



Laplitec[®]
Prestigious Italian Surface

Processing Manual

EN - Vers. 0/2016



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PROCESSING MANUAL

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1. PRODUCT

1.1/ Product

Lapitec® is an inorganic ceramic material, sintered at 1,200°C, which is produced in “full body” slabs using an exclusive patented technology.

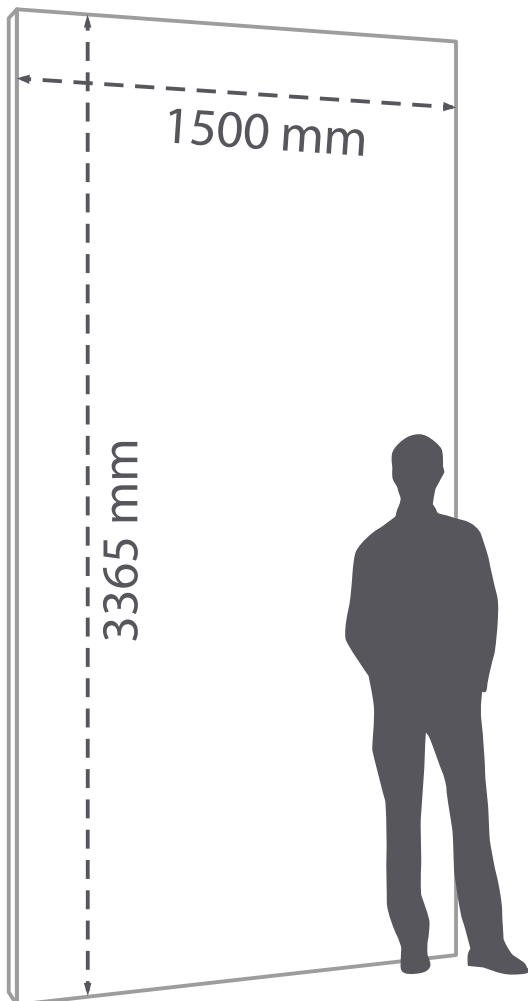
Lapitec® is comparable in appearance and strength to a “stone” and has a particularly high density exceeding 2.40 kg/dm³.

Lapitec® has the following distinguishing features:

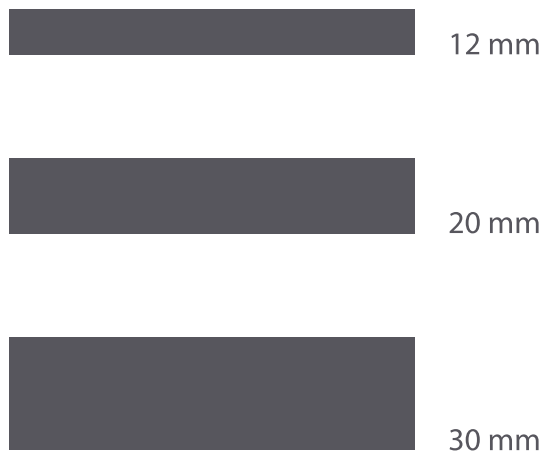
- it is isotropic
- it is frost resistant as it is non-porous
- it is scratch resistant as it has a high resistance to deep abrasion
- it is stain resistant as it does not have a porous surface that retains solid and/or liquid deposits*

*Under the microscope, the surface only has 5% of micro depressions with an average size of less than 30 µm and a depth of less than 15 µm. The original inorganic surface of **Lapitec®** is hydrophobic and oleophobic, properties that prevent liquids depositing at the bottom of the micro depressions, ensuring perfect stain resistance.

Standard dimensions

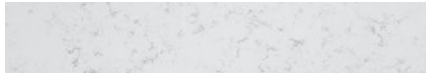


THICKNESSES

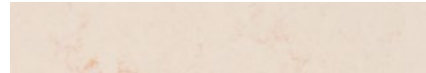


1. PRODUCT

1.2 The Lapitec® range



ARABESCATO MICHELANGELO



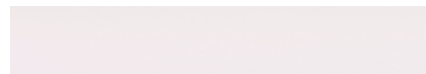
ARABESCATO PERLA



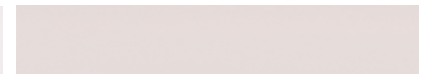
ARABESCATO CORALLO



ARTICO



BIANCO POLARE



BIANCO CREMA



AVORIO



SAHARA



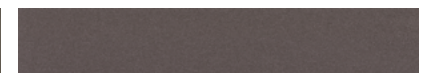
TABACCO



PORFIDO ROSSO



MOCA



EBANO



GRIGIO CEMENTO



GRIGIO PIOMBO



NERO ANTRACITE



FOSSIL:

A coarse-grained surface finish, with a roughness similar to split stone or mottled natural stone surfaces.



ARENA

A smooth sanded finish, with a regular grain that gives a natural dynamism to the whole slab.



VESUVIO

A structured finish that is soft to the touch - similar to the velvet (leather) finish given to granite.



DUNE

It evokes desert sand, where the wind delicately models the panorama.



SATIN

A silky shine with imperceptible roughness.



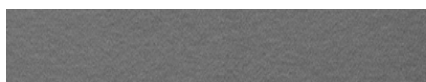
LUX

A polished and highly reflective finish.



LITHOS

Fine rough surface, ideal for kitchen worktops, exterior paving of yachts and swimming pools.



SKYLINE

A structured finish with a delicate parchment-like roughness, ideal for large flat surfaces.

1.PRODUCT

1.3/ Certifications and memberships:



Lapitec® is approved and certified by the NSF institute as a material that is safe for direct contact with food.
The certification guarantees the maximum safety and protection to the final consumer, particularly for kitchen worktops and surfaces that come into direct contact with food.



Lapitec® complies with the Jewish Kosher rules. Tables and kitchen worktops can be kosherised.




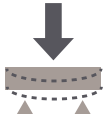





Lapitec® is a member of the Marble Institute of America, an association that promotes the use of natural stone and provides information about stone product workmanship standards.





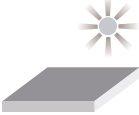




Lapitec® is a member of the National Kitchen and Bath Association.

2. TECHNICAL SPECIFICATIONS

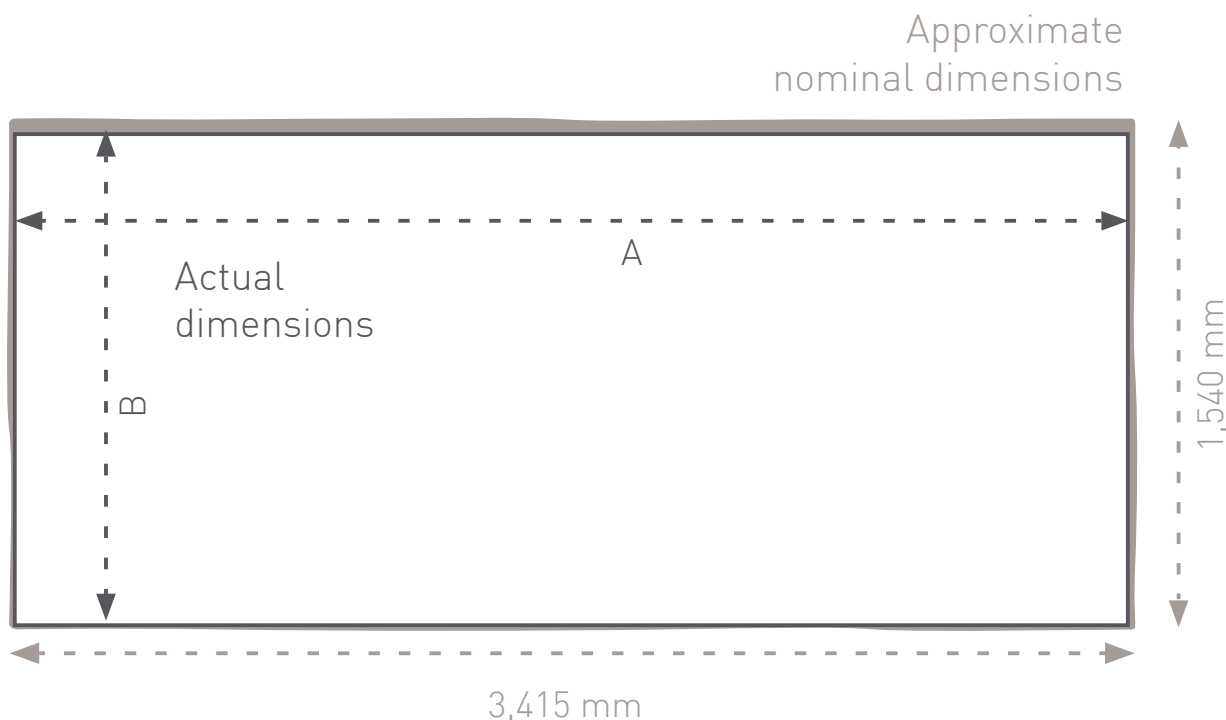
TECHNICAL SPECIFICATIONS	STANDARD	TEST RESULT
 <p>Standard dimensions</p>	EN 14617-16	3365 x 1500 mm
 <p>Thicknesses</p>	EN 14617-16	12 – 20 – 30 mm
 <p>Density</p>	EN 14617-1	2.4 kg/dm ³
 <p>Flexural strength</p>	EN 14617-2	53 N/mm ²
 <p>Water absorption</p>	EN 14617-1	0.03%
 <p>Compressive strength</p>	ASTM C170	483 N/mm ²
 <p>Impact resistance</p>	EN 14617-9	3.3 Joule reference sample thickness 20 mm

2. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	STANDARD	TEST RESULT
 <p>Deep abrasion resistance</p>	EN 14617-4	25.5 mm
 <p>Freeze and thaw resistance</p>	EN 14617-5	Resistant
 <p>Reaction to fire tests</p>	EN 13501-1	A1
 <p>Chemical resistance (to acids and bases)</p>	EN 14617-10	C4 - Resistant
 <p>Light fastness of colours</p>	DIN 51094	No change
 <p>Linear thermal expansion coefficient</p>	EN 14617-11	$6.3 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
 <p>Thermal conductivity</p>	EN ISO 10456	1.3 W/(m·K)

2. TECHNICAL SPECIFICATIONS

2.1/ Dimensions



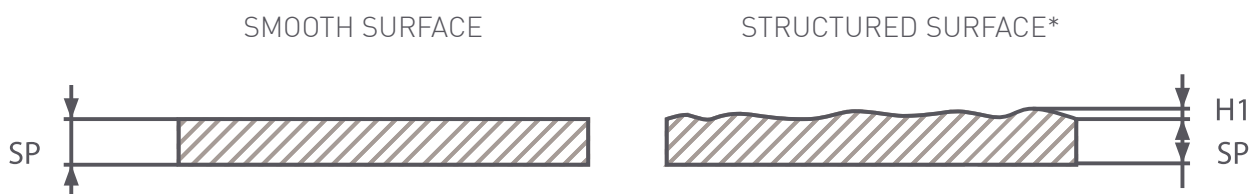
Dimensions	Value	Length mm	Width mm
Nominal	Indicative	3415	1540
Actual with th. of 12 mm	Minimum guaranteed	3365 (A)	1500 (B)
Actual with th. of 20 mm		3365 (A)	1500 (B)
Actual with th. of 30 mm		3365 (A)	1460 (B)

Technical information	M.U.	12 mm	20 mm	30 mm
Slab surface	m ²	5.05	5.05	4.91
Slab weight	kg	160	260	370
Weight per m²	kg	29	48	72

3.QUALITY CONTROL

3.1/ Thickness

Nominal thickness SP	Tolerance mm	H1 mm
12	-0/+1	< 3
20	±0.5	< 3
30	±0.5	< 3



*STRUCTURED SURFACE: Fossil, Arena, Vesuvio, Dune, Skyline

3.2/ Gloss grades

Finishing	GLOSS	
	Minimum	Variation on same slab
Lux	> 65	< 10
Satin	< 16	< 3
Vesuvio	< 5	< 3
Fossil	< 5	< 3
Arena	< 5	< 3
Lithos	< 5	< 3
Dune	< 5	< 3

The grade of gloss is measured using a glossmeter on the processed surface. The gloss variation on the same slab is checked by making measurements at the edges and the centre of the slab.

3.QUALITY CONTROL

3.3/ DIN 51130 - R-value slipperiness classification

	R-value
Finishing	R
Lux	-
Satin	-
Vesuvio	10
Fossil*	13
Arena*	13
Lithos	10
Dune	10
Skyline*	12

*Considering the anti-slip properties of surfaces with a R-value ≥ 12 , they should only be used in applications in which they can be cleaned with high-pressure water.

3.4/ A+B+C - DIN 51097

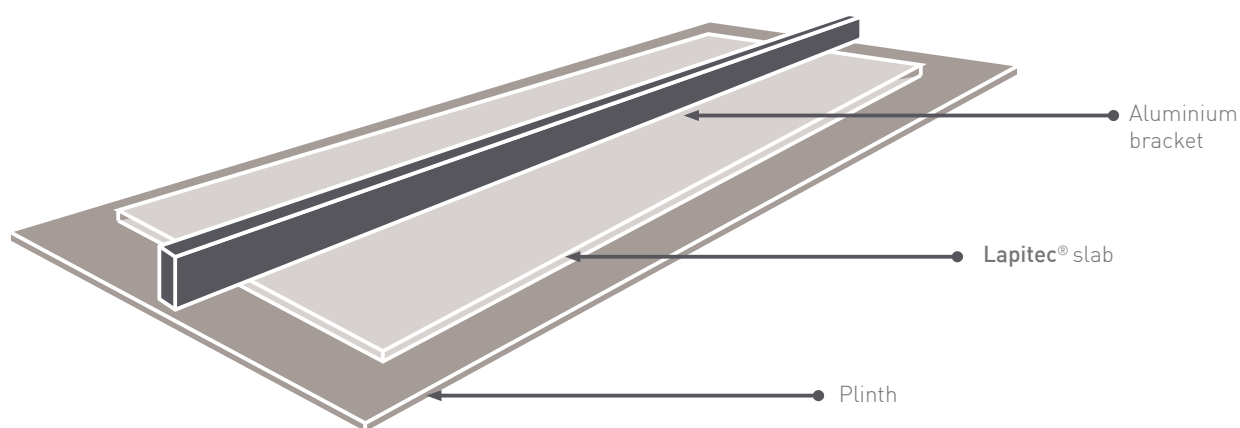
Finishing	Slip resistance	
	Average slip angle	Classification group
Lux	-	-
Satin	11 °	N.C.
Vesuvio	24 °	A + B + C
Fossil	> 35 °	A + B + C
Arena	> 24 °	A + B + C
Lithos	19 °	A + B
Dune	20 °	A + B
Skyline	14 °	A

3.5/ Colour

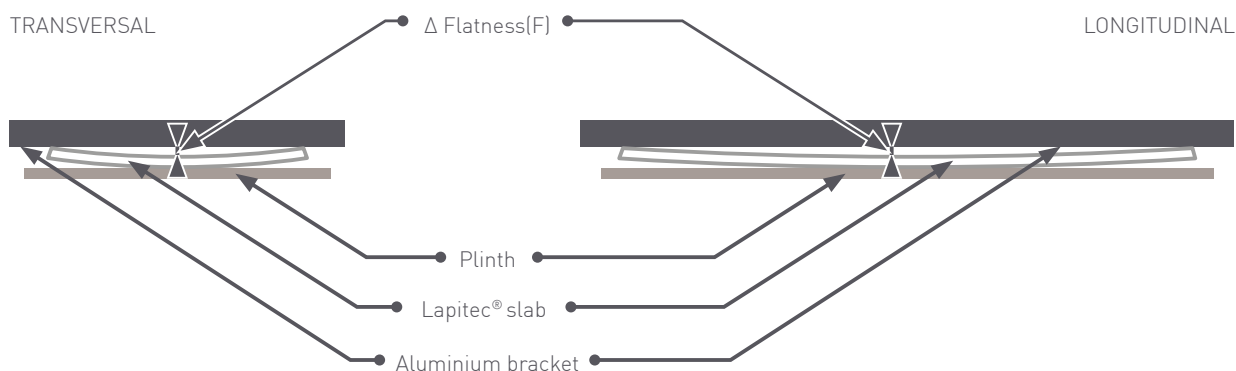
As it is a sintered natural material, it is advisable to check the colour uniformity, even for slabs from the same lot, as there could be variations due to the firing.

