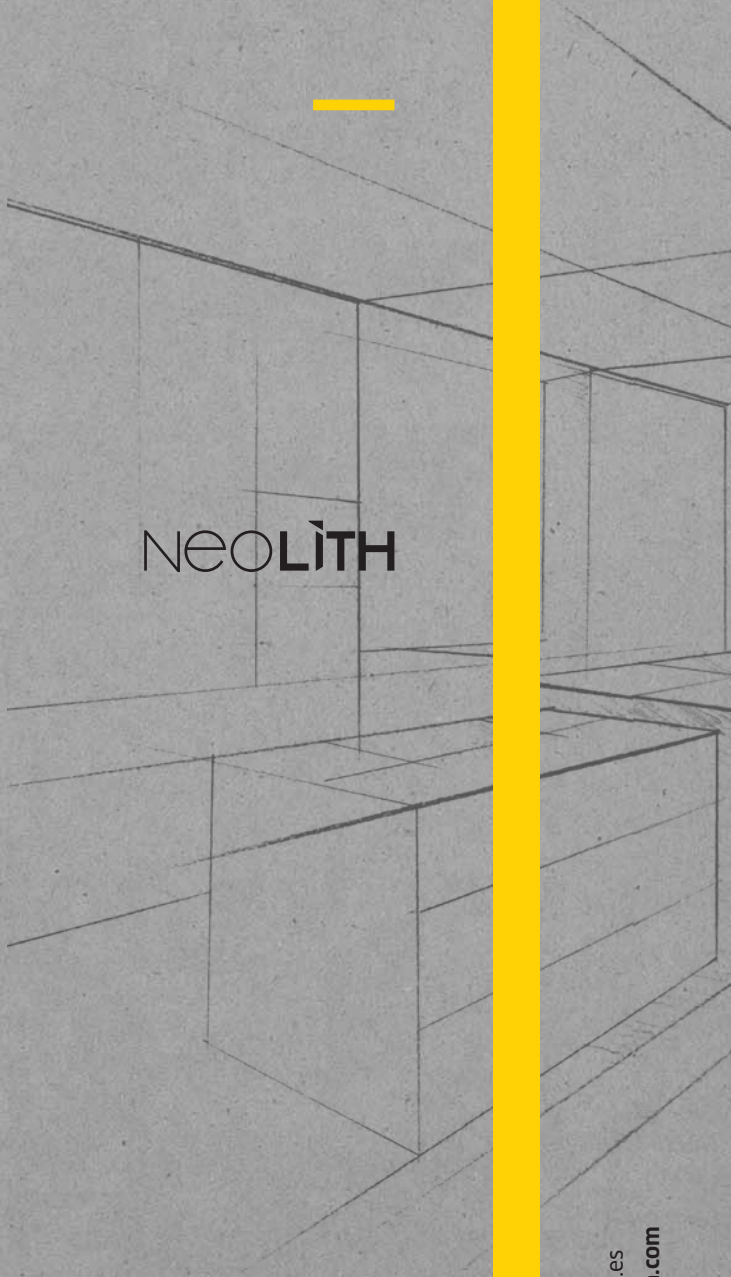
TECHNICAL MANUAL 2017



NEOLITH

DESIGN, HANDLING AND FABRICATION

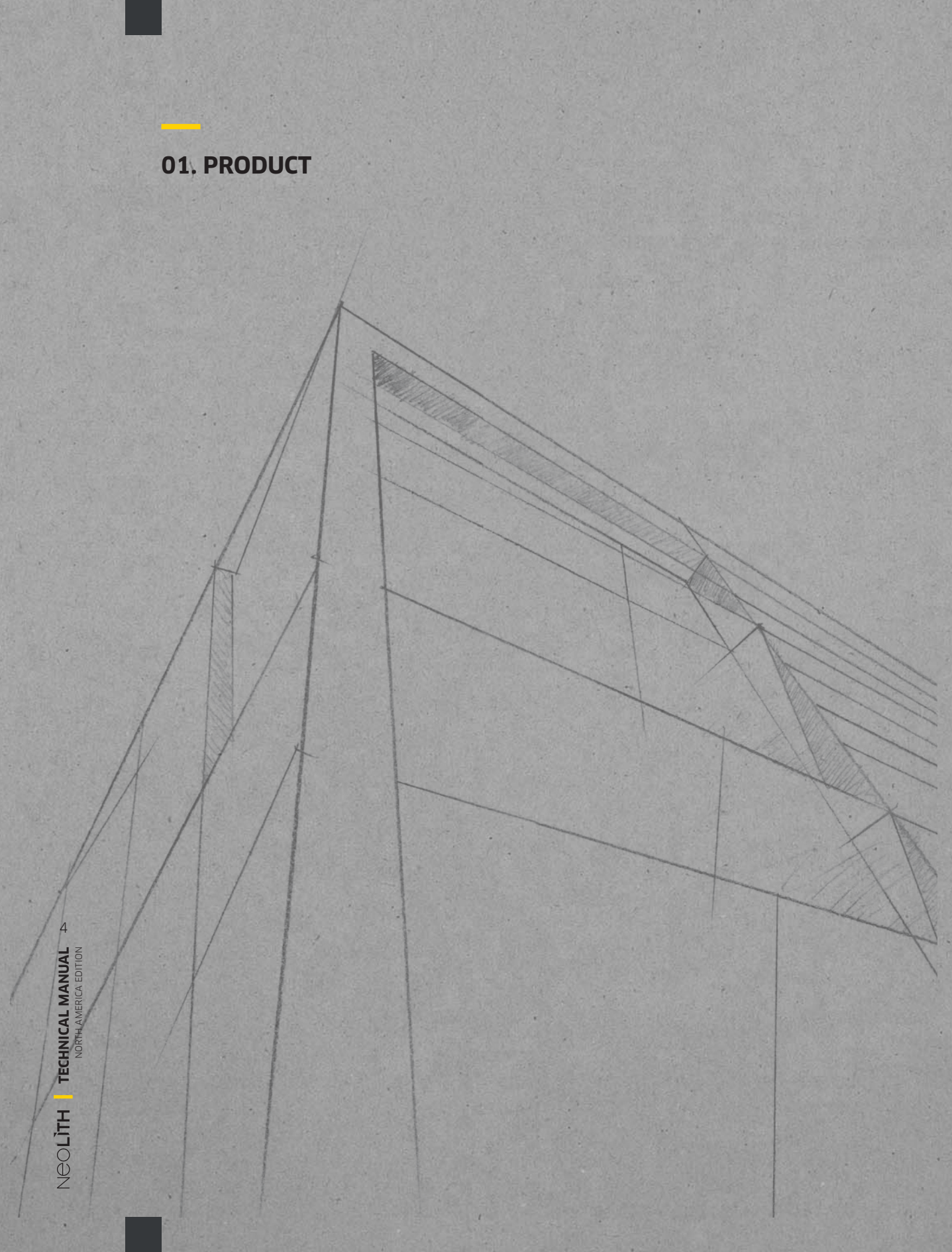
NORTH AMERICA EDITION

info@thesize.es

www.neolith.com

INDEX

01. PRODUCT



01. PRODUCT

1.1 Product Range

Arctic White


Barro


Nero Zimbabwe

Avorio


Basalt Beige


Phedra


Humo


Basalt Black


Pierre Blue


Nero


Basalt Grey


Pietra di Luna

Nieve


Beton


Pietra di Osso


Perla


Cement


Pietra di Piombo

Arena


Concrete Taupe


Zaha's Stone


Aspen Grey


Lava

01. PRODUCT

1.1 Product Range


Iron Ash


Iron Copper


Iron Corten

Iron Frost


Iron Grey


Iron Moss


Textil White


La Bohème

Blanco Carrara


Calacatta


Calacatta Gold


Estatuario E01/E01R


Estatuario E04/E04R

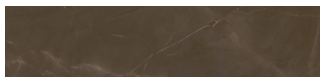

Estatuario E05/E05R

Marfil


Nero Marquina

Onyx translucent

Onyx 001/001-R


Pulpis


Strata Argentum


Travertino Navona


Steel Marengo

01. PRODUCT

1.2 Finishes

SATIN

Completely matte finish. Highly resistant and ideal for commercial uses.

SILK

A matte finish with a light layer of enamel for subtle shine and a pleasant soft touch. Surface finish which is easy to clean.

RIVERWASHED

Finish with a rugged texture and high relief for surfaces that evoke feelings upon touch.

NATURAL HONED

A honed texture which is typical of natural stones: smooth, soft, shine-free and completely matte.

DÉCOR POLISHED

Décor Polished offers a perfectly linear reflection of the Classtone Collection colors, which gain depth and elegance.

NANOTECH POLISHED

With a high shine level, Nanotech Polished offers the Colorfeel Collection a more sophisticated image.

01. PRODUCT

1.3 Formats

New

3.200x1.600 mm / 125”x64”

* Only in 12 and 20 mm (1/2” and 3/4”)

3.200x1.500 mm / 125”x60”

* Only in 6 and 12 mm (1/4” and 1/2”)

01. PRODUCT

1.4 Thicknesses

12 mm - 1/2”

20 mm - 3/4”

	12 (1/2”)	20 (3/4”)
Indoor cladding		
Indoor flooring	●	●
Outdoor natural stone facade	●	
Outdoor flooring	●	●
Ventilated facade with exposed anchor	●	
Ventilated facade with hidden anchor	●	
Countertops	●	●
High-traffic flooring	●	●
Indoor cladding over the material		
Indoor flooring over the material		
Furniture	●	

01. PRODUCT

1.5 Product Technical Characteristics

Product characteristics as per the finishes:

TEST	STANDARD	DETERMINATION	Unit	FINISH			
				SATIN	SILK	POLISHED	RIVERWASHED
Determination of Dimensions and Surface Appearance	ASTM	Thickness*	mm				
		Tolerance Flatness Slab width	mm				
		Tolerance Flatness Slab length	mm				
		Dimensional Tolerance**	mm				
Water Absorption	ASTM	Boiling Absorption	%				
		Apparent Density	gr/cm3				
Impact Resistance	ASTM	Coefficient of restitution	-				
Deep Abrasion Resistance	ASTM	Lost Volume	mm3				
Surface Abrasion Resistance	ASTM	Visual Appearance	Class				
Linear Thermal Expansion	ASTM	Expansion 25 - 100oC (Average)	10-6· oC				
Resistance to Sudden Temperature Change	ASTM	Damage	-				
Moisture Expansion	ASTM	Coefficient of Expansion	mm/m				
Freeze Resistance	ASTM	Damage	-				
Chemical Resistance	ASTM	Cleaning Products	Class				
		Pool Salts	Class				
		Weak Concentrations	Class				
		High Concentrations	Class				
Stain Resistance	ASTM	Visual Appearance	Class				
Release of Lead and Cadmium	ASTM	Lead Concentration	mg/dm2				
		Cadmium Concentration	mg/dm2				
Lightfastness	DIN 51094	Cambio Cromático	-				
Anti-Slip Properties	DIN 51130	Critical Angle of Slip (Shoes method)	Class				
	DIN 51097	Critical Angle of Slip (Barefoot areas)	Class				
	ANSI A137.1	Coefficient of Dynamic Friction	Class				

* Slabs without mesh
** Cut Slabs/Tiles

01. PRODUCT

1.5 Product Technical Characteristics

Bending Resistance as per the slab thickness:

TEST	STANDARD	DETERMINATION	Unit	125" x 60"	
				1/2"	3/4"
Bending Resistance	ISO	Breaking Force	N	5451	15748
		Modulus of Rupture	N/mm^2	51	55

02. HANDLING AND STORAGE

02. HANDLING AND STORAGE

Neolith slabs must be loaded, unloaded and transported by means of a forklift, bridge crane or other hoisting device.
Whenever handling and transporting, the slabs must be balanced taking their center of gravity into account.

The following table summarizes the weight per slab and per square meter:

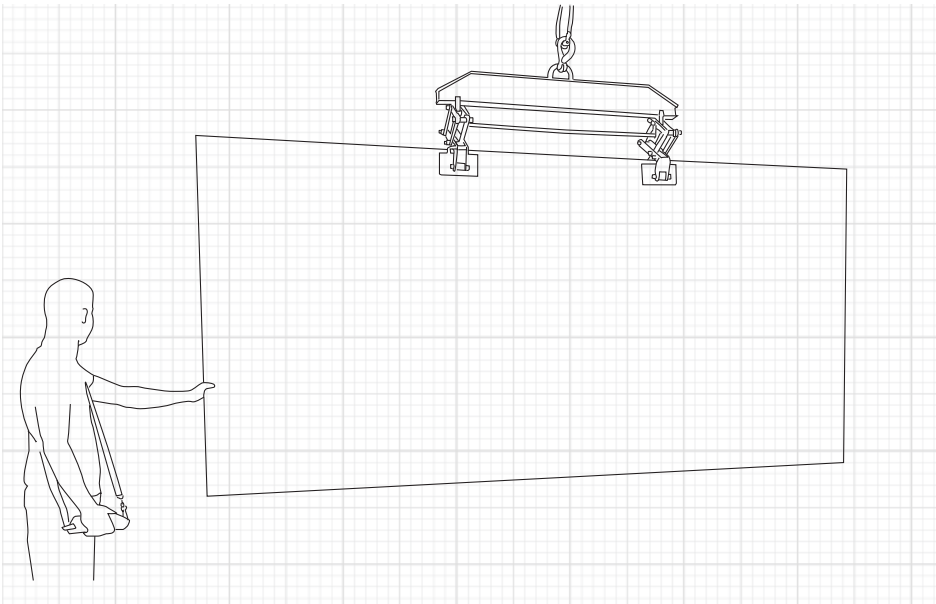
Format	**3200 x 1500mm, 125" x 60"**	
Thicknesses (inch)	**1/2"**	**3/4"**
Weight (lb/ft²)	6,3	10,5
Weight of full slab (lb)	330	551

Tabla 1: Formats and weights per thickness.

TheSize Surfaces recommends 1/2" and 3/4" slabs for countertops. 1/4" slabs are not recommended for countertops.

2.1 Transporting with a clamp

Always pay attention to the movement and handling of the slabs to prevent splintering or breakage.
TheSize recommends using the following type of clamp for lifting and moving individual slabs:



Neolith Slab handled with a clamp

The additional width of this clamp will prevent the slab from bending during handling to, thus, prevent undesirable breakage.

