EXTRA
ORDINARYSIZE

Technical guide

EXTRAORDINARYSIZES

Handling and laying oversize slabs

EXTRA
ORDINARY SIZE

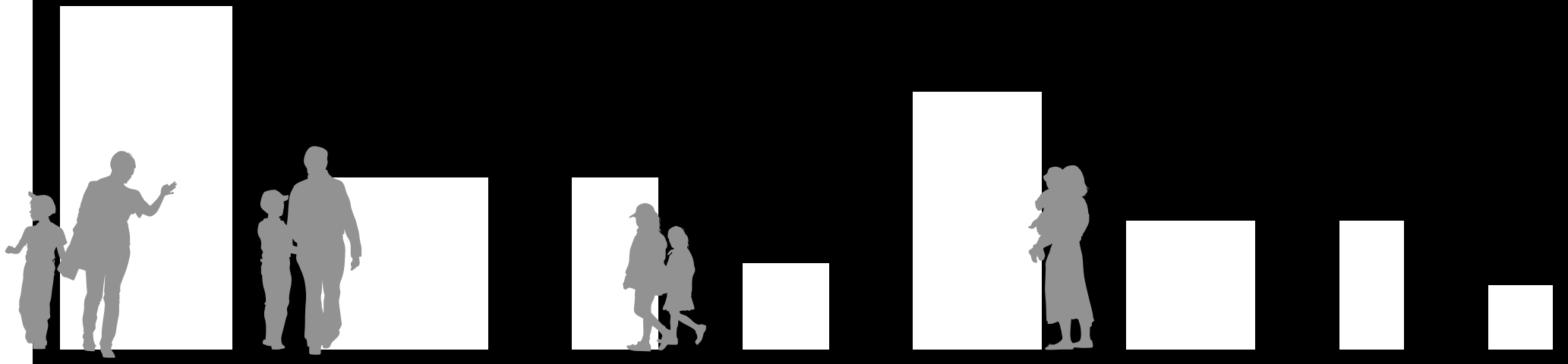
Contents

Extra-large slabs

EXTRA
ORDINARY SIZE

Ava presents the largest slab in the world. A product that's as attractive as it is versatile, planned with the most ambitious projects in mind. EXTRAORDINARYSIZE can be used freely in all kinds of applications, from the decoration of interiors to the creation of complex technical design - all with stunning results guaranteed. With EXTRAORDINARYSIZE, users can explore new collections and surfaces, all featuring a vast assortment of sizes for a 6 mm thick material, opening up a world of creativity and ingenuity.

SIZES AVAILABLE IN THE RANGE



160x320
63"x126"
thickness
6 mm

160x160
63"x63"
thickness
6 mm

80x160
31"½x63"
thickness
6 mm

80x80
31"½x31"½
thickness
6 mm

120x240
48"x96"
thickness
6 mm

120x120
48"x48"
thickness
6 mm

60x120
24"x48"
thickness
10 mm

60x60
24"x24"
thickness
10 mm

Large sizes and sound technical features.

Dry-pressed porcelain stoneware slabs.


No water absorption


Deep abrasion resistance.


Frost-resistant.


Stain resistance.


Withstands sudden temperature changes


Easy to clean.


Colourfast even when exposed to sunlight.


Withstands chemicals.


High ultimate strength.


Fireproof.

Extraapplications

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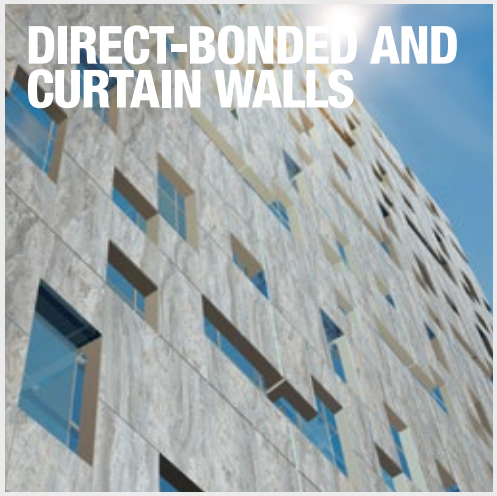
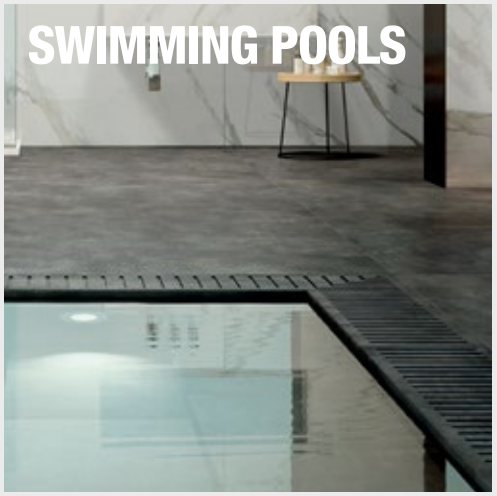
EXTRAORDINARY **SIZES**





A-FRAMES AND CRATES

To protect the integrity of the “EXTRAORDINARY Size” slabs during transport, optimised packaging has been specially designed and produced for the products.

The slabs are packed and shipped in specially made crates and on specific A-frames (specially designed to improve the carriage of these products in containers), taking care to protect every single slab from knocks and scratches as best as possible.

A-FRAME

CRATE

2 types of A-frames
- For slabs measuring 160x320 cm and 160x160 cm.
- For slabs measuring 120x240 cm.

3 types of Crates
- For slabs measuring 160x320 cm.
- For slabs measuring 160x160 cm.
- For slabs measuring 120x240 cm.

SLABS PACKED ON A-FRAMES.

The A-frames are shipped as full as possible.
The A-frame is only used at the customer's request.

If an individual customer orders two or more items in the same size, these will be placed on the same A-frame, until the A-frame is completely full (e.g. one A-frame holds 44 slabs measuring 160x320 cm).

If an individual customer orders two or more items (even if they are different sizes), these will be placed on the same A-frame, until the A-frame is completely full (assuming the various sizes are modular).

A-frame used for slabs of the following sizes:

160x320 cm,
160x160 cm

A-frame used for slabs of the following sizes:

120x240 cm
120x120 cm

Packaging systems

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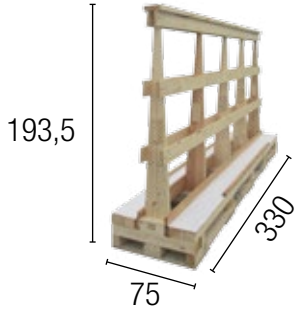
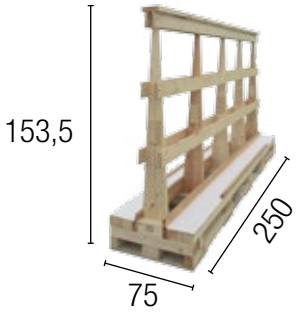
Type	Slab size	Slab		Empty A-frame			Full A-frame
		Sqm	Kg	Articles	Sqm	Kg	Kg
	**160x320 cm** 63”x126”	5,12	74,14	44	225,28	210,00	3.472
	160x160 cm 63”x63”	2,56	37,07	88	225,28	210,00	3.472
	**120x240 cm** 48”x96”	2,88	41,70	44	126,72	158,00	1.993
	120x120 cm 48”x48”	1,44	20,85	88	126,72	158,00	1.993

SLABS PACKED IN CRATES.

The crates are shipped as full as possible.

If an individual customer orders two or more items in the same size, these will be placed in the same crate, until the crate is completely full (e.g. one crate holds 14 slabs measuring 160x320 cm).

If an individual customer orders two or more items (even if they are different sizes), these will be placed in the same crate, until the crate is completely full (assuming the various sizes are modular).

Crate recommended for slabs of the following sizes:

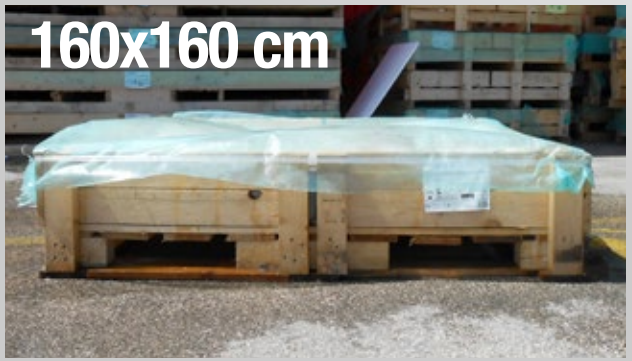
160x320 cm

Crate recommended for slabs of the following sizes:

120x240 cm

Crate recommended for slabs of the following sizes:

160x160 cm



Toothed washer to prevent stacked crates slipping.

Packaging systems

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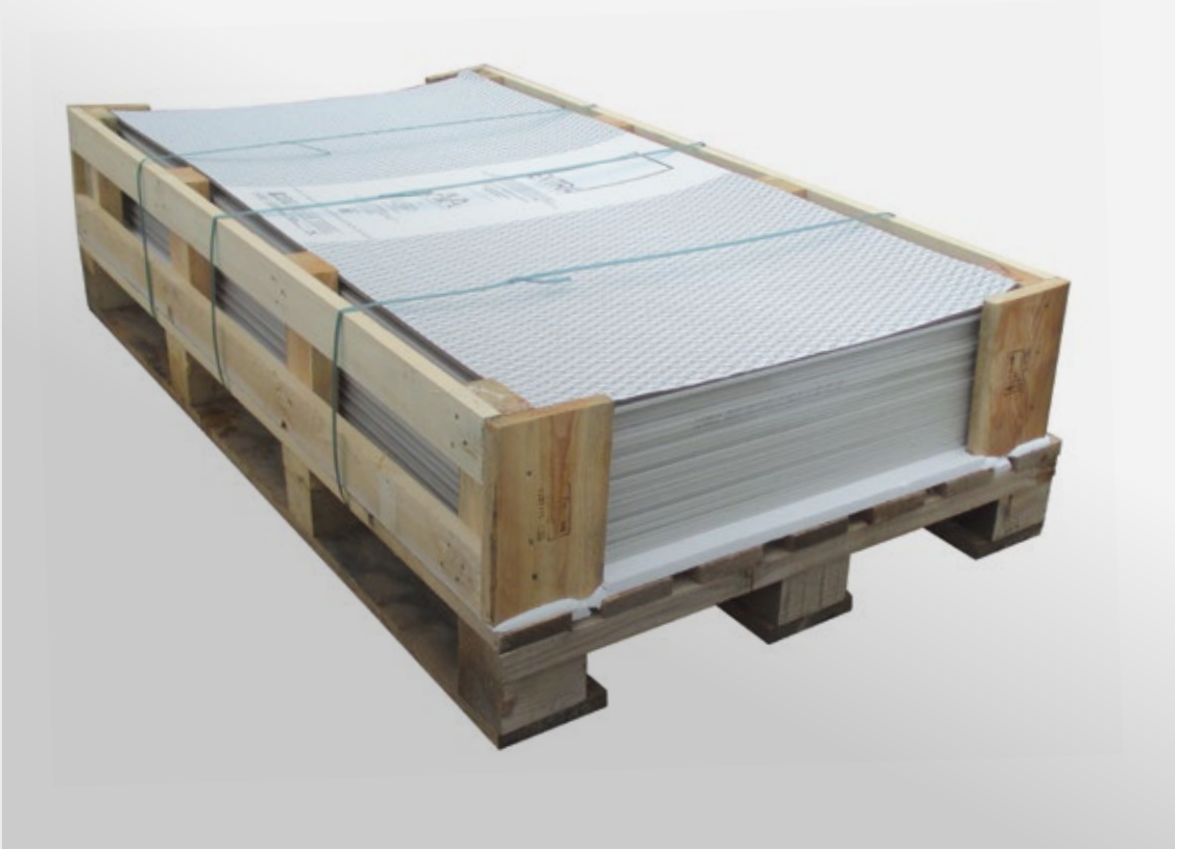
Type	Slab size	Slab		Empty crate			Full crate
		Sqm	Kg	Articles	Sqm	Kg	Kg
	**160x320 cm** 63”x126”	5,12	74,14	14	71,68	140,00	1.178
	**120x240 cm** 48”x96”	2,88	41,70	20	57,60	100,00	934
	**160x160 cm** 63”x63”	2,56	37,07	24	61,44	71,80	962

