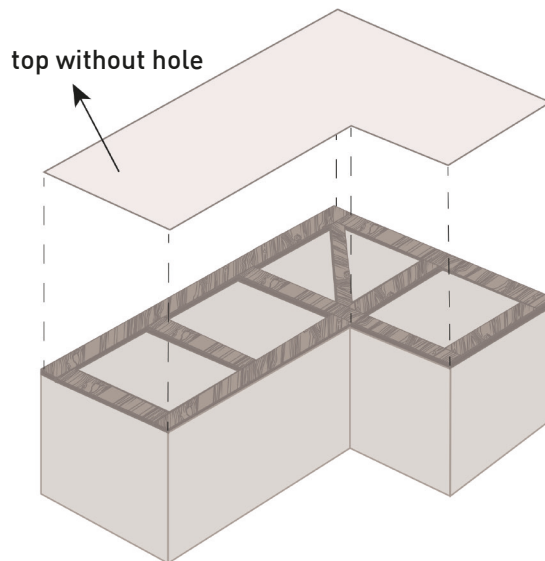
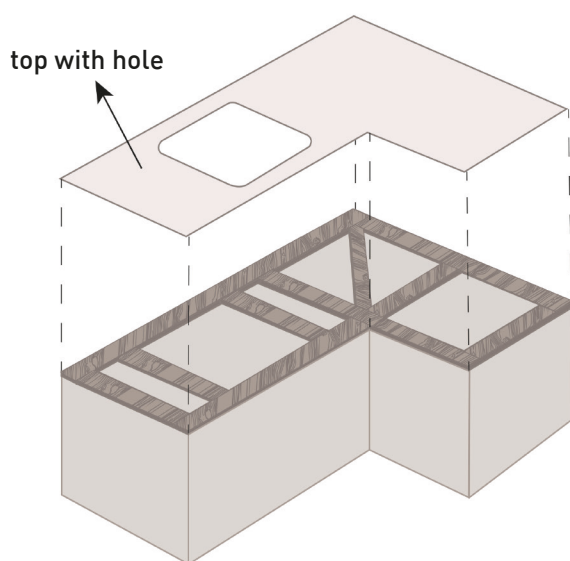
Moreover, it is important that the adhesive used to glue the **Lapitec®** to the support is sufficiently elastic (e.g. silicone) in order to compensate for any differences in expansion between the two materials.



If it is decided to use a slatted structure, it is important to respect the minimum difference between the “C” bars indicated in the following table:

Supporto richiesto	Spessori			Drawing
	12 mm	20 mm	30 mm	
Campate consigliate max Carico massimo 130 kg	$C \leq 250 \text{ mm}$	$C \leq 450 \text{ mm}$	$C \leq 600 \text{ mm}$	

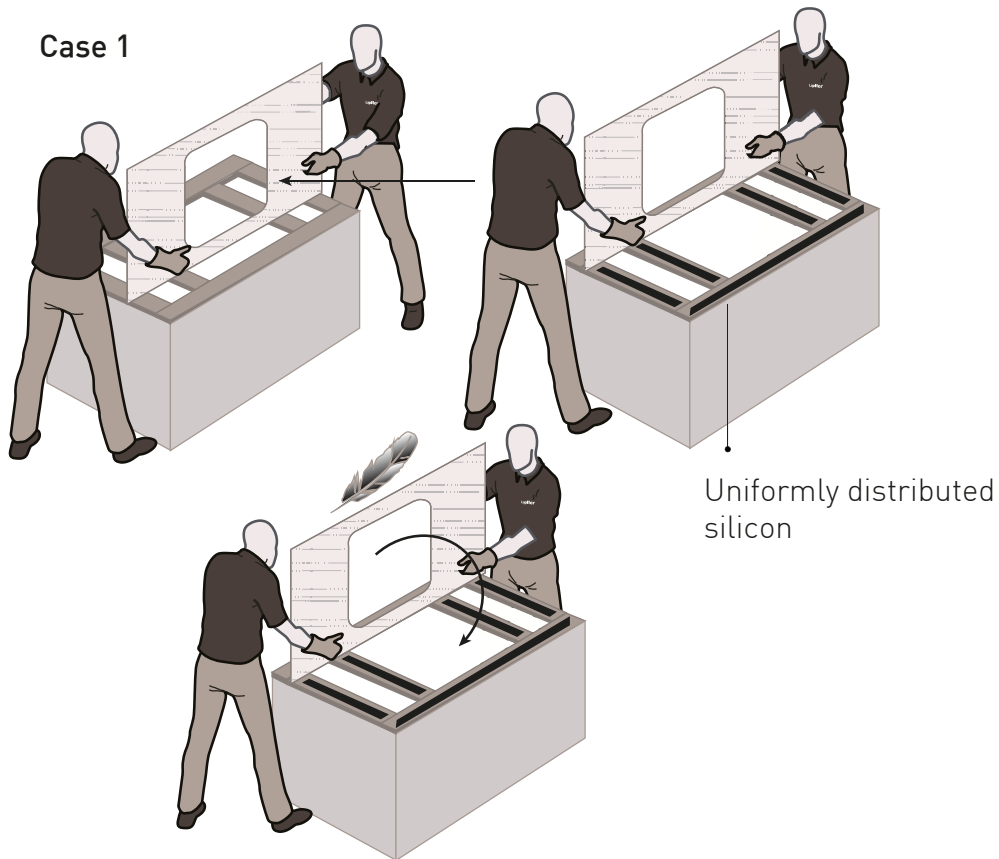
If the top itself has one or more cut-outs (sink, gas cut-out...) suitable support must be provided for the most stressed parts in order to impart greater stability to the top.