This clamp is available through TheSize.

Contact TheSize for more details.

Recommendations:

- Clamping more than 2 slabs at the same time is not recommended.
- Before lifting polished slabs with the clamp, remove the protective plastic.

Make sure to cover all metal surfaces that may come into contact with the slab with adhesive foam tape.

Make sure to cover all metal surfaces that may come into contact with the slab with adhesive foam tape.

If this type of clamp is not available, use a 3/4" thick slab of approximately 10 ft x 8" so the clamp can catch 1/2" slabs.

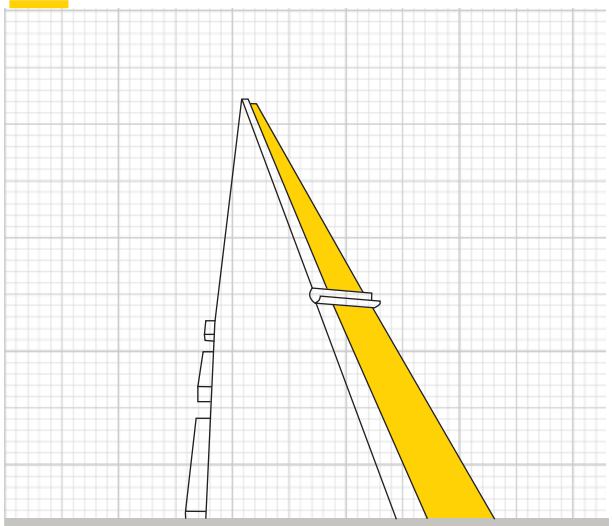
Fixing the ends of the slab with jacks to the plank so the slab doesn't sag during handling is recommended.

Position the plank to the rear of the slab to be lifted.

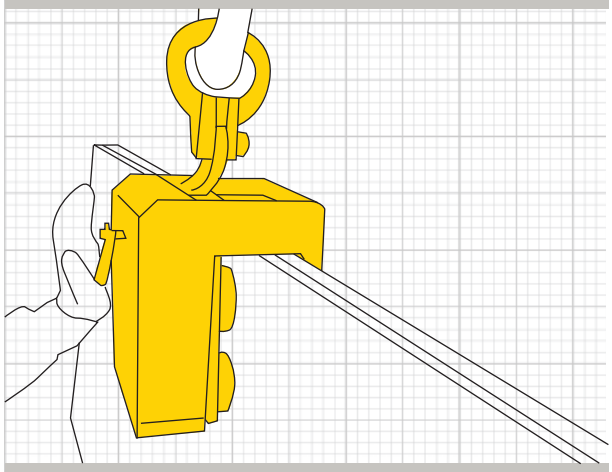
1) Place the clamp on the slab and the plank.

2) Fix the clamp and lift the slab and plank with care.

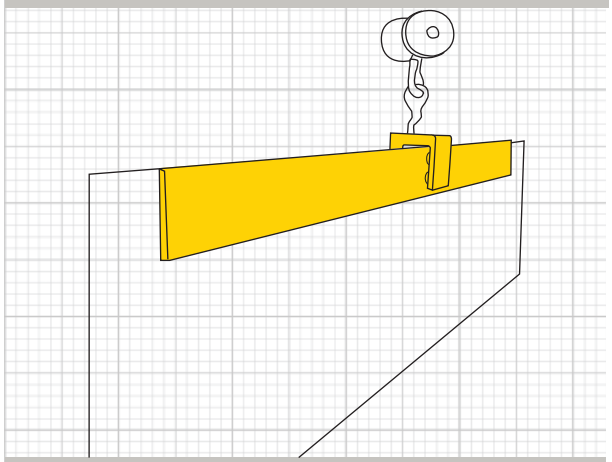
3) Avoid sudden changes in direction.



1. Plank at the back of the slab



2. Clamping



3. Handling the slab with the clamp

2.2 Transporting with slings

Using canvas slings to move several slabs at the same time is recommended.

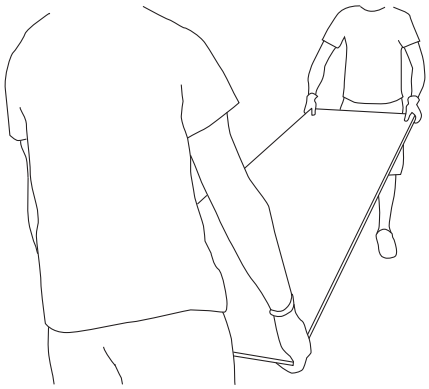
Metal slings must not be used to handle Neolith slabs.

Canvas slings

2.3 Manually transporting a Neolith slab

* Only for 1/4” Slabs

Moving a Neolith countertop



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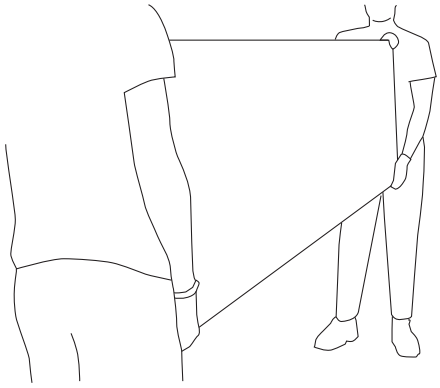
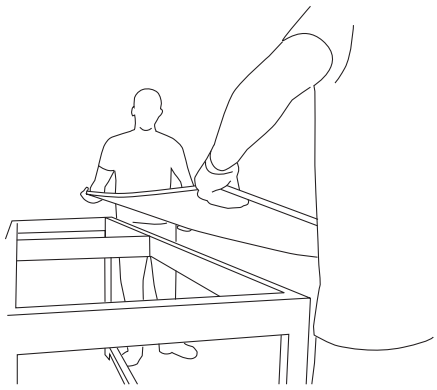


✓ CORRECT

Raising a Neolith countertop onto a bench



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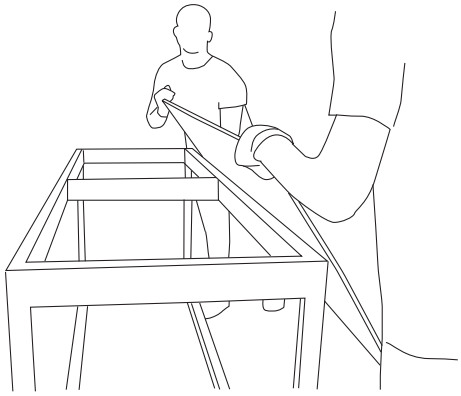


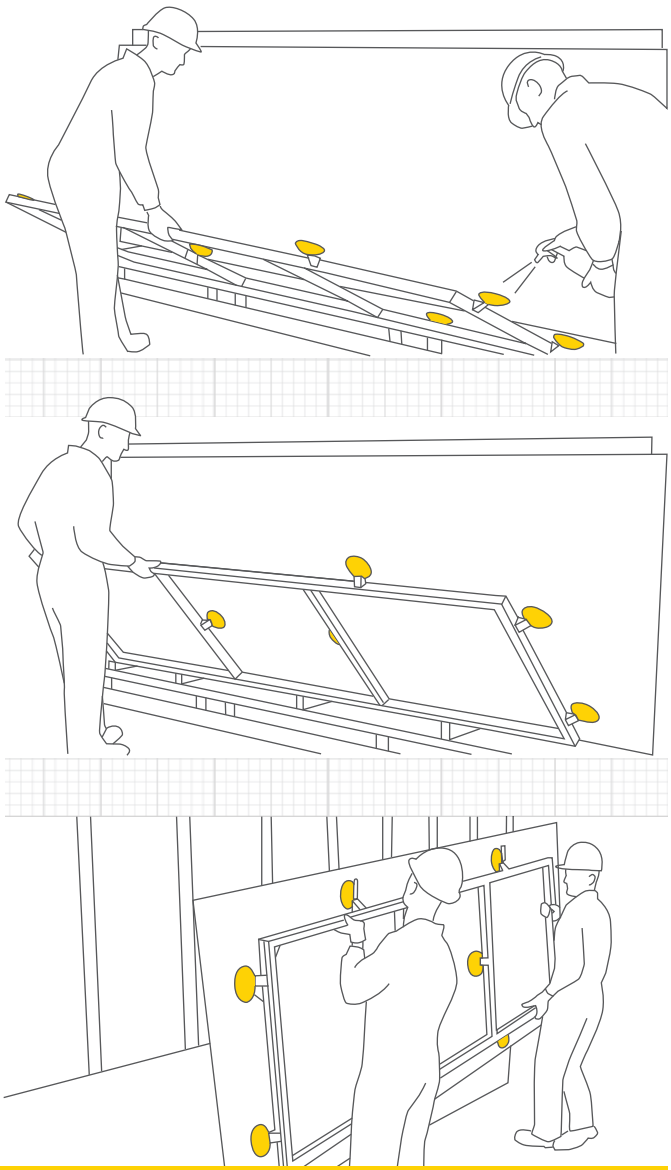
✓ CORRECT

2.4 Suction frame

For easier handling of slabs and finished parts, using a suction frame is recommended (Only for 1/4" Slabs).

The suction cups can move easily along the frame which helps adapt the frame to any size slab needed.

This frame can be purchased from TheSize.
Contact TheSize for more details.

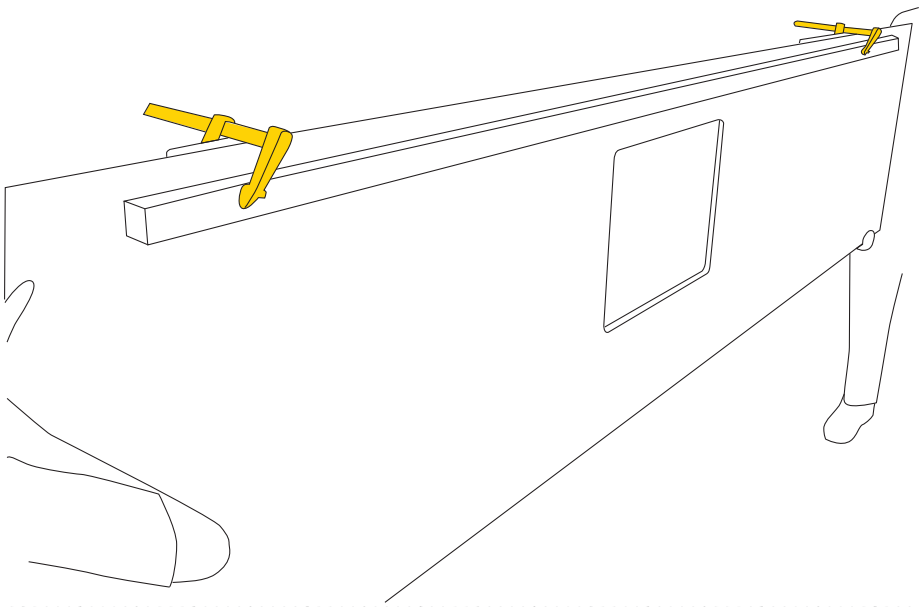


Handling and installing a piece with a suction frame

If this type of frame is not available, an aluminum rod or similar element, secured with several jacks, can also be used.

This will prevent the part from bending too much during handling.

Fixing thin, long parts (skirting, for example) with clamps to an aluminum rod for transport is also recommended.
This will prevent the part from bending too much during handling.



Handling a piece with a rod secured with jacks

2.5 Slab storage

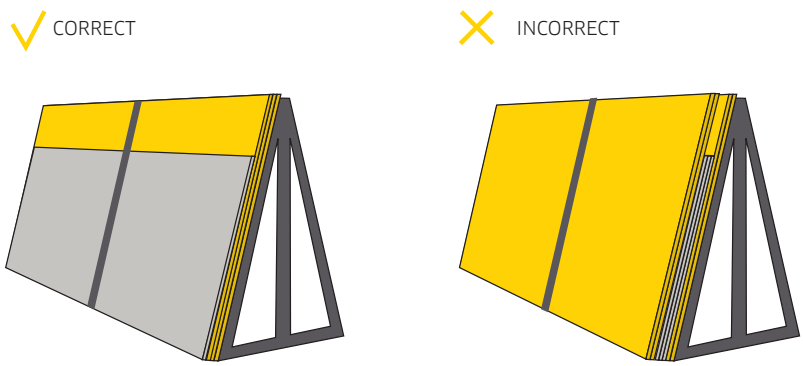
Place the slabs length-wise on wooden beams to prevent the slabs from splintering.

supports for slab storage

The slabs need at least three support points, distributed evenly along the back of the slab.

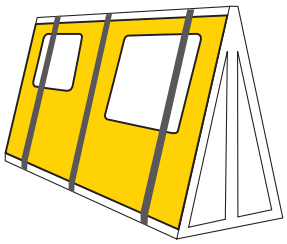
The best way to maintain the integrity of the slabs is to keep them in their original packaging or use a full support on the rear of the slab such as an unused granite or marble slab which is wide enough.

Avoid positioning large slabs against smaller slabs::

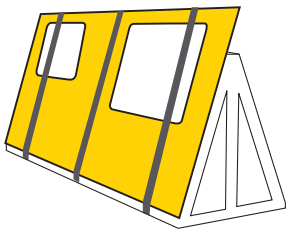


The supports must be able to hold the entire surface of the piece during transport. Supports that are too small may cause the piece to break:

CORRECT



INCORRECT



Storage of Neolith slabs in the shop

2.6 Transport by road

When in a truck, the slabs must be completely supported and securing the slabs mechanically (with clamps or belts) is recommended as they could become loose with strong wind and break.

Lightweight slabs and tiles may easily fall from a truck or to the ground so always secure the slabs to a sawhorse while unloading.
Pay special attention in the shop if the slabs are stored outdoors; secure the slabs to sawhorses to protect them from gusts of wind.

03. INSPECTION

Before beginning production, TheSize recommends deep-cleaning the slab and doing a meticulous visual inspection of the slab to check whether the slab complies with the quality requirements. Check these items when visually inspecting a slab:

- Fissures
- Stains
- Tones of different slabs
- Thickness
- Shine variations
- Flatness
- Pollution
- Princks
- Imperfections

This should be the first step prior to starting production. Doing the inspection against the light to identify possible imperfections not seen when flat is recommended.