SLABS PACKED ON HIGH-SIDED PALLETS.

Dedicated high-sided pallets
For slabs measuring 80x160 cm and 120x120 cm.

80x120 cm EUROPALLETS
For slabs measuring 80x80 cm and for the 10 mm-thick sizes.



Packaging systems

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Type	Slab size	Boxes				Pallets with sides		
		LM	Articles	Sqm	Kg	Slabs	Sqm	Kg
	**80x160 cm** 31”1/2x63”		1	1,28	18,60	30	38,40	606
						Boxes per pallet	**Sqm per pallet**	**Kg per pallet**
	**120x120 cm** 48”x48”		2	2,88	41,70	24	69,12	1.057

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Packing

SIZE (cm)	THICKNESS	PACKING TYPE	SLABS	SQM	KG	TARE
160x320	6 mm	**CRATE** 345x175x37 cm	14	71,68	1.178	140,00
		A-FRAME 330x75x193,5 cm	44	225,28	3.472	210,00
160x160	6 mm	**CRATE** 182,6x173,6x40,4 cm	24	61,44	962	71,80
		A-FRAME 330x75x193,5 cm	88	225,28	3.472	210,00
120x240	6 mm	**CRATE** 264x136x40 cm	20	57,60	934	100,00
		A-FRAME 250x75x153,5 cm	44	126,72	1.993	158,00
80x160	6 mm	**SPECIAL PALLET WITH SIDES** 168x97x40,9 cm	30	38,40	606	45,00
120x120	6 mm	**A-FRAME** 250x75x153,5 cm	88	126,72	1.993	158,00

SIZE (cm)	THICKNESS	PACKING TYPE	Articles per BOX	SQM per BOX.	KG PER BOX	BOXES per PAL.	SQM per PAL.	KG per PAL.
120x120	6 mm	**PALLET SPECIALE CON SPONDE** 143x123x64,7 cm	2	2,88	41,70	24	69,12	1.057
80x80	6 mm	**EUROPALLET** 80x120 cm	3	1,92	27,90	40	76,80	1.141
60x120	10 mm	**EUROPALLET** 80x120 cm	2	1,44	33,41	30	43,20	1.025
60x60	10 mm	**EUROPALLET** 80x120 cm	3	1,08	24,80	40	43,20	1.012

The weights stated in the chart are approximate and may undergo slight changes for production reasons.

Handling the A-frames

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LOADING THE A-FRAMES INTO THE CONTAINERS

Equipment for handling A-frames for slabs up to the 160x320 size
Lifting truck
Load capacity: 5,000 kg
Fork length: 100-120 cm
Extended fork length: 280 cm

The containers can be loaded with A-frames for slabs up to the 160x320 size

Loading must be carried out using suitably sized ramps.
From the ground.

Handling the A-frames

Loading the A-FRAMES into the containers

A-FRAMES (UP TO 160x320 cm)

- A 20’ container can hold up to three A-frames, which - for weight balance purposes - must be positioned in the middle of the container.
- An empty 40’ container can only be loaded via a ramp. It can contain up to nine A-frames.

A-FRAMES (UP TO 120x240 cm)

- A 20’ container can hold up to six A-frames, which - for weight balance purposes - must be positioned in the middle of the container.
- An empty 40’ container can only be loaded via a ramp. It can contain up to twelve A-frames.

A-frame protection system
We recommend the use of special protection systems, such as **Airbags**, **straps** or **ties**.

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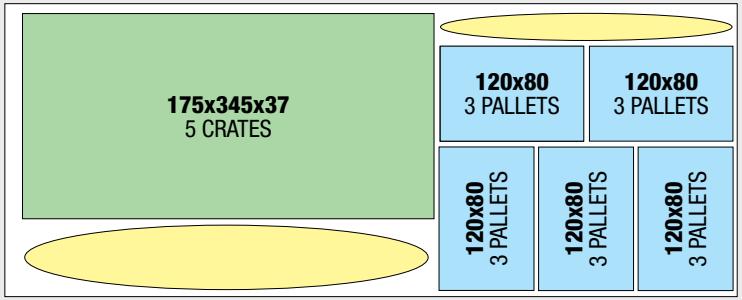
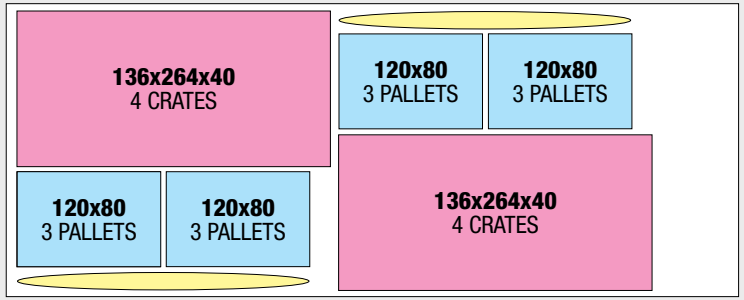
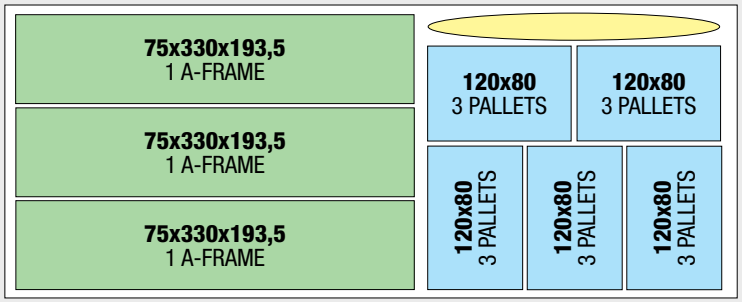
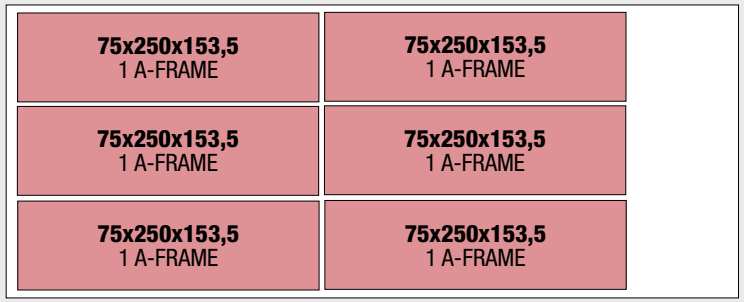
Container loading diagram