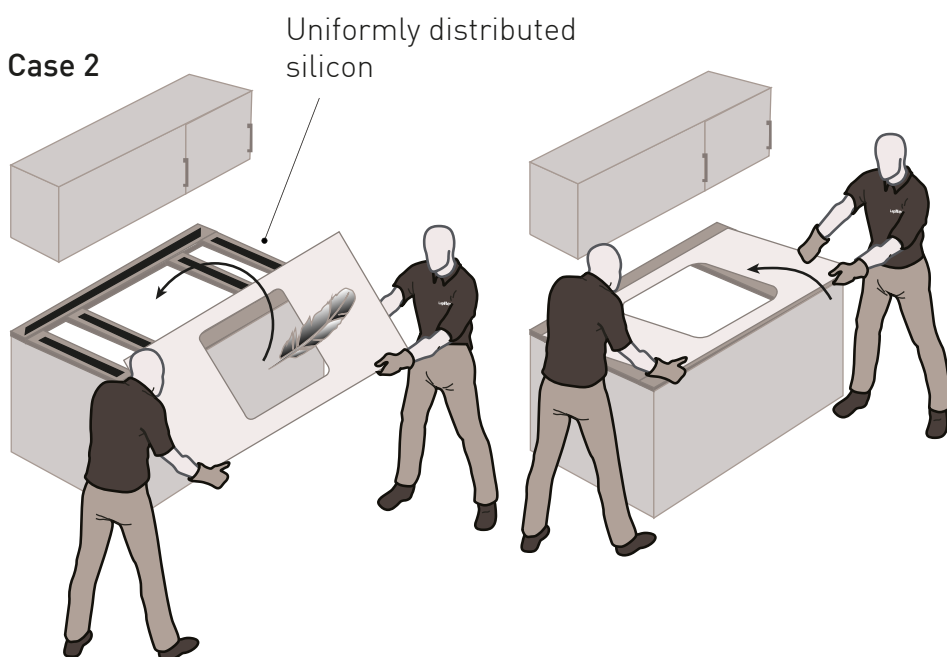
3.3/ LAYING

When laying the workpiece, the recommendations reported below should be followed in order to ensure best positioning.

Case 1



Case 2

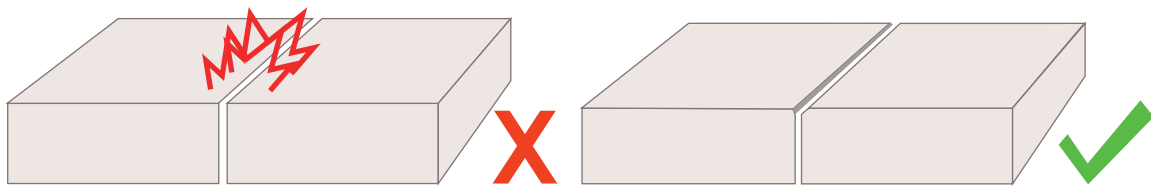


3.3.1/ Laying pieces side by side with zero joint

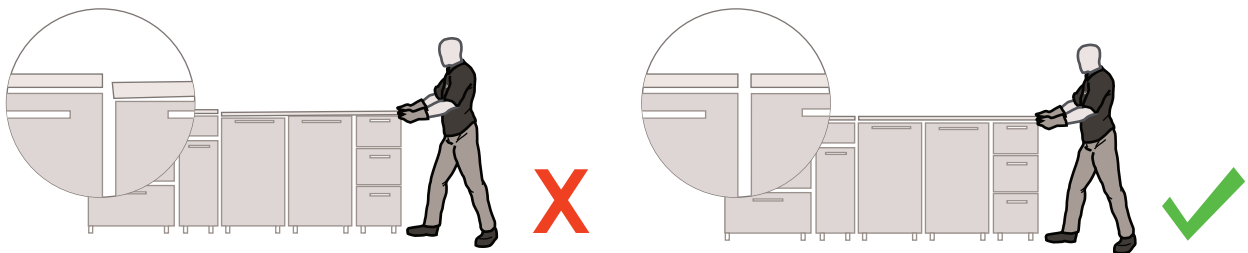
The handling and laying of the processed workpieces is a very delicate stage, both when performed at the factory to check the final result, and when assembled on-site.

The workpieces should always be handled with proper care, paying attention to sharp edges and in respect of the following guidelines:

Each edge must have a minimum chamfer to guarantee the solidity of the workpiece.