3.QUALITY CONTROL

3.6/ Flatness



Thicknesses mm	TRANSVERSAL		LONGITUDINAL	
	Width mm	F mm	Length mm	F mm
12-20-30	1500	≤ 1.5	3365	≤ 3.4

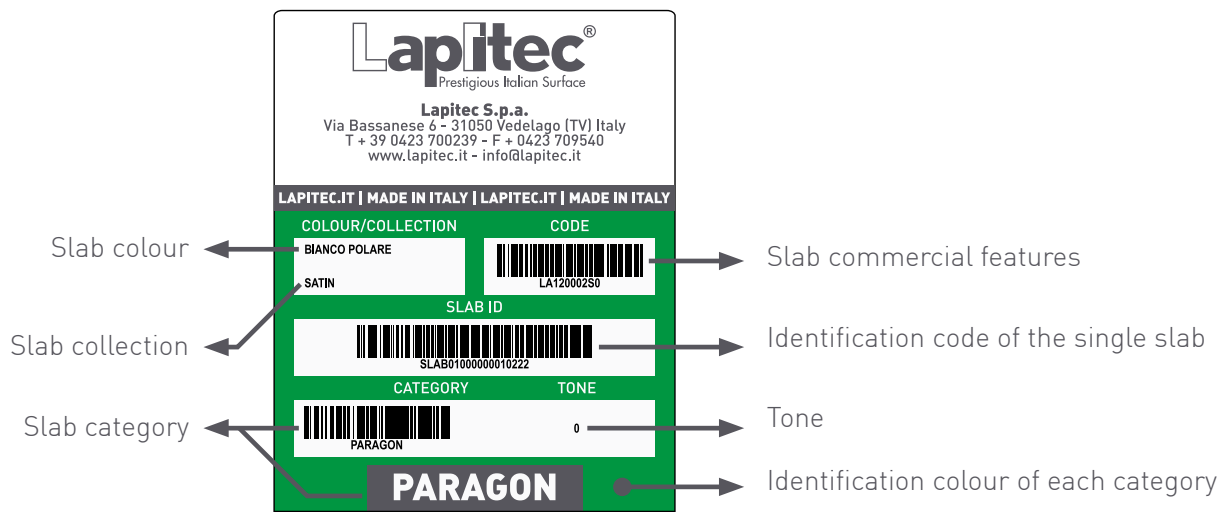


To correctly measure flatness, the slab must rest upon a perfectly horizontal and stable surface plate. Flatness is measured across the width and length of a slab using an aluminium bar (straight edge) and thickness gauges. The flatness is measured with an aluminium bar and feeler gauges at the centre of the sides: 750 mm and 1700 mm.

3.QUALITY CONTROL

3.7/ Identification label

At the end of the production line, each slab is identified with a unique adhesive label containing all the production information related to the individual slab.



3.QUALITY CONTROL

3.8/ Conformity of aesthetic features - Vesuvio, Fossil, Arena, Lithos, Dune

Type of non-conformity	Size mm
Different coloured spot	> 0.6
Uneven area	> 3
White grains on a dark background	Acceptable up to 1 mm

3.9/ Conformity of aesthetic features - Lux and Satin

Type of non-conformity	Size mm
Different coloured spot	> 0.6
Similar coloured spot	> 5
Hole	> 0.6
Uneven area	> 3
Scratch / Shading	If visible at right angles to the slab, from one metre away, in natural light
White grains on a dark background	Acceptable up to 1 mm

3.10/ Slabs inspection

We advise our customers to carefully clean and inspect the slab before processing it. This procedure guarantees that the material processing is optimised and verifies that all the quality standards have been met.

Tip: this should be standard practice. We will not accept complaints for materials installed with defects that were already there at delivery.

4. PACKAGING AND HANDLING

4.1/ Packaging

Wooden bundles: standard packaging for container shipment.

A-frames clad in wood: provided by the customer for shipping by road.

Non-standard packaging: for material supplied cut to size. The packaging is chosen according to the format, either crates or pallets.

The values indicated below are merely illustrative

Technical information	M.U.	THICKNESS 12 mm	THICKNESS 20 mm	THICKNESS 30 mm
		Values	Values	Values
Delivery		FCA - Lapitec S.p.A. Vedelago (TV) ITALY		
Slab surface	m ²	5.05	5.05	4.91
Slab weight	kg	160	260	370
Weight per m²	kg	29	48	72
Slabs per bundle	no.	20 - 18*	12 - 11*	8 - 7*
m² per bundle	m ²	101	60.6	40.4
Weight of wooden bundle	kg	Approx. 80		
Weight of complete bundle	kg	Approx. 3,300		
Bundle dimensions including packaging	mm	3,420 x 350 h 1,600		

* The variation in the number of slabs per bundle is due to the differences in thickness of the chosen collections.

The **Lapitec®** slabs are packed with the machined surfaces protected by a polyethylene film. The carrier must adequately secure the material during loading.

4.2/ Truck

Load: 14,000 kg

Technical information	M.U.	THICKNESS 12 mm	THICKNESS 20 mm	THICKNESS 30 mm
		Values	Values	Values
Total slabs loadable	no.	87	53	37
Total weight with packaging	kg	13,990	13,850	13,760
total m²	m ²	439.35	267.65	186.85

4.3/ Semi-trailer truck

Load: 24,000 kg

Technical information	M.U.	THICKNESS 12 mm	THICKNESS 20 mm	THICKNESS 30 mm
		Values	Values	Values
Total slabs loadable	no.	149	91	64
Total weight with packaging	kg	23,980	23,800	23,820
total m²	m ²	752.45	459.55	323.20

4. PACKAGING AND HANDLING

4.4/ Container 20' box

Load: 21,000 kg

		THICKNESS 12 mm	THICKNESS 20 mm	THICKNESS 30 mm
Technical information	M.U.	Values	Values	Values
Total bundles loadable	no.	6	6	7
Total slabs per container	no.	120 - 108*	72 - 66*	48 - 42*
Total weight with packaging	kg	Approx 19,800		
total m²	m ²	606.00 - 545.40	363.60 - 333.3	242.40 - 212.1

4.5/ Container 20' box

Load: 24,000 kg

		THICKNESS 12 mm	THICKNESS 20 mm	THICKNESS 30 mm
Technical information	M.U.	Values	Values	Values
Total bundles loadable	no.	7	7	7
Total slabs per container	no.	140 - 126	84 - 77	56 - 49
Total weight with packaging	kg	Approx 23,100		
total m²	m ²	707.00 - 636.3	424.20 - 388.85	282.80 - 247.45

** When organising a container, consider the weight limits imposed by the destination port

4.6/ Transportation and storage

During transportation and warehouse storage, the slabs must be held on suitable supports or metal structures such as A-frames or dedicated shelving. These supports must be appropriately treated to prevent rust or any contamination of the loaded material. There must also be suitable wooden, rubber or plastic protection to prevent any impact or abrasion when transporting, handling and storing the material.

Separate the packs of slabs using wooden strips that are thicker than the ropes used for lifting. For storage, and especially for transportation, the wooden strips used to separate the packs of slabs must be centred on the slab and be about 120 cm from one another.

The material is not affected by the weather and can also be stored outside as long as it rests on a plastic, rubber or wooden base, the supports are not made of iron and the top is protected by a suitable cover.

4. PACKAGING AND HANDLING

4.7/ Handling

Always move and handle the slabs with the utmost care and attention to avoid chipping or cracking the material. Pay attention to the following measures and recommendations:

Each single slab can be handled using rubber-coated web slings, rubber-coated grippers or suction cups. Slabs with a "Vesuvio" or "Fossil" finish however should not be lifted using suction cups. Do not use chains or steel cables that could damage the material.

When **lifting a single slab**, we recommend that the gripper is positioned at the centre of the slab to balance the weight and limit oscillations (as shown in figure 1). When placing a slab with the gripper, make sure that there is no empty space between it and the previous slab.

Caution: always check the maximum load capacity.

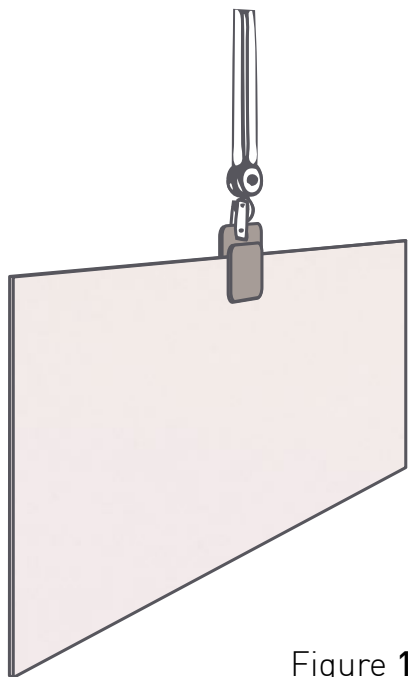


Figure 1

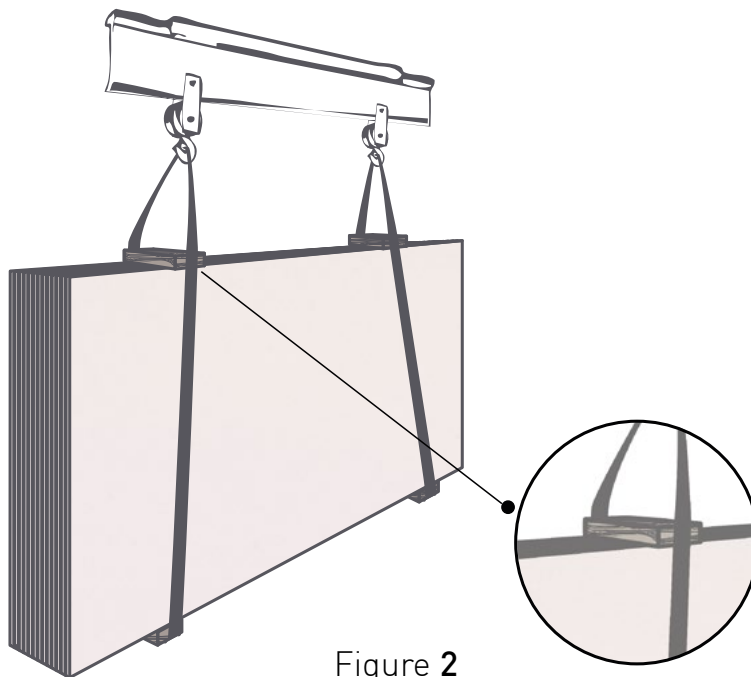


Figure 2

When **lifting multiple slabs** we advise using a spreader beam and webbing straps, with a wooden spacer that is slightly longer than the pack of slabs, underneath and at the top (as shown in figure 2). In this way, the force exerted during handling will not be applied to the slabs, thereby avoiding breaking them.

Caution: always check the maximum load capacity.

5. LAPITEC® RESEARCH AND DEVELOPMENT CENTRE

5.1/ LapitecLAB - Research centre

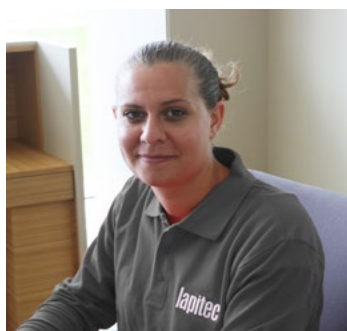
LapitecLAB is the Research and Development division dedicated to the study and experimentation of Lapitec® accessories and applications. The constant drive for innovation and the continuous development of new solutions allows us to meet the market's most specific needs.

Every single experience gained on international projects and designs for various applications is exploited to refine the products and accessories sold by Lapitec S.p.a. Through direct involvement with its customers, LapitecLAB incessantly searches for new ways to make its service more complete and efficient for diverse needs.

5.2/ LapitecACADEMY - Development centre

LapitecACADEMY is the division responsible for training and supporting professionals working with Lapitec® by means of shadow training in the factory and direct assistance. Thanks to the **Academy Community** service, all news and technical developments is rapidly disseminated throughout the entire network of personnel.

By attending the training course held by LapitecACADEMY each professional can obtain an **Approved Fabricator certificate** and gain useful tips and details concerning Lapitec® machining techniques.



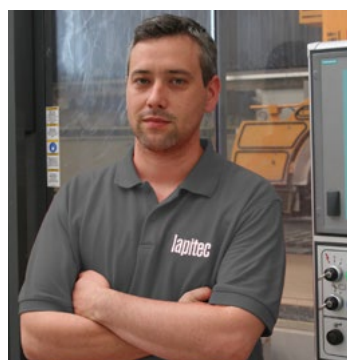
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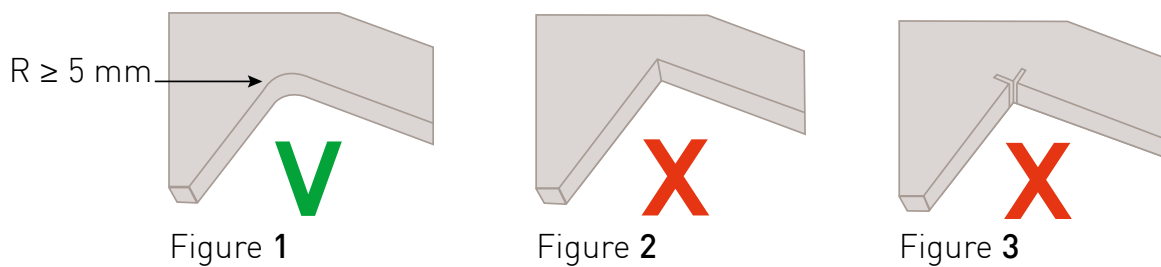
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6. PRINCIPLES OF DESIGN

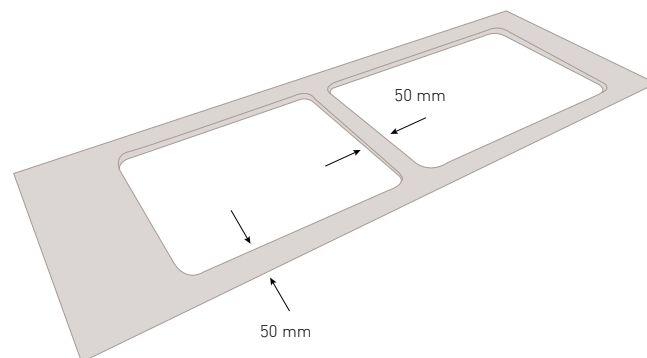
6.1/ Internal angles and sink hole

All internal angles must follow a minimum radius of 5mm. A greater radius imparts greater structural strength to the material (see figure 1), while any non-radiused angle will create a stress point on the top (see figures 2 and 3).



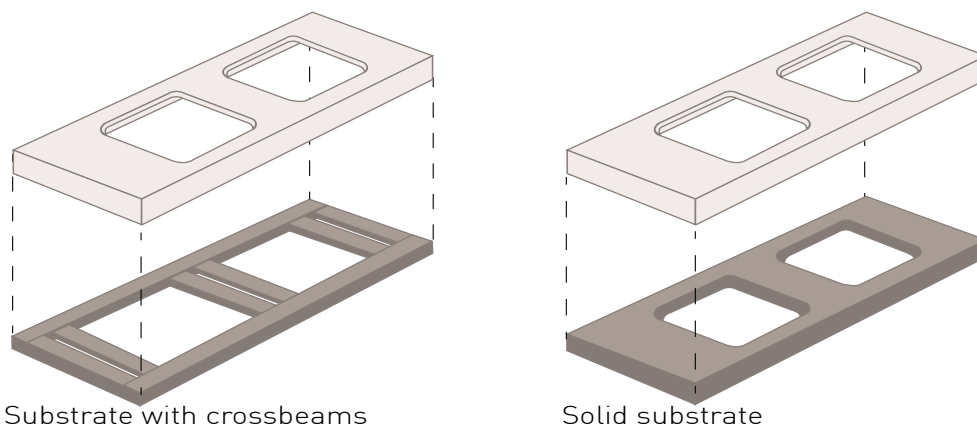
6.2/ Minimum distance between edge and sink hole

The minimum recommended distance between the sink hole and the outer edge of the workpiece is 50 mm.