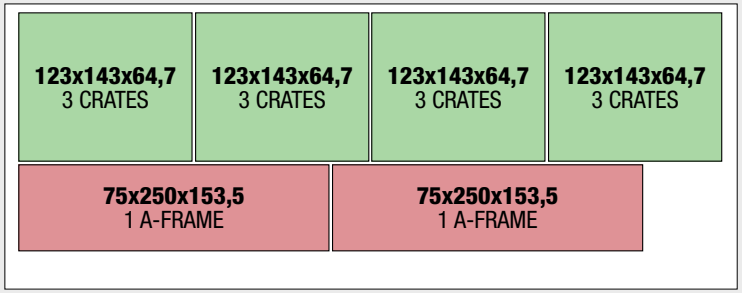
20 FOOT CONTAINER

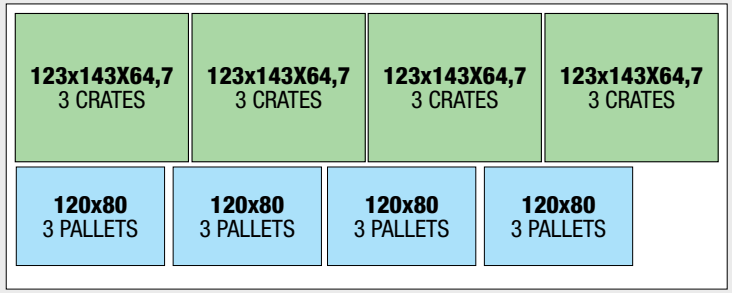








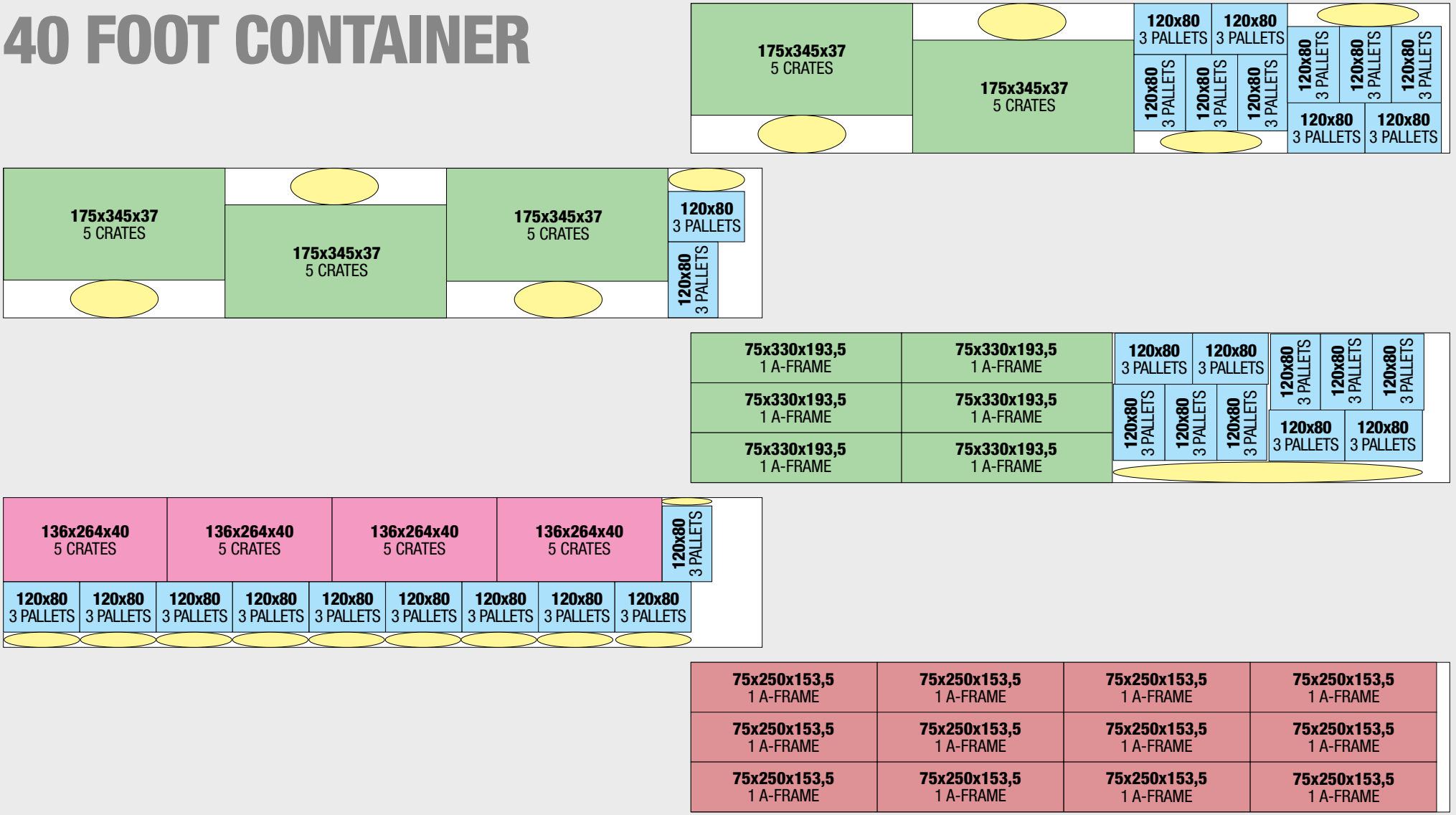




EXTRA ORDINARY SIZE

Container loading diagram

40 FOOT CONTAINER



Handling the A-frames

EXTRA
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A-FRAME types (based on product size)

A-FRAME data	For 120x240 cm		For 160x320 cm	
	Size **120x240 cm**	Size **120x120 cm**	Size **160x320 cm**	Size **160x160 cm**
Maximum number of A-frames in one 20’ container	6	6	3	3
Sqm per A-frame	126,72	126,72	225,28	225,28
Articles per A-frame	44	88	44	88
Total weight per A-frame	2.015>2.045 kg	2.015>2.045 kg	3.494>3.536 kg	3.494>3.536 kg
A-frame width	250	250	330	330
A-frame depth	75	75	75	75
A-frame height	153,5	160	193,5	193,5
Slab weight (kg/each)	27,5	13,8	73,5	36,8
A-frame weight, empty (kg/each)	158	163	210	210
Stackability	no	no	no	no

20’ Container Data

Outer length	6.059	mm
Inner length	5.860	mm
Outer length	2.438	mm
Inner length	2.310	mm
Outer height	2.591	mm
Inner height	2.360	mm
Rear opening width	2.280	mm
Rear opening height	2.270	mm
Internal load volume	da 32 a 33,9	m^3
Empty weight (tare)	2.050 - 2.650	kg
Maximum loaded weight	18.270 - 27.980	kg

40’ Container Data

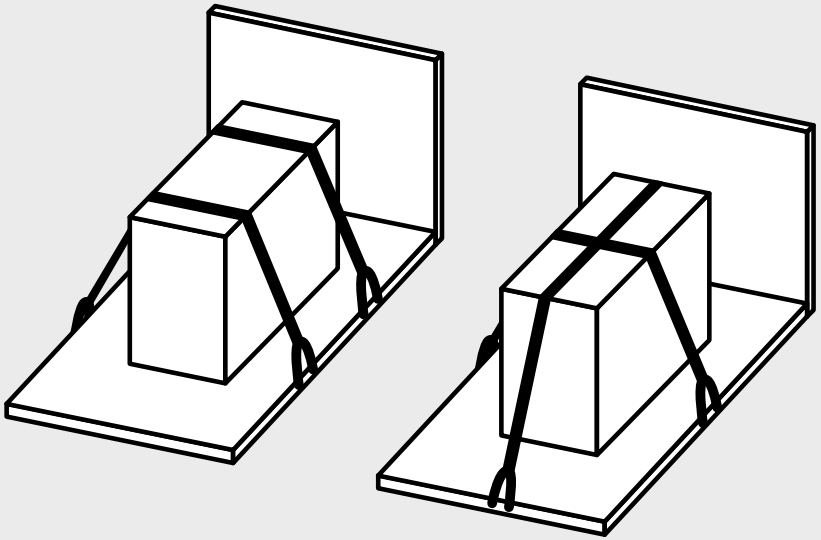
Outer length	12.192	mm
Inner length	12.010	mm
Outer length	2.438	mm
Inner length	2.300	mm
Outer height	2.591	mm
Inner height	2.360	mm
Rear opening width	2.290	mm
Rear opening height	2.260	mm
Internal load volume	da 65,20 a 67,7	m^3
Empty weight (tare)	3.630 - 3.740 kg	kg
Maximum loaded weight	26.740 - 26.850	kg

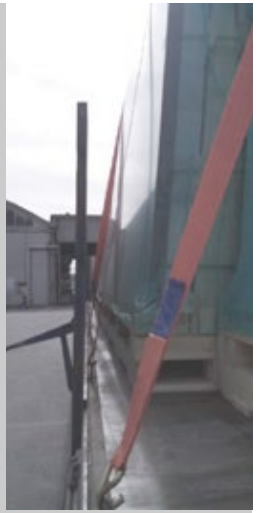
Handling the A-frames

Loading the A-frames onto trucks

IMPORTANT

Once loaded on the truck, we recommend the use of ropes, or nylon or jute straps, which must be tightened using the tensioning devices provided.





Handling the A-frames

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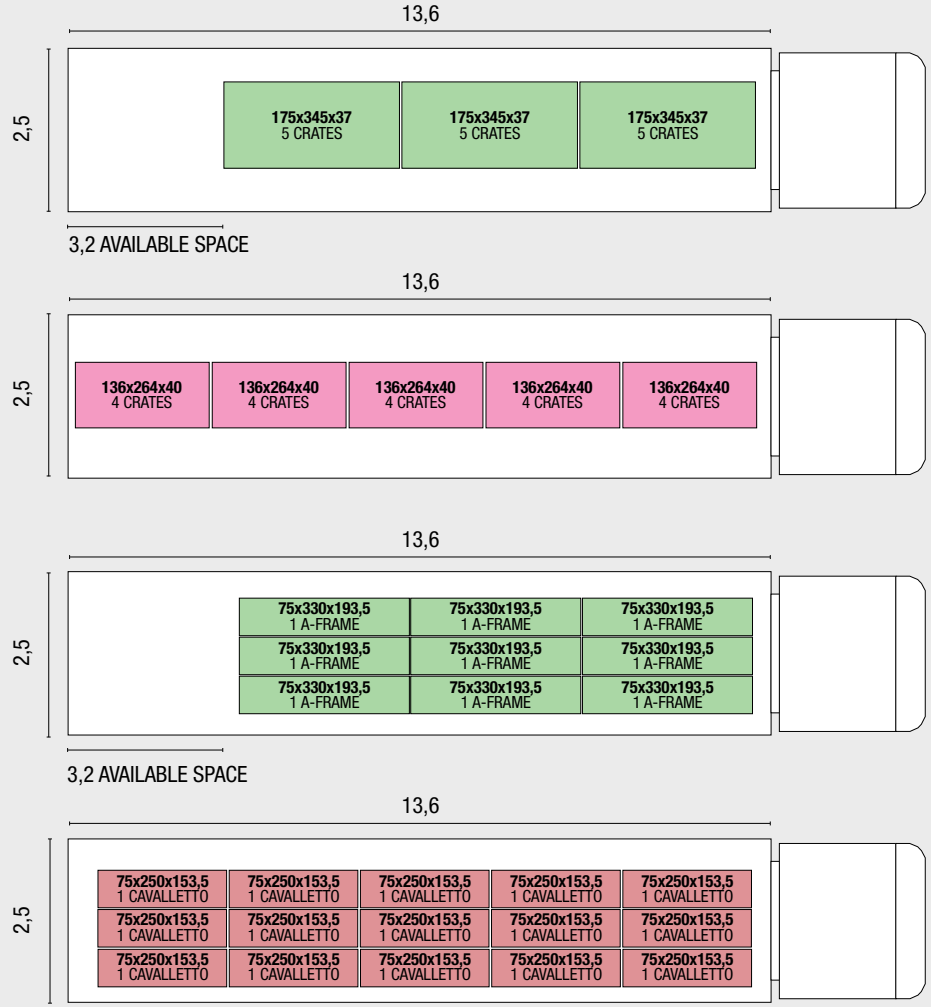
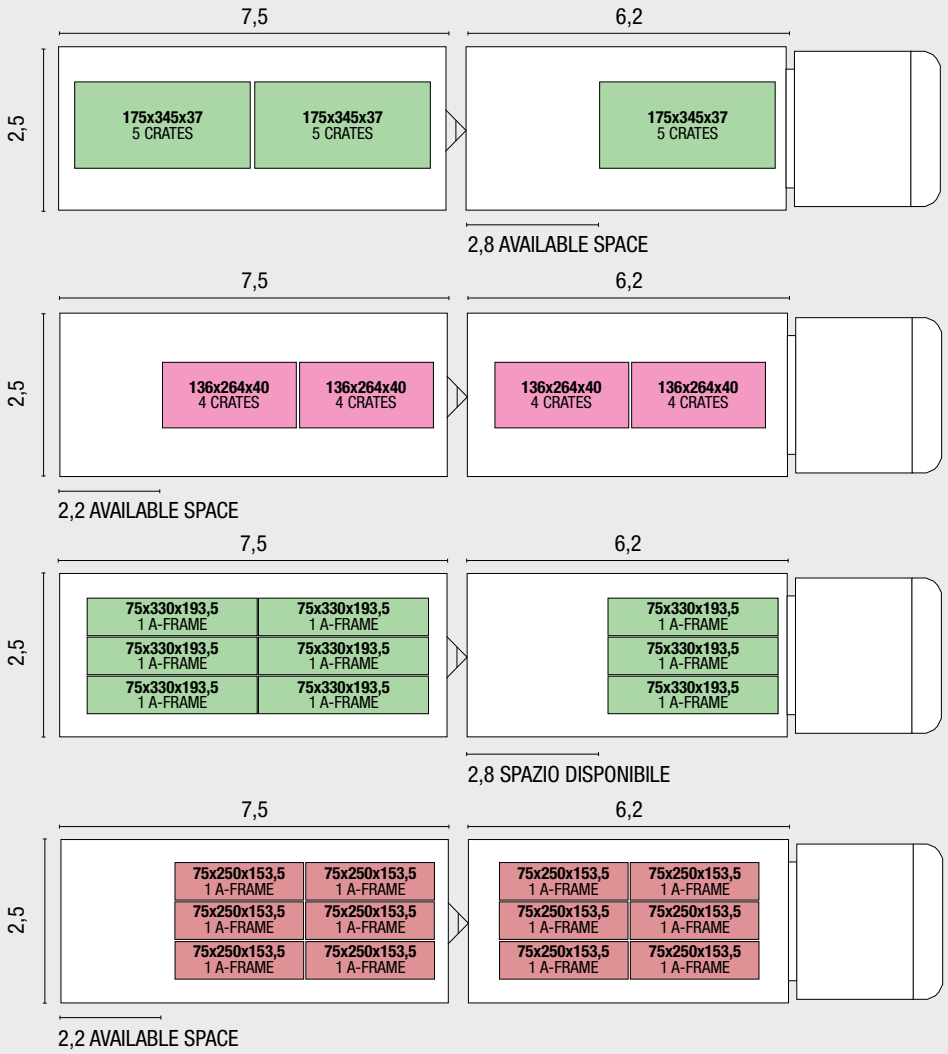
Truck loading diagrams