*No claims will be accepted for installed or manufactured material when defects were already present upon delivery of the material. Marble workers are responsible for determining whether the slabs are adequate for use. If they are not adequate, they should be exchanged before the slabs are cut or modified in any way.

3.1 Slab characteristics

3.1.1 Flatness

To check the flatness of a slab, it should be positioned horizontally on a completely flat base.
The flatness is measured by placing an aluminum rod or similar object on the surface of the slab, covering the entire width or length of the slab.

Imagen 9: Set-up for correct measurement of the warp.

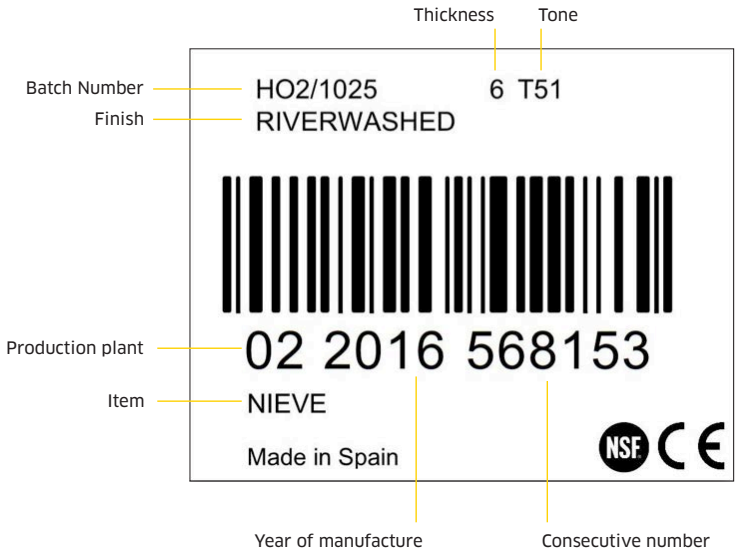
MAXIMUM TOLERANCE IN THE SLAB WIDTH:	1/8”
MAXIMUM TOLERANCE IN THE SLAB LENGTH:	3/16”

3.1.2 Tone

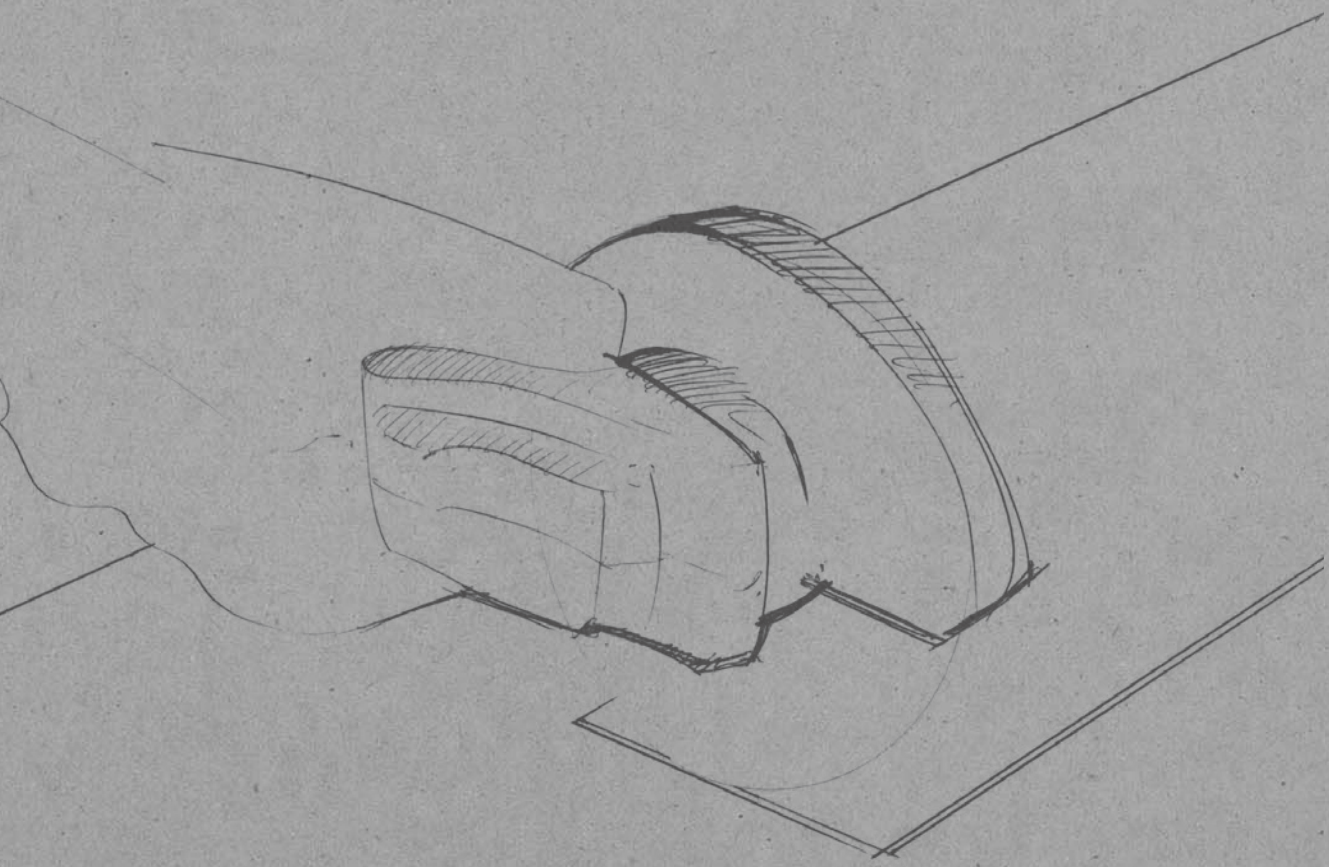
TheSize is constantly working so the tone of the current batches matches the tone of previous batches. Despite our efforts, slight variations in tone may occur between different batches of the same model due to the use of natural raw materials.
Deviations in tone are more noticeable among the various thicknesses of a single model given the way in which each thickness is produced.
Before cutting, visually inspect the slabs to ensure the tone of the different slabs is acceptable. Do this inspection under lighting conditions that are similar to what would be found at the place of installation. We recommend not combining slabs from different batches.

3.2 Slab identification

Each slab has a label with important information related to each slab. The labels must be recorded for future reference.

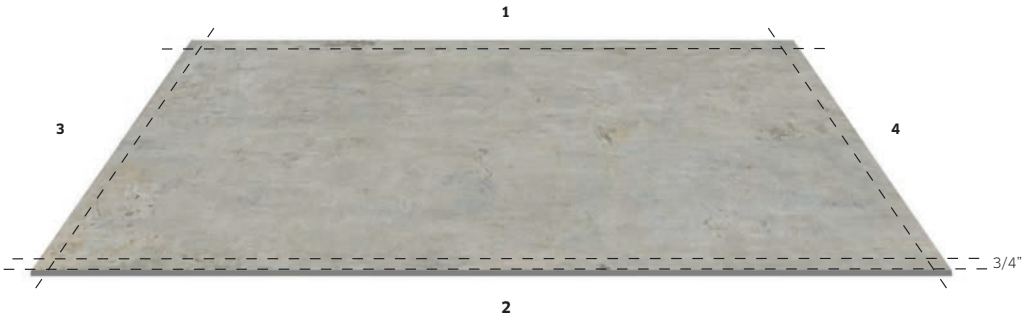


04. MECHANIZATION PARAMETERS



04. MECHANIZATION PARAMETERS

Before producing a 1/2” or 3/4” slab, it is important to remove 3/4” of each side from the slab:



Cuts to loosen a 1/2” or 3/4” slab.

When cutting 1/2” or 3/4” slabs with a disc, it is important to reduce the speed to half at the beginning and end of the cutting process.

4.1 Parameters for the Ultra-compact Neolith disc

Thickness	Straight Cut Speed (ft/min)	45º Angle Speed (m/min)	Ø Disc (inch)	RPM	Surface Speed (ft/s)
1/2”	4.9	2.3	12”	2400-2600	140
			14”	2300-2500	
			16”	2000-2150	
3/4”	3.2	0.5	16”	2000-2150	

Table 3: Disc parameters.

Cutting Neolith requires paying attention to the general principles of cutting with diamond grinding discs and having the correct disc segment alloy.

These discs can be found with manufacturers that have developed a specific disk for sintered compact or ultra-compact surfaces.
Nowadays, there are specific discs on the market for this new product category.

Discs for cutting glass and discs for porcelain may work for one or two jobs; our recommendation is to obtain a disc from a local Neolith distributor or a disc specifically designed for Neolith.

A proper disc will work better at the correct surface speed. All diamond grinding discs cut at maximum efficiency around 140 linear feet per second, meaning it is very important to know the “Arbor RPM” for the bridge disc motor to determine the best disc diameter.

Incorrect RPM’s will damage the slabs and cause excessive splintering or cutting deviations. Please check this number and get the right disc.

4.2 Waterjet parameters

Thickness	Speed (ft/min)	Pressure (PSI)	Abrasive flow rate (lb/min)
1/2”	3.3	40610	0,9
3/4”	2.3		

Table 4: Waterjet parameters

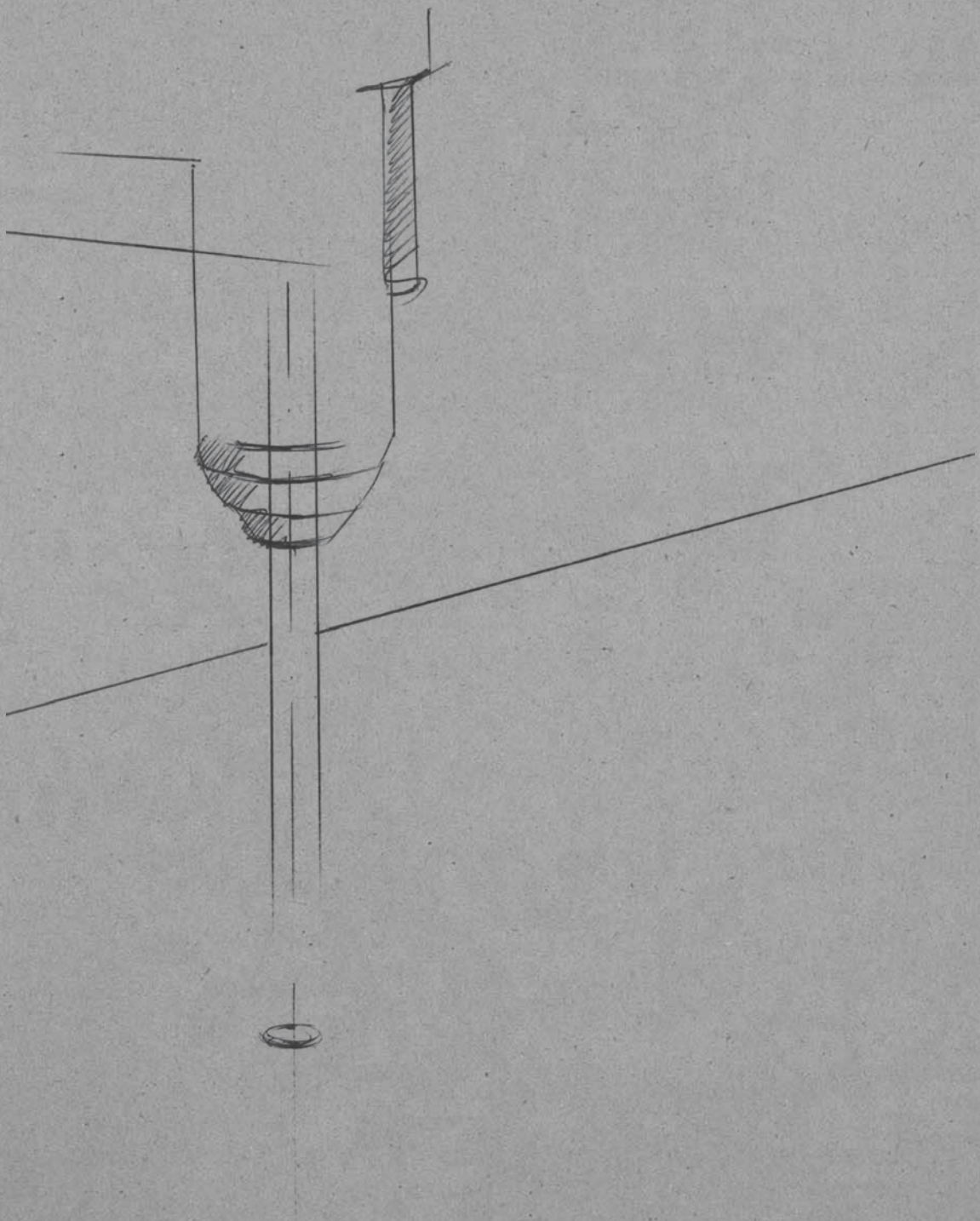
The values indicated are suggestions. The cutting speeds and abrasive flow rates can be adjusted for a cleaner finish.

4.3 Parameters for CNC tools.

Tool		RPM	Speed (inch/min)
Core bit		4500 - 5500	3/8”
Finger bit	1/2”	4500 - 5500	5.9
	3/4”	4500 - 5500	4.9

Table 5: CNC Parameters.

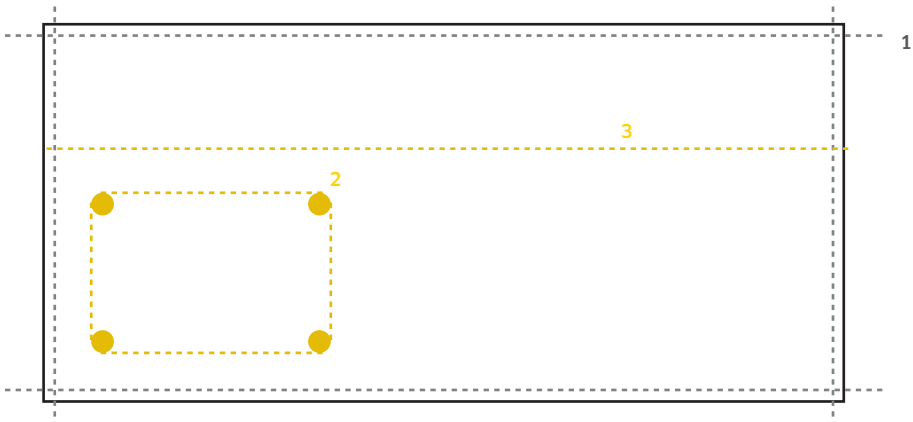
05. CUTTING RECOMMENDATIONS



05. CUTTING RECOMMENDATIONS

5.1 Bridge disc or similar

The values indicated are suggestions. The cutting speeds and abrasive flow rates can be adjusted for a cleaner finish.