6.3/ Top substrate

Depending on the thickness of **Lapitec**® employed and the configuration of the top, we recommend supporting the top adequately with a reinforcement in **Lapitec**®, or using material having the same thermal expansion coefficient (e.g. granite, **Lapitec**® or Eulithe).



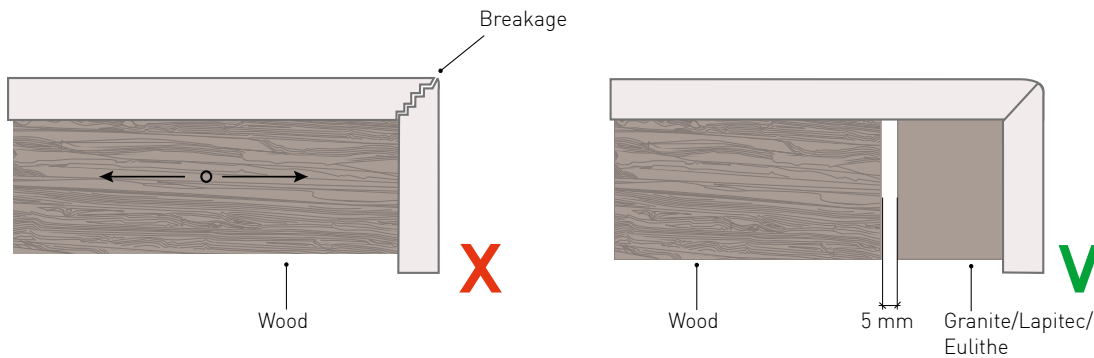
6. PRINCIPLES OF DESIGN

6.4/ Outdoor applications

In outdoor applications in the presence of a lamination or bonding at 45°, it is good practice to support the apron with material having the same thermal expansion coefficient (granite, Lapitec, Eulithe).

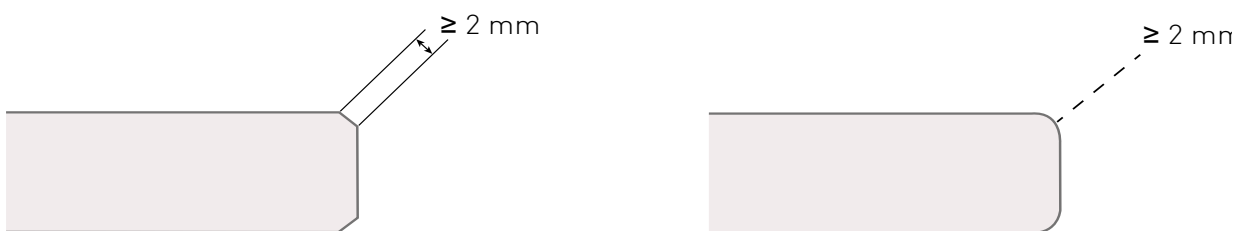
Supporting the adhesive bond between two parts with a timber substrate should therefore be avoided, because when it is exposed to the weather the wood may tend to expand or swell and create pressures acting on the bonded parts causing them to become detached.

We also recommend maintaining a gap of at least 5 mm between wood and top in order to compensate for any thermal expansion.



6.5/ Edges of the top

We recommend processing the workpiece's edges as shown in the drawing. These indications are a good compromise between aesthetics and functionality. Moreover, they considerably reduce accidents.

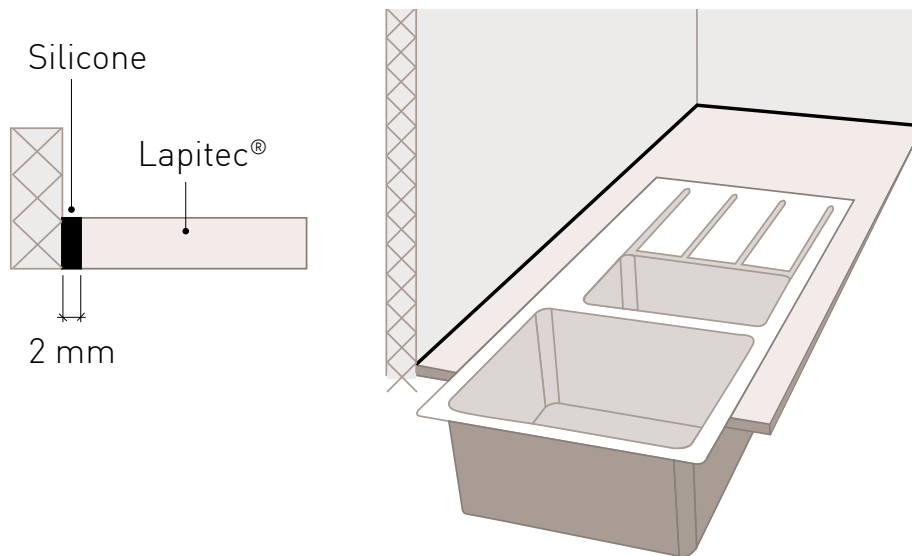


6. PRINCIPLES OF DESIGN

6.6/ Minimum distance between Lapitec® and wall

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

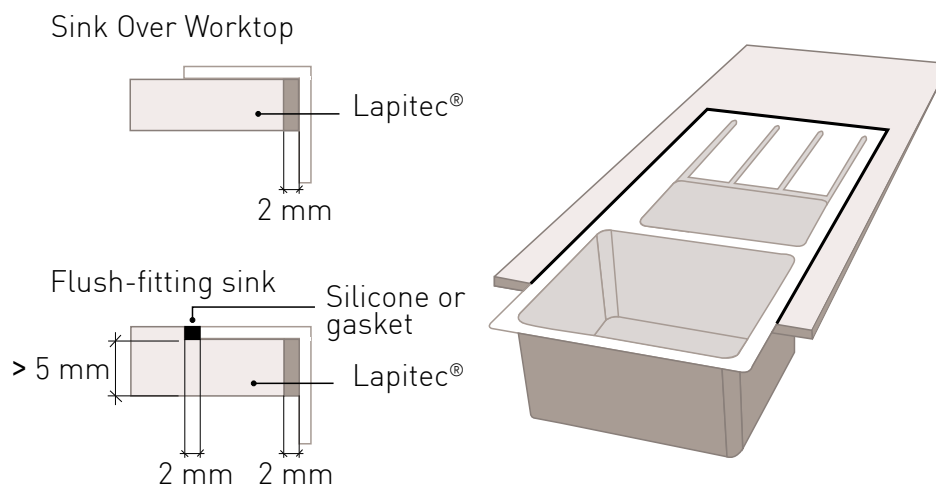
NB: When you apply silicone to seal the hob is necessary to protect the Lapitec surface using an adhesive tape



6.7/ Minimum distance between Lapitec® and sink

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

NB: When you apply silicone to seal the hob is necessary to protect the Lapitec surface using an adhesive tape



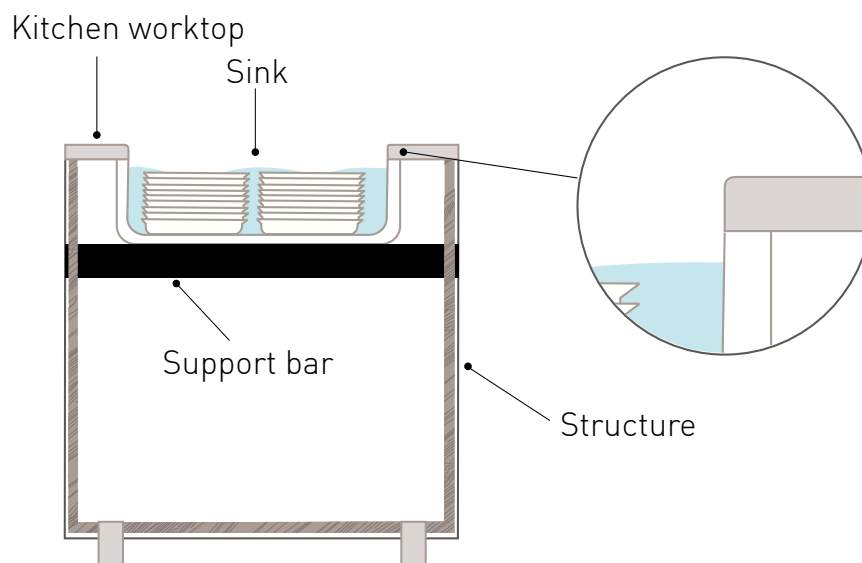
Warnings

Interpose a sealant capable of compensating for the different thermal expansion occurring during daily use, such as silicone or gaskets supplied by the appliance manufacturer between the Lapitec® top and the components mounted on the top.

6. PRINCIPLES OF DESIGN

6.8/ Sink substrate

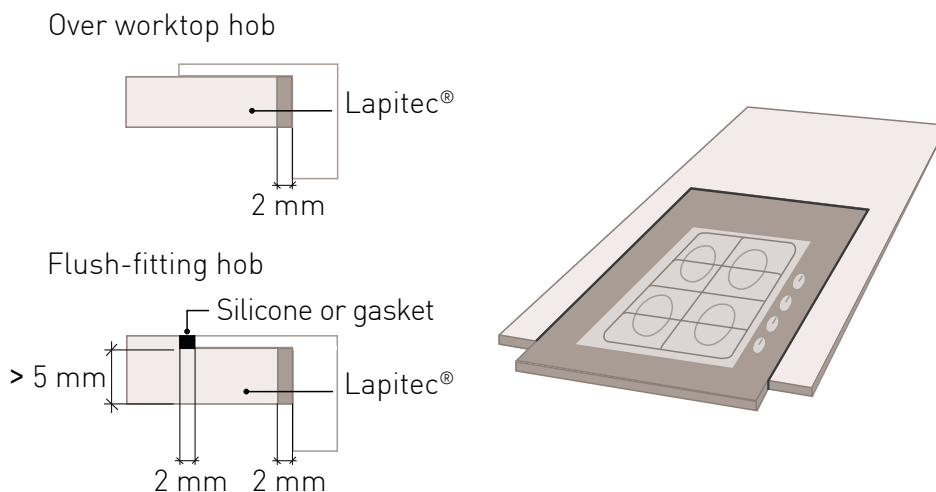
We recommend adding a support bar for large size sinks, to be secured to the structure on which the top is to be placed. The weight of the sink full of water or with additional loads of materials and objects of daily use could cause the sink to become detached and/or lead to breakage of the top. To reduce the risk of chipping, it is advisable to align the sink with the top recess edges as shown in the diagram.



6.9/ Minimum distance between Lapitec® and hob

The minimum recommended distance between the **Lapitec®** top and the hob is 2 mm. Consult the hob manufacturer's technical manual to establish the minimum gap between the hob and the **Lapitec®**.

NB: When you apply silicone to seal the hob is necessary to protect the Lapitec surface using an adhesive tape



Warnings

Interpose a sealant capable of compensating for the different thermal expansion occurring during daily use, such as silicone or gaskets supplied by the appliance manufacturer between the Lapitec® top and the components mounted on the top.

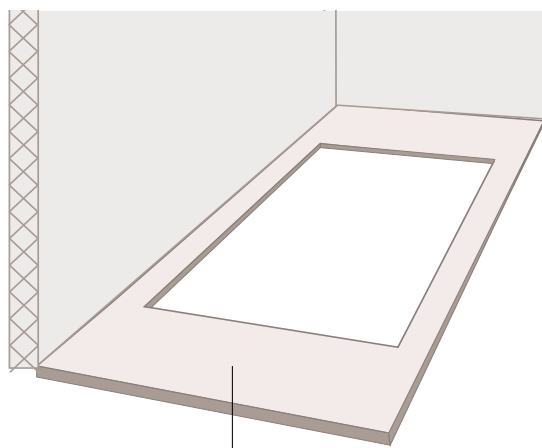
6. PRINCIPLES OF DESIGN

6.10/ Design of holes for sink, gas hob or induction hob

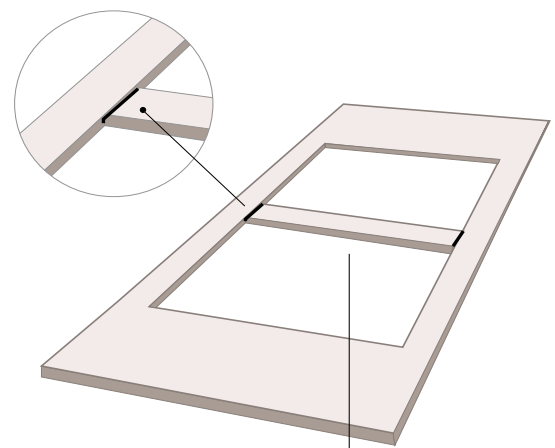
In the presence of one or more large size holes or interrupted/open holes, it is good practice to leave a strip of material in place to support the top. The top, already cut half way through its thickness, will be completely cut once the installation procedures are terminated.

This practice restricts the potential for breakage during handling and installation.

Case 1: large-size hole

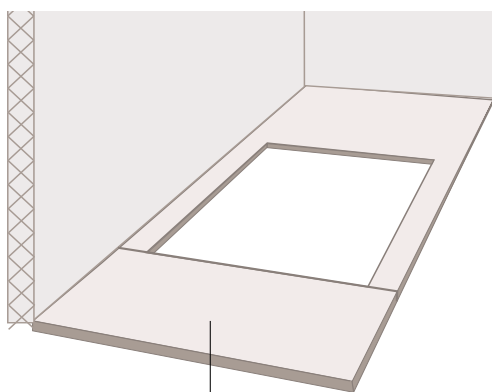


Installed top

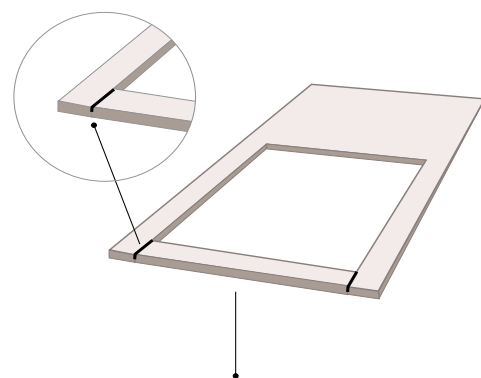


Pre-cut strip of Lapitec® to be cut off completely after the top has been installed

Case 2: interrupted sink hole



Installed top

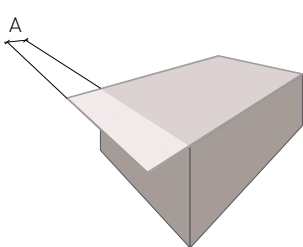
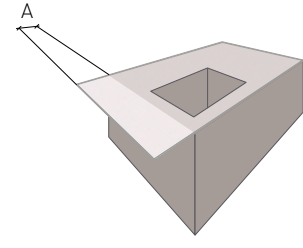