ARTICULATED LORRY



RIGID LORRY WITH TRAILER



Handling the A-frames

CRATE types (based on product size)

CRATE data	For 120x240 cm	For 160x320 cm	For 160x160 cm
	Size **120x240 cm**	Size **160x320 cm**	Size **160x160 cm**
Maximum number of crates in one 20’ container	10	5	15
Sqm per crate	57,6	71,68	61,44
Articles per crate	20	14	24
Total weight per crate	934 kg	1.178 kg	962 kg
Crate width	264	345	182,6
Crate depth	136	175	173,6
Crate height	40	37	40,4
Slab weight (kg/each)	41,70	74,12	37,07
Empty crate height: (kg/each)	100	140	71,80
Maximum stackability	10	10	10

LOADING THE CRATES

Equipment for handling crates for slabs up to the 160x320 size
Lifting truck
Load capacity: 3,000 kg
Fork length: 160 cm
Extended fork length: 280 cm

Tips for loading crates up to 160x320 cm

The crates must be handled individually.
Crates can be stacked up to 10 crates high (only applies to use of the same crates).

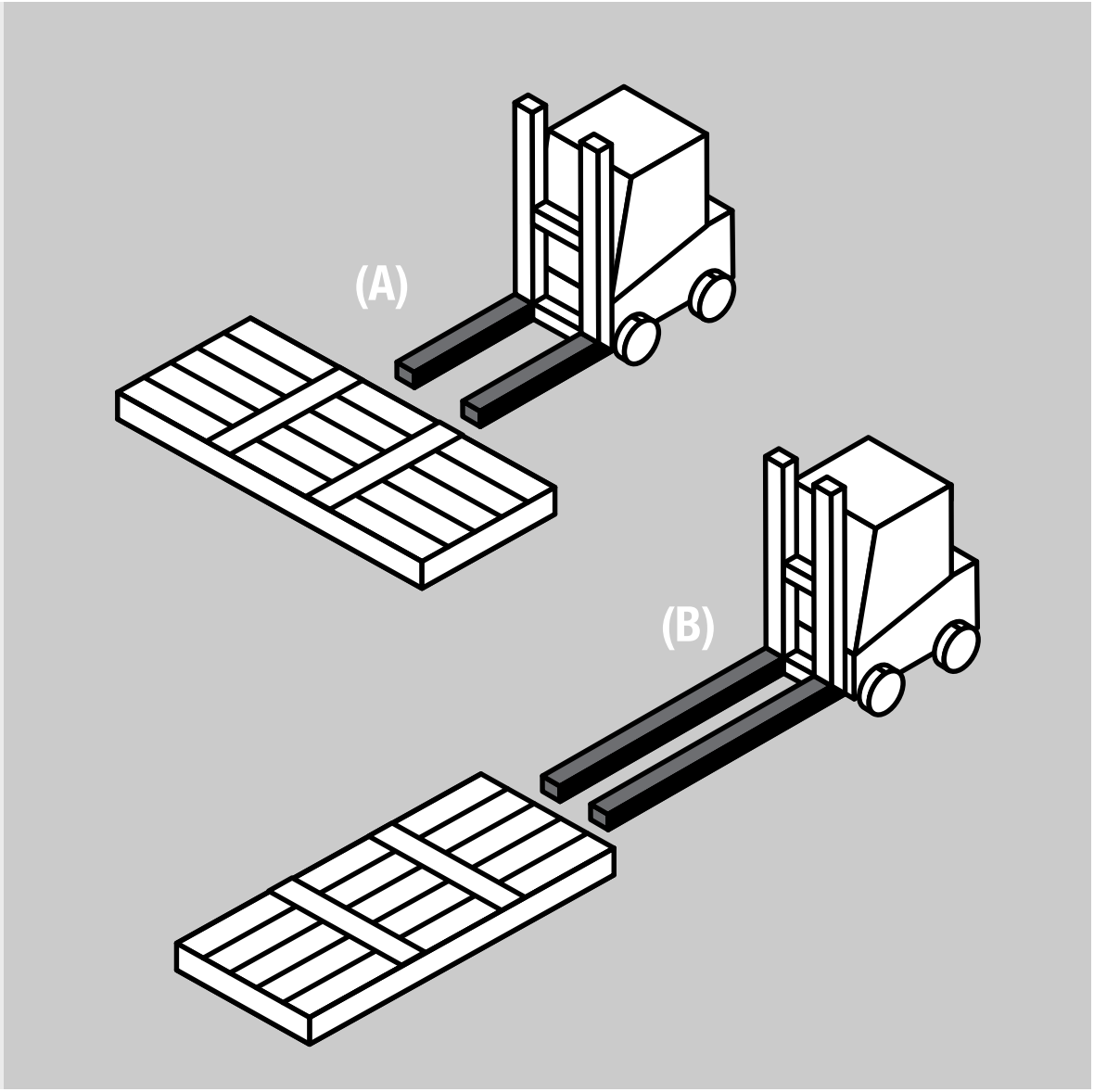
Loading The CRATES

Crate handling from long side (A) (recommended choice)

We recommend you use forks with a length of at least 1.6 m, widening them to the maximum limit to make the most use possible of the crate's surface.

Crate handling from short side (B)

We recommend you use forks with a length of at least 2.8 m, widening them to the maximum limit to make the most use possible of the crate's surface.



Handling the slabs on the construction site

EXTRA
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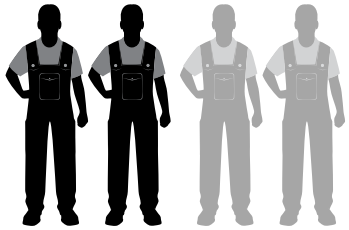
EQUIPMENT

When handling the slabs, from removing them from the crates through to fitting them on the wall or floor, we recommend you use equipment designed specifically for handling large slabs.



When handling a 160x320 cm slab, we recommend the presence of 2/4 operators.

Bar system equipped with suction cups for the 160x320 cm size and sub-sizes.
The application of this tool to the slab increases its rigidity and allows it to be handled safely, moving it around the building site using an appropriate truck/trolley.

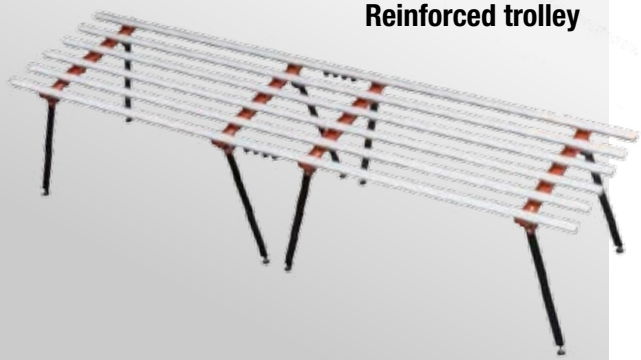
Handling with the frame becomes essential when slabs have holes cut in them for routing electrical trunking or water piping.

Two to four people may be required, depending on the dimensions of the slab size being handled.

We recommend you obtain a work bench with aluminium section bars.

Bars with suction cups

Reinforced trolley



Workbench with aluminium section bars

Equipment recommended for handling slabs of various sizes

Slab size	Number of tools needed	Number of workers recommended	Tool description	Tool
160x320 cm	1	4	Bar system equipped with suction cups	
120x240 cm	1	2		
160x160 cm	2	2	160 cm bar with two 15 cm vacuum suction cups	
80x160 cm	1	2		
120x120 cm	4	2	15 cm vacuum suction cup	
60x120 cm	2	1		
80x80 cm	1	1	Double suction cup	

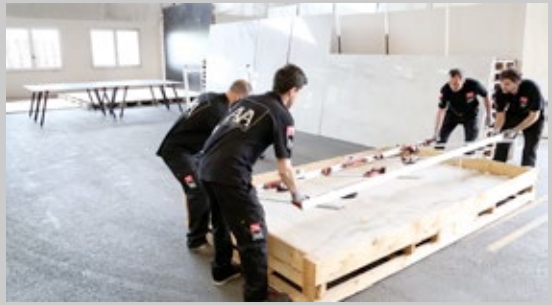
Watch the video

PROCEDURE FOR SLAB REMOVAL FROM PACK

1)

1) 2) 3) 4) !)

