Kitchen countertop

Design and installation manual

Vers. US-0/2024

LAPITEC

Introduction

The purpose of this manual is to provide general instructions on how to use Lapitec® to make kitchen tops. For the specific characteristics of the Lapitec material, please refer to the Technical Data Sheet.

It is the responsibility of a qualified professional to assess the suitability for use in a specific project and to verify compliance with the applicable standards in the country where the project will be carried out.

This manual has been designed to provide guidelines and helpful suggestions for the processing of Lapitec slabs.

The information contained herein reflects the highest level of technical/scientific and operational knowledge in possession of the manufacturer at the time of publication. You are therefore invited to consult the latest updated version in the "catalogues" section of the website www.lapitec.com where the following documents can be found:

- Technical data sheet;
- Processing manual;
- Design and installation manual for kitchen countertops;
- Design and installation manual for claddings;
- Design and installation manual for ventilated facades.

Given that Lapitec 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 extensive technical/scientific and operational literature available on the subject, and to rely on professional experts for the various processing and installation phases.

Regarding the above, Lapitec S.p.A. shall not be held liable for any damage which may occur as a result of the application of the information and suggestions in this technical manual, insofar as considered information and suggestions that must always be checked in advance by the user.

Moreover, Lapitec S.p.A. reserves the right to make technical changes of any kind without prior notice and without direct communication to any party.

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1. OUTDOOR KITCHEN (BBQ)

Design

When making worktops for outdoor kitchens with a grill or barbecue, follow the recommendations given below.

All internal corners in holes must have a minimum radius of ⅜".

Figure **1**

Figure **2**

Figure **3**

Figure **4**

It is possible to consider creating entire L-shaped pieces only if a total and robust support is provided beneath the countertop.

In the case of aprons or laminations, the recommended practice is to create fibre cement substrate under the top and leave a gap of at least 3⁄16" between top and the apron substrate to absorb possible thermal expansion.

Use suitable adhesives for outdoor applications, choosing the type based on the local weather conditions (such as Strongbond and Frozebond adhesives, developed by Lapitec S.p.A. in collaboration with Tenax - see specific indications in the heading ASSEMBLY USING ADHESIVES in the processing manual).

Warnings:

If the working temperatures exceed the temperatures stated in the adhesive technical datasheets, Lapitec S.p.A. suggests adopting a solution without apron, with exposed edges and no use of adhesive bonding.

Finish the edges as per the indications in the drawing. The indications are the best compromise between appearance and function, while also greatly reducing the risk of chipping the edges.

Provide for a chamfer of at least 3⁄64" on the top edges for joints between two adjoining worktops. This will reduce the risk of edge chipping during installation.

Since the surface is exposed to big temperature differences, make joints at least 1⁄8" wide. Joints should be sealed with silicone in the required color.

Avoid direct contact between Lapitec tops and barbecues, metal structures, and any materials subject to significant thermal expansion. Leave a gap of at least 3⁄16" between the Lapitec worktops elements of this type, sealing it with colored heat-resistant silicone to prevent water infiltration. Also, when installing Lapitec worktops against a wall, leave a 3⁄16" gap and seal it with silicone.

Before applying the silicone, protect the worktop surface with adhesive tape.

For partially recessed barbecues, cut the part of the top behind the barbecue as shown in the drawing.

Lapitec S.p.A. recommends Mapei MAPESIL LM, Sika SIKASIL C, Ardex SX Sealant, Laticrete LATASIL, or an equivalent product. Make sure the temperature range of the above products is suitable for the requirements of your project.

Installation

Important: the resting base on which the Lapitec worktop is resting must be flat, level, and structurally robust.

For brick-built kitchens, provide for a substrate for the entire area of the worktop. Lapitec S.p.A. suggests using GRC panels at least ½" thick as supporting surface adequately fixed to the resting base. If the resting base is insufficiently solid, add support bars. Do not use marine plywood. A supporting substrate is required for all Lapitec thicknesses, and check with the supplier that this support is suitable and stable for outdoor application.

In the case of kitchens composed of modular units, use units with a solid top to provide greater support for the Lapitec worktop. If solid top units are not available, use supports as per the table below.