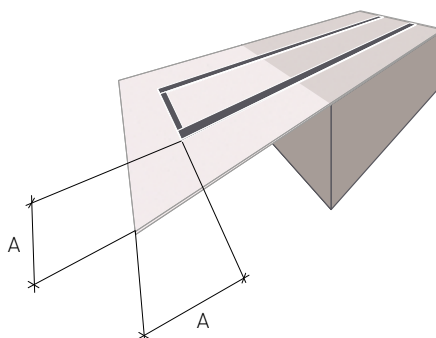
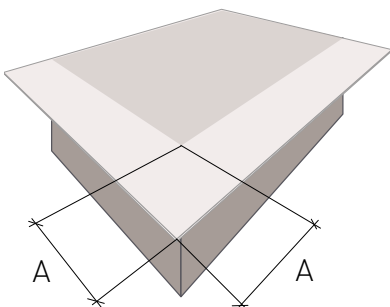
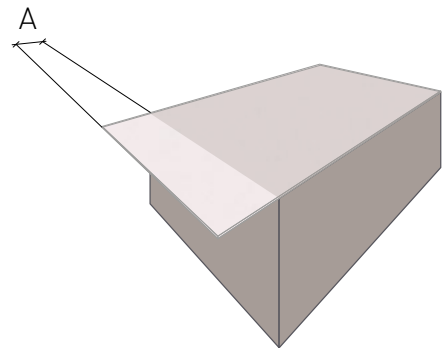
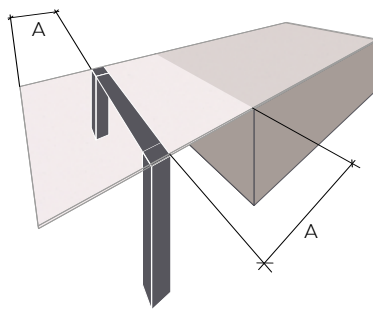
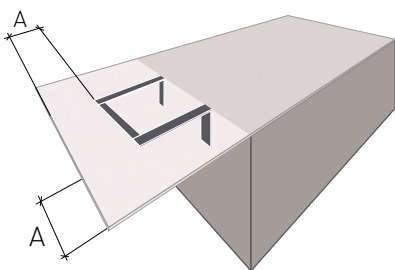
Pre-cut strip of Lapitec® to be cut off completely after the top has been installed

6. PRINCIPLES OF DESIGN

6.11/ Overhangs

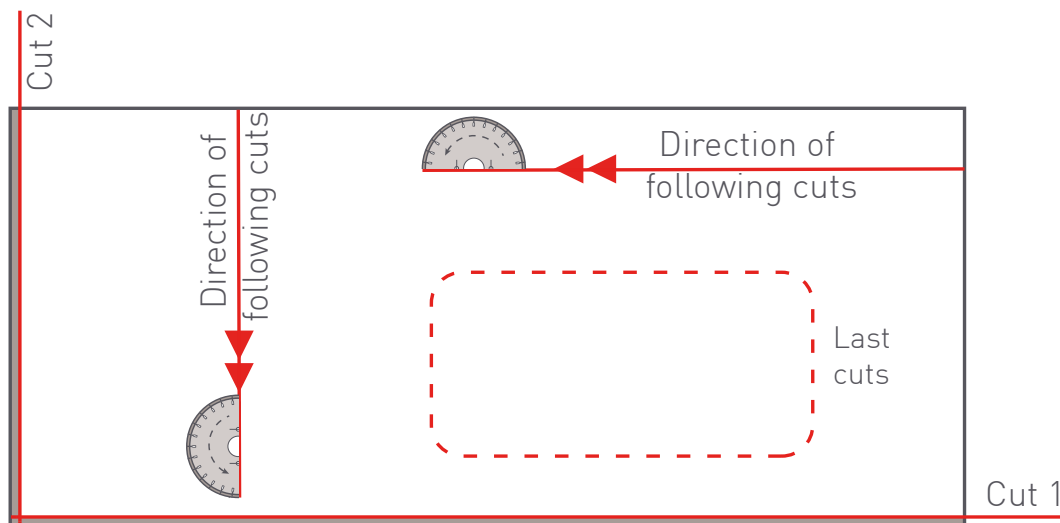
When designing the top, the overhangs should be sized by following the following table in order not to expose the workpiece to the risk of breakage during daily use.

	Thicknesses			Drawing
	12 mm	20 mm	30 mm	
Top with unsupported overhang	A < 150 mm	A < 350 mm	A < 500 mm	
Drilled top with unsupported overhang	A < 90 mm	A < 210 mm	A < 300 mm	



7. MACHINING PRINCIPLES

Before starting **any processing**, the slab has to be trimmed off longitudinally and transversally at a distance from the edge which is proportional to the slab thickness (see the trimming scheme); all the following cuts will be performed starting from the rough side towards the trimmed side as indicated in the figure. By trimming all four sides, there will be no constraint on the direction of subsequent cuts.



Warnings

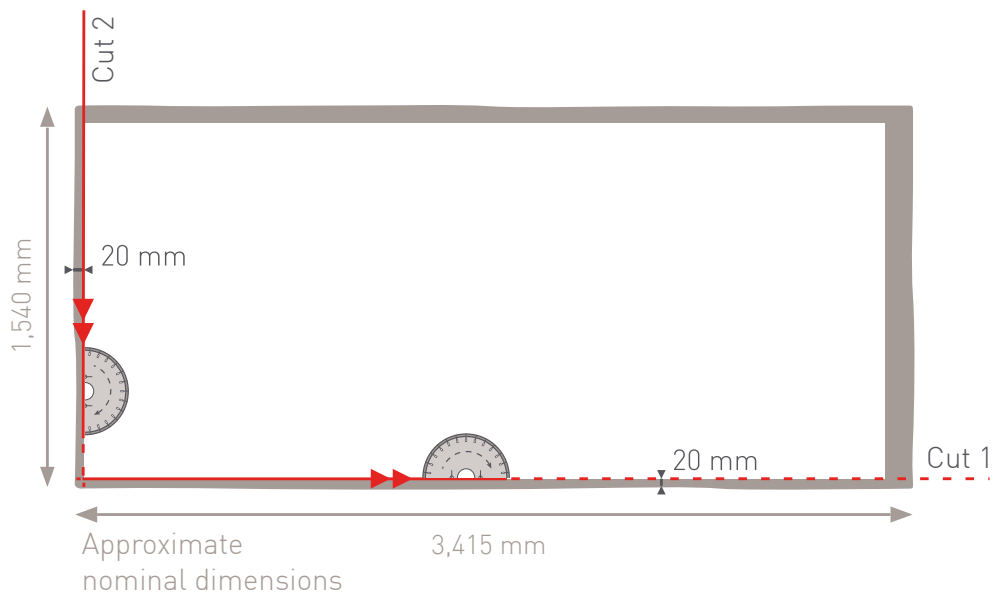
After each machining task, rinse the surface copiously with clean water before the workpiece has dried (better if in vertical position).

The cutting direction must always be the same as the saw blade rotation direction.

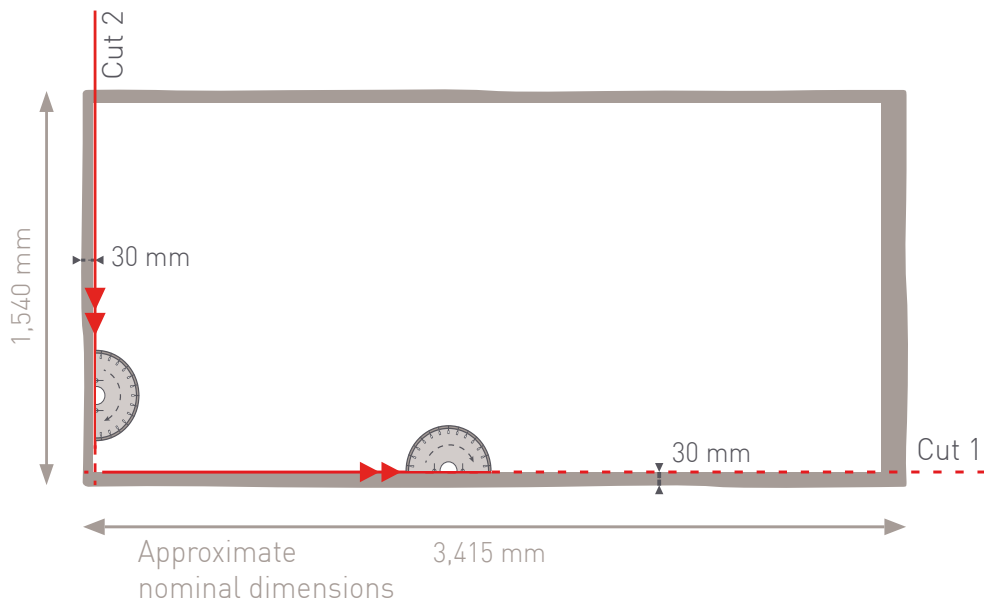
7. MACHINING PRINCIPLES

7.1/ Trimming schemes

Thickness 12 mm - Minimum trimming 20 mm

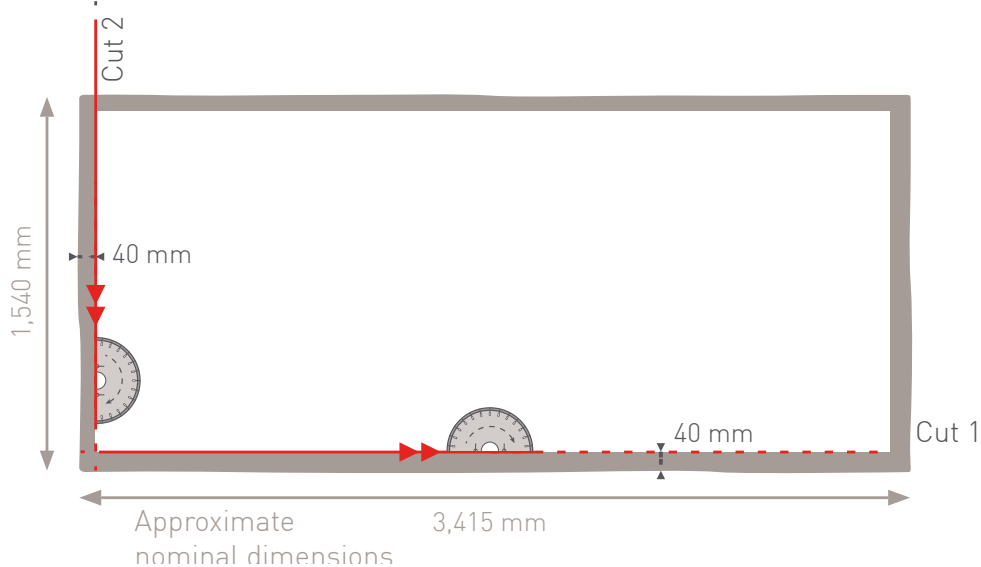


Thickness 20 mm - Minimum trimming 30 mm



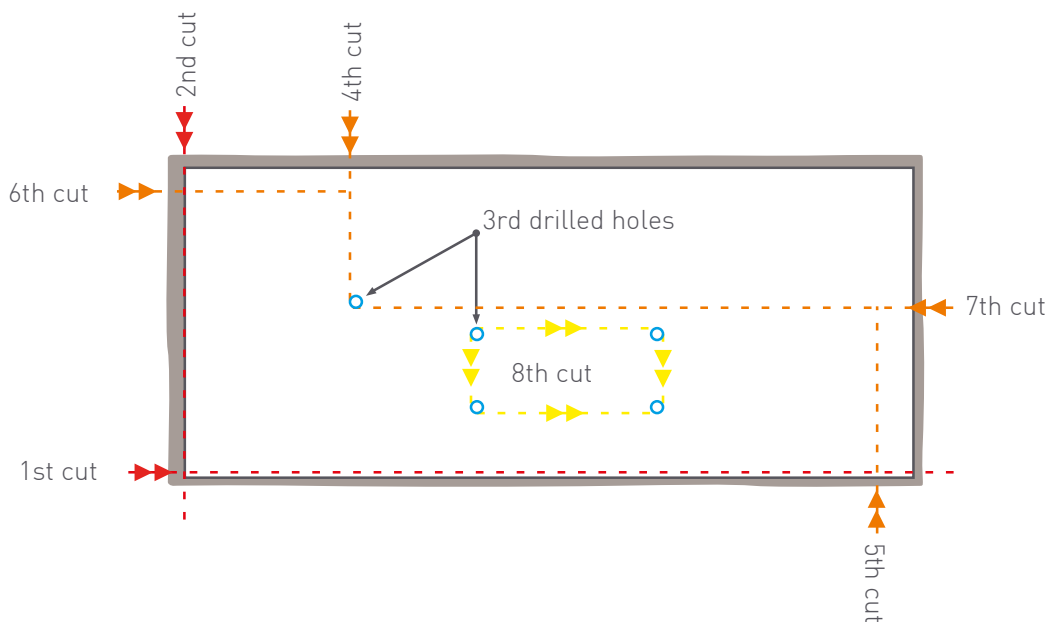
7. MACHINING PRINCIPLES

Thickness 30 mm - Minimum trimming 40 mm



7.2/ Processing order

Example: cutting diagram for bridge saw



Sequence of machining steps:

- 1 Slab trimming (red sections)
- 2 Core drilling (blue sections)
- 3 Top perimeter cutting (orange sections)
- 4 Interrupted cuts (yellow sections)

Warnings

The cutting direction must always be the same as the saw blade rotation direction.

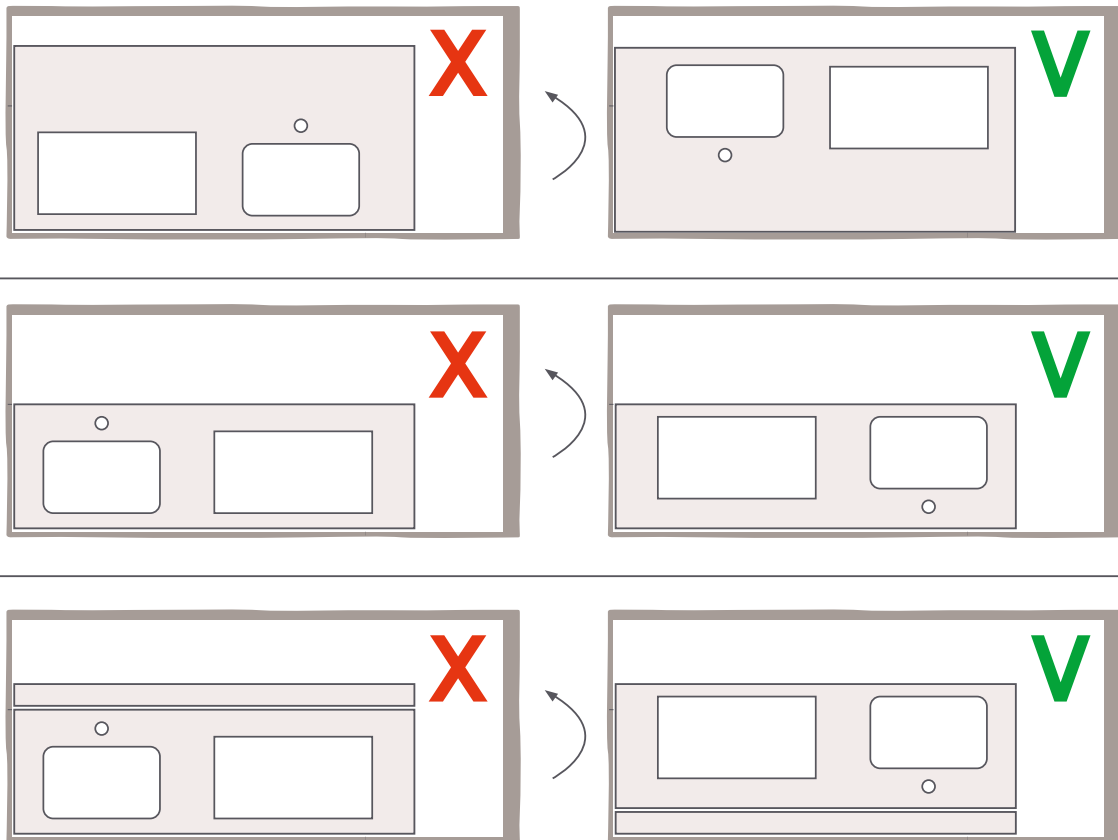
7. MACHINING PRINCIPLES

7.3/ Workpiece orientation

Make the holes for sinks or hobs towards the centre of the slab and get the folded edges on the outer sides of the slab.