Place the lifting frame on the 160x320 cm slab, in a central position, with the lower ends of the crossbars touching the wall of the crate.



PROCEDURE FOR SLAB REMOVAL FROM PACK

2)

1) **2)** 3) 4) !)

Clean the slabs accurately and press the pistons on the suction cups until the red ring (safety signal) is no longer visible.

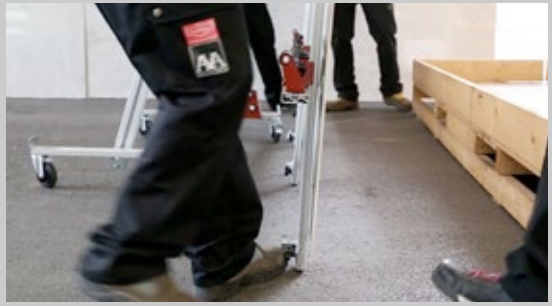
PROCEDURE FOR SLAB REMOVAL FROM PACK

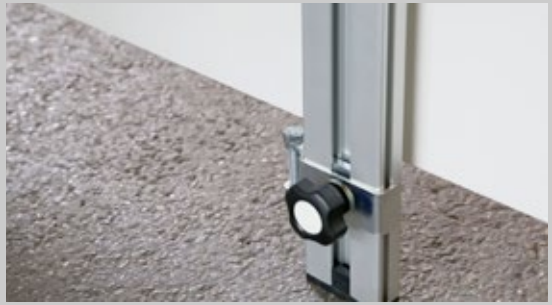
3)

1) 2) **3)** 4) !)

Carefully lift the slab and rest the frame crossbars on the ground.

Adjust the safety hooks at the ends of the crossbars, making sure the metal does not stick onto the slab. Then leave a little clearance between the edge of the slab and the hook.





PROCEDURE FOR SLAB REMOVAL FROM PACK

4)

1) 2) 3) **4)** !)

Lift the slab and fasten the lifting frame crossbar onto the hooks on the lifting truck/trolley.

PROCEDURE FOR SLAB REMOVAL FROM PACK

!)

1) 2) 3) 4) !)

If the slab measures no more than 120x240 cm, it can be moved by just two people.

The lifting kit for this size consists of two long bars, each measuring 230 cm.

The suction cup fastening procedure is the same as described above.

Manual handling

In addition to professional handling machinery, such as pneumatic handling machines or gantries, or the frame stated earlier, the slabs are usually moved (on the construction site and in the warehouse) by workers provided with tools which are commonly available and easy to use.

It is important to remember, that **manual handling must only be carried out where site conditions are amenable,** such as:

- ample room for manoeuvre;
- ground-floor location;
- easy access;
- limited number of slabs to be laid.

IN ANY CASE, THE SLABS MUST ALWAYS BE **HANDLED INDIVIDUALLY** AND **ENSURING THE WORKERS' COMPLETE SAFETY.**

Handling with manual suction cups

In the case of two workers, perform the handling using manual suction cups (preferably equipped with a pressure adjustment function). The workers must remove the slabs by lifting them in the middle, then moving them in an upright position, positioning themselves at the two ends of the long side.

During movement of the slabs, care must be taken around the edges and swinging and vibrations should be minimised.

Once the delivery area has been reached, **the slab must be positioned horizontally on a specially prepared workbench.**

In order to apply the adhesive easily, the slab must be placed on the bench with the rear side facing upwards.

If the slab needs to be placed on the ground, it must be positioned resting on a vertical wall or against a flat, rigid support, with the long side on the ground.

The edges must be protected with some kind of soft material (e.g. wood, polystyrene or other material) which must be positioned on the floor beforehand, extending along the entire length of the slab.

Watch the video

FLOORING

1) 2) 3) 4) 5) 6) 7) 8) 9)

1)

First of all, make sure that the sub-floor is properly set and has no cracks, and that it is clean, smooth and has a maximum flatness tolerance of 1 mm (checked with a levelling bar at least 2 m long).

Remove the slab from the pack with a frame fitted with VACUUM suckers and place it on the truck/trolley.

FLOORING

2)

1) **2)** 3) 4) 5) 6) 7) 8) 9)

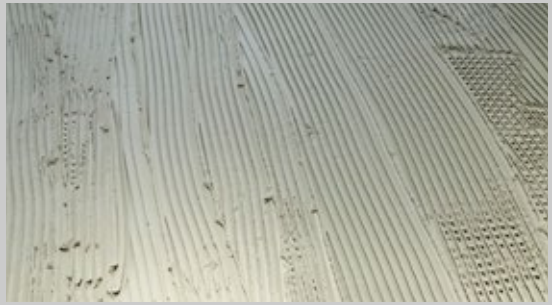
Apply the adhesive, using the double spreading technique, i.e. first, using a 3x3 mm notched trowel, spread the glue all over the back of the slab in the same direction, taking care to distribute it properly, including in the corners.

FLOORING

3)

1) 2) **3)** 4) 5) 6) 7) 8) 9)

Then, using a 10 mm slanted notched trowel, spread the glue on the sub-floor covering an area which is 5 to 10 cm wider than the size of the slab so as to be certain that there are no parts without glue. Make sure you cover the edges and corners of the rear of the slab.



N.B.
It is important that the glue is applied to the sub-floor and the rear of the slab in the same direction, not crosswise.

EXTRA
ORDINARY SIZE

FLOORING

4)

1) 2) 3) **4)** 5) 6) 7) 8) 9)

Lift the slab off the A-frame using the handles in the lifting kit.

Place the frame crossbars on the ground and release the safety hooks.

FLOORING

5)

1) 2) 3) 4) **5)** 6) 7) 8) 9)

Lift the slab and position it carefully on the glue applied earlier.

Once laid, the slab may be moved by 4-5 cm, but it can no longer be lifted.

FLOORING

6)

1) 2) 3) 4) 5) **6)** 7) 8) 9)

With an anti-rebound float or an electric vibrator, beat the slab from the middle outwards to ensure perfect slab/sub-floor adhesion and to force out any trapped air.

FLOORING

7)

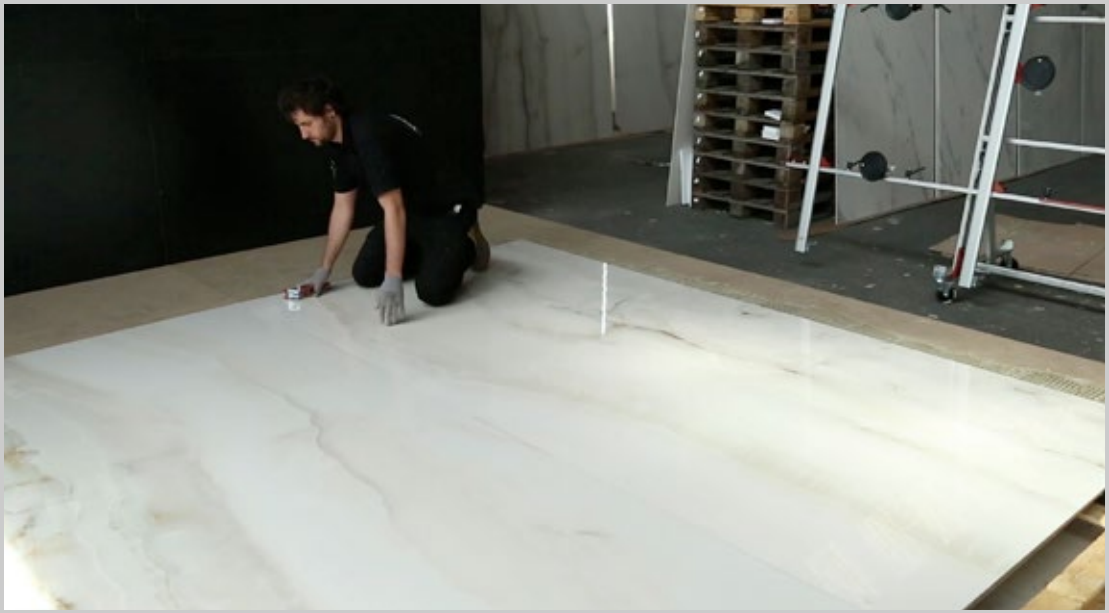
To perfect the positioning of the slab, a special tool is available to position the slabs close together.

We recommend you leave a gap of at least 2 mm between one slab and the next.

FLOORING

8)

Once laying is complete, the floor will be ready to be walked on after 12-24 hours or more (depending on the type of adhesive used).



FLOORING

1) 2) 3) 4) 5) 6) 7) 8) 9)

9)

TECHNICAL JOINTS

In the laying design phase, it is absolutely essential to take into account the structural expansion joints and the distribution joints.
The structural expansion joints must correspond to the existing ones in the sub-floor and the further expansion (distribution) joints must be made using a suitable sealant or dedicated section bars.

When laying external flooring, indoor floors exposed to high traffic, and on sub-floors prone to bending, squared areas measuring 9-12 sqm (depending on the size to be laid) must be created, around whose perimeter the distribution joint must be laid.

If the tiling is laid indoors on a stable sub-floor, these squares can measure 20-25 sqm.

In any case, the laying surface should always be finished by leaving at least 4-5 mm from walls, columns, and corners unfilled (to accommodate skirting or cable trunking).

WALL TILING

1)

1) 2)

When fitting a slab on a wall, the same techniques should be used as described for laying as flooring.

EXTRA
ORDINARY SIZE

WALL TILING

2)

1) 2)

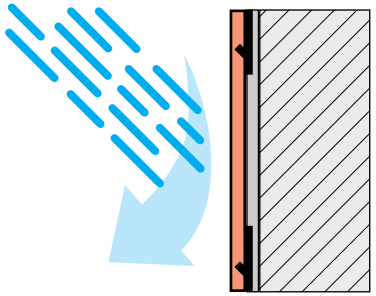
To ensure the slabs are laid 1 mm apart (optimal positioning), it is a good idea to use the special tool.

We recommend you leave a gap of at least 1 mm between one slab and the next.

THE ADVANTAGES OF CURTAIN WALLS MOUNTED WITH A DIRECT BONDING METHOD

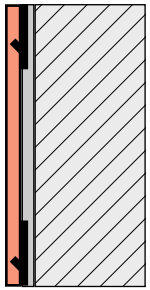
Protection against water.