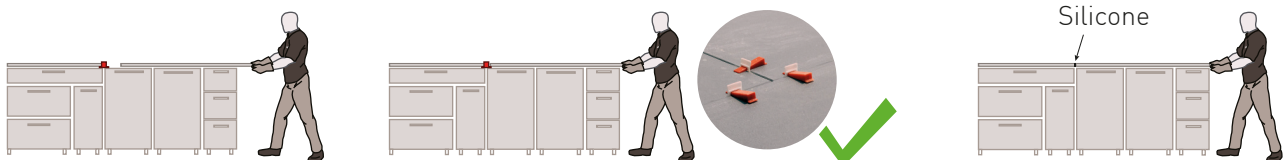


Before laying, it is important to make sure the support is levelled and perfectly flat, otherwise it is essential to intervene with adjustments or shims. Side-by-side edges must be perfectly aligned and not present any different angles that may lead to chipping.



To avoid dry impacts between two pieces and facilitate the side-by-side laying of adjacent workpieces, always insert shims that must only be removed to apply the silicone and during subsequent final adjustments with minor movements.

Care and attention during the installation stage remains a determining factor.



3.3.2/ Side-by-side laying of pieces using suction cups

To avoid chipping during the laying stage, it is recommended to place workpieces side by side using a special suction cup system.





4. MANUAL PROCESSING

4.1/ INTRODUCTION

Lapitec® is a sintered stone supplied to the worksite ready for installation (cut, drilled and processed).

A good design and accurate site survey will allow all processes to be carried out at the company premises, avoiding the need for inconvenient and critical adjustments in the worksite.

Should processing be necessary in the worksite, it is recommended to strictly follow all instructions provided in this manual, using the tools supplied and/or recommended by Lapitec SpA.

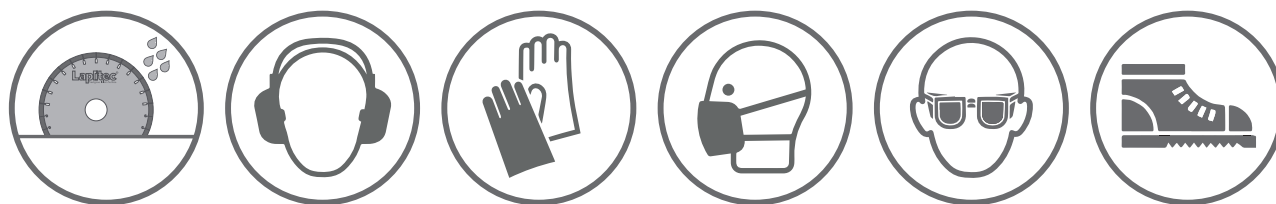
If it becomes necessary to perform any type of process, it is good practice to carry out preliminary tests for both cutting and drilling in order to acquire familiarity and avoid unfortunate inconveniences.

On request, the company can provide manufacturing scraps to use for this scope.

To perform manual processes, it is recommended to abide by health and safety legislation in force.

Each worker must have the PPE (Personal Protective Equipment) specific to the required processes.

Following are our recommendations.

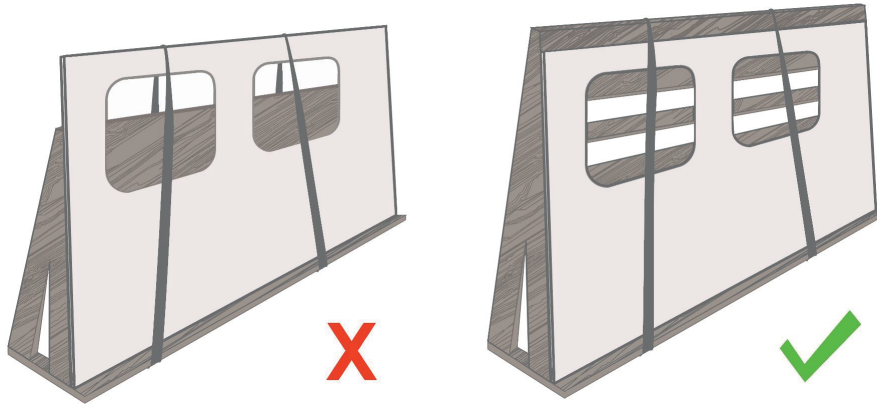


4.2/ SLAB RECOVERY

The slabs are packaged either on A-frames and/or in crates. Individually, they must be transported with care and stacked on their side, regardless of their format, making sure to insert materials between the different pieces, and between the slabs and the support, to prevent any potential breakages (e.g. wooden shims). The slabs must be suitably supported so as to avoid any flexion and must be housed in spaces that are not subject to any accidental impact (passageways or manoeuvring areas).

If they must be deposited outdoors, they must always be protected against the rain by a sheet, thus preventing any stagnation on the slabs. If the slabs are wet during packaging, the packaging must be completely removed and the slabs must be arranged in such a way as to perfectly dry.

During any manual processing, the slabs must be properly supported. The support must be sufficiently rigid, perfectly flat and in good condition. A wooden support is preferable to a metal one in order to prevent scratches due to rubbing on the Lapitec surfaces.