CUTTING SEQUENCE:

Steps:

1. Perimeter cut, minimum 3/4". (only for 1/2" and 3/4")

2º Prepare the holes on all **inner corners**, minimum 1/4" bit diameter.

We recommend bits larger than 1/4" when the kitchen design allows, as it will offer greater firmness to the countertop.

3º Prepare the **remaining cuts**.

RECOMMENDATIONS:

Neolith is a large-format slab. If the cutting table length is not sufficient, first adjust the slab to the length of the cutting table. **Never make a partial cut on the slab.**

When cutting smaller parts with a bridge disc, remember the lightest parts may need to be secured, weighted or "limited" to prevent them from moving while cutting. A piece at the head and tail of the cut will help keep small parts secure.

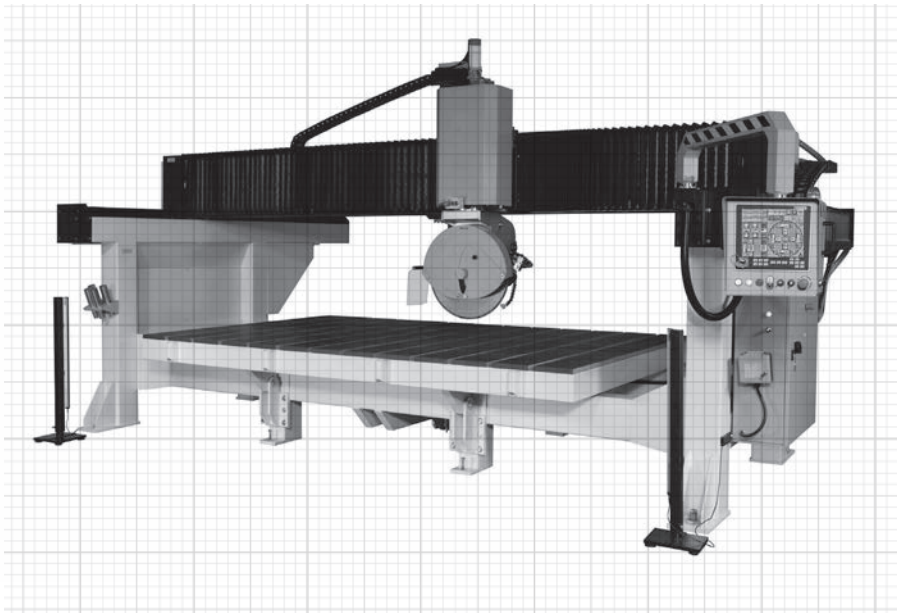
Removing cut pieces from the bridge disc table is safer if the parts are handled on the ends and not in the center.

Cutting 45º angles in Neolith requires a slower cutting speed. It also helps to lower the disc more on the cutting table (if made of concrete or stone) and having something at the head and tail of the cut to keep the disc aligned.

All cutouts must have previously drilled holes:

- Minimum of 1/2" for sink cutouts and 1/4" for sockets and other types of cutouts.

- **Never lower the disc directly on the slab before drilling the corners.**



Bridge disc

No squared inner corner means:

- No “L”-shaped countertop with 45º angled edges.
- No squared cutout for a sink.
- No inner 45º angled edge for the sink.
- Absolutely NO 90º CORNER.

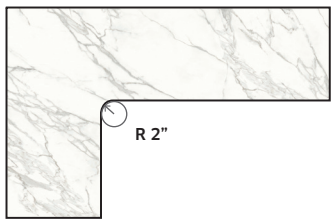
Periodically check the support plates and don’t use the disc if it does not easily fit into the support plate.

When using a new disc, do a few cuts so the disc segments can adapt and the diamonds open.
If the segments get blunt quicker than usual when cutting straight cuts, make a cut that is a bit deeper in the cutting table (if made of concrete or stone). Otherwise, use something made of limestone at the head and tail of the cut to enhance the segments.

The clearest models (Arctic White, Estatuario, Calacatta) are harder for tools given the specific raw materials used.

TheSize recommends lowering the cutting speeds to 75% for these models to prevent the disc from overheating.

INCORRECT



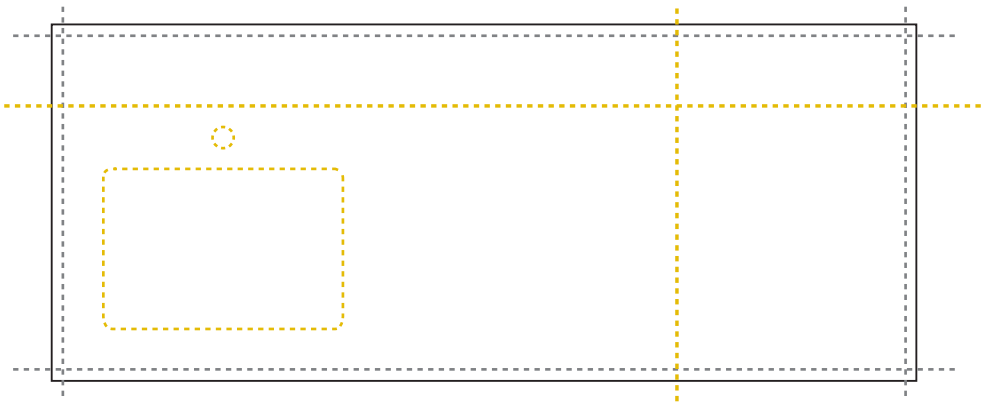
CORRECT

5.2 Waterjet

Before beginning:

Check that the bench is straight, levelled and free of any waste. Check that there is enough support for the slab.

If using the waterjet to remove the 3/4" perimeters from 1/2" and 3/4" slabs, the cut should begin and go off the slab.



STEPS:

1º Perimeter cut, minimum 3/4". (only for 1/2" and 3/4")

2º Cutting.

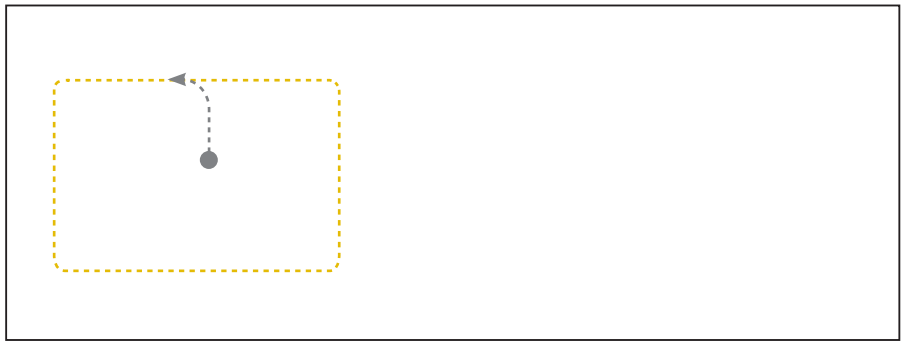
3º Prepare the cutouts.
All inner corners require a minimum radius of 1/8".

We recommend radiuses of more than 1/8" when the kitchen design allows as it will make the countertop firmer.

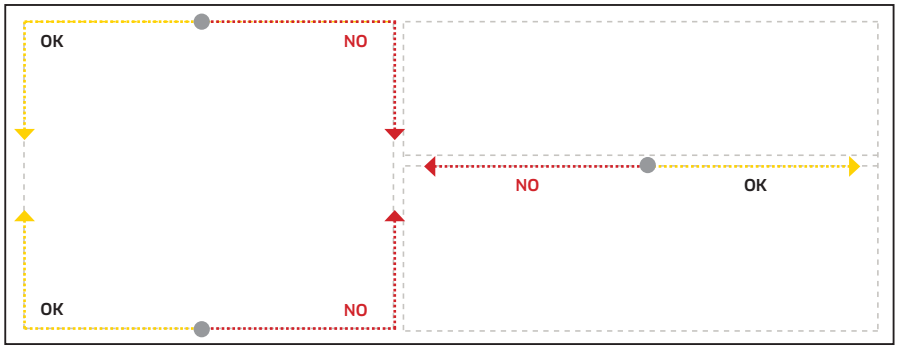
Remember that the perimeter cut of the slab to release stress may not be used as a final cut for the part to be made.

Lower pressure is recommended for drilling holes.

To do the cutouts, beginning the cut at an internal point in the cutout and then getting closer to the cut perimeter is recommended:



To do large cutouts or large parts, you must remember the following cutting sequence:



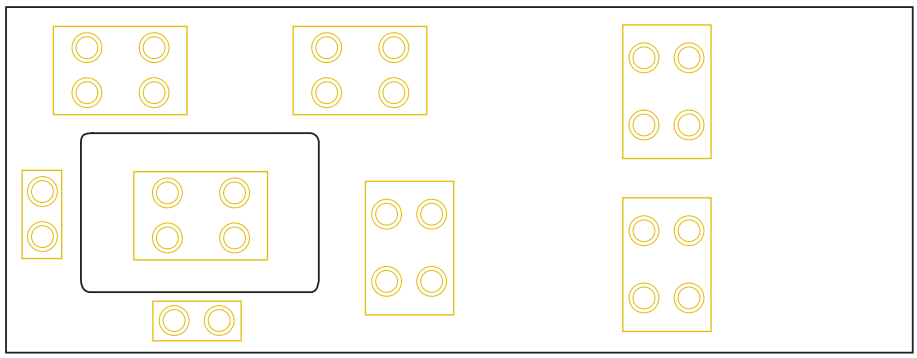
First cutting towards the edge of the slab from the hole or in parallel to the edge of the slab and following this direction to finish the piece is recommended.
Making the first cut towards the center of the slab is not recommended.

5.3 Numeric Control Bit

Before beginning:

Check that the bench is straight and level and that the suction cups are free of any waste. Check that there is enough support for the slab.

Make sure there are suction cups below the entire slab, especially below the piece to be cut.



Use plenty of water to cool the tool during production in the inside and outside of the tool.

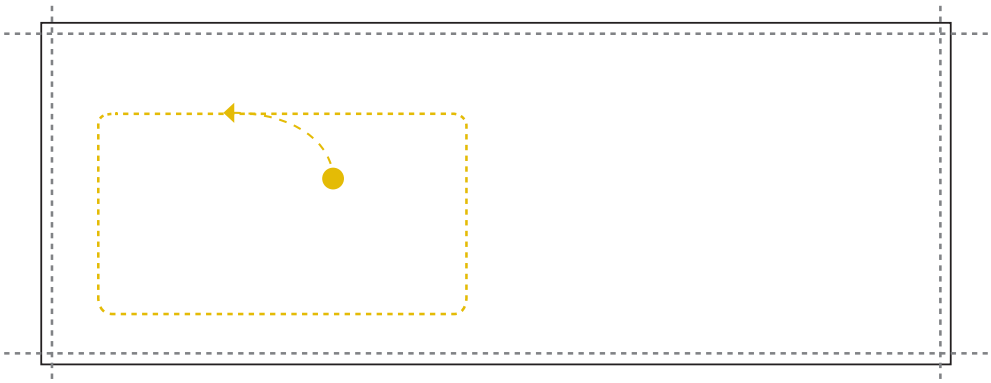
STEPS:

1º **Perimeter cut**, minimum 3/4". (only for 1/2" and 3/4").

2º **Drilling** with a crown bit.

3º Prepare the **cutouts**. All inner corners require a minimum bit of 1/2".

We recommend bits larger than 1/2" when the kitchen design allows, as it will make the countertop firmer.



First drill a hole inside the cutout, using the crown bit. Afterwards, use the cutting bit to get closer to the cutting line.

As you get closer to the cutting line, curve a bit; do not use a perpendicular approach as this could create a notch.

At the end of the cut, reduce the speed to 50% as you complete the cutout.

Tips for Sink Machines / Radial Arm.

- Core Bit:
  Drill the slab with the lowest downward speed possible, especially at the end of drilling. Before completing the drilling, raise the crown a bit to remove the pressure from the inside of the crown.

- Incremental Bit:
  Always begin from a hole previously made with a crown bit.

  Never lower the router bit directly onto the surface.

  The first two times, eliminate only 1/64"; then 5/64" per pass.

  Removing more than 1/4" on a 1/2" slab or 3/8" on a 3/4" slab is not recommended.