A curtain wall system protects the building's main structures, keeping them dry and preventing wear.



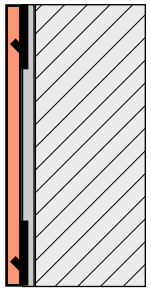
No loss of looks or technical wear.

The colour-fastness of a curtain wall, combined with the low absorption rates and the ease of cleaning offered by porcelain stoneware, guarantees a great-looking and high-performing finish that will stand the test of time.



An optimal solution for renovation projects.

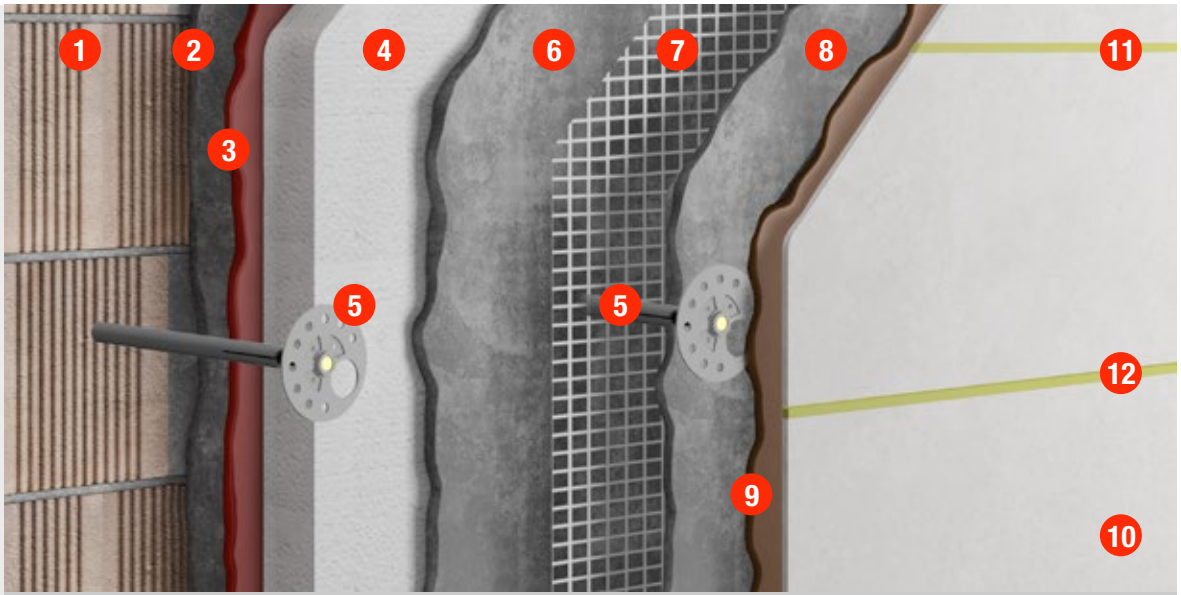
Use of slabs on walls reduces wear considerably and consequently also the need for external building maintenance. This advantage is vitally important in coastal areas, where salt corrosion leads to increased wear.



INSTALLATION AS INSULATION CLADDING

With a **thickness of just 6 mm,** these slender slabs are widely used as **cladding** for insulating layers, with the dual function of enhancing the **building's appearance** and offering it **protection.**

The various insulation systems developed by manufacturers offer various possibilities for use; given the peculiarities of the technical specifications involved in the construction of an insulation cladding system (which needs to be built to high professional standards, throughout all the phases), we therefore recommend you choose a cladding system which has been tried and tested by a leading firm in the field.



1. **Load-bearing walls**
2. **Smoothing layer**
3. **MAPETHERM AR1 (sp. 3-5 mm)**
4. **EXP or EPS insulation layer**
5. **MAPETHERM tile fix 15**
6. **PLANITOP HDM Maxi**
7. **Reinforcement mesh**
8. **PLANITOP HDM Maxi - second smoothing**
9. **Adhesives**
10. **Slab**
11. **Grouts**
12. **Sealant**

INSTALLATION AS INSULATION CLADDING

Mapetherm Tile System
In this application, slabs should be used with light or intermediate colour shades (with over 20% reflectance) and the usable sizes (depending on the colour) must be no larger than 80x160 cm.

The slabs must be applied to EPS or XPS heat insulation slabs, in compliance with the specifications described below:

1. the wall must be covered with a layer of render with a tear strength of 1.00N/mm², whose surface must be perfectly smooth and flat;
2. laying the first Mapetherm BA section bar, in order to maintain horizontality; the section bar must be fastened with a drip moulding using plastic screw anchors and galvanized steel fastening screws (Mapheterm FIX B);
3. proceed by laying the Mapetherm EPS or XPS insulation panel using Mapetherm AR1 or Mapetherm AR1 GG adhesive, duly mixed with water.

   The adhesive must be applied using the double spreading system, i.e. both the rear of the panel and the wall must be covered;

INSTALLATION AS INSULATION CLADDING

4. once the adhesive is completely dry, the layer of structural rendering must be made, using Planitop HDM MAXI with a max thickness of 7-10 mm, and then the Mapegrid G120 alkali-resistant fibreglass mesh must be positioned while the adhesive is still wet.
   At this point, the Mapetherm TILE FIX 15 mechanical screw anchors must be fitted, equipped with flush washers(4-5 anchors per square metre).

   Wait around 24-36 hours and then apply a second layer of Planitop HDM MAXI in the vicinity of the openings (doors and windows), as well as in the corners and critical areas.

   We recommend using the same Mapegrid G120 fibreglass, cut into strips and applied at 45° with respect to the laying angle. The edges near adjacent walls must be reinforced by embedding Mapetherm PROF metal reinforcing elements inside the structural render;

5. lay the 6 mm-thick slabs using the double spreading technique and large joints (minimum 5 mm), estimating the size of the joint based on the size of the slab being laid and the weather conditions in the construction site.

   Structural joints must be respected and distribution joints must be envisaged, in particular near the corners, edges, and string course (one per 9-12 sqm square section).

   To ensure the cladding is protected against water seepage, metal sealing flashings must be used at the upper and lower ends, or specific sealants near doors and windows.

INSTALLATION AS INSULATION CLADDING

6. RECOMMENDED ADHESIVES

normal-setting

- ULTRALITE S2
- KERBOND+ISOLASTIC

quick-setting

- ELASTORAPID
- KERAQUICK+LATEX PLUS

7. GROUTS

- ULTRACOLOR PLUS
- KERACOLOR+FUGOLASTIC

8. JOINT SEALANTS

- MAPESIL LM
- MAPEFLEX PU40

FACADE LAYING direct bonding

The slender, 6 mm-thick slabs are widely used for external cladding of buildings with a direct bonding technique. For this kind of application, the design phase should take into account several aspects, including:

- type of structure and base onto which to apply the slabs;
- local climate and orientation of the building;
- size and colour to be applied;
- suitable adhesives;
- joint sizes;
- structural and distribution joints;
- sealant for protection against water seepage.

FACADE LAYING

The base

Broadly speaking, these slabs can be applied to all kinds of concrete or cement render bases. In the frequent case of mixed bases (reinforced concrete mixed with masonry panels), you will need to render the wall before laying the slabs, reinforcing the render with a galvanised mesh in the areas over the changes in base.

The render must provide high mechanical strength, flexural strength, and high adhesion to the walls (10 kg/sq cm).

The base must be flat, stable, and crack-free, and the normal drying shrinkage must be complete.

All the uneven sections must be corrected with suitable levelling products.

Before laying, you must also check that the sub-floor is clean, dust-free, and devoid of unanchored loose parts.

Choice of size

Outdoor laying is strongly conditioned by the weather, by heat expansion, and by exposure to sunlight, all factors which must be borne in mind when choosing the colour and size of the slabs to use.

Darker shades shall be avoided, as they tend to retain the heat, thereby stimulating expansion of the bonding system, and therefore requiring large joints (minimum 5 mm), given the size of the slabs due to be used (80x160 maximum).

Another aspect to consider is the overall height of the building and any local regulations concerning the use of mixed adhesive/mechanical hook system to anchor the slabs safely.

Finally, the logistical conditions of the site must be analysed (room for manoeuvres, heights, handling ease, scaffolding, access) in order to plan the job using the most appropriate slab size for the actual work site.

FACADE LAYING
Laying

High-deformability adhesive must be used in order to accommodate the natural handling of the tiling and to offset tension levels in the sub-floor.

The adhesive must be applied with the double spreading system taking particular care to cover the edges and corners, using a 3 mm notched trowel for the rear of the slab and a 6-9 mm slanted notched trowel for spreading over the base.

In the case of very absorbent or crumbly sub-floors, an appropriate primer must be found and applied prior to application of the adhesive (with which the primer must be compatible).

The final beating with a rubber trowel, which must be carried out evenly over the entire surface, forces out air bubbles underneath the slab and facilitate bonding of the two layers of adhesive applied.

The joints must be large (at least 5 mm) and sufficiently filled and will only be applied once the adhesive is completely dry.

If using epoxy fillers, you must wait until they are set and the excess has been removed.

Structural joints must correspond with existing structural joints and distribution joints must be positioned near the string course, corners, and edges (approximately one per each 9-12 sqm square area) depending on the slab size used.

These must then be sealed with suitable neutral curing products.
To protect against weathering, we recommend that metal flashings be added on the upper and lower seals.