4.3/ MANUAL CUTTING

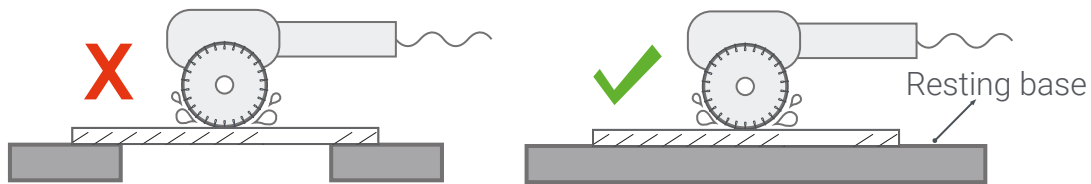
The instructions provided in this paragraph refer to manual cutting only; for benchtop processes (saw, waterjet or CNC), refer to the specific chapters.

In order to proceed, it is necessary to use the cutting tools supplied and recommended by Lapitec SpA, or alternatively, tools whose full compatibility with the indicated type has been checked, always with plenty of running water for cooling and to reduce dust. Lapitec SpA does not recommend dry cutting.

Processing must always start from the finished surface and proceed toward the unfinished one.

Once cutting is complete, it is recommended to lightly sand (with a sandpaper pad, 60/120 grit) the top and lower edge of the newly cut side. This technique will prevent inconvenient chipping and prevent the risk of cuts (the hardness of **Lapitec®** leaves the edges quite sharp).

Supplier	Tool	Grinder rotation
Lapitec®	Saw blade for manual cutting	13.000



4.3.1/ Tools - blades for on-site cutting

To process the material on-site, Lapitec SpA supplies and suggests specific tools, all tested and guaranteed. The approved tools are available at Lapitec SpA, which declares their suitability for use.

Continuous rim diamond blades for manual tools (angle grinders, flex...)

Ø 115 mm attachment Ø 22 (*) RPM from 11,000 to 13,000

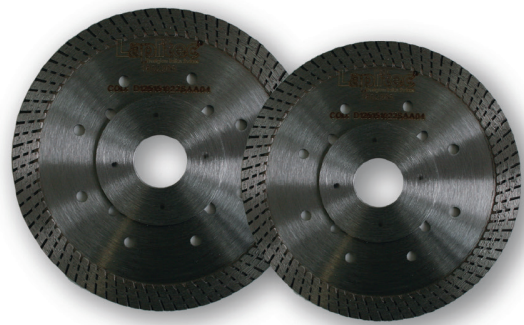
Ø 125 mm attachment Ø 22 (*) RPM from 11,000 to 13,000

Ø 230 mm attachment Ø 22 (*) RPM from 9,000 to 11,000

(*) adaptor also available for Ø 20

Lapitec® saw blade for manual cutting

Diameters 115-125-150-230 mm



The sequences are subject to possible variations due to the continuous effort to improve processing products. It is recommended to contact the supplier or the LapitecACADEMY service for all clarifications.

4.4/ MANUAL DRILLING

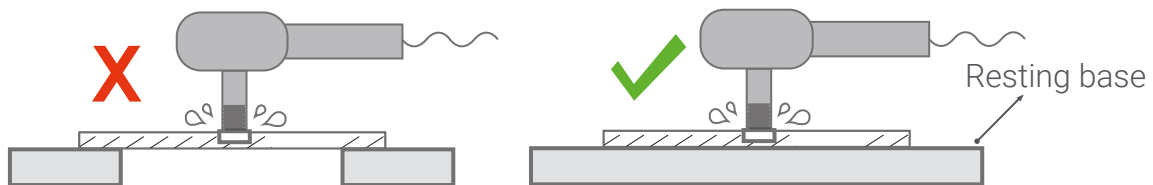
If cut-outs need to be made (for piping, wiring, air vents...) Lapitec can be drilled using the tools listed below and the indicated methods.

The part to be drilled must be suitably supported, as in the case of cutting; during drilling operations, all types of percussions must be avoided so as to prevent breakages.

To proceed with drilling, water must be used for cooling and to reduce dust. Lapitec SpA does not recommend dry cutting.

Processing must always start from the finished surface and proceed toward the unfinished one.

Attention: drilling must always start from the finished surface and proceed toward the unfinished one.



4.4.1/ Tools - bits and hole saws for on-site drilling

To process the material on-site, Lapitec SpA supplies and suggests specific tools, all tested and guaranteed. The approved tools are available at Lapitec SpA, which declares their suitability for use.

Diamond hole saw for drilling with manual tools (drills...)

Holes Ø 06 mm attachment HEX RPM 1,800 - 2,000 (for drill)
 Holes Ø 08 mm attachment HEX RPM 1,800 - 2,000 (for drill)
 Holes Ø 10 mm attachment HEX RPM 1,800 - 2,000 (for drill)
 Holes Ø 12 mm attachment HEX RPM 1,800 - 2,000 (for drill)
 Holes Ø 14 mm attachment HEX RPM 1,800 - 2,000 (for drill)
 Holes Ø 06 mm attachment M14 RPM 1,800 - 2,000 (for flex)
 Holes Ø 08 mm attachment M14 RPM 1,800 - 2,000 (for flex)
 Holes Ø 10 mm attachment M14 RPM 1,800 - 2,000 (for flex)
 Holes Ø 12 mm attachment M14 RPM 1,800 - 2,000 (for flex)
 Holes Ø 14 mm attachment M14 RPM 1,800 - 2,000 (for flex)
 Holes Ø 15 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 20 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 25 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 30 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 32 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 35 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 40 mm attachment M14 RPM 3,000-11,000 (for flex)
 Holes Ø 50 mm attachment M14 RPM 3,000-11,000 (for flex)