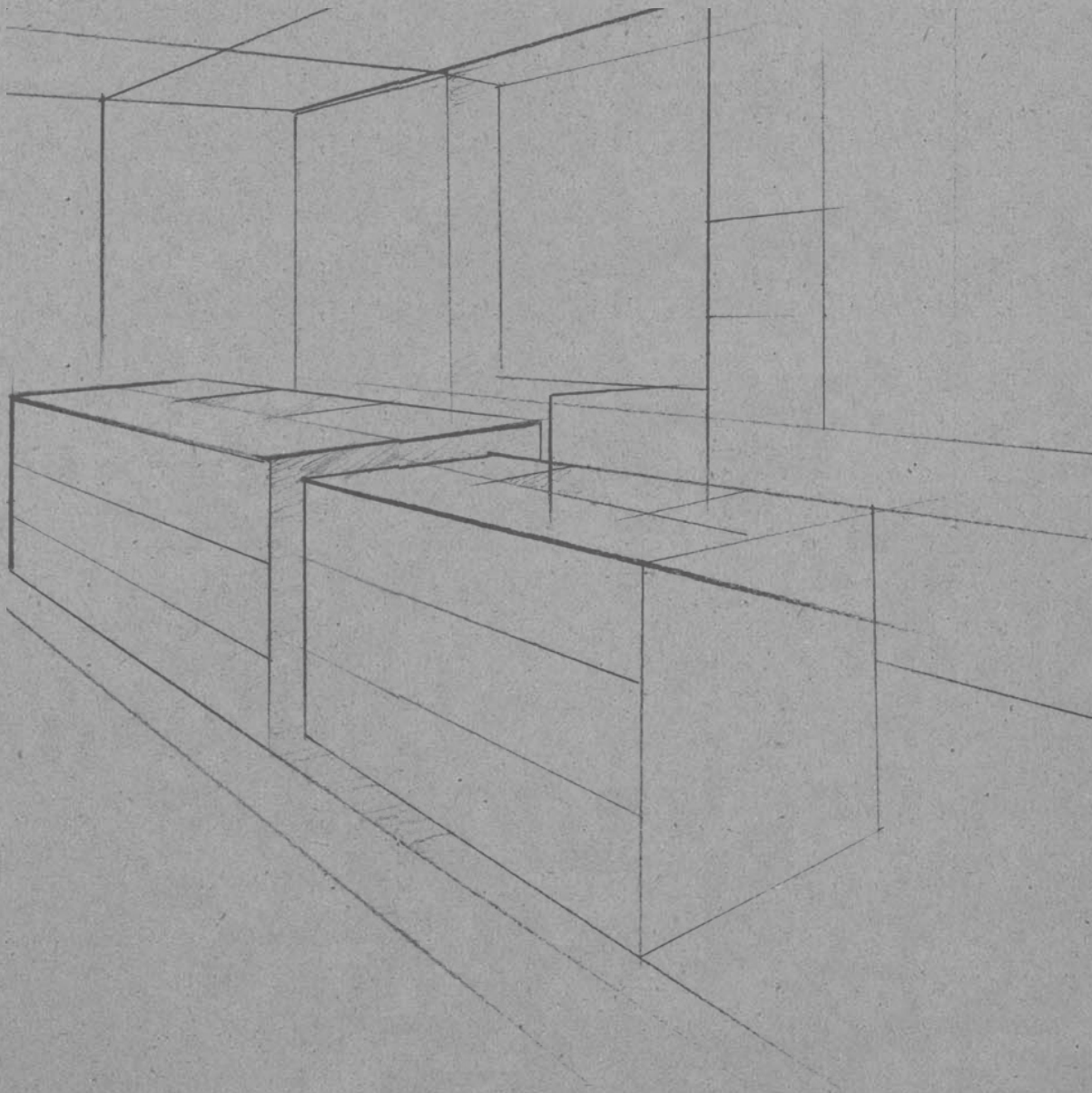
  Fingerbit::
- Do not use the oscillation option during cutting; this could cause splintering.

When producing 45º angles in mono-screw machines, reduce the quantity of material eliminated per pass to reduce the pressure and stress all along the edge of the slab.

The clearest models (Arctic White, Estatuario, Calacatta) are harder for tools given the specific raw materials used;

TheSize recommends lowering cutting speeds to 75% for these models to prevent tool overheating..

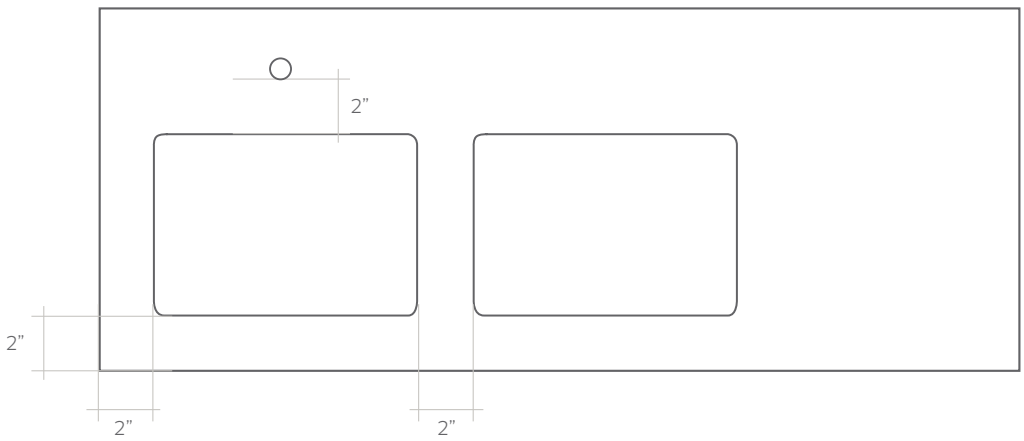
06. DESIGN AND PRODUCTION OF A NEOLITH COUNTERTOP



6.1 Cutout design

The minimum distance between a cutout and the edge of the slab must be at least 2”.

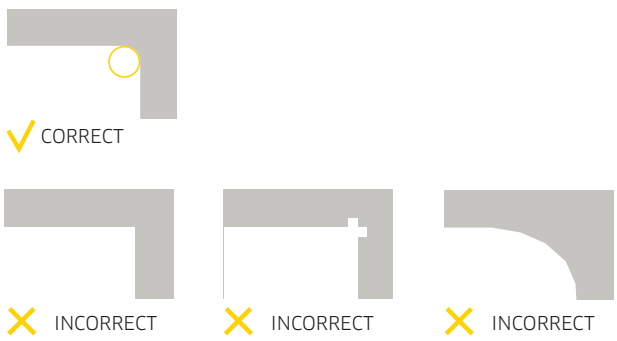
TheSize recommends distances greater than 2” when the kitchen design allows as it makes the countertop firmer.



IMPORTANT

All cutout corners must have a minimum diameter of 1/4”.
Never leave 90º angles.

We recommend radiuses of more than 1/4” when the kitchen design allows as it makes the countertop firmer.



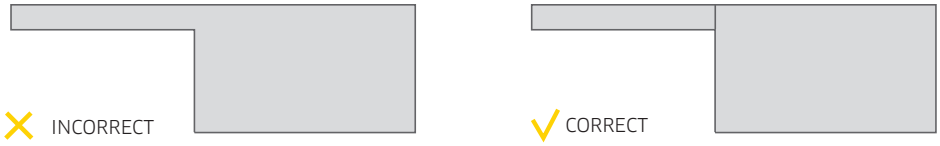
The correct way to create a cutout, except with waterjet and digital control bits, is to first drill the corners and then the rest of the cuts.

Guidelines for cutouts:

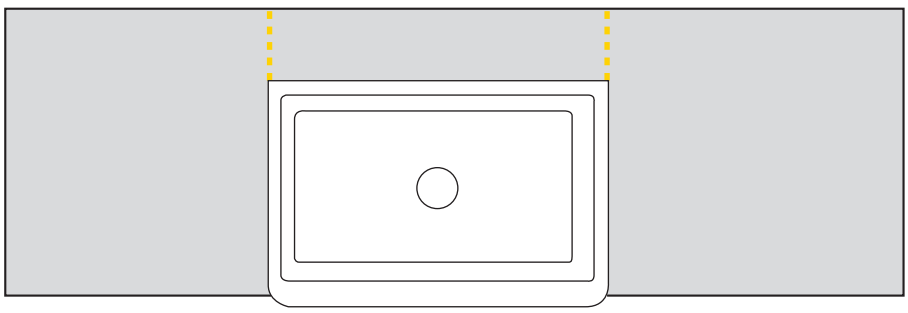
- Two straight cuts must never be joined.
- No squared inner corners.
- All inner corners must have one radius.

If the countertop design so allows, avoid large cutouts. Experienced manufacturers make large cutouts but following their own risk assessment.

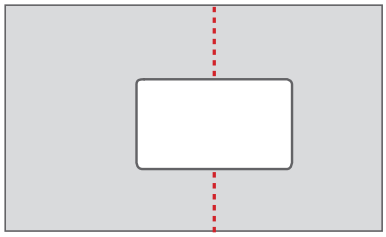
If the countertop design so allows, avoid Neolith countertops with unbalanced weights:



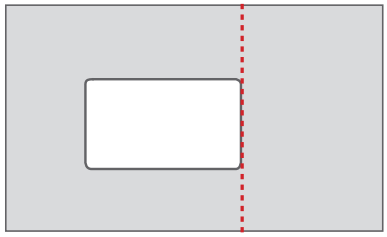
Irregular cuts are also not recommended such as for a “farmhouse sink”; in these cases, add joints to the countertop design:



Other types of designs to be avoided:



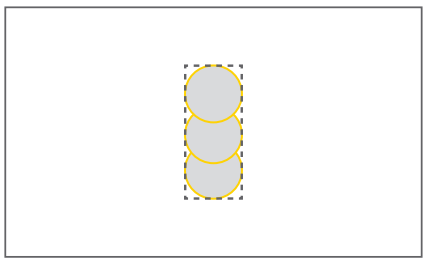
✕ INCORRECT



✕ INCORRECT

Sockets and switches:

Gaps made to insert accessories (sockets, switches, etc.) should be done using circular drills; they may overlap.



✓ CORRECT

6.2 Reinforcement

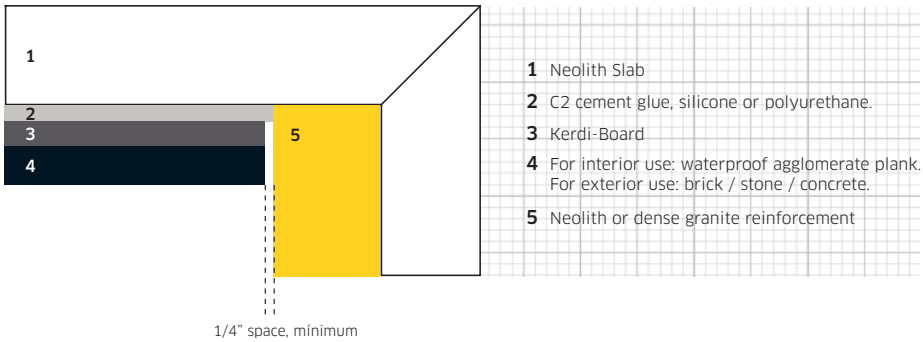
The countertops must have a total, level and flat support throughout the structure. To achieve this total support, a continuous surface like a wooden plank, Kerdi-Board or similar element should be placed over kitchen furniture.

- Countertops with 45º edges:

Reinforcements for 45º edges must be made with Neolith strips or dense granite; be careful when using other materials for reinforcement. The difference in the thermal expansion can cause the countertop to curve or the 45º edges may open over time.

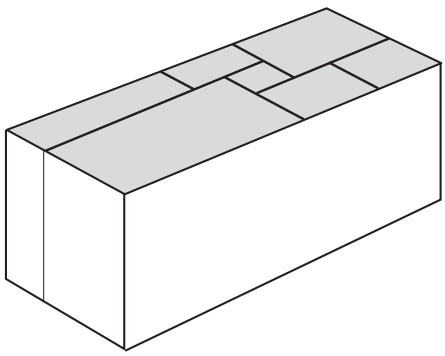
NEVER USE QUARTZ REINFORCEMENT.

Mittered design:



- Countertops with a straight edge:

For straight edge countertops, where no inner structure can be hidden, a continuous surface like a wooden plank, Kerdi-Board or similar element should be placed over kitchen furniture.



6.3 Sinks

Flush sinks

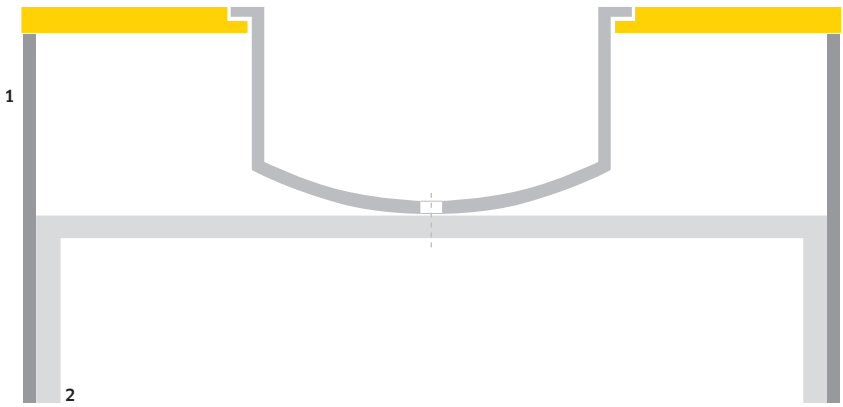
TheSize only recommends the installation of 1/2” and 3/4” flush sinks.

Removing more than 1/4” on a 1/2” slab or 3/8” on a 3/8” slab is not recommended.

Undermount sinks

To reduce the risk of splintering to a minimum, a round edge with a radius of at least 1/8” is recommended.

For large-size sinks, place a rod support structure under the sink so the weight is on the rods and not the countertop.



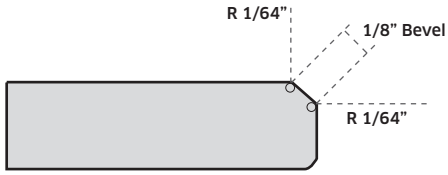
1.Furniture

2.Support Rod

6.4 Edges and Joints

Edges

TheSize recommends using the following edge for Neolith countertops.
It is the perfect compromise between esthetics and functionality.



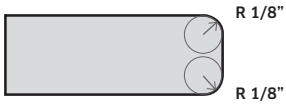
The edge is formed by a 1/8" bevel and by two rounded edges with a radius of 1/64". The radius is barely visible but increases the edge impact resistance.

In high impact risk areas (sinks and dishwashers, for example), the edges could be as follows:

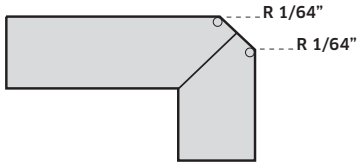
The greater the radius, the better it will bear any impacts. Remember that the greater the bevel, the more base color in the slab.

The edges can be wet or dry polished using standard granite or marble discs.

Recommended edges for Neolith:



Round edge, R 1/8"



45º edge with a bevel, 1/8"

Inverted fluted peak

IMPORTANT

Polished edges must be treated with water repellant to permanently seal the edge.

6.4 Edges and Joints

Joints

Given the texture of Neolith slabs, a micro-bevel for all joints is recommended. Even if the straight edges are perfect, they may seem “splintered” due to the texture of Neolith slabs.

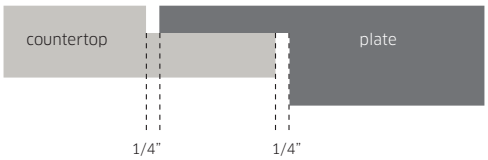
Each joint requires additional support (any technique will work).