Concealed hooks

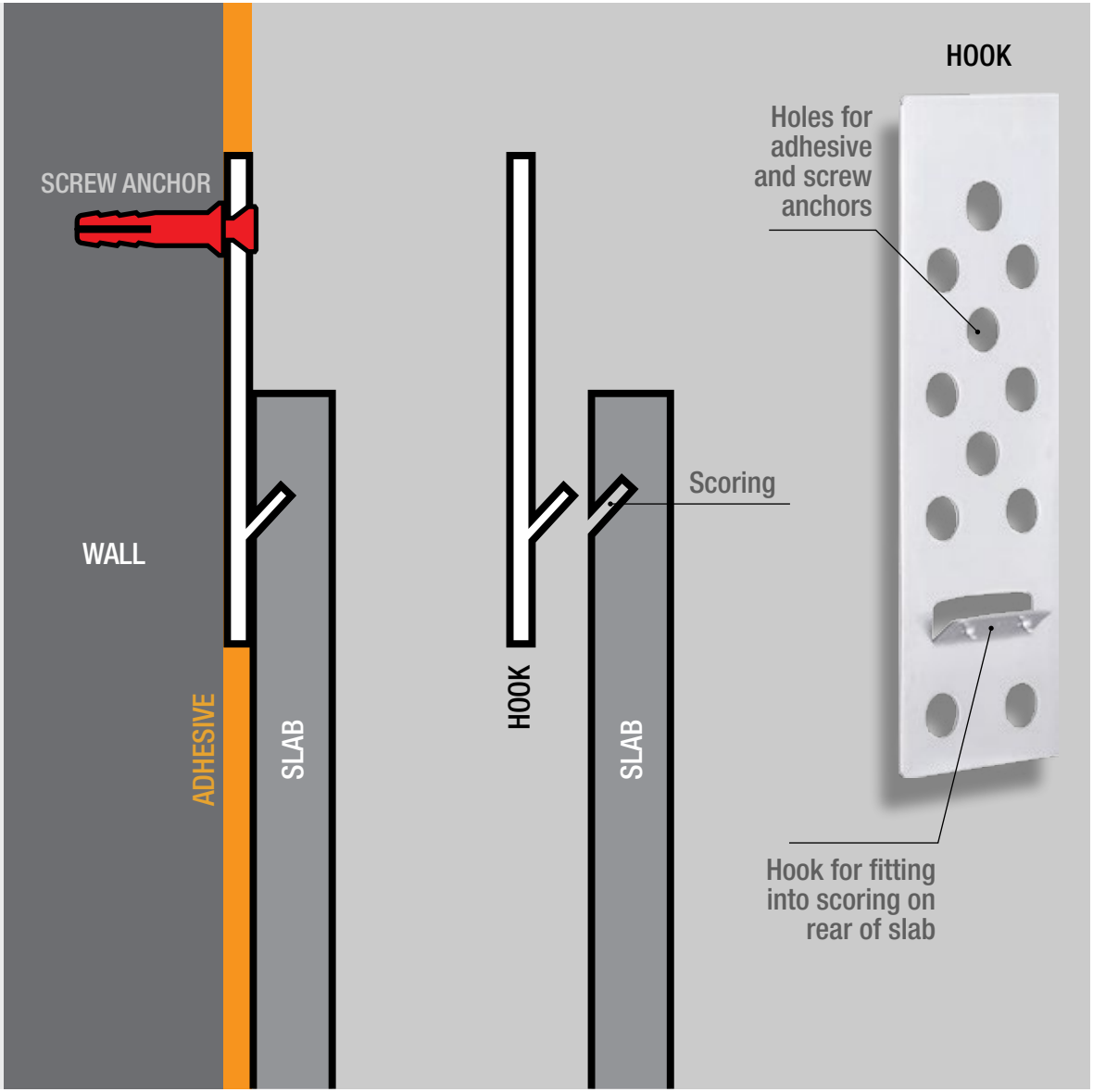
FACADE LAYING

Safety hooks

Certain conditions, such as building height, base and slab features, as well as particular local regulations, may require the use of a bonding system combined with mechanical fastening hooks, to ensure better grip and prevent the slabs slipping.

These “concealed” metal supports can be fitted prior to the slabs via micro-cuts on the rear of the slab (which must be performed in special laboratories), calculating the number required in proportion to the size of the slabs due to be used, and can then be embedded in the adhesive and hooked with a special anchor or tapered nails.

The 0.5 mm thick stainless steel plate is inserted into the milled area on the rear of the slab (unless specified otherwise, usually two per slab, positioned near the upper corners) and is completely concealed. Alternatively, you can use the hooks, with an exposed technique, fastened mechanically to the wall.

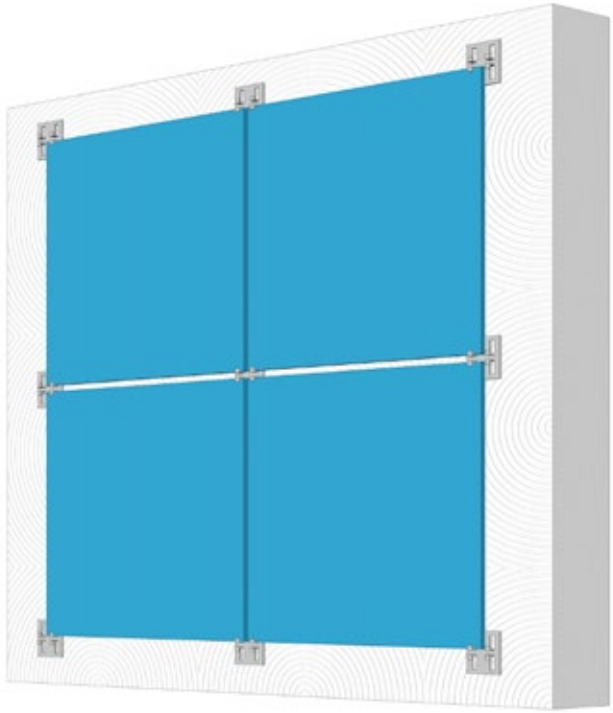


Exposed hooks

ANCHORAGE SYSTEMS FOR **CURTAIN WALLS** MOUNTED WITH DIRECT BONDING METHOD

Exposed mechanical fastening

In addition to the action performed by the adhesive, this system involves anchoring the slabs with stainless steel clips fixed to the wall with anchor bolts. The clip remains visible, but can be painted the same colour as the slab, in which case it is only easily seen when close up.



CURTAIN WALLS MOUNTED WITH MECHANICAL FASTENING METHOD

The EXTRAORDINARY SIZE slabs are the latest offering for the construction of curtain walls.

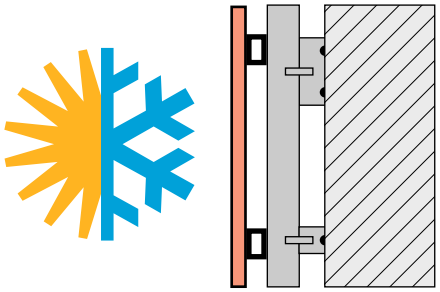
With this system, there are no limits when it comes to sizes and colours, as walls can be clad using extra-large slabs measuring 160x320 cm available in all colours.

What is more, these lightweight extra-thin tiles (just 6 mm thick), with the technical features of porcelain stoneware, are the ideal option for outdoor use, offering frost-resistance and stability over time.

THE ADVANTAGES OF CURTAIN WALLS

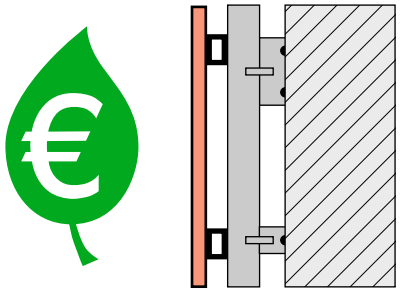
Better thermal insulation.

A curtain wall system guarantees effective thermal insulation during both winter and summer.



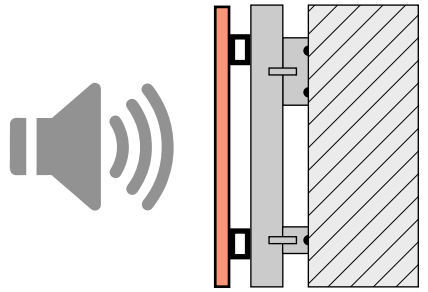
Lower bills.

Better insulation means lower bills all year round, as less heating and air conditioning is needed.



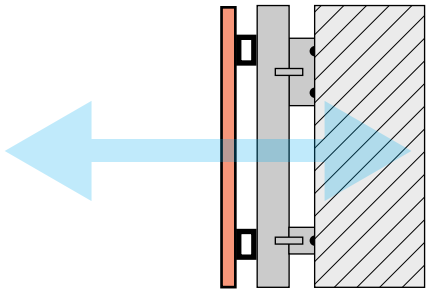
Better noise insulation.

The layers that make up the system create an effective barrier against noise coming into the building.



Healthier homes.

The dry installation, requiring no adhesives, and the ventilation inside the cavity improve breathability of the brickwork.



Protection against water.

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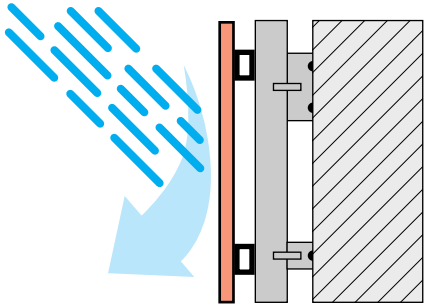

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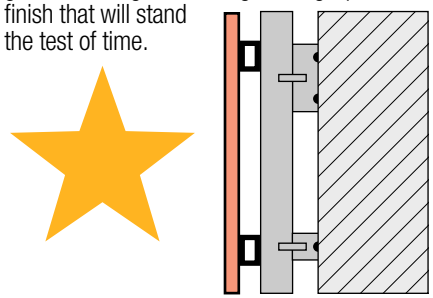

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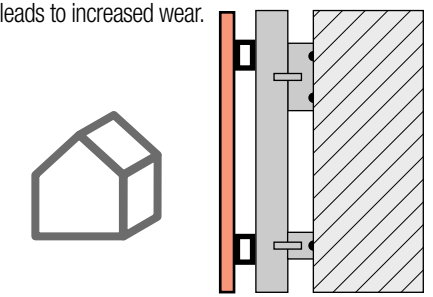
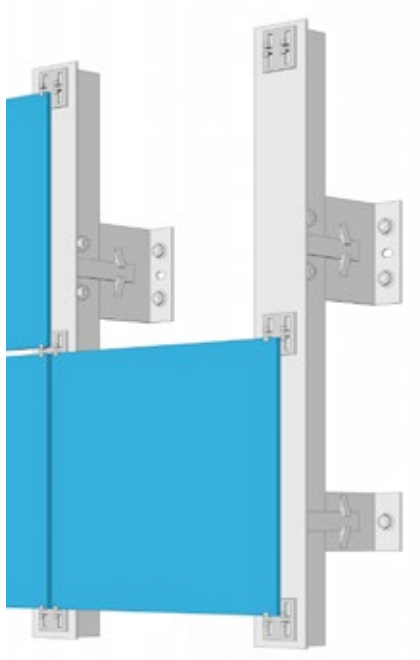


ANCHORAGE SYSTEMS FOR CURTAIN WALLS

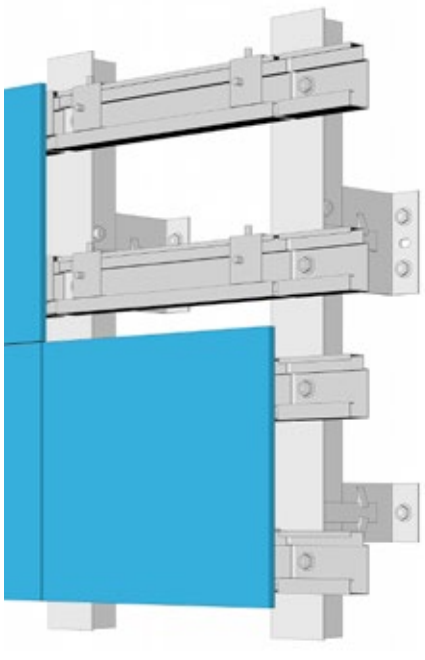
Wallfix V1 exposed mechanical fastening

This is the easiest and cheapest method. No preparation is required for the slabs, which are simply fastened (using exposed hooks) onto a framework of vertical posts, spaced according to the width of the slab.