Factory core drill bits

Ø 35 mm M14 1,500-2,500

4.5/ FINISHES

4.5.1/ Finish for top and edge - LUX

Supplier	Tool	Sequence adopted
Sanwa - Kenma (Alpha Tools)	Dia Ceramica - Ex Ceramica Series	150R - 300R - 500R - 1000R - 2000R - 3000R
Weha	Es Wet Use - Ex Series - Hybrid Flash	1 - 2 - 3 - 4 - 5 - 6 - 7 50 - 100 - 200 - 400 - 800 - 1500 - 3000 H1 - H2 - H3
Italdiamant	Ds Series	50 - 100 - 200 - 400 - 800 - 1500 - 3000

4.5.2/ Finish for top and edge - SATIN

Supplier	Tool	Sequence adopted
Sanwa - Kenma (Alpha Tools)	Dia Ceramica - TF Ceramica Series	150R - 300R - 500R*
Weha	Es Series - Hybrid Flash	50ES - 100ES - 200ES - 400ES - 800ES* H1 - H2
Italdiamant	Ds Series	50 - 100 - 200 - 400 - 800*

*Optional

See the technical manual of the tool manufacturer to determine the best working parameters.

4.6/ ASSEMBLY USING ADHESIVES

This paragraph deals with processes for bonding **Lapitec®** slabs to each other. For instructions on how to bond **Lapitec®** onto other supports, see the specific Finishes Manual.

Lapitec SpA has performed bonding tests on numerous products, not only for their technical performance, but also for the compatibility of their tone with the colours of **Lapitec®** slabs.

A number of Tenax branded products are proposed below, custom made for **Lapitec®** slabs and our colour range, inclusive of their technical specifications.

4.6.1/ Good practices for use of adhesives

Before applying the adhesive, check that the surface to be glued is clean, properly dried and free of any type of treatment. If it is necessary to glue on a treated surface, it must be sanded with coarse sandpaper (60-80) so as to remove the treatments and create a rough surface that guarantees certain and long-lasting adhesion.

For greater certainty on overhanging (45°) bondings, it is good practice to place a square or "L" profile measuring approximately 30 x 30 mm on the non-visible rear side of the material, along the entire gluing length of the lintel.

When it is not possible to use **Lapitec®** to support the finished piece, choose a material with the same expansion coefficient as **Lapitec®** (e.g. Granite).

Disclaimer

When selecting the adhesive, the intended function and use of the workpiece must be considered in order to identify the most suitable product.

4.6.2/ STRONGBOND Cartridge

Adhesive paste to glue **Lapitec®** suitable for both indoor and outdoor applications, also with persistent exposure to UV rays.

The Strongbond cartridge offers excellent adhesion in very short times (1 hour, 1 hour and 15 minutes), allowing the cutting and polishing of glued pieces. The surface of the hardened product is smooth, shiny and easy to polish.

Instructions for use

The product is packaged in special twin-cartridges containing 215 ml in a ratio of 2:1. The two chambers of the cartridge contain resin and a pre-dosed hardener.

All surfaces of the support to be treated must be clean, dry and without traces of dust and grease. In the case of glossy and/or smooth surfaces, it is recommended to sand the support before applying the adhesive.

Remove the threaded tip and pull out the stopper. Secure the mixer to the cartridge with the threaded nozzle.

Before applying the adhesive, it is good practice to extrude about 5-10 g of product (half a cup of coffee) equivalent to a bead of about 30-45 cm. This operation should be repeated each time the mixer is changed. After use, clean the tip with a piece of paper and close the cartridge. Throw away the used mixer. Use only guns compatible with the 2:1 cartridge.

The product will not harden under +1°C.

Parameter	Value	Parameter	Value
Product	Epoxy resin	Shelf life	24 months
Type	Vertical application	Pot life	45-60 minutes
Scope	Indoor and Outdoor (Guaranteed for 15 years)	Workpiece can be handled after	15 minutes
Subject to yellowing	No	Max. working temp.	60°/-25°C
Colour	All colours	Trowel	Stainless steel or clean plastic
Product package	215 gr	Gel time at 25°C	3-5 minutes



4.6.3/ STRONGBOND A+B

New generation dual-component adhesive with zero yellowing in the sun for **Lapitec®** bonding, suitable for indoor and outdoor use and in the case of persistent exposure to UV rays. Paste product without solvents and with medium reactivity. Good hardness. The adhesive hardens even at 0°C. The appearance of the hardened film is still shiny and dry even in conditions with a poor humidity rate and temperature. Its use is suggested for white materials where it must be guaranteed that the resin will not yellow in the sun. Thanks to its properties, it does not leave streaks and its colour does not alter. The hardening of the resin is only marginally affected by the temperature. Product with VOC=0.

Instructions for use

The resin and hardener must be kept in their original plastic or enamelled metal containers. The hardener must be kept tightly closed to prevent hardening. Do not place in contact with other resins or hardeners, which even if dry, may alter the properties of the product. In automatic dosing systems, avoid contact with metal parts unless they are in stainless steel. Take the required amounts (in weight) of the two components from their containers, according to the indicated usage ratio, mix them vigorously and then proceed with their use. Use clean plastic or stainless steel tools during mixing. The use of metal tools (except for stainless steel) may damage the quality of the resin.