The oven finish may not be “touched-up”; once the Neolith surface is polished or ground, there is no way back.

Producing samples so your customer can approve the edges and joints is highly recommended. (joint with a micro-bevel, 45º edge with a 1/8” bevel or a round 1/8” edge).

6.5 Glass-ceramic / induction stovetops

The minimum distance between the countertop and a stovetop must be 1/4".



Use the right heat-resistant silicone or the joints supplied by the stovetop manufacturer.

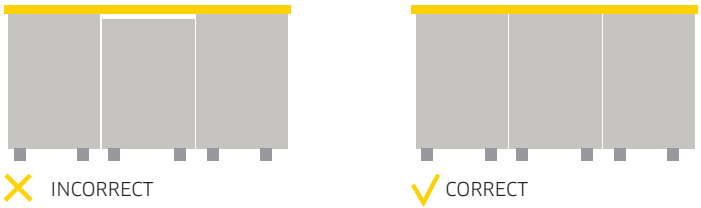
Removing more than 1/4" on a 1/2" slab or 3/8" on a 3/4" slab is not recommended.

6.6 Countertop Installation

- Furniture:

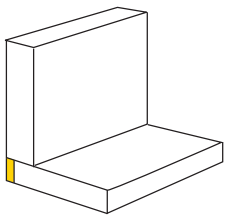
Furniture must be in perfect conditions and level before installing the countertop.

Cabinets must be secured to each other and then secured to the wall.



- Expansion joints:

Given the irregularities in the wall and possible structural movements in the building, leaving a 1/8" perimeter expansion joint on the countertop is recommended. The point where the crown and countertop meet shall be sealed with a line of silicone:

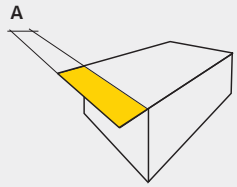
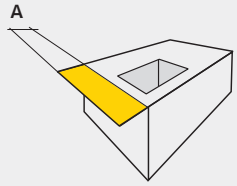


Flexible adhesive should be used such as 100% transparent adhesive to fill these joints and secure the countertops to the furniture and the floor or to secure the Neolith crowns to the wall. This will enable adequate thermal expansion.

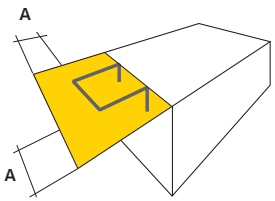
Using flexible adhesives such as epoxy or liquid nails to secure the countertop is not recommended.

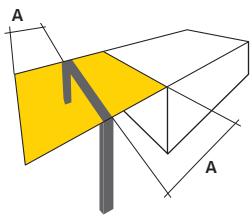
6.7 Overhang

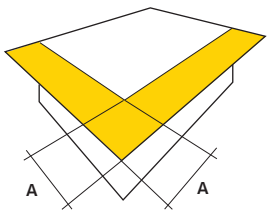
Sizing the parts that will overhang must be taken into consideration during countertop designing, pursuant to the parameters indicated in the following table:

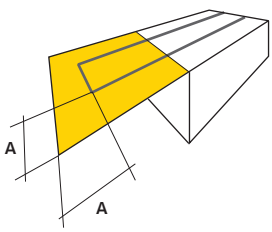
	Thicknesses	
	1/2”	**3/4”**
1.Countertop with overhang without support 	A<6”	A<14”
2. Countertop with hole and overhang with no support 	A<3”1/2	A<8”

More examples of countertops with overhangs









6.8 Outdoor countertops

Installing the countertop over a brick/stone or similar base or structure using C2 cement glue is recommended.

If there is no such structure available, covering the top of the existing structure with reinforced cement panels is recommended.

Avoid the use of wood or agglomerate planks for outdoor installation.

Rounded edges and built-in skirting are best for extreme weather conditions.

This is the best thing to allow the support furniture to expand and contract as the weather changes.

Using flexible adhesives such as epoxy, liquid nails or construction adhesives to secure a Neolith countertop is not recommended.

To glue the 45º angles, use an adhesive that is suitable for outdoor use and resistant to UV rays such as Integra Ultra.

6.5 Observations

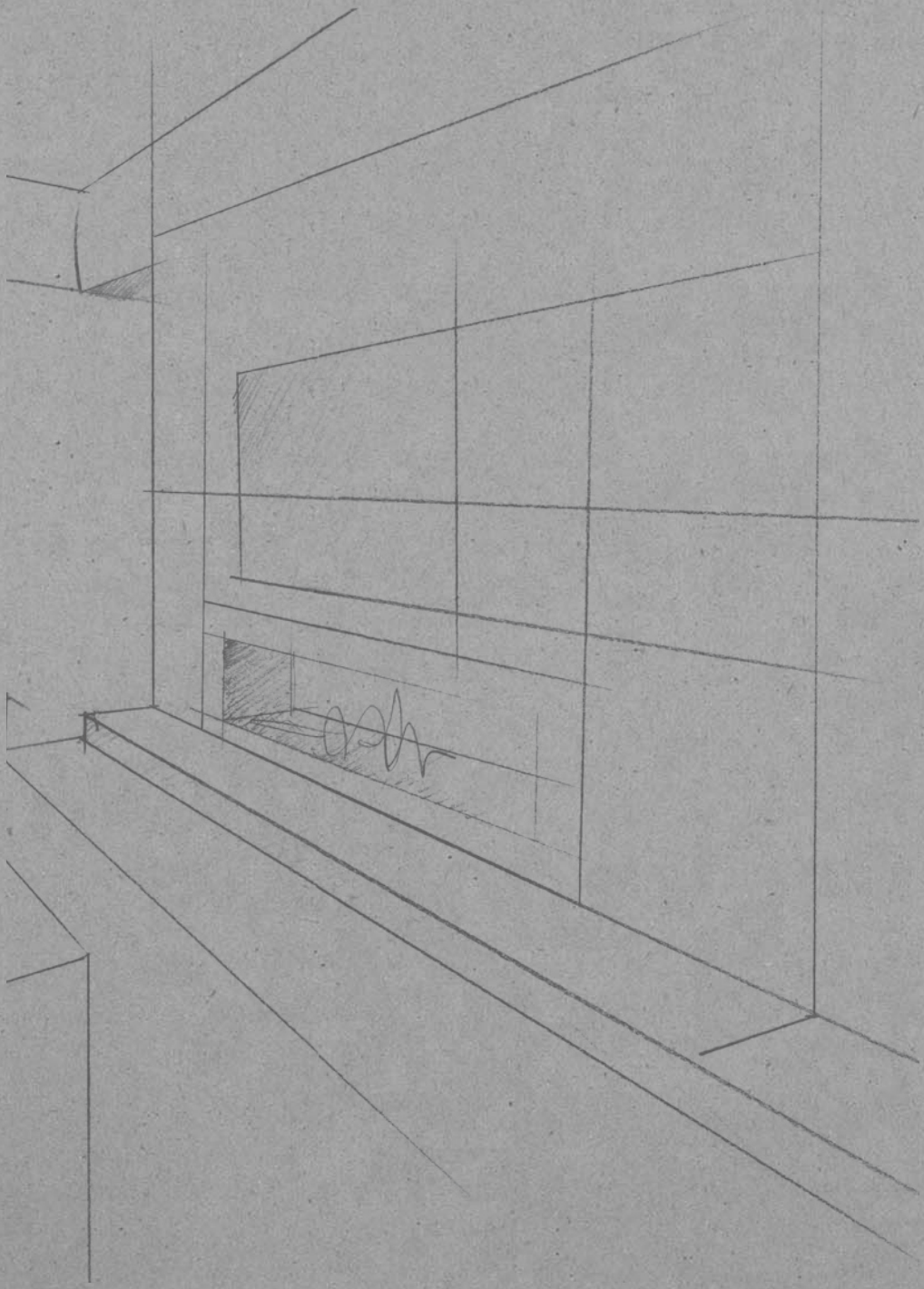
- L-shaped countertops

Dividing L-shaped countertops into several parts is recommended to avoid 90º corners in one part.

L-shaped countertops made of a single piece without a 45º angle must have a minimum radius of 2".

Make sure the furniture is in perfect conditions and level before installing this type of countertop.

07. EXTREME HEAT



07. EXTREME HEAT

Neolith parameters that are essentially relevant for this use:

- **Maximum temperature: 300º C**
- **Linear thermal expansion: between 5.1º and 6.5º. 10^{-6} x$^{ºC-1}$**

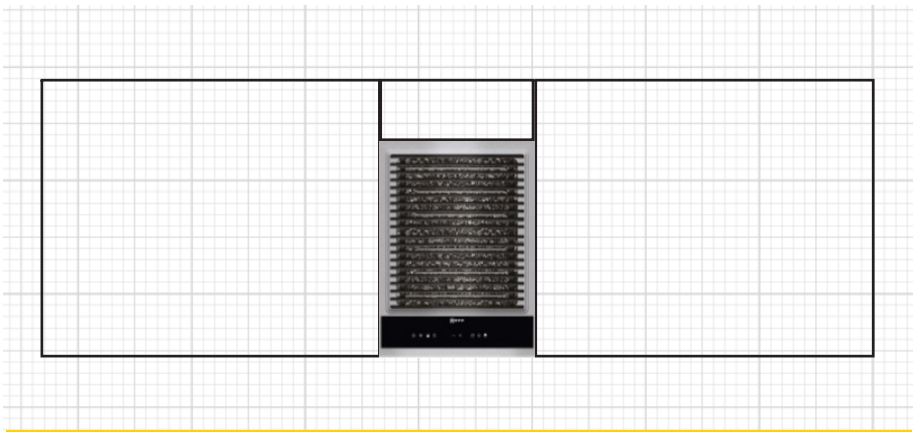
If barbecue grills are to be placed in a Neolith countertop, keep the following in mind:

· Always remember that all material expands when subject to temperature changes (i.e. the metal structure of a barbecue grill) to prevent stress due to a lack of space for such expansion.

· Metal materials expand much more than Neolith; therefore, prevent direct contact by leaving enough space (which will depend on the dimensions of the barbecue grill, maximum temperature it may reach, etc.).

· Polishing the edges of the cutout is recommended to eliminate any micro-fissures created when cutting. The more intense this treatment is, the less risk there will be in the future.

· Inner corners must have minimum radiuses of 1/2". We recommend diameters of more than 1/2" or producing the countertop in several parts, when the design so allows:



View of the top of the barbecue grill built into a Neolith countertop

· Leaving a minimum space of 1/4" between the grill/barbecue grill and filling with thermal insulation such as fiberglass thermal insulation tape is recommended.

Neolith is not recommended for inner paneling for a fireplace.

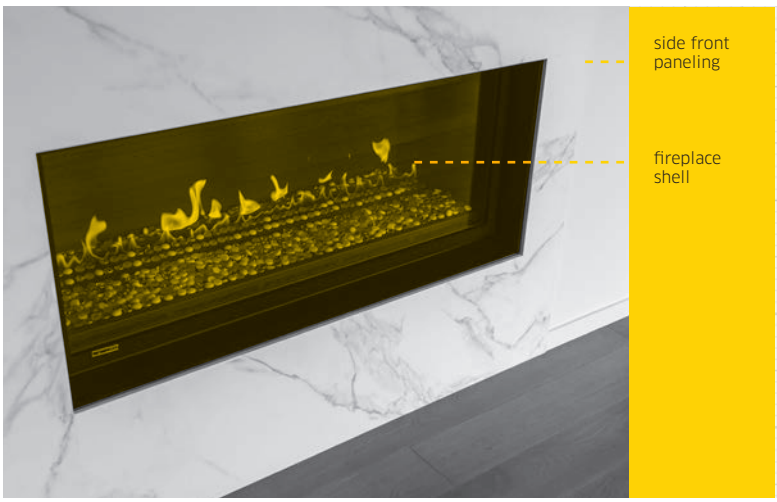
Possible uses for Neolith with built-in barbecue grills:

Possible uses for Neolith with fireplaces:

Front outer paneling: separated from the heat by an inner refractory wall (fire resistant).

Side outer paneling: separated from the heat by an inner refractory wall.

Countertop furniture



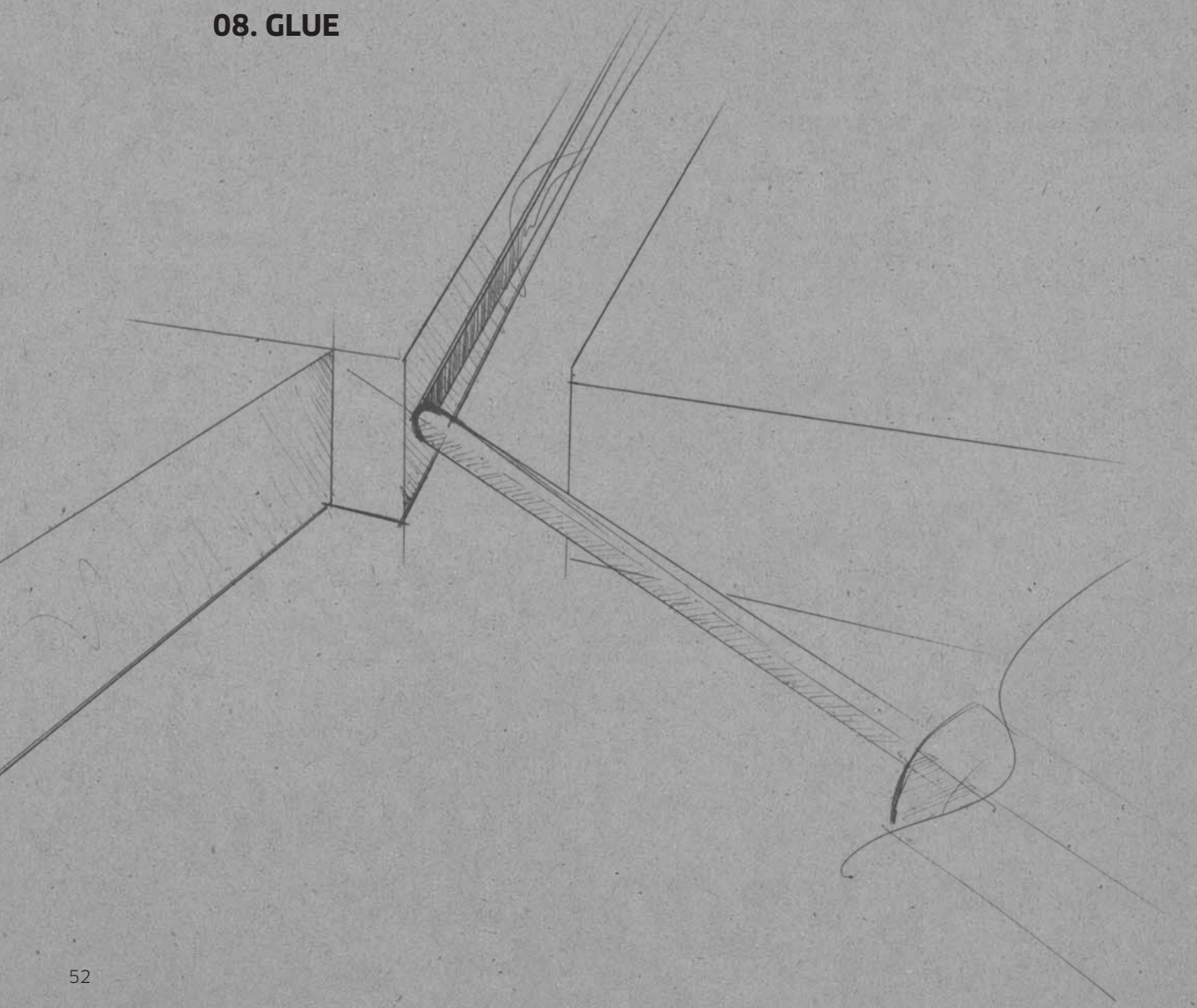
Neolith is not recommended for inner paneling for a fireplace.