Incorrect machining

Correct machining



8. MACHINING PARAMETERS FOR BRIDGE SAW

8.1/ Lapitec® saw blade

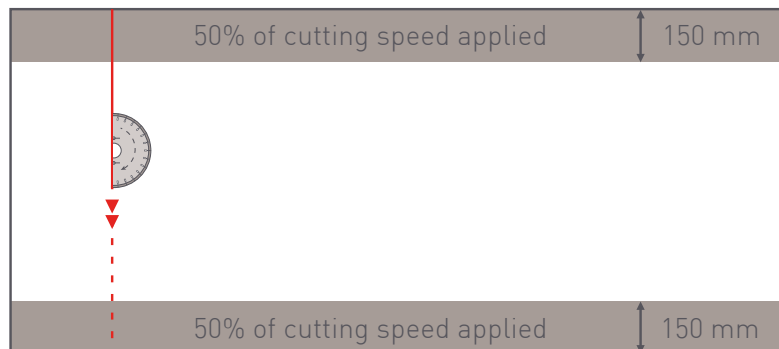
General instructions

Use plenty of water when cutting. The jet of water must be directed at the front or side of the saw blade, as close as possible to the cutting area (as shown in the figure below).

Caution: insufficient water flow causes the saw blade to overheat, compromising the workpiece processing and the tool.



Make sure that the work table of the milling machine is in good condition and flat. **If the work table is in poor condition, place a sheet of high-density technical rubber between the workpiece and the table, reducing vibrations and improving the cut finish.**



Slow the feed rate down to 50% for the first 150 mm and the last 150 mm.

To cut a small workpiece, we advise blocking it with suitable clamps to prevent it from moving during machining.

8.MACHINING PARAMETERS FOR BRIDGE SAW

Notice:

All data refer to discs marked Lapitec®

Parameters

SAW BLADE ROTATION PARAMETERS

Saw blade Ø	Spindle revolutions rpm	Peripheral speed m/s
300	2100-2300	34
350	1800-2000	
400	1600-1800	
450	1400-1600	
500	1260-1460	

Note: if the spindle speed is fixed, you must choose the saw blade that requires a speed as close as possible to that of the spindle.

CUTTING PARAMETERS

Type of cut	Feed rate mm/min		
	12 mm	20 mm	30 mm
Cut entering from above the slab	100	100	100
Straight cut	1400	800	600
Inclined cut	800	450	300

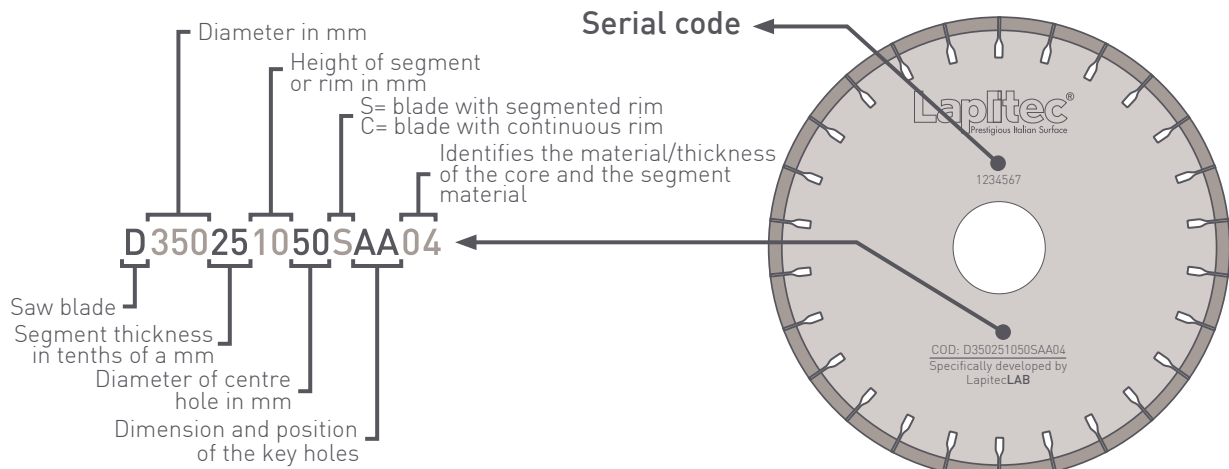
Warnings

Any increase in the spindle's input current indicates that the saw blade needs to be dressed with a grinding stone.

8.MACHINING PARAMETERS FOR BRIDGE SAW

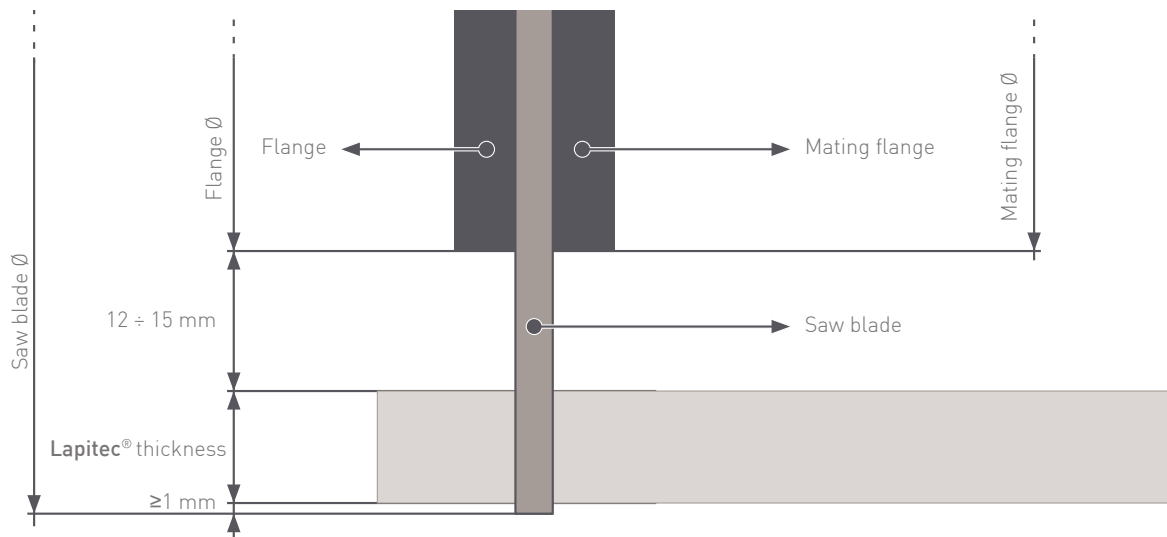
Lapitec® blade codes

All the saw blades developed by LapitecLAB are marketed under the **Lapitec®** brand name and are codified for identification and reordering. Use discs marked **Lapitec®** exclusively for cutting **Lapitec®**. Use of the **Lapitec®** saw blade for cutting different materials can result in injury to persons and/or damage to property.



8.MACHINING PARAMETERS FOR BRIDGE SAW

Flange dimensioning



8.2/ Dimensions of flanges for straight or inclined cut

Saw blade Ø mm	Thickness mm	Flange Ø mm
350	12	265
	20	
	20	230
30		
400	12	315
	20	
	20	280
30		
450	12	365
	20	
	20	330
30		
500	12	415
	20	
	20	380
30		

The saw blade must be selected according to the features of the machine, the thickness of the material to be cut and the tilt angle. **The exposed part of the saw blade should be as small as possible, considering that at least 1 mm should protrude from the other side of the workpiece.**

We recommend only using the rings supplied by the saw blade manufacturer together with the saw blade for reducing the bore diameter.

9. MACHINING SUGGESTIONS FOR BRIDGE SAW

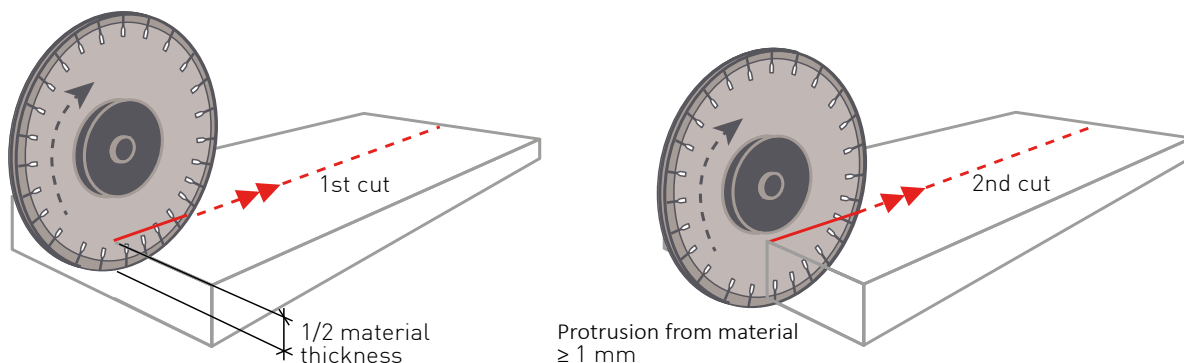
9.1/ Multipass cutting:

Specific measures: In the presence of one or more of the following conditions we recommend multipass cutting:

- a larger flange is not available
- there is insufficient water
- the saw blade is in poor condition
- the resting base is not flat

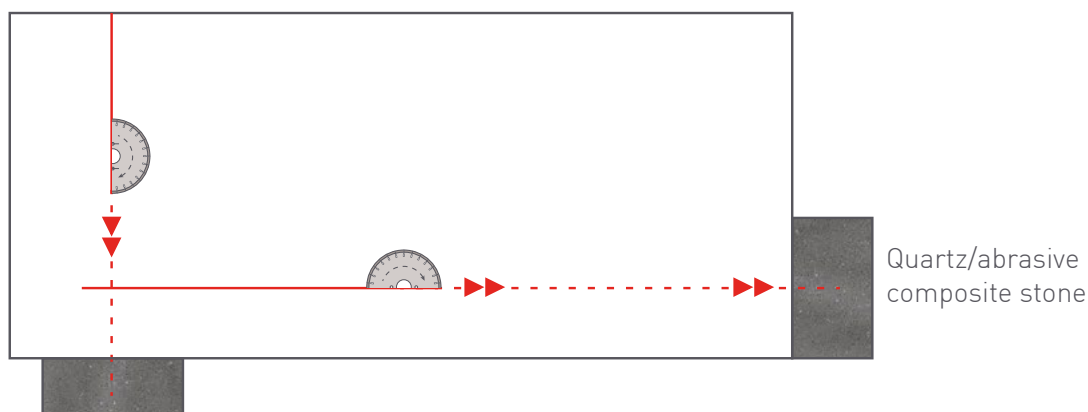
Type of cut	Feed rate mm/min	
	20 mm	30 mm
Straight cut	1600	1200
Inclined cut	900	600

MULTIPASS CUTTING DIAGRAM:



9.2/ Quartz/abrasive composite stone

We recommend placing a piece of quartz/abrasive stone composite material at the position at which the **Lapitec®** saw blade exits the cut. This will allow you to limit deflection of the blade as it exits the material, preventing unsightly chipping of the material and helping also to hone the saw blade.

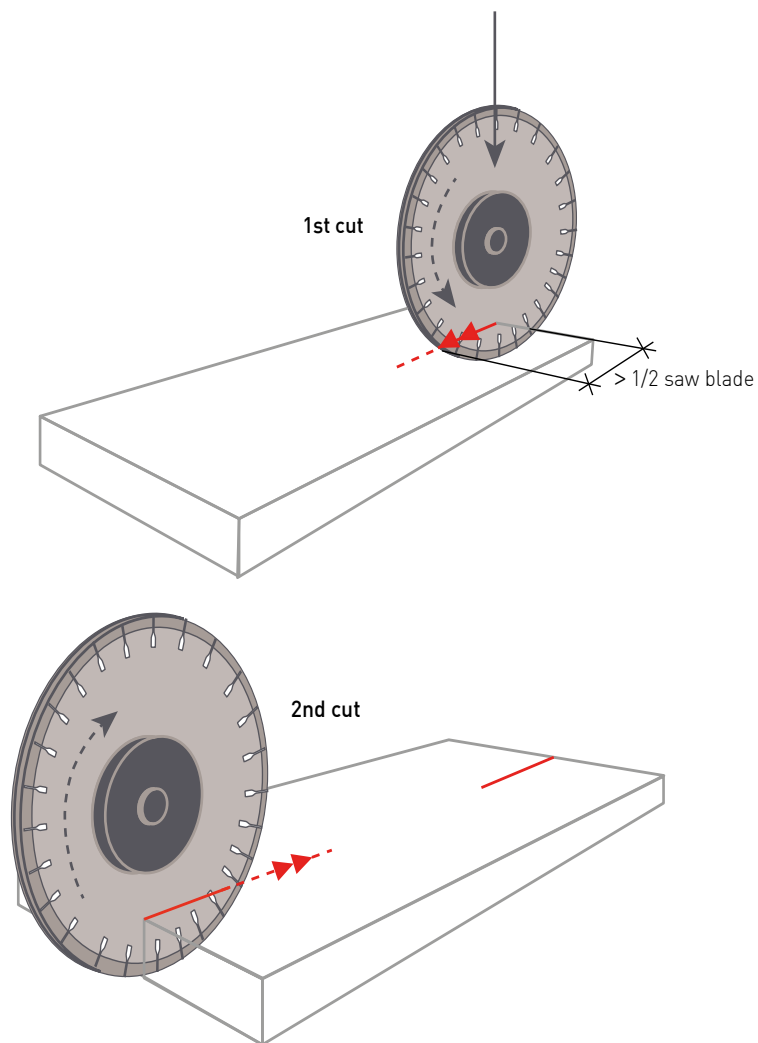


9. MACHINING SUGGESTIONS FOR BRIDGE SAW

9.3/ Pre-cutting diagram

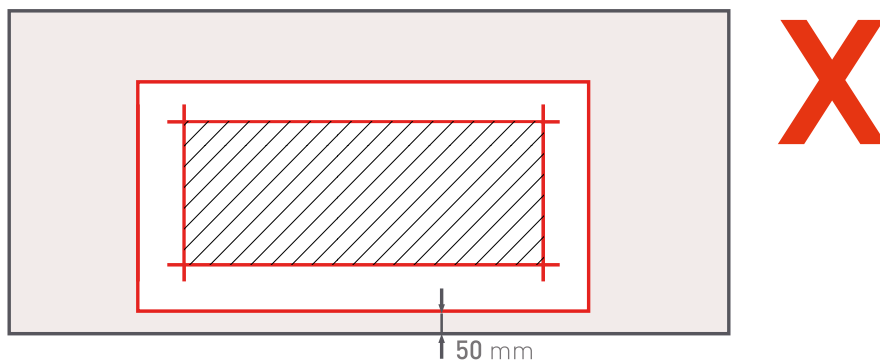
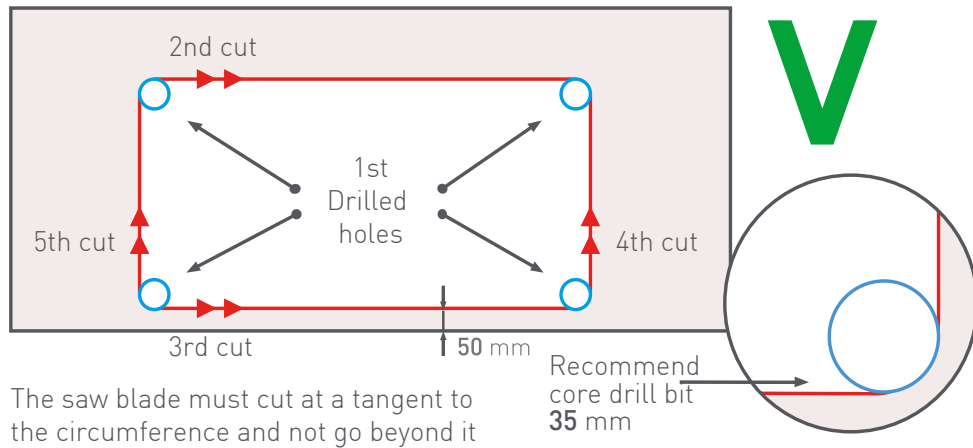
Specific measures: In the presence of one or more of the following conditions we recommend multipass cutting:

- a larger flange is not available
- there is insufficient water
- the saw blade is in poor condition
- the resting base is not flat



9. MACHINING SUGGESTIONS FOR BRIDGE SAW

9.4/ Cutting diagram for sink with saw blade

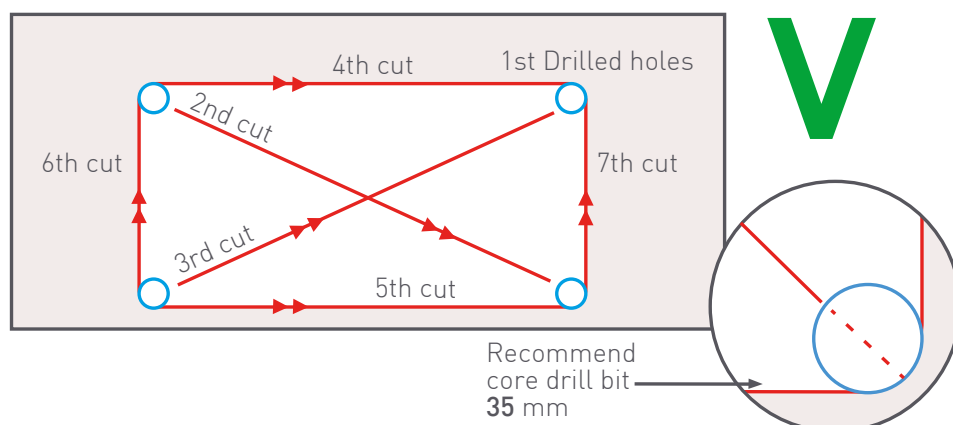


Specific instructions

In the presence of one or more of the following conditions

- non-flat resting base
- islands measuring more than 2600x600 mm
- sinks measuring more than 560x480 mm

we advise following the cutting diagram shown below:



10.LAPITEC® TOOLS FOR BRIDGE SAW

10.1/ Tools marked Lapitec®



Lapitec® saw blade

Diameters 300-350-400-450-500 mm

11.MACHINING PARAMETERS FOR WATERJET MACHINE

11.1/ Waterjet

Low pressure piercing parameters

Thickness	Minimum pressure bar	Minimum pressure psi	Abrasive 80 mesh kg/min
12 - 20 - 30	600	8700	0.35-0.45

Suggestions

When possible, make the entry hole outside the slab. Alternatively, make the entry hole a few centimetres away from the cutting perimeter and never less than 5 mm away.

High pressure cutting parameters

Thickness	Minimum pressure bar	Minimum pressure psi	Feed rate mm/min	Abrasive 80 mesh kg/min
12	3600-3800	52200-55100	500-900	0.35-0.45
20	3600-3800	52200-55100	400-500	0.35-0.45
30	3600-3800	52200-55100	200-300	0.35-0.45

Suggestions

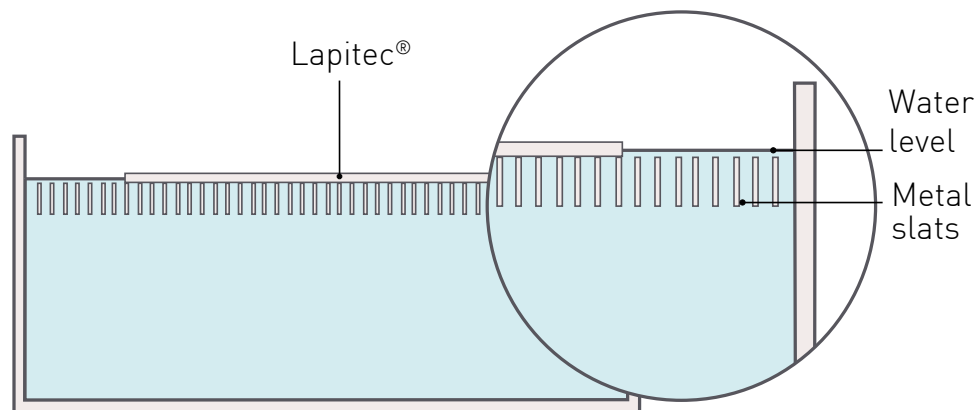
The above data refer to the maximum recommended values. Reduce the feed rate to get a better finishing. **Even for the processing with Waterjet is recommended the trimming operation as indicated in the "Trimming scheme" on pages 24, 25 and 26.**

Make sure the work table of the cutting machine is in good conditions, perfectly flat, with no processing waste or discontinuity elements.

In case of equal angles or angles smaller than 90° it is recommended to join up the angle with radius ≥ 5 mm.

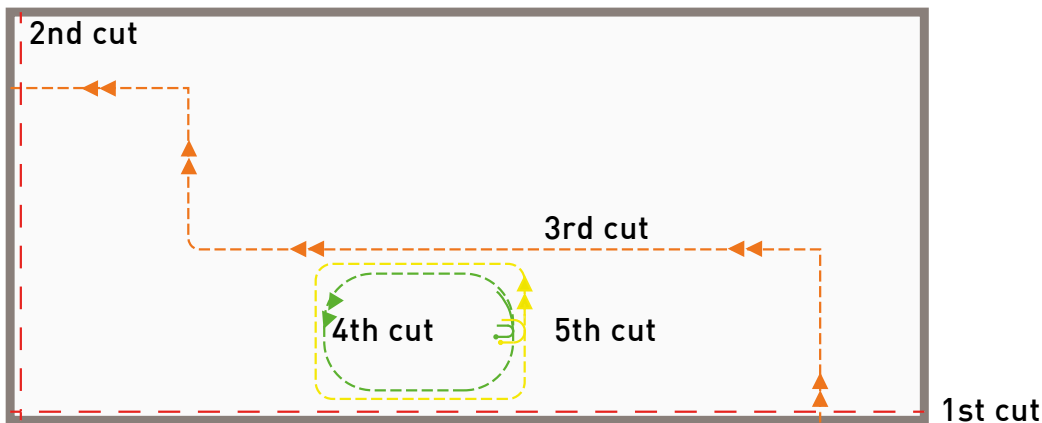
WATER LEVEL IN WATERJET TANK:

To improve the finish of the bottom of the workpiece, it is advisable to keep the water level higher than or at the same level as the work table surface.



11.MACHINING PARAMETERS FOR WATERJET MACHINE

11.2/ Cutting sequence



Machining steps:

- 1-2. Slab trimming (colour portions **red**)
3. Workpiece shape cutting (colour portions **orange**)
4. Sink pre-cutting, if required (colour portions **green**)
5. Sink cutting (colour portions **yellow**)

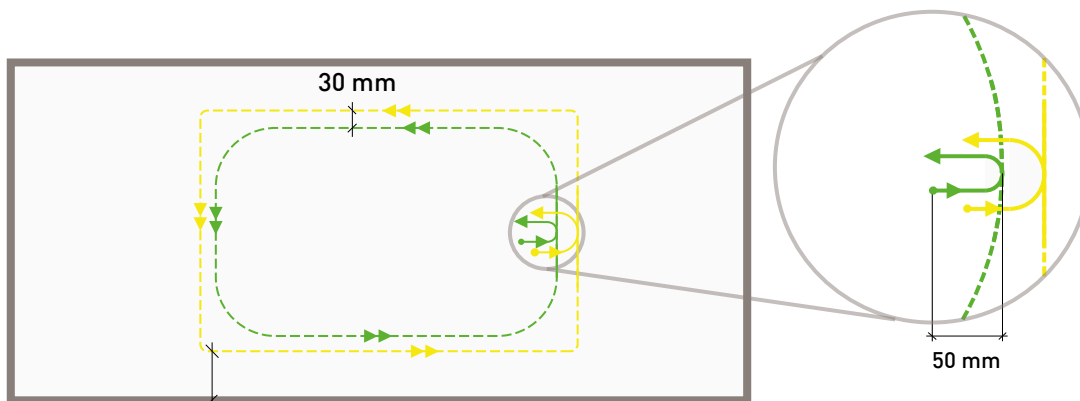
11.3/ Sink cutting

In the presence of one or more of the following conditions

- non-flat resting base
- islands measuring more than 2600x600 mm
- sinks measuring more than 560x480 mm

we advise following the cutting diagram shown below:

N.B.: the sink cut must be started inside the pre-cut as shown in the diagram below

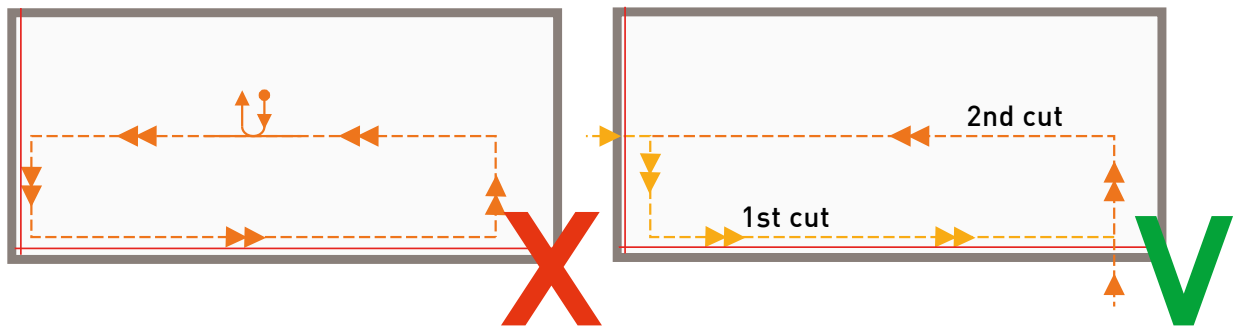


Minimum recommended
distance 50 mm

11.MACHINING PARAMETERS FOR WATERJET MACHINE

11.4/ Cutting diagram

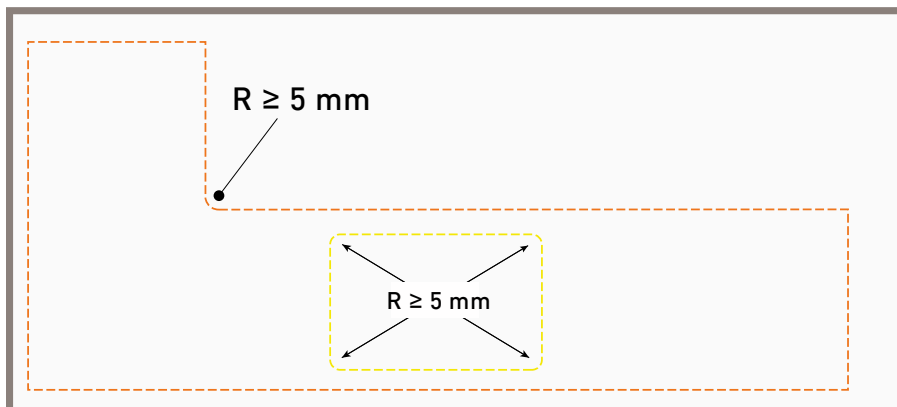
To cut the top outline, the profile should be divided into two parts and the first cut should be at the outer side of the slab. The outline cut will always be made after the trimming cuts.



11.5/ Radiusing

All internal angles must follow a radius of at least 5 mm.

A greater radius imparts greater structural strength to the workpiece, while any non-radiused angle will create a stress point on the top



12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.1/ Lapitec® milling tool



Parameters

Data referring to tool measuring 22 mm \varnothing with Lapitec® trademark for through cuts.

Thickness	Feed rate mm/min	Spindle Revolutions rpm
12	350-400	3600-4500
20	300	3600-4500
30	200-250	3600-4500

Do not make cuts with an oscillating tool. Excessively reducing the cutting speed may cause damage to the cutting tool diamond concretion, generating excessive force on the workpiece and causing it to break. During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool (as shown in the figure below).

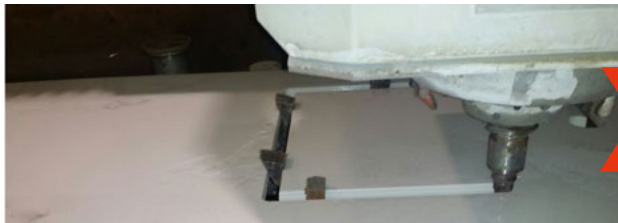


12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.2/ Sink cutting with a contouring machine

Before starting a machining process with a contouring machine make sure the worktable is adequately configured to guarantee correct execution.

All work processes must be performed in compliance with the instructions in the Technical Manual, without using supports other than the suction cups and Teflon positioning end stops. The use of devices exerting mechanical action on the workpiece could result in breakage of the workpiece.



WEDGES



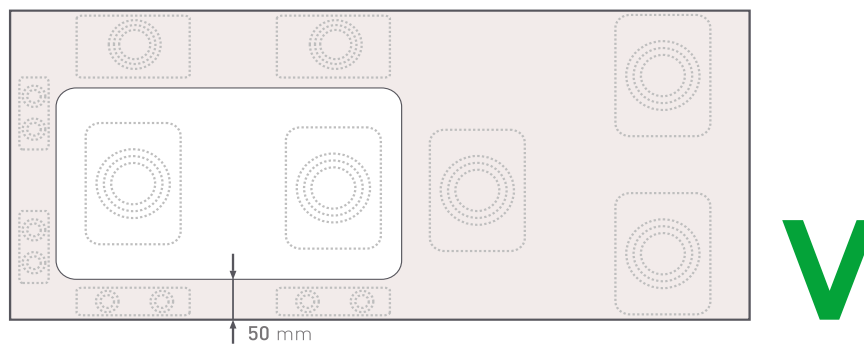
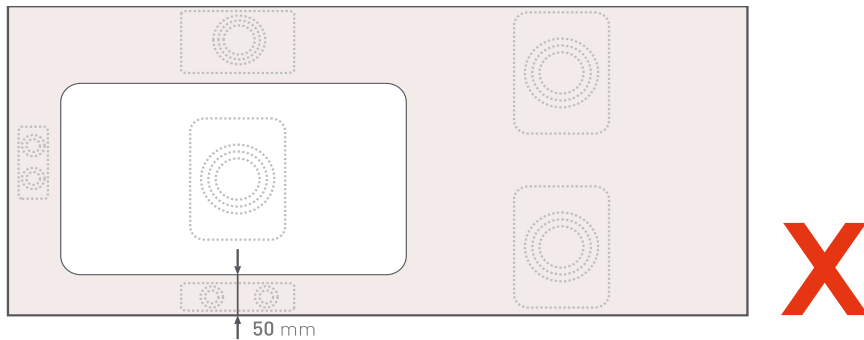
GRIPPERS



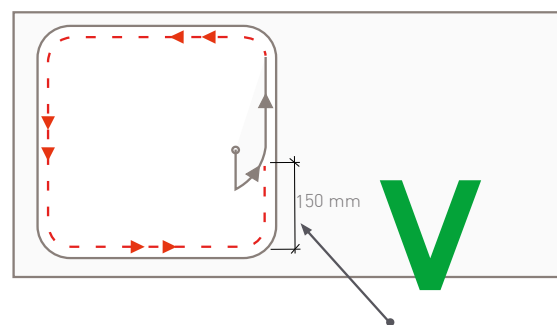
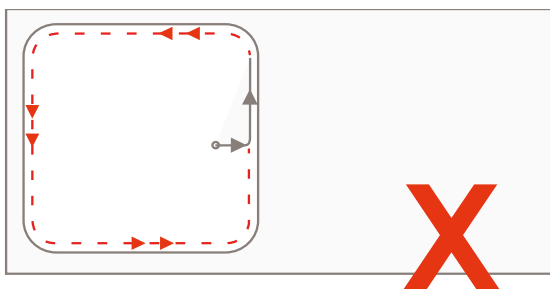
PISTONS

We recommend distributing the suction cups appropriately in order to support the areas of the workpiece that are the most highly stressed during the machining process; use suitable suction cups to support the narrowest areas of the workpiece (as shown in the photo alongside). Before positioning the workpiece make sure the suction cups are clean and free of residues from the previous work process; if necessary, rinse the suction cups thoroughly with clean water before starting any processing.