Never place any unused adhesive paste that has already been mixed with the catalyst back into the container.

If the colour of the adhesive paste needs to be corrected, use the special Rainbow colouring pastes.

Make sure the material on which the Strongbond resin is applied is completely dry and clean.

Close the containers tightly after use and avoid prolonged contact with the air.

Parameter	Value	Parameter	Value
Product	Epoxy resin	Catalyst	70% in weight
Type	Vertical application	Pigment	1-2%
Scope	Indoor and Outdoor (Guaranteed for 15 years)	Shelf Life	12 months
Subject to yellowing	No	Pot life	24 hours
Colour	Clear	Workpiece can be handled after	1 hour and 15 minutes
Product package	500 gr	Max. working temp.	60°/-25°C
Catalyst package	350 gr	Trowel	Stainless steel or clean plastic
Pigment packages	75 ml	Gel time at 25°C	20-25 minutes



4.6.4/ FROZENBOND A+B

Extra-strong dual-component epoxy adhesive in thixotropic paste for vertical application, ideal for indoor and outdoor use, particularly suited to colder climates. High adhesion strength on multi-materials and resistant to weather. Can be applied even on damp surfaces. Also suitable to bond different types of materials: **Lapitec®**-stone, **Lapitec®**-glass, **Lapitec®**-cement, **Lapitec®**-composite honeycomb panels, **Lapitec®**-wooden or laminate panels. The surfaces to be bonded should be sanded beforehand. It is advisable to check the flatness of the finished workpiece after one month.

Instructions for use

The resin and hardener must be stored in their original containers. In automatic dosing systems, avoid contact with metal parts made of copper, brass or similar alloys that may rust. Use plastics resistant to corrosive liquids, never use PVC. Take the required amounts (by weight or volume) of the two components A and B from the two containers, in the ratio 1:1. Mix vigorously and then use.

During mixing, use clean tools. Never place any unused adhesive paste that has already been mixed with the catalyst back into the container. If the colour of the adhesive paste needs to be corrected, use the special Rainbow colouring pastes. Make sure the material on which the adhesive is applied is completely dry and clean. If using automatic dosing machines, we recommend checking the dose each day. When cleaning the tools, use only grease-free solvents such as acetone and butyl acetate. Always use gloves and goggles during use (see the safety data sheet). Close the containers tightly after use and avoid prolonged contact with the air.

Parameter	Value	Parameter	Value
Product	Epoxy resin	Catalyst	100% in weight
Type	Vertical application	Pigment	3%
Scope	Indoor and Outdoor	Shelf Life	2 years
Subject to yellowing	Slight over time on light colours	Pot life	24 hours
Colour	Beige	Workpiece can be handled after	4 hours
Product package	500 ml	Max. working temp.	60°/-25°C
Catalyst package	500 ml	Trowel	Plastic, clean
Pigment packages	75 ml	Gel time at 25°C	2 hours and 30 minutes



4.6.5/ FIREBOND

Adhesive paste to glue **Lapitec®**, suitable for indoor applications with high resistance to heat and fast processing. Excellent workability and adhesion in very short times, 60-90 minutes, allowing the rapid processing of bonded pieces even at low temperature. The hardened product is very smooth, shiny and easy to polish. Good stability in sunlight.

Instructions for use

Before applying the product check that the material is clean, dry and free of dust. Take the required amount of adhesive paste from the container/jar/tin, add 2-3% of hardener paste, mix vigorously and then use. Never place any unused adhesive paste that has already been mixed with the catalyst back into the container. If the colour of the adhesive paste needs to be corrected, use the special Rainbow colouring pastes.

The colour must be added before the catalyst, mixing the required quantity to obtain the desired colour, then add the catalyst for hardening. An excessive amount of colouring paste or powdered pigments may alter the final characteristics of the adhesive paste.

Close the containers after use. Store the adhesive paste and catalyst away from light and the sun.

Parameter	Value	Parameter	Value
Product	Polyester resin	Catalyst	2-3% in weight
Type	Vertical application	Pigment	3%
Scope	Interiors	Shelf Life	6 months
Subject to yellowing	Yes	Pot life	40/50 minutes
Colour	Beige	Workpiece can be handled after	40/50 minutes
Product package	2x500 ml	Max. working temp.	120°C
Catalyst package	33ml tube	Trowel	Plastic
Pigment packages	75 ml	Gel time at 25°C	2-3 minutes



4.6.6/ RAINBOW

The systems described above can all be coloured with universal Rainbow pigments in a range of colours aligned with **Lapitec®** colours. The colouring paste blends perfectly with all types of adhesive pastes, making them easy to colour.

The paragraph below indicates the correspondence between colours in the **Lapitec®** range and Tenax products.

Instructions for use

Add the colour or colours to the adhesive to obtain the desired shade. Mix thoroughly. Several colours can be added. It is important not to exceed the maximum recommended quantity, 2-3% in weight. An excessive amount of colouring paste may alter the quality of the adhesive. Close the containers after use. Store in the original containers. Store away from light and the sun.