Ethanol fireplace design

Front outer paneling: separated from the heat by an inner refractory wall.

Side outer paneling: separated from the heat by an inner refractory wall.

08. GLUE



08. GLUE

Look at the side of the Neolith slab when preparing the glue color as the color of the surface is not exactly the same as the color of the slab base; this is important as polishing the edges will expose the slab base color.

Recommended glue: Integra or similar, polyester-acrylic, polyester-epoxy and slow-curing A+B epoxy.

For Ourdoors use, plesase select the Integra Ultra references.

INTEGRA COLOR CATALOGUE:

Sheet name	Sheet code	Integra Match	U	Integra Alt Match	U
Arancio	Decor	Carat - 3143 +			
Arancio	Mitre	Carat - 3143 +			
Arctic White Polished	Decor	Transparent White - 0271	U		
Arctic White Polished	Mitre	White Linen - 0310		Pure White - 0190	
Arctic White Satin	Decor	Pure White - 0190			
Arctic White Satin	Mitre	White Linen - 0310		Pure White - 0190	
Arctic White Silk	Decor	Pure White - 0190			
Arctic White Silk	Mitre	White Linen - 0310		Pure White - 0190	
Aspen Grey	Mitre	Quarry - 2375			
Aspen Grey	Decor	Iron Grey - 3064			
Avorio Satin	Decor	Cygnus Pearl - 2195	U		
Avorio Satin	Mitre	Marfil - 3273	U		
Barro Satin	Decor	Twilight Grey - 3212		Peat - 3248	
Barro Satin	Mitre	Meteor Grey - 2320	U		
Basalt Beige Satin	Mitre	Barley - 3265 +			
Basalt Beige Satin	Decor	Diana Pearl - 2200			
Basalt Black Satin	Decor	Nacreto - 3131	U		
Basalt Black Satin	Mitre	River Rock - 3113 +			
Basalt Grey Satin	Mitre	Meteor Grey - 2320	U	Quarry - 2375	
Basalt Grey Satin	Decor	Iron Grey - 3064			
Basalt Grey Silk	Decor	Iron Grey - 3064			
Basalt Grey Silk	Mitre	Meteor Grey - 2320	U	Quarry - 2375	
Belgian Blue	Decor	Nacreto - 3131	U	Galaxy Black - 2235	
Belgian Blue	Mitre	Nacreto - 3131	U	Galaxy Black - 2235	
Beton	Decor	Seashell - 3035			
Beton	Mitre	Geogris - 3130		Silver - 3129 *	U

Sheet name	Sheet code	Integra Match	U	Integra Alt Match	U
Blanco Carrara BC01 Polished	Decor	Transparent White - 0271	U		
Blanco Carrara BC01 Polished	Mitre	White Linen - 0310			
Blanco Carrara BC01 Silk	Decor	White Linen - 0310			
Blanco Carrara BC01 Silk	Mitre	Bright White - 3011*			
Calacatta Gold Polished	Decor	Transparent White - 0271	U		
Calacatta Gold Polished	Mitre	White Linen - 0310		Pure White - 0190	
Calacatta Gold Silk	Decor	Bright White - 3011		Snow White - 0230	
Calacatta Gold Silk	Mitre	White Line - 0310		Pure White - 0190	
Calacatta Polished	Decor	Transparent White - 0271	U		
Calacatta Polished	Mitre	White Linen - 0310		Pure White - 0190	
Calacatta Silk	Decor	White Linen - 0310		Pure White - 0190	
Calacatta Silk	Mitre	White Linen - 0310		Pure White - 0190	
Carbono White	Decor	White North - 2440			
Carbono White	Mitre	Zenith - 3276	U	Perfect White - 3172	
Cement Satin	Mitre	Meteor Grey - 2320	U		
Cement Satin	Decor	Meteor Grey - 2320*	U		
Chocolate Satin	Mitre	Royal Brown - 3115* +			
Chocolate Satin	Decor	Brocade - 3138		Wenge - 3245	U
Cobalto Satin	Mitre	Cornflower - 3107+			
Cobalto Satin	Decor	Cornflower - 3107+			
Concrete Taupe	Decor	Coastal Path - 3267 * +			
Concrete Taupe	Mitre	Diana Pearl - 2200			
Crema	Mitre	Sabbia - 3139 *			
Crema	Decor	Sabbia - 3139 *			
Estatuario Polished	Mitre	White Linen - 0310		Pure White - 0190	
Estatuario Polished	Decor	Transparent White - 0271	U		
Estatuario Silk	Decor	Pure White - 0190			
Estatuario Silk	Mitre	White Linen - 0310		Pure White - 0190	
Humo Satin	Mitre	Batteship Grey - 3274+			
Humo Satin	Decor	Meteor Grey - 2320	U		
Iron Ash Satin	Mitre	Timberwolf - 3275+			
Iron Ash Satin	Decor	Fieldstone - 3246	U		
Iron Blue Satin	Decor	Cocoa Brown - 0065	U		
Iron Blue Satin	Mitre	Timberwolf - 3275+			

* Indicates tight seam required // + indicates custom colour (minimum orders may apply)
U Indicates color is available in Surface Bonder ULTRA

Sheet name	Sheet code	Integra Match	U	Integra Alt Match	U
Iron Copper Satin	Decor	Bitter Chocolate - 3185*			
Iron Copper Satin	Mitre	River Rock - 3113 +			
Iron Corten Satin	Decor	Wenge - 3245	U		
Iron Corten Satin	Mitre	River Rock -3113 +			
Iron Frost Satin	Decor	White Linen - 0310		Pure White - 0190 *	
Iron Frost Satin	Mitre	White Linen - 0310		Pure White - 0190 *	
Iron Grey Satin	Mitre	River Rock -3113 +			
Iron Grey Satin	Decor	River Rock -3113 +			
Iron Moss Satin	Mitre	River Rock -3113 +			
Iron Moss Satin	Decor	Nacreto - 3131	U		
La Bohème B01 Natural Honed	Decor	Coral Troya - 2194			
La Bohème B01 Natural Honed	Mitre	Sahara - 2380			
Lava Satin	Mitre	Oscuro - 3142			
Lava Satin	Decor	Iron Grey - 3064			
Limestone Arena	Mitre	Marfil - 3273	U	Sabbia - 3139	
Limestone Arena	Decor	Marfil - 3273	U		
Limestone Lava	Decor	Quarry - 2375		Meteor Grey - 2320	U
Limestone Lava	Mitre	Meteor Grey - 2320	U		
Marfil Pulido	Decor	Aura - 3266 +			
Marfil Pulido	Mitre	Marfil - 3273	U		
Marfil Silk	Decor	Barley - 3265 +			
Marfil Silk	Mitre	Marfil - 3273	U		
Mela Satin	Decor	Pistachio - 3032* +			
Mela Satin	Mitre	Pistachio - 3032* +			
Moka Satin	Decor	Custom - Cust +			
Moka Satin	Mitre	Custom - Cust +			
Nero Satin	Decor	Galaxy Black - 2235			
Nero Satin	Mitre	Nacreto - 3131	U		
Nero Assoluto	Decor	Onyx - 3243	U	Transparent Black -0260	
Nero Assoluto	Mitre	Nacreto - 3131	U	Onyx - 3243	U
Nero Marquina Silk	Mitre	River Rock - 3113 * +			
Nero Marquina Silk	Decor	Galaxy Black - 2235		Flint - 2220	
Nero Zimbabwe Riverwashed	Decor	Galaxy Black - 2235		Flint - 2220	
Nero Zimbabwe Riverwashed	Mitre	Iron Grey - 3064			

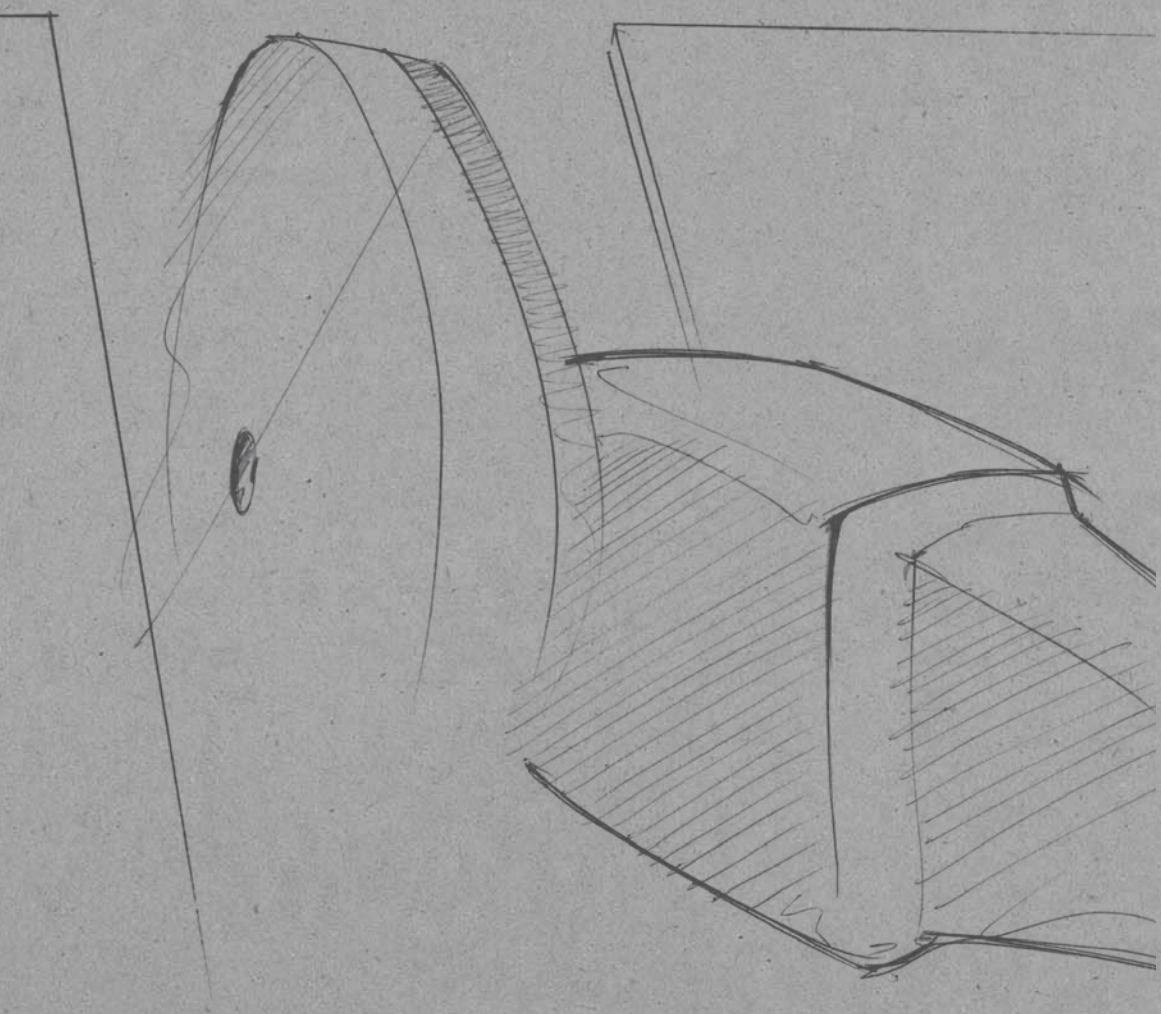
* Indicates tight seam required // + indicates custom colour (minimum orders may apply)
U Indicates color is available in Surface Bonder ULTRA