12.MACHINING PARAMETERS FOR CONTOURING MACHINE



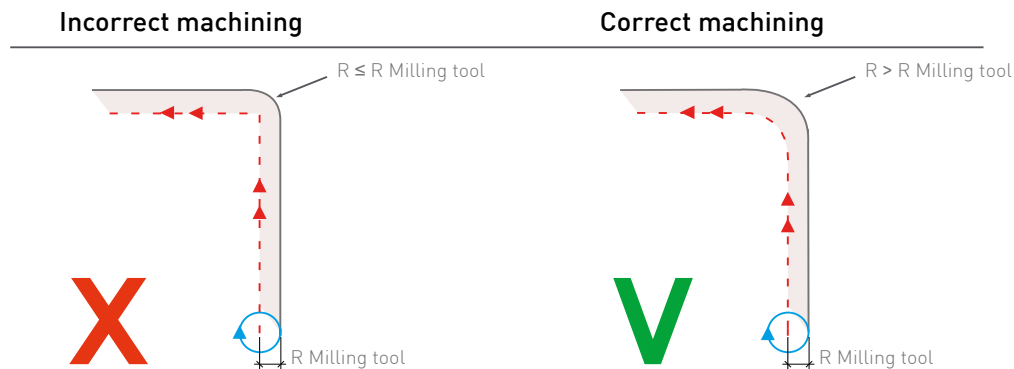
The radius of entry of the milling tool must be wide in order to facilitate retreat of the tool at the end of the machining process and prevent chipping that could damage the workpiece.



50% of cutting speed applied
in the last 150 mm

Make the internal corner fillets with a larger radius than the radius of the milling tool: this ensures smoother machine movements resulting in less stress on the material.

12.MACHINING PARAMETERS FOR CONTOURING MACHINE



When using the milling tool on 12 mm and 20 mm thicknesses, it is good practice to centre the tool with respect to the thickness of the slab: this precaution reduces vibration and also reduces the force exerted on the workpiece and on the tool.

Also, we advise against causing the tool to oscillate back and forth during the cutting operation.



Machining advice

Tool breakages are because:

- feed rate too high
- number of revolutions far lower than the nominal revolutions of the tool
- insufficient cooling water

Workpiece breakage is due to the fact that cutting weight is concentrated on a single point.

Solutions:

Where possible, support the parts with suction cups that will be removed after cutting or ensure that the cutting weight is not concentrated in one corner by dividing the side into two segments.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

12.MACHINING PARAMETERS FOR CONTOURING MACHINE

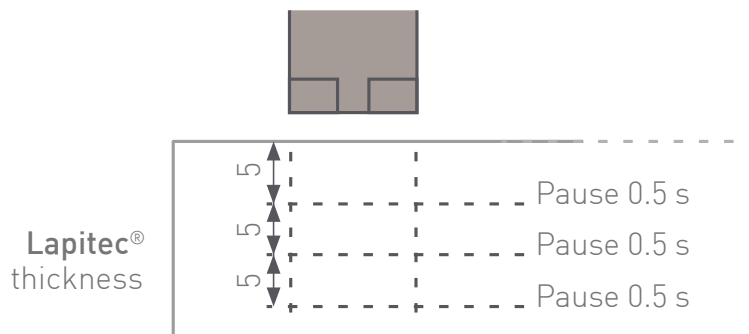
12.3/ Lapitec® core drill bit



Parameters - Data referring to tool with Lapitec® trademark.

Available diameters	Spindle revolutions rpm	Feed rate mm/min
Ø 30	2000	20-30
Ø 35	1800	20-30
Ø 55/60	1200	20-30
Ø 70	900	20-30
Ø 100	650	20-30

Suggestions: During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool. To avoid chipping, do not drill with an oscillating tool.



To avoid openings on the back of the workpiece, stop 2 mm from the bottom and complete drilling with hammering from the side opposite the hole.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried. For the tap holes, we advise placing a suction cup near the holes to support the workpiece properly so that the final result is not compromised.

12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.4/ Lapitec® worktop edge milling tool



Parameters

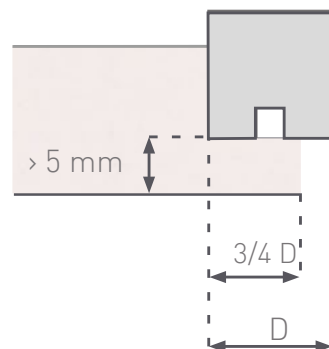
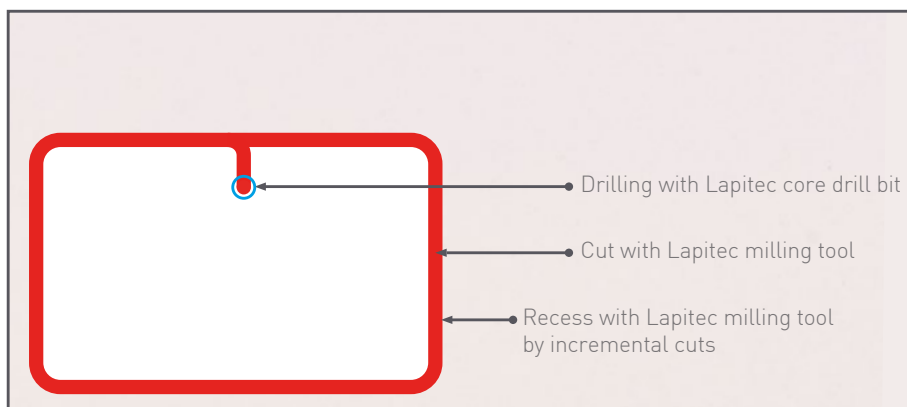
Data referring to tool with **Lapitec®** trademark.

Available diameters	Spindle revolutions rpm	Feed rate mm/min	Removal*
Ø 6	7500	100-200	0.5-1
Ø 8	7500	200-300	0.5-1
Ø 10	7000	300-400	0.5-1
Ø 12	6500	600-800	0.5-2
Ø 16	6000	800-1500	0.5-2

*Use tools with Ø 12 and 16 to make the recess, and those with Ø 6, 8 and 12 for finishing the corners.

Suggestions

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.



It is recommended to cut out the sink before starting the "flush fitting" processing. Moreover, it must be considered that an edge of at least 5 mm thickness is left after the recessing machining.

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.5/ Lapitec® cup saws



To drill blind holes in Lapitec® use Lapitec® branded cup saws.

Parameters.

Available diameters	Spindle revolutions rpm	Feed rate mm/min
Ø 6	6000	15-20
Ø 8	6000	15-20
Ø 10	6000	15-20
Ø 12	6000	15-20

Suggestions

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

12.6/ Lapitec® milling tool for incremental passes

Tool for cutting sink on continuous base, without suction cups

Parameters

Data referring to tool measuring 16 mm Ø with Lapitec® trademark.

Thickness	Feed rate mm/min	Spindle revolutions rpm	Max removal mm
12 - 20 - 30	400-600	6500	2

Suggestions

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.



12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.7/ Lapitec® stubbing wheel



Parameters

Data referring to tool with **Lapitec®** trademark.

Available diameters	Spindle revolutions rpm	Feed rate mm/min	Max removal
Ø 50	4500-5000	300	2
Ø 88	4000-4500	500	2

Suggestions

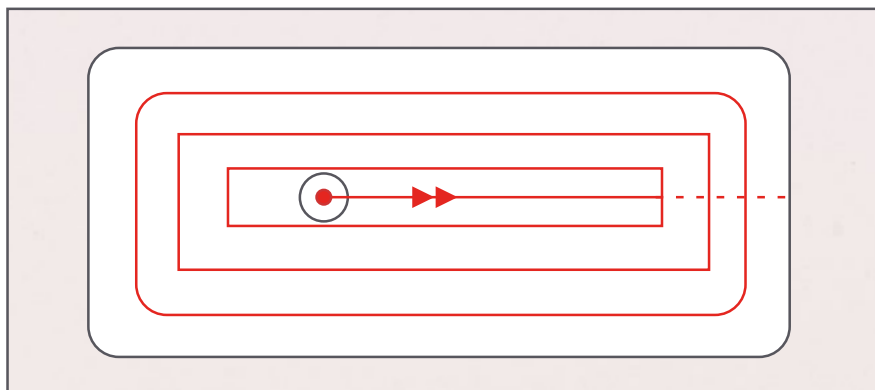
Remove 2 mm per pass at the most.

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

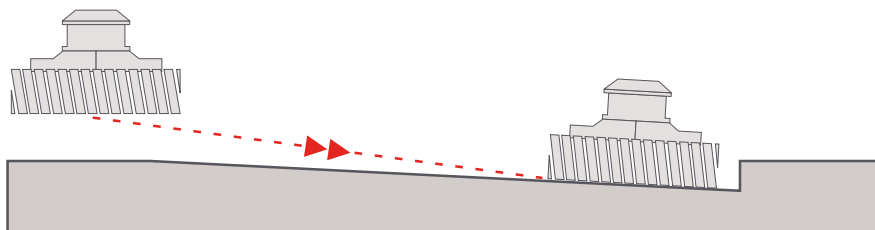
Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

Pocket milling pattern



Approach pattern



12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.8/ Spherical milling tool for drainers*

To mill grooves on Lapitec® use spherical mills for **granite/ceramic**.

Parameters - Data referring to tool measuring 8 mm ø.

Grinding wheel	Feed rate mm/min	Spindle revolutions rpm
1	250	6000
2	400	6000
3	400	6000
4	200	6000

Suggestions

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

12.9/ Engraving tool*

To perform surface engraving, we advise using a PCD (polycrystalline diamond) tool for granite.

Parameters:

Thickness	Max. removal	Feed rate mm/min	Spindle revolutions rpm
12 - 20 - 30 mm	1.5	80-120	8000-10000

Suggestions

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

*Consult the tool manufacturer's data sheet to establish the appropriate machining parameters.

The tool's machining parameters may vary depending on the manufacturer.

12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.10/ Profiling tool

For profiling Lapitec®, we recommend using grinding wheels for **granite/ceramic**.

Parameters

Data referring to tool measuring 80 mm ø.

Grinding wheel	Type	Feed rate mm/min	Spindle revolutions rpm
1	Metal	1000	5000-5500
2	Metal	2500	5000-5500
3	Metal	2500	5000-5500
4	Metal	1000	4500-5000
5	Polishing	900	2500-3000
6	Polishing	900	2500-3000
7	Polishing	900	2500-3000

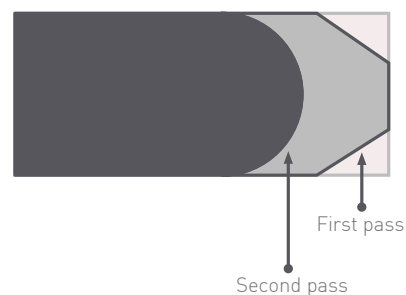
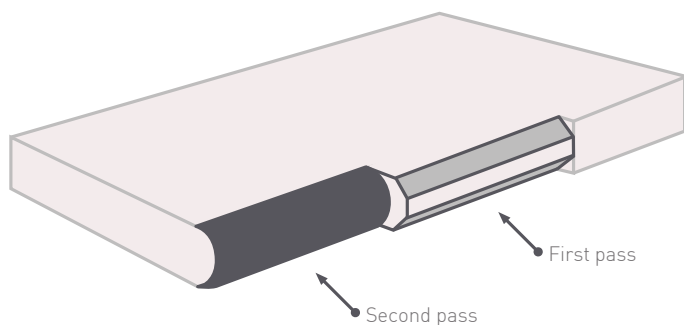
Suggestions

During machining, use plenty of carefully directed water on the **outside** and **inside** of the tool.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

For profiling shapes with **major removal**. Divide removal by the first metal tool into 2 passes or use the breaker tool.



12.MACHINING PARAMETERS FOR CONTOURING MACHINE

12.11/ Polishing the top

For polishing Lapitec®, we recommend using polishing grinding wheels for granite.

Parameters

Data referring to tool measuring 100 mm ø.

LUX FINISH

Grinding wheel	Grit	Feed rate mm/min	Spindle revolutions rpm	Compression *	Passes
1	GR 50	6000	1200	0.5	1
2	GR 100	6000	1200	0.5	1
3	GR 200	6000	1200	0.6	1
4	GR 500	6000	1200	0.8	2
5	GR 1000	4500	1200	1	1
6	GR 2000	4500	1200	0.5	2
7	GR 3000	4500	1200	1	2

SATIN FINISH

Grinding wheel	Grit	Feed rate mm/min	Spindle revolutions rpm	Compression *	Passes
1	GR 50	6000	1200	0.5	1
2	GR 100	6000	1200	0.5	1
3	GR 200	6000	1200	0.6	1
4	BRUSH GR 180	3500	1500	1	1
5	BRUSH GR 220	3500	1500	1	2

Suggestions

*This data is specific to Breton® machines which are equipped with polishing system which controls the spindle power absorption.

Warnings

After each machining task, rinse the surface copiously with clean water before the workpiece has dried.

13.LAPITEC® TOOLS FOR CONTOURING MACHINE

13.1/ Tools marked Lapitec®:



Lapitec® cutting milling tool

Diameter 22 mm



Lapitec® core drill bit

Diameters 30-35-60-70-100 mm



Lapitec® edge milling tool

Diameters 6-8-10-12-16 mm



Lapitec® incremental milling tool

Diameter 16 mm



Lapitec® stubbing wheel

Milling tool diameter 55 and 88 mm



Lapitec® cup saw

Cup saw diameter 6 - 8 - 10 - 12 mm

14.MACHINING PARAMETERS FOR MANUAL TOOLS



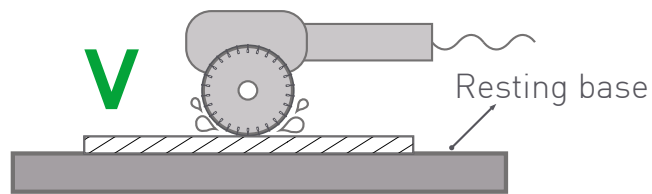
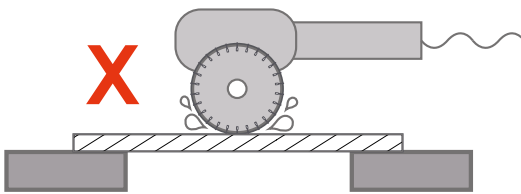
Manual processes

Warnings: during any type of manual processing the workpiece should be adequately supported with a flat resting base in good condition, preferably made of wood. For any type of machining process always use high water flow rates.

For cutting and drilling Lapitec® we recommend using tools for ceramic materials.

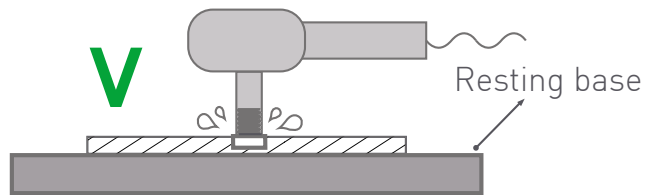
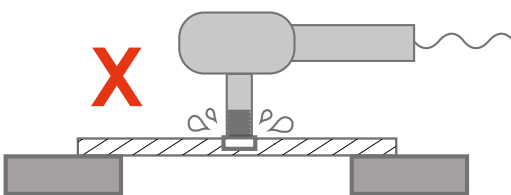
14.1/ Cutting

Supplier	Tool	Grinder speed
Lapitec	Saw blade for manual cutting	13,000



14.2/ Drilling

Supplier	Tool
Alpha Tools	Wet core Drill series
Weha	Ceramic line, Drymagic
Italdiamant	EvoGres Series



The sequences described are subject to possible variations due to ongoing research into improvements in product fabrication. We recommend contacting your dealer or the Lapitec**ACADEMY** service department for any details you may require.