Parameter	Value	Parameter	Value
Product	Coloured paste	Dosage	2-3% in weight
Package	75 ml		



4.6.7/ Correspondence with Lapitec® range

Lapitec® Material	Strongbond Colour	Description on label
Arabescato Bernini	ARABESCATO BERNINI	ARABESCATO BERNINI
Arabescato Canova	ARTICO	ARTICO - CANOVA - MICHELANGELO
Arabescato Corallo	BIANCO CREMA	ROMA - CORALLO - CREMA
Arabescato Donatello	BIANCO POLARE	CASABLANCA - DONATELLO - PERLA - POLARE
Arabescato Michelangelo	ARTICO	ARTICO - CANOVA - MICHELANGELO
Arabescato Perla	BIANCO POLARE	CASABLANCA - DONATELLO - PERLA - POLARE
Artico	ARTICO	ARTICO - CANOVA - MICHELANGELO
Avana	AVANA	AVANA
Avorio	AVORIO	AVORIO
Bianco Assoluto	BIANCO ASSOLUTO	BIANCO ASSOLUTO
Bianco Crema	BIANCO CREMA	ROMA - CORALLO - CREMA
Bianco Polare	BIANCO POLARE	CASABLANCA - DONATELLO - PERLA - POLARE
Berlin	GRIGIO CEMENTO	BERLIN - GRIGIO CEMENTO - LONDON
Brooklyn	TABACCO	BROOKLYN - TABACCO
Ebano	EBANO	EBANO
Grigio Cemento	GRIGIO CEMENTO	BERLIN - GRIGIO CEMENTO - LONDON
Grigio Piombo	GRIGIO PIOMBO	GRIGIO PIOMBO
London	GRIGIO CEMENTO	BERLIN - GRIGIO CEMENTO - LONDON
Moca	MOCA	MOCA
Nero Antracite	NERO ANTRACITE	NERO ANTRACITE
Nero Assoluto	NERO ASSOLUTO	NERO ASSOLUTO
Porfido Rosso	PORFIDO ROSSO	PORFIDO ROSSO
Sahara	SAHARA	SAHARA
Tabacco	TABACCO	BROOKLYN - TABACCO
Casablanca	BIANCO POLARE	CASABLANCA - DONATELLO - PERLA - POLARE
Roma	BIANCO CREMA	ROMA - CORALLO - CREMA

4.7/ BIO-CARE

Bio-Care is a technology whereby Titanium Dioxide (TiO_2) is applied to full body **Lapitec®** during the production process. It is an exclusive patent that gives the material antibacterial and self-cleaning properties. The functions of Bio-Care can be reactivated at any time by applying the Bio-Care kit. This treatment must be applied on the visible parts each time the material is processed (drilling, surface processing and cutting). Failure to use Bio-Care may inhibit the properties of the Titanium Dioxide (TiO_2) and compromise the typical qualities of **Lapitec®**.

How to apply

Make sure the surface is clean, dry and free of dust. Spread the Bio-Care One product evenly using a solvent-resistant cloth. When the product assumes a more viscous consistency (due to the evaporation of most of the solvent after about 2 minutes), remove the excess Bio-Care One with a clean cloth, taking care to remove any stains or shadows.

Attention: any shadows or stains left on the surface will become permanent once the treatment has completely hardened.

Treatment	Quantity gr/m ²	Workpiece can be handled after
Bio-Care One	5-6	40 minutes

The surface can be handled 40 minutes after application; the treatment will have completely set and tests can be carried out after 7 days. The treatment can be manually applied on smaller surfaces. On slabs, the treatment must be applied using dedicated machinery. Given the minimal amount of product, it is recommended to apply **Lapitec®** Bio-Care One on several workpieces to be treated in a sequence.

Warning: do not turn upside down, store in a cool, dry place far from sources of heat.



4.8/ REPAIR KIT

The repair kit is composed of a 395nm UV torch, a coloured **Lapitec®** filler, 2 trowels, 1 diamond sheet 400 grit (usable on all finishes except Lux).

Instructions for use

Using the supplied trowel, thoroughly mix the filler until all the internal components are completely blended, then apply it in small quantities (drops) on the parts to be repaired.

Turn on the UV lamp and hold it over the repair to activate the solidification process (approx. 15-20 seconds). Manually check the compactness of the filler. Repeat the procedure until all chips have been filled.

Then protect the non-repaired section of the **Lapitec®** top with some masking tape to prevent the sandpaper from damaging the surface. Use the supplied diamond sandpaper to sand off any excess filler.

Then apply Bio-Care only on the repaired part to prolong the aesthetic effect of the repair over time.

Disclaimer

Failure to properly mix the filler may cause a difference in colour with respect to the **Lapitec®**.

The characteristics of the UV Lamp must be the same as those indicated by Lapitec, otherwise the filler may not completely react. For the Lux finish, use polishing paper for granite with grit up to 3000.

Poor chamfering on the edge of the workpiece may be the cause of chipping. For more information see the **Lapitec®** Technical Manual.

Duration of filler: 3 months in closed jar.