Sheet name	Sheet code	Integra Match	U	Integra Alt Match	U
Nero Silk	Mitre	River Rock - 3113 +			
Nero Silk	Decor	Satin Black - 3062	U		
Nieve Satin	Mitre	White Linen - 0310			
Nieve Satin	Decor	White Linen - 0310			
Nieve Silk	Decor	White Linen - 0310		Glacier White - 3006*	
Nieve Silk	Mitre	White Linen - 0310			
Onyx	Decor	Tusk - 3148		Manila - 0133	
Onyx	Mitre	Zenith - 3276	U	Perfect White - 3172	
Onyx Polished	Mitre	White Linen - 0310		Pure White - 0190	
Onyx Polished	Decor	Manila - 0133		Tusk - 3148	
Perla Satin	Decor	Cregris - 3134+			
Perla Satin	Mitre	Cregris - 3134+			
Phedra Satin	Mitre	Geogris - 3130			
Phedra Satin	Decor	Seashell - 3035		Stellar Grey - 2403	
Pierre Bleue Silk	Decor	Velvet Green - 2417 +		Nacreto - 3131 *	U
Pierre Bleue Silk	Mitre	Storm Grey - 2402	U		
Pietra Di Luna Riverwashed	Decor	Stellar Grey - 2403			
Pietra Di Luna Riverwashed	Mitre	Raton - 3132			
Pietra Di Luna Silk	Mitre	Raton - 3132			
Pietra Di Luna Silk	Decor	Stellar Grey - 2403			
Pietra Di Osso Riverwashed	Decor	Barley - 3265 +			
Pietra Di Osso Riverwashed	Mitre	Barley - 3265 +			
Pietra Di Osso Silk	Mitre	Barley - 3265 +			
Pietra Di Osso Silk	Decor	Beach - 2065			
Pietra Di Piombo Silk	Decor	Peat - 3248			
Pietra Di Piombo Silk	Mitre	Storm Grey - 2402	U		
Pulpis Polished	Decor	Hickory - 3192 +			
Pulpis Polished	Mitre	Clay Brown - 2114			
Pulpis Silk	Decor	Clay Brown - 2114		Slate - 3060	
Pulpis Silk	Mitre	Clay Brown - 2114			
Statuario Polished	Mitre	White Linen - 0310		Pure White - 0190	
Statuario Polished	Decor	Transparent White - 0271	U		
Steel Marengo Shiny Silk	Mitre	Iron Grey - 3064			
Steel Marengo Shiny Silk	Decor	Iron Grey - 3064 *			

* Indicates tight seam required // + indicates custom colour (minimum orders may apply)
U Indicates color is available in Surface Bonder ULTRA

Sheet name	Sheet code	Integra Match	U	Integra Alt Match	U
Strata Argentum Riverwashed	Decor	Champagne - 3118			
Strata Argentum Riverwashed	Mitre	White Linen - 0310 *			
Taj Mahal	Decor	Transparent White - 0271	U		
Taj Mahal	Mitre	White Linen - 0310			
Textil Black Satin	Decor	Peat - 3248			
Textil Black Satin	Mitre	Meteor Grey - 2320	U		
Textil White Satin	Mitre	Polar White - 3080			
Textil White Satin	Decor	White North - 2440			
Timber Ash Satin	Mitre	Meteor Grey - 2320	U		
Timber Ash Satin	Decor	Twilight Grey - 3212			
Timber Ice Satin	Decor	Newport Grey - 2360			
Timber Ice Satin	Mitre	White Linen - 0310		Pure White - 0190	
Timber Night Satin	Decor	Storm Grey - 2320	U		
Timber Night Satin	Mitre	Meteor Grey - 2320	U	Quarry - 2375	
Timber Oak Satin	Decor	Clay Brown - 2114			
Timber Oak Satin	Mitre	Meteor Grey - 2320	U		
Travertino Classico Polished	Decor	Palermo - 3019			
Travertino Classico Polished	Mitre	Marfil - 3273	U		
Travertino Classico Silk	Mitre	Marfil - 3273	U		
Travertino Classico Silk	Decor	Cream - 3045 * +	U		
Travertino Navona Polished	Decor	Palermo - 3019			
Travertino Navona Polished	Mitre	Marfil - 3273	U		
Travertino Navona Silk	Mitre	Marfil - 3273	U		
Travertino Navona Silk	Decor	Cream - 3045 * +	U		
Zaha Stone Silk	Decor	Dove - 3150 +			
Zaha Stone Silk	Mitre	Dove - 3150 +			

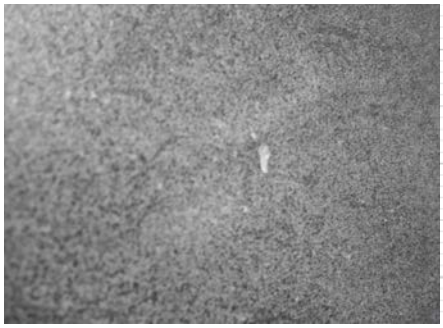
09. REPAIRS

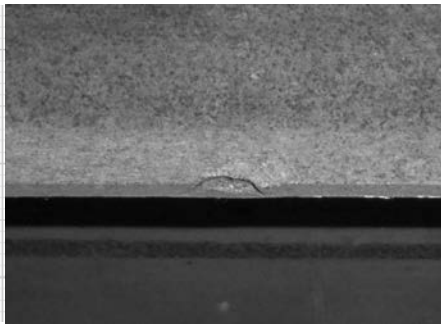


09. REPAIRS

9.1 Chip repair:

Ceramic surfaces can be damaged for many reasons. Most of the time it is due to a defect caused by a plate that falls down or a heavy object.





Keep in mind that no repair is perfect; it's very difficult to duplicate the tone and texture of a surface with resins.

Step 1:
Mix the bi-component epoxy resin, adding the color to color the epoxy so it matches the Neolith countertop.

Tip:
Repair all defects at the same time as the bi-component epoxy will cure quickly. And only mix enough to fill the defects with a little left over: epoxy resin cannot be stored once mixed.

Step 1

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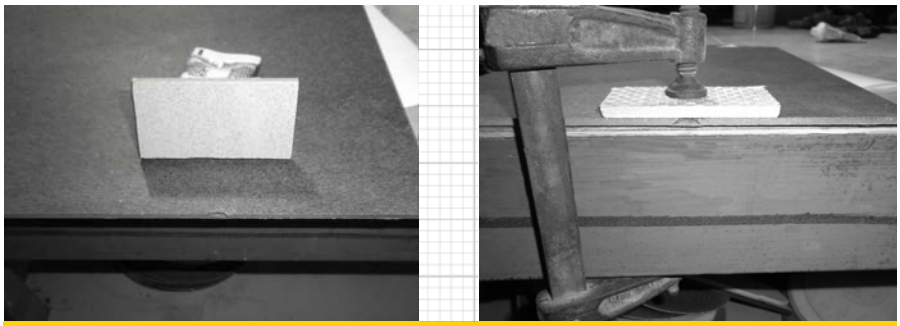
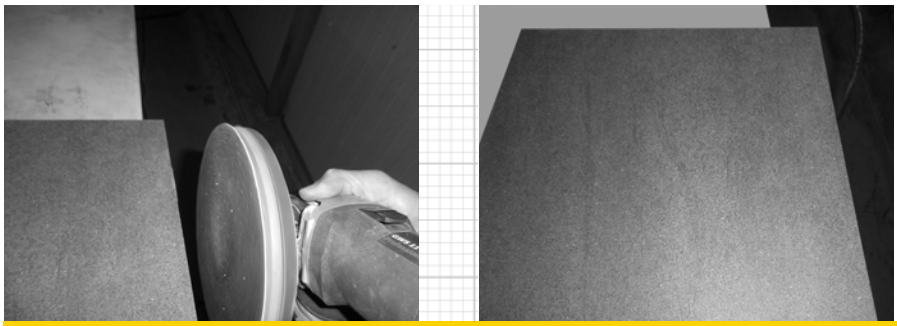
Step 2:
Use a Neolith fragment to imitate the surface finish and fill the defect with the mixed resin.



Step 2

Step 3:
Use an acetone-soaked cloth to add additional texture to the resin to imitate the adjacent surface even better.
Make sure the level of resin does not exceed the surface.
Clean the excess resin from the surface before it hardens with an acetone-soaked cloth.

Step 4:
Once the resin hardens, remove the excess resin in the edge mechanically. For surface repairs, it's best to work manually to prevent damage to the surface.



Step 4

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9.2 Repairing surface scratches in Neolith Polished.

Necessary materials:
- GlassRenu® Professional Repair System
- Variable speed electric grinder
- Anti-dust mask
- Hair-free cloth
- Water
- Spray bottle
- Protection goggles

Before beginning the process of removing all scratches from the polished surface of the slab, inspect to determine the depth of the scratches.
If you can feel a scratch with your fingernail, use the GlassRenu repair system.
If the scratch cannot be felt with your fingernail it may be removed with the polishing compound and felt disc supplied with the system.

PLEASE TAKE THE TIME TO READ THE INSTRUCTIONS INCLUDED WITH THE GLASSRENU PROFESSIONAL REPAIR SYSTEM BEFORE ATTEMPTING A REPAIR. *

1. Mix the entire bag of dry polishing compound supplied with the system with 475 ml of clean water in the spray bottle.
2. Deep clean the surface of the tile to remove all remains of dirt and grease.
3. If the scratch can be felt with your fingernail, you will need to grind the surface of the piece using a new black RenuDisk to remove the scratch. Once the black RenuDisk is connected to the support pad included, adjust the variable speed of the grinder to 1800 RPM and move the pad up and down, to the left and right over the scratched area. Remember that this grinding is done dry and it should only take a few passes to eliminate the scratch. This step will only take a few minutes to complete. If the scratch cannot be felt with your fingernail, go to step 5.
4. Once the scratches are no longer visible on the surface of the slab, remove the black RenuDisk from the support pad and replace with a new grey or “Pre-Polished” RenuDisk. Use this disc in the same way and at the same speed as the black RenuDisk. Go over the repair area at least 3 complete times so the piece is ready for polishing. You will know the pre-polishing is done when the entire surface of the piece is evenly blurred. This process should only take 2-3 minutes per square foot of repaired area.
5. Remove the grey RenuDisk from the grinder and insert the polished felt pad. Rinse the polishing solution (from step 1) over the felt polishing surface making sure the surface is damp to touch and is not dripping (4 to 5 sprays). Begin polishing the repair area on the surface of the piece. The tile will be quickly polished; Just make sure the surface is free of scratches from all angles that may be observed.
6. Clean the polished area of the piece and carefully inspect the repaired area. Keep polishing until the result is satisfactory.

* NOTE: IF YOU HAVE SPECIFIC QUESTIONS OR REQUIRE ADDITIONAL INFORMATION, CONTACT YOUR NEOLITH DISTRIBUTOR OR GLASSRENU DIRECTLY (www.glassrenu. com).

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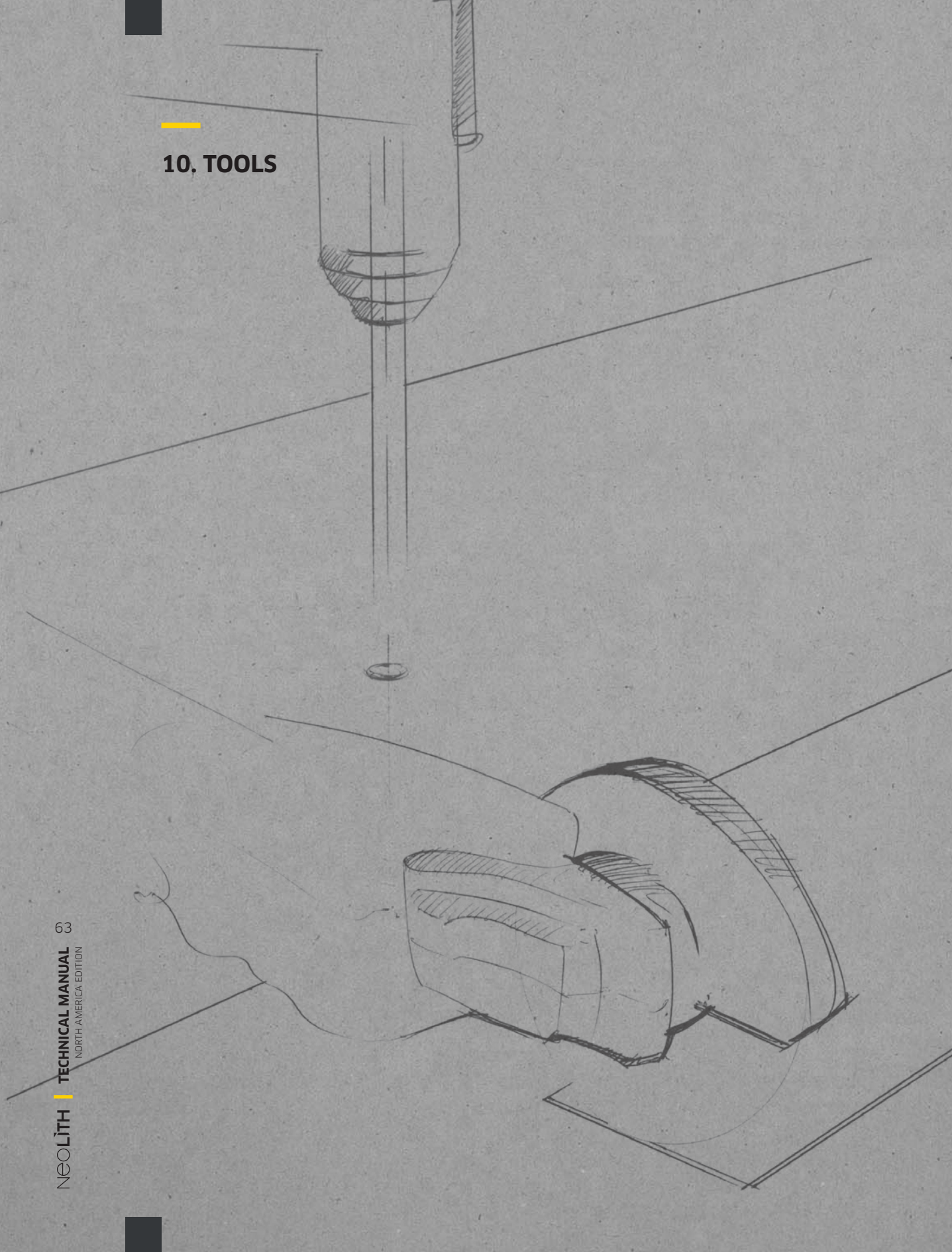
10. TOOLS



10. TOOLS

DIAMOND CUTTING
http://diamxinc.com/products/tile/Cyclone_Porcelain_Tile_Turbo_Blade
Turbo mesh thin blade


DIAMOND CUTTING
http://www.terminatordia.com/store/cutting/porcelain-granite-blades/terminator-nanocutdk-fine-turbo-blades-new.html
Blades developed for Neolith


CORE DRILLING
http://www.terminatordia.com/store/coring/dry-core-drills/terminator-nanocutdk-core-drills-news.html
Core drilling diamonds formulated for neolith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NEOLITH

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