14.MACHINING PARAMETERS FOR MANUAL TOOLS

14.3/ Finish for top and edge - LUX

Supplier	Tool	Sequence adopted
Sanwa - Kenma (Alpha Tools)	Dia Ceramica - former Ceramica Series	150R - 300R - 500R - 1000R - 2000R - 3000R
Weha	Es Wet Use - former 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

14.4/ Finish for top and edge - SATIN

Supplier	Tool	Sequence adopted
Sanwa - Kenma (Alpha Tools)	Dia Ceramica - TF Ceramic 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

Consult the tool manufacturer's technical manual to define the required machining parameters.

15.LAPITEC® TOOLS FOR MANUAL PROCESSES

15.1/ Tools marked Lapitec®



Saw blade Lapitec® for manual cutting

Diameters 115-125 mm

16.ASSEMBLY USING ADHESIVES

16.1/ Checking the surface to be bonded

Before applying the adhesive make sure the surface to be glued is clean, perfectly dry and free of any form of treatment. If you need to glue a treated surface you must first sand it with a coarse sandpaper (60-80 grit) in order to remove the coatings and create a rough surface that will provide a secure and lasting anchorage.

16.2/ Good safety practices

For greater safety on overhanging bonds (45°), it is good practice to put a square or "L" profile of about 30 x 30 mm hidden behind the apron, along the whole length of the bond.

If it is not possible to use Lapitec® to support the finished workpiece, use a material with the same expansion coefficient as Lapitec® (e.g. granite).

16.3/ Choosing the adhesive

When choosing the adhesive it is advisable to consider the function and use of the machined workpiece in order to identify the most suitable adhesive product.

16.ASSEMBLY USING ADHESIVES

16.4/ STRONGBOND A+B

Adhesive recommended for indoor and outdoor use and in situations with persistent exposure to UV radiation.

Description

New generation dual component adhesive with zero yellowing due to exposure to solar radiation for bonding of Lapitec®. Paste product without solvents and with medium reactivity. Good hardness. The adhesive hardens even at 0°C. The appearance of the hardened film is always bright and dry, even in poor humidity and temperature conditions. We suggest using it for white materials, where it is necessary to ensure that the resin does not yellow in sunlight. Thanks to its properties, it does not leave streaks and does not alter the colour. Hardening of the resin is only marginally affected by the temperature. Product with VOC=0.

Instructions for use

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 apply in contact with other resins or hardeners, even if dry, that could alter the product's properties. In automatic dosing systems, avoid contact with metal parts unless they are stainless steel. Take the required amount (by weight) of the two components from their containers, according to the usage ratio, mix energetically and then use. During mixing, use clean plastic or stainless-steel tools.

Using parts made of metals other than stainless steel may harm the quality of the resin.

Never put back into the container mastic mixed with the catalyser that has not been used.

Where the colour of the mastic has to be corrected, use Rainbow colouring pastes.

Make sure that the material on which the Strongbond resin will be applied is completely dry and clean. Close the containers properly after use and avoid prolonged contact with the air.

Parameter	Value	Parameter	Value
Product	Epoxy resin	Catalyser	70% by weight
Type	Vertical application	Pigment	1-2%
Scope	Indoor and Outdoor (Guaranteed for 15 years)	Shelf Life	12 months
Subject to yellowing	None	Pot life	10 minutes
Colour	Transparent	Workpiece can be handled after	1 hour -1 hour and 15 min
Product package	500 gr	Max working temp.	60 °/-20 °
Catalyser package	350 gr	Spatula	Stainless steel or Clean Plastic
Pigment packages	75 ml		



16.ASSEMBLY USING ADHESIVES

16.5/ STRONGBOND CARTRIDGE

Adhesive recommended for indoor and outdoor use and in situations with persistent exposure to UV radiation.

Description

Lapitec® adhesive paste. The product is packed in special dual-cartridges containing 215 ml of the two components in the ratio 2:1. The two chambers of the cartridge contains pre-dosed resin and hardener. With the aid of a mixer spout and suitable cartridge gun, the two components are effortlessly mixed at the correct ratio. Strongbond features excellent adhesive properties in very short times (1 hour - 1 hour and 15 min), allowing the bonded parts to be cut and polished. The hardened product is very smooth on the surface, shiny and easy to polish.

Instructions for use

All the surfaces of the substrate to be treated must be clean, dry and without traces of dust or grease. In the case of glossy and/or smooth surfaces, the substrate should be sanded before applying adhesive.

Remove the threaded tip and pull out the stopper. Fix the mixer to the cartridge with the threaded nozzle. Before applying the adhesive extrude a bead of around 5 - 10 g (tablespoon) of product, equivalent to a bead of around 30 - 45 cm in length. Repeat this operation each time you fit a new mixer. After use, clean the tip with a piece of paper and close the cartridge. Discard the used mixer. Use exclusively guns suitable for the 2:1 cartridge.

The product will not cure at temperatures below +1°C.

Parameter	Value	Parameter	Value
Product	Epoxy resin	Shelf life	6 months
Type	Vertical application	Pot life	15 minutes
Scope	Indoor and Outdoor (Guaranteed for 15 years)	Workpiece can be handled after	1 hour - 1 hour and 15 min
Subject to yellowing	None	Max working temp.	60 °/-20 °
Colour	All colours	Spatula	Stainless steel or Clean Plastic
Product package	215 gr		



16.ASSEMBLY USING ADHESIVES

16.6/ FROZENBOND A+B

Adhesive indicated for indoor and outdoor use, especially in cold climates.

Description

Extra-strong dual-component epoxy adhesive in thixotropic resin for vertical surfaces that is exceptionally soft and spreadable. Used to glue **Lapitec®**. Recommended for external use. It is characterised by a high adhesion strength on multiple materials and resistance to weather. Applicable even on damp surfaces. Also suitable for bonding different materials, such as: **Lapitec®** and stone, **Lapitec®** and glass, **Lapitec®** and cement, **Lapitec®** and composite honeycomb panels, **Lapitec®** and wood or wood laminate panels. The surfaces to be bonded should be sanded before bonding. We recommend checking the flatness of the finished workpiece after a month.

Instructions for use

The resin and hardener must be kept in their original containers. In automatic dosing systems, avoid contact with parts made of copper, brass or similar alloys that can corrode. Use plastics that are resistant to corrosive liquids. Never use PVC. Take the required amount (by weight or volume) of the two components A and B from their containers, with a ratio of 1:1. Mix energetically and then use. During mixing, use clean tools. Never put back into the container mastic mixed with the catalyser that has not been used. Where the colour of the mastic has to be corrected, use Rainbow colouring pastes. Make sure that the material on which the adhesive will be applied is completely dry and clean. If using automatic dosing systems, we recommend checking the dose daily. Clean the tools using grease-free solvents, such as acetone or butyl acetate. Always use protective gloves and glasses during use (consult the safety data sheet).

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

Parameter	Value	Parameter	Value
Product	Epoxy resin	Catalyser	100% by weight
Type	Vertical application	Pigment	3%
Scope	Interior and Exterior	Shelf Life	2 years
Subject to yellowing	Slight in time on soft colours	Pot life	2 hours at 30° 4 hours at 15°
Colour	Beige	Workpiece can be handled after	8 hours at 30° 24 hours at 15°
Product package	500 ml	Max working temp.	60 °/-50 °
Catalyser package	500 ml	Spatula	Plastic, clean
Pigment packages	75 ml		



16.ASSEMBLY USING ADHESIVES

16.7/ FIREBOND

Recommended for indoor applications and especially suitable for high heat resistance and fast processing

Description

Adhesive paste for bonding **Lapitec®**. Very quick, soft and with optimal spreadability. Firebond is characterised by very good adhesion in a very short time, 60-90 min, thereby allowing bonded pieces to be processed very quickly even at low temperature. The hardened product is very smooth on the surface, shiny and easy to polish. Good stability in sunlight.

Instructions for use

Before applying the product, make sure that the material is clean, dry and free of dust. Take the required quantity of mastic from the container/jar/can, add 2-3% of hardener paste, mix energetically and then use.

Never put back into the container mastic mixed with the catalyser that has not been used.

Where the colour of the mastic has to be corrected, use Rainbow colouring pastes.

The colouring paste should be added before the catalyser, mixing the quantity required to obtain the desired colour, then adding the catalyser to make it harden. An excessive amount of colouring paste or powdered pigment could change the mastic's final characteristics.

Close the containers after use. Keep the mastic and catalyser away from light and out of sunlight.

Parameter	Value	Parameter	Value
Product	Epoxy Resin	Catalyser	2-3% by weight
Type	Vertical application	Pigment	3%
Scope	Interior	Shelf Life	6 months
Subject to yellowing	Yes	Pot life	5/6 minutes at 25°
Colour	Beige	Workpiece can be handled after	40 min - 1 hour
Product package	2x500 ml	Max working temp.	120 °
Catalyser package	33ml Tube	Spatula	Plastic
Pigment packages	75 ml		



16.ASSEMBLY USING ADHESIVES

16.8/ RAINBOW

The 3 systems can be coloured with universal Rainbow pigments in a colour range coordinated with **Lapitec®** colours.

Description

The colouring paste is supplied as a soft, uniform coloured paste. It blends perfectly with all types of adhesives to allow easy colouring of the paste. The range of colours is as follows: artico, bianco polare, bianco crema, avorio, grigio cemento, sahara, tabacco, moca, ebano, porfido rosso, grigio piombo and nero antracite.

Instructions for use

Add the colouring paste or pastes to the adhesive to obtain the desired tint. Mix thoroughly. Several colouring pastes may be added. It is important not to exceed the maximum recommended amount of 2-3% by weight. An excessive amount of colouring paste could alter the adhesive's quality. Close the containers after use. Store in the original containers. Store away from light and out of sunlight.

Parameter	Value	Parameter	Value
Product	Coloured paste	Dosage	2-3% by weight
Packaging	75 ml		



17. BIO-CARE

17.1/ Post work process treatments

Treating the machined surface

It is mandatory to treat the machined surface with **Lapitec® Bio-Care**, two products to be used one after the other to ensure antibacterial properties and self-cleaning action and to optimise the aesthetic appearance of the material. **Lapitec®** is produced using **Bio-Care** so the manual application process must be performed only on surfaces that are subject to processing after production. The two components **A** and **B** of the **Bio-Care** line developed by LapitecLAB are formulated to combine chemically with the **Lapitec®** in an inseparable manner, thus rather than forming a surface skin they react with the material and form a coherent body. **Failure to apply the Bio Care treatment may impair the properties of Lapitec®** |

How to apply

- Make sure that the surface is clean, dry and dust-free.
- Spread **Bio-Care A** evenly on the surface using a solvent-resistant cloth, then wait for approx. 60 seconds until the surface is completely dry
- Using a solvent-resistant cloth, apply a small amount of **Bio-Care B** to the whole surface to be treated. Take care to spread the product uniformly.
- When the product is more viscous (because of the evaporation of most of the solvent after 5 minutes), remove the excess **Bio-Care B** with a clean cloth, taking care to remove shadows or stains.

Warning: any shadow or stain left on the surface will become permanent after the treatment has completely set.

Treatment	Quantity g/m ²	Workpiece can be handled after	Complete hardening time
Bio-Care A	5-6 g/m ²	60 s	-
Bio-Care B	5-6 g/m ²	40 min	7 days

The surface can be handled 40 minutes after application. The treatment is completely finished and ready for testing after 7 days. The treatment may be applied manually on small surfaces. On slabs, the treatment must be applied using dedicated machinery.

As the amount of product is minimal, we recommend applying **Lapitec® Bio-Care** to several workpieces to be treated in sequence.

Warning: do not turn upside down, keep in a cool, dry place well away from heat sources.



18. CLEANING, CARE AND MAINTENANCE

18.1/ Routine cleaning

The surface should be cleaned daily to remove stains and residues.

Type of dirt	Type of detergent	Smooth surfaces	Structured surfaces*
Rust	Acid	Moist anti-scratch Scotch-brite	Fine bristle brush
Limescale deposits			
Residues of cement, plaster or lime			
Aluminium marks			
Grease	Alkali/Solvent	Damp cloth	Sponge
Coffee			
Ink	Oxidant/Solvent		
Oil			
Rubber	Solvent	Moist anti-scratch Scotch-brite	Fine bristle brush
Wax			
Epoxy adhesive			
Resin			
Indelible marker pen			
Wine	Oxidant	Damp cloth	Sponge
Iodine tincture			
Blood			
Fruit juice			
Ice cream	Alkali		

Acid: acidic detergents, limescale and cement remover products **e.g. Viakal**

Alkali: alkaline detergent, ammonia, degreasing agent **e.g. ChanteClair, Cif, Bam**

Solvent: universal solvent, thinners, white spirit, alcohol

Oxidant: bleach, hydrogen peroxide

*STRUCTURED SURFACE: Fossil, Arena, Vesuvio, Dune, Skyline

Warnings

Do not use strong acids (e.g.: hydrochloric acid, sulphuric acid, hydrofluoric acid, ammonium fluoride) or strong alkalis (e.g.: sodium hydroxide, potassium hydroxide)

On smooth surfaces use a magic eraser sponge without solvent to remove the final traces of dirt that other sponges are unable to shift.

Warning: avoid products containing hydrofluoric acids and its derivatives.

18. CLEANING, CARE AND MAINTENANCE

18.2/ Regenerative cleaning

Regenerative cleaning is required to remove ingrained or particularly stubborn stains or residues.

Type of dirt	Type of detergent	Name	Manufacturer
Coffee, coca cola, fruit juice	multi-purpose cleaners, alkali based	detertek	Fila
		cpbase	CPSsystem
		coloured stain remover	Faberchimica
Grease, dust from foot traffic, deep cleaning	multi-purpose cleaners, alkali based	detertek	Fila
		hmk r55	Hmk
		intensive cleaner	Lithofin
		litonet	Lotokol
		taski r20-strip	Johnsondiversey
Wine	oxidant	oxidant	Faberchimica
Limescale deposits	acid-based	detertek	Fila
		cpstore	CPSsystem
		viakal	Procter&Gamble
Rust	acid-based	cpconcrete	CPSsystem
		diluted muriatic acid	Any manufacturer
Ink, felt-tip pens	solvent-based	cpsolve	CPSsystem
		coloured stain remover	Faberchimica
		Methyl ethyl ketone, nitro thinner, Dielian, turpentine	Any manufacturer
		Cif Cream	Unilever
Metal signs		Clean with a light-blue abrasive sponge applying gentle rubbing action	

Warning: avoid products containing hydrofluoric acids and its derivatives.

19.DISCLAIMER

Disclaimer

The purpose of this manual is to provide guidelines and tips for the processing, installation and servicing of **Lapitec®** slabs.

The information contained herein reflects the state of the art and technical-scientific and practical knowledge of the manufacturer at the time of publication. We therefore invite you to refer to the latest updated version which is always available from the download area of the website www.lapitec.com.

However, since this is a natural sintered material, the user should look beyond the advice given in this document and refer to the technical-scientific and operational literature available in relation to this type of material and seek professional expert assistance for the various stages of processing and installation of the ceramic products.

In relation to the above matters, Lapitec S.p.A. cannot be held liable for any damage that may occur due to the application of the information and advice given in this technical manual, which is of a purely guideline nature so the user is always responsible for checking the suitability of all operations before proceeding.

Lapitec S.p.A. reserves the right to make technical changes of any type without any form of advance notice and without direct notification of any third parties. We therefore invite you to refer to the latest updated version of the "Technical Manual" which is always available from the download area of the website www.lapitec.com.

When the material is delivered always check the colour, thickness and machining of the surface because claims of defects present at the time of delivery cannot be accepted if the material has already been installed.

In case of complaints it is advisable to contact Lapitec**ACADEMY**, addressing your e-mail to academy@lapitec.it; our technicians will be at your disposal.

Lapitec[®]
Prestigious Italian Surface

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