Hazard identification

Classification of substance or mixture: the product is classified as hazardous pursuant to the provisions set out in Regulation (EC) 1272/2008 (CLP) (and subsequent amendments), the product therefore requires a safety data sheet compliant with the provisions of Regulation (EC) 1907/2006 and subsequent amendments. Any additional information regarding risks to health and safety and/or the environment are reported in sect. 11 and 12 of this data sheet.



Watch the video tutorial



5. CLEANING, CARE AND MAINTENANCE

5.1/ MAINTENANCE

Avoid the use of ceramic knives or other objects with a hardness comparable to **Lapitec®** as they may compromise the surface. Do not use abrasive sponges that may scratch the surface, opt for blue, scratch-proof Scotch-brite type sponges.

Do not knock the material with sharp or heavy metallic objects as these might chip the material or in some cases even cause it to break. Remember that the edges are the most sensitive part of the top.

5.2/ ROUTINE CLEANING

For routine cleaning of **Lapitec®**, it is recommended to use a microfibre cloth to remove the dust from the surface. The **Lapitec®** top should be washed with warm water, possibly with the addition of a neutral detergent in the doses recommended by the manufacturer (such as vetril, glassex or FilaBrio). Then rinse with clean water and dry with a damp microfibre cloth or soft, non-abrasive sponge. For best results, it is recommended to clean any stains immediately without allowing them to dry.

WHAT NOT TO DO

Do not use dish-washing detergents, oily soaps, impregnating agents or other treatments. Certain detergents available on the market contain wax or polishing additives, which after several applications may leave an oily film on the surface that compromises the cleanliness and appearance of the **Lapitec®**.

5.3/ REGENERATIVE CLEANING

When routine cleaning is not sufficient, specific procedures must be carried out depending on the stain to be removed; in these cases, the use of aggressive, recommended products will not compromise the beauty of the top. The amount of time the stain is left on the surface has a strong influence on its removal, therefore cleaning is recommended as soon as possible.

It is recommended to start cleaning on a small portion of the area, checking the efficacy before applying the product across the entire surface. Do not use under any circumstances hydrochloric acid or caustic soda concentrates and products containing hydrofluoric acid and its derivatives.

Below is a table identifying the types of stains that may occur on the finishes and the products recommended by Fila Solution for their removal. Technical data sheets available on the website www.filasolution.com. The choice of detergent must be made based on the products reported in this table, or otherwise making sure that any other product has identical characteristics to those expressed herein.

Before proceeding, Lapitec SpA recommends contacting the provider of the cleaning products to obtain the most up-to-date documentation, always following the provided instructions.

After cleaning, the surfaces must be washed with plenty of warm water in order to remove all traces of the detergent used and dried with a cloth.

In the case of special needs, Lapitec SpA customer care can be contacted by writing to customercare@lapitec.com

Type of dirt	Type of detergent	Smooth surfaces (Lux, Satin)	Structured surfaces (Lithos, Vesuvio, Dune)
Limescale deposits	Descaler detergent (such as Fila Deterdek)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Aluminium marks	Descaler detergent (such as Fila Deterdek)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Pencil	Descaler detergent (such as Fila Deterdek)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Grease	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Coffee	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Ice cream	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Fruit juice	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Blood	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Wine	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Beer	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Ink	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Nicotine	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Urine and vomit	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Marker pen	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge



Type of dirt	Type of detergent	Smooth surfaces (Lux, Satin)	Structured surfaces (Lithos, Vesuvio, Dune)
Coca Cola	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Hair dye	Degreaser detergent (such as Fila PS87)	Moist cloth	Non-abrasive sponge
Rubber	Degreaser detergent (such as Fila PS87)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Chewing Gum	Degreaser detergent (such as Fila PS87)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Rust	Descaler detergent (such as Fila No Rust)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Silicone	Specific detergent for the removal of silicone (such as Fila Zero Sil)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush
Candle wax	Solvent (such as Fila Solv)	Moist scratch-proof scotch-brite	Fine sorghum or plastic bristle brush

Notes

Stains such as ink, paint, wax, oil/grease can also be removed using solvents such as a nitro thinner or turpentine. Before applying the product on the entire surface of the finish, it is recommended to test its efficacy on a small portion first.

Do not use hydrochloric acid or caustic soda concentrates and products containing hydrofluoric acid and its derivatives.

Warnings

If the material is not cleaned after installation, or in the case of poor cleaning, Lapitec SpA denies all liability in regards to the efficacy of cleaning and maintenance operations.



6. LAPITEC SPA

Customer Care

Every single experience acquired working on international projects, in a range of different uses, is utilised to perfect the products and accessories sold by Lapitec S.p.A. Through a direct exchange with its customers, Lapitec S.p.A. continuously studies new solutions to offer an increasingly complete and efficient service for a diverse range of needs.

In the case of special needs, Lapitec SpA customer care can be contacted by writing to **customercare@lapitec.com**

LapitecACADEMY - Development centre

LapitecACADEMY is the division responsible for training and supporting professionals that work with **Lapitec®** through in-house company training courses and direct assistance. Thanks to the Academy Community service, all news and technical developments are rapidly diffused to the entire network of collaborators.

By attending the training course held by LapitecACADEMY, professionals can obtain an Approved Fabricator certificate and learn a series of helpful tips and **Lapitec®** machining techniques.

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