Required support	Thicknesses ½"	¾"	1 ¼"	Drawing
Max recommended spans Maximum load 286 lb	C ≤ 10"	C ≤ 17 ¾"	C ≤ 23 ½"	

If the worktop has one or more holes (sink, barbecue, etc.) the parts most subject to stress must be adequately supported to ensure the worktop is sufficiently stable.

The Lapitec top must be bonded to the substrate using polyurethane adhesives: avoid cement-based or epoxy adhesives, which may be too rigid and unsuitable for the temperatures reached by the worktop (see adhesive manufacturers). Lapitec S.p.A. recommends Mapei ULTRABOND ECO PU 2K, Sika SikaForce 479 L45, Ardex 90, Laticrete LATAPOXY 300, or an equivalent product. Make sure the temperature range of the above products is suitable for the requirements of your project.

It is important to check that the substrate is perfectly flat before bonding on the worktop. Whether the support is a full-size solid substrate, or a structural frame, apply a full bed of adhesive to ensure the adhesive is evenly distributed over the entire support.

To install Lapitec panels as kitchen sides, it is recommended to maintain a gap of at least 2 mm from the floor. This involves gluing the piece to the kitchen structure, using the adhesives mentioned in the previous paragraph, as illustrated in the figure below.

Lapitec S.p.A. recommends that the barbecue be held by a suitable support rather than resting directly on the finished surface. With this method, the weight of the barbecue is not supported directly by the worktop, and provides the ease of pulling out the BBQ without potentially scratching the surface or damaging the BBQ.

For more details on assembly of the barbecue resting base, see the related manufacturer's manual.

2. HANDLING AND LAYING

2.1. HANDLING AND PACKAGING OF THE WORKPIECE

At all times, when handling and transporting the workpiece, whether by hand or by means of belts and suction cups, it must be kept in an upright position, as shown in the drawing below. Any holes inside the workpiece must always be facing upwards.

The slabs are packaged on stands and/or in crates. They must be transported individually with care and stacked on their side, regardless of their format, making sure to insert materials (e.g. wooden shims) between the different pieces and between the slabs and the support to prevent any breakages. The slabs should always be properly supported to avoid bending and stored in areas that are not subject to accidental impacts (workplace transport or manoeuvring areas).

If stored outside, the slabs should always be protected from rain by a sheet, thus preventing any stagnation. If the slabs get wet during packaging, the packaging must be completely removed and the slabs must be arranged so that they can dry perfectly.

Make sure the wooden crate is properly secured.

Keep the workpiece in an upright position during transport.

The use of bars to open the crate is not recommended, as these may damage the workpiece.

2.2. PRE-LAYING

It is essential that the support base on which the Lapitec® countertop is to be laid is flat, level and structurally solid. Most breakages during assembly and post-laying are due to an uneven or inadequate support, or the presence of debris or process residues. The surface of the countertop must rest perfectly on the support, any unsupported points may weaken the workpiece. It is therefore not advisable to apply isolated silicone dots. Apply the adhesive over the entire support area so that it adheres completely to the countertop.

For countertops with a thickness of ½", it is advisable to ensure full support across the entire surface of the workpiece for greater stability. Use marine plywood with a minimum thickness of ¾" mm that supports the countertop over the entire area.

It is also important that the adhesive used to fix the Lapitec to the support is sufficiently elastic (e.g., silicone) to compensate for any differences in expansion between the two materials.

If a slatted structure is used, observe the maximum distance between the C crosspieces as shown in the following table:

Required support	Thicknesses ½"	¾"	1 ¼"	Drawing
Max recommended spans **Maximum load 286 lb**	C ≤ 10"	C ≤ 17 ¾"	C ≤ 23 ½"	

If there are one or more holes (sink hole, gas hole) in the countertop, the most stressed parts must be properly supported to provide adequate stability.

2.3. LAYING

When laying the workpiece, follow the advice below to ensure optimal positioning.

2.3.1 LAYING PIECES WITH ZERO GAP

The process of handling and laying workpieces is intricate, both in the laboratory when testing their performance and during installation on site.

It is always recommended to handle the workpieces with care, paying attention to the corners and observing the following instructions.

Each corner must have a minimum chamfer on the edge to ensure the solidity of the workpiece.

Before laying, ensure that the support is level and perfectly flat, otherwise it is necessary to intervene with adjustments or shims. The flanked edges must fit perfectly and not have different angles that could lead to breakages.

To avoid hard impacts between two workpieces and to facilitate the approach of adjacent workpieces, it is always advisable to place shims between them, which will only have to be removed when applying silicone and making subsequent final adjustments with minimum displacements.

Care and attention during installation remains a decisive factor.

Joining workpieces with suction cups

Another way to join workpieces with zero gap is to use special equipment with suction cups for the calibrated approach of the workpieces.

3. MANUAL PROCESSING

3.1. INTRODUCTION

Lapitec® is a sintered stone product supplied to the site ready for installation (cut, drilled and processed). A good design and accurate site survey enable processing to be carried out in the factory, therefore avoiding needless and critical adjustments on site.

Should processing be necessary on site, it is recommended to strictly follow all the instructions provided in this manual, using the tools supplied and/or recommended by Lapitec S.p.A. If any processing becomes necessary, it is good practice to carry out preliminary tests for both cutting and drilling in order to acquire familiarity and avoid any problems. On request, the company can provide processing waste to use for this purpose.

For manual processing it is recommended to follow the health and safety regulations in force. Each worker must have specific PPE (Personal Protective Equipment) for the work to be performed. Our recommendations are as follows.

3.2. MANUAL CUTTING

The instructions provided in this paragraph refer to manual cutting only; for benchtop processing (saw, water jet or CNC), refer to the specific sections.

To proceed, the cutting tools supplied and recommended by Lapitec S.p.A. must be used, or, alternatively, tools whose full compatibility with those indicated has been checked. Always use plenty of water for cooling and dust suppression. Lapitec S.p.A. does not recommend resorting to dry cutting.

The slabs must be properly supported during any manual processing. The support should be sufficiently rigid, perfectly flat and in good condition. A wooden support is preferable to a metal one to prevent scratches from friction on the Lapitec surface.

Disclaimer

Always work from the finished surface towards the raw surface.

Square or rectangular holes (e.g. electrical installations) must have a rounded edge with a radius of 3/16'' at all four corners.

Once the cut has been completed, it is recommended that the upper and lower edge of the newly cut edge is lightly sanded using 60/120 grain diamond sandpaper. This will prevent unwanted chippings and cuts (the hardness of Lapitec leaves rather sharp edges).

3.2.1 TOOLS – BLADES FOR CUTTING ON SITE

For processing on site, Lapitec S.p.A supplies and suggests using specific tools that are tested and guaranteed. The approved tools are available at Lapitec S.p.A., which declares their suitability for use.

Continuous rim diamond blades for manual equipment (angle grinders, hoses, etc.)

Ø 4" attachment Ø 7/8" (*) RPM from 11,000 to 13,000

Ø 5" attachment Ø 7/8" (*) RPM from 11,000 to 13,000

Ø 6" attachment Ø 7/8" (*) RPM from 9,000 to 11,000

(*) adapter for Ø 13/16" also available.

Disco per taglio manuale Lapitec

Diameters: 4", 5", 6".

The sequences are subject to variations due to ongoing research aimed at improving processing products. It is recommended to contact the supplier or the Lapitec Academy service for any clarifications.

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4. CUSTOMER CARE

Lapitec Academy

Lapitec Academy is the division that trains and supports professionals working with Lapitec® through in-company training and direct support. Every single experience gained on international projects and through different uses is used to perfect the product and accessories marketed by Lapitec S.p.A.

Through direct involvement with its customers, Lapitec S.p.A. is constantly searching for new solutions to make the service increasingly complete and effective for the various needs of use.

Thanks to the Academy Community service, any technical news and developments are promptly shared with the entire network of collaborators.

Professionals participating in the training course held by Lapitec Academy can earn Approved Fabricator certification and learn useful tips and techniques for processing Lapitec.

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