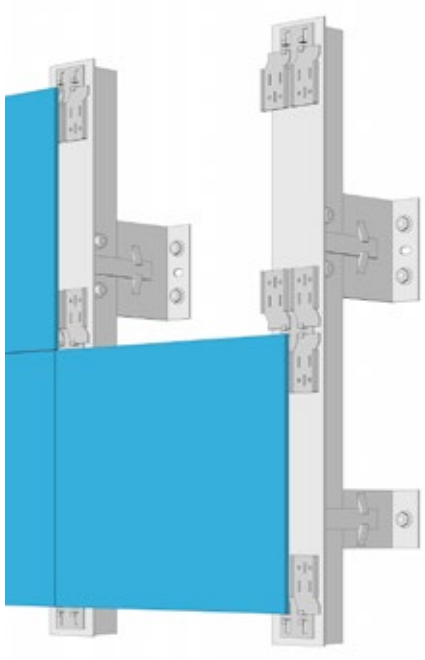
Wallfix S1 concealed mechanical fastening with specific boring

This concealed hook system requires the rear of the slabs to be prepared with four countersunk circular recesses with a conical shaft. Expansion bolts are fitted into the recesses and then, using special hooks, they anchor the slab to a structure consisting of vertical posts and horizontal section bars.



Wallfix S2 concealed mechanical fastening with oblique milling

System employing concealed mechanical hooks.
The slabs must be prepared by fitting a clamp plate inside sections of engraved milling. The system involves a substructure consisting of vertical posts onto which the slabs are fastened.



Special cuts and finishes

EXTRA
ORDINARY SIZE

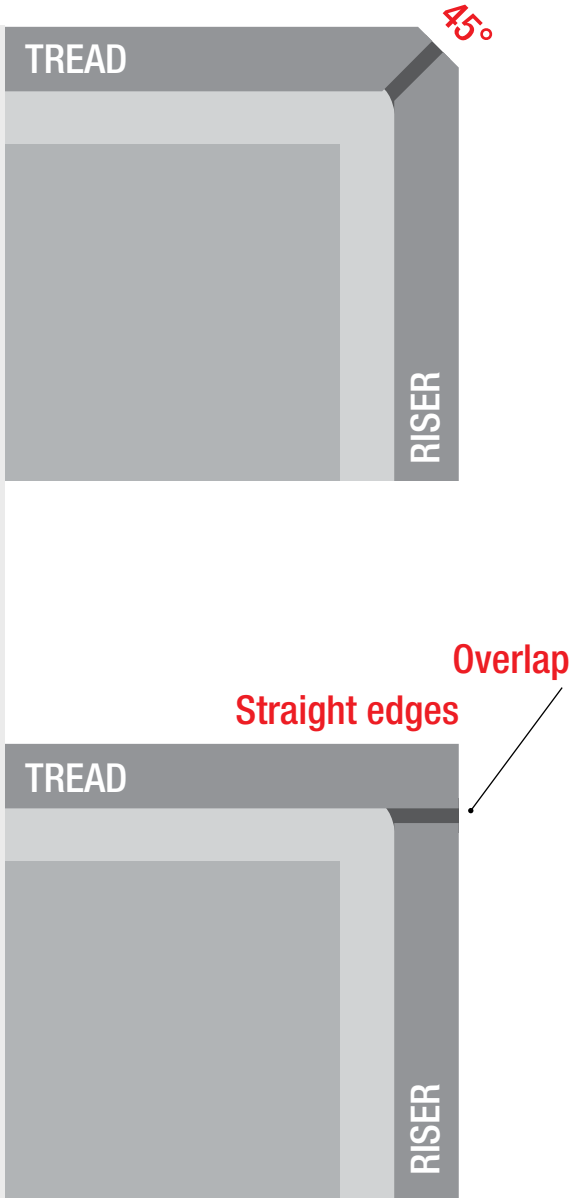
BESPOKE STAIRCASES

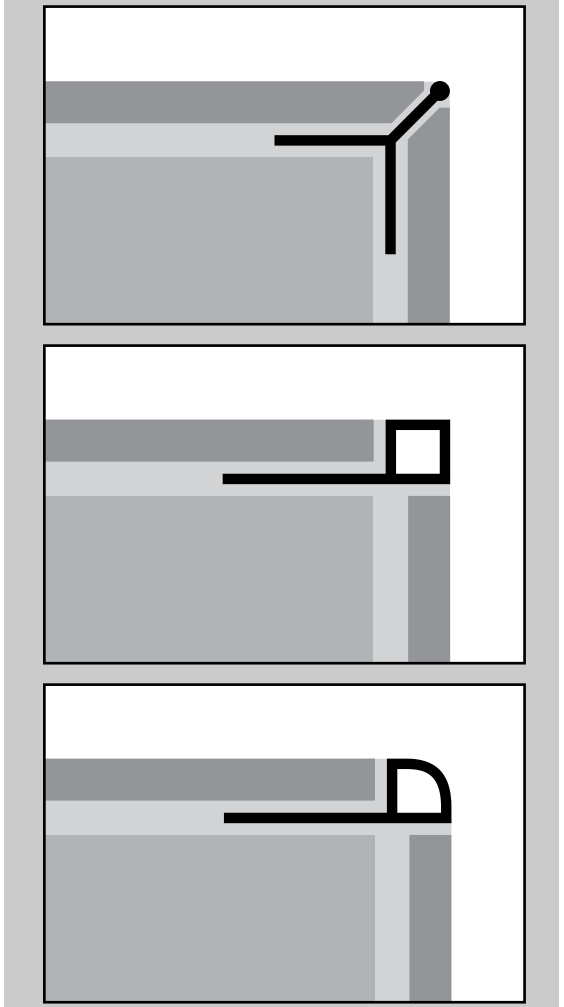
The slabs' size and easy workability mean they are perfect for creating seamless designs, with staircases flowing effortlessly into the surrounding flooring.

The construction of a stair tile, i.e. cutting the slabs to size, must be carried out by machining centres equipped with professional cutting equipment, based on the working design provided to performing customised shaping.

To ensure a more attractive finish and for protection against accidental breakage, the edges must be made with rounded or squared corners.

Alternatively and depending on style requirements, **metal section bars** can be used for the thinner slabs which are quite commonplace nowadays.





BESPOKE STAIRCASES

The angle made when the tread is bonded to the respective riser must be chamfered or bevelled, after bonding, with diamond sponge pads or abrasive discs.

During the design stages, three different types of corner can be considered, which will then be produced during the work using the slabs received already shaped to size, providing a joint of at least 1 mm at the point where the tiles meet:

1 - with a 45° angle at the meeting point
2 - overlay
3 - with sharp edges

Once laid and before grouting, the corner created from the combination of the tread and the respective riser, as well as all the top edges, should be rounded or chamfered manually with diamond sponge pads or abrasive discs applied to an angle grinder.

The sub-floor must be flat, level, clean, properly set and devoid of loose parts.

Application must always be carried out using the double spreading system, with at least 1 mm joints at the meeting points of the corners between the risers and the treads.

TOPS

Stoneware slabs have a wide range of applications in interior design and both the 6 mm versions can be used (after plating with a support panel) and the 12 mm versions (obtained by bonding two 6-mm slabs), which do not require reinforcement underneath.

Whatever processing is envisaged, it is a good idea to have the final tile made at professional machining centres specialising in this type of product.

TOPS
Plating

The use of 6 mm-thick slabs for flat tops must always involve bonding to compatible bases with a limited expansion coefficient and which are suitable for the environments in which they will be fitted, as well as being able to withstand the weights they will have to bear when in use.

We therefore recommend application of the slabs to specific polyurethane-fibre-reinforced slabs, which have been successfully tried and tested over years of use.

The two parts (slab and reinforcement panel) must be processed separately and then joined with epoxy-based adhesives (vertical use) and two-part polyurethane adhesives (horizontal use), preferably with the double-spreading technique.

The final pressing of the composite panel is of crucial importance, as is waiting the time specified for the adhesive used.

When using a 12 mm-thick slab (i.e. two 6-mm slabs bonded together), the reinforcement panel is not necessary, however, it may be added in cases where you have to increase the thickness of the workpiece in order to align it with the height of any panels.

In this case, the support bars are made first, followed by the frame below; the bars must be positioned around the perimeter and in proximity to all the cutouts and holes.

In the case of extremely large finished items, one of these bars must be provided every 50-60 cm, in the ways specified in the figure.

TOPS

Processing

The slabs can be cut, shaped, and transformed with cutouts for sinks or holes for taps, using the professional machines in use at machining centres, such as disc-cutters, CNC machines and water jet cutters.

Disc-cutting

Use water-cooled continuous and segmented rim diamond discs for stoneware, with input and output speeds reduced by 50%.

The rotation speed and the travel direction must be set in based on the disc size and the processing type.

45° cuts are made with machines with tilting discs and, in the case of L-shaped workpieces, it is advisable to make a hole in the corner before proceeding with the linear cuts.

The same diamond discs can be mounted on manual grinders for finishing purposes, using the same procedures. The disc should only protrude from the lower part of the slab very slightly (1-2 mm).

TOPS

CNC MACHINING

Also in this case, the discs and the various tools must be diamond-enhanced for stoneware and water-cooled, with a rotation speed ranging from 1900 to 2500 rpm (revolutions per minute) and a travel speed of 1-2 m/minute depending on the type of tool.

With this machine you can make the flush fit finish, which must be scored prior to making the cutout for the sink.

With CNC machines, you can make the flush fit finish by proceeding as stated below:
1 - drill the first hole
2 - make the score
3 - cut out the hole for the sink

Water jet cutting

This is by far the most powerful type of processing and the one that allows the most types of cutting, shaping or holes to be made, and provides the cleanest edge requiring minimum final rounding.

The slabs must rest firmly on the support grid, which must be flat and devoid of residues from prior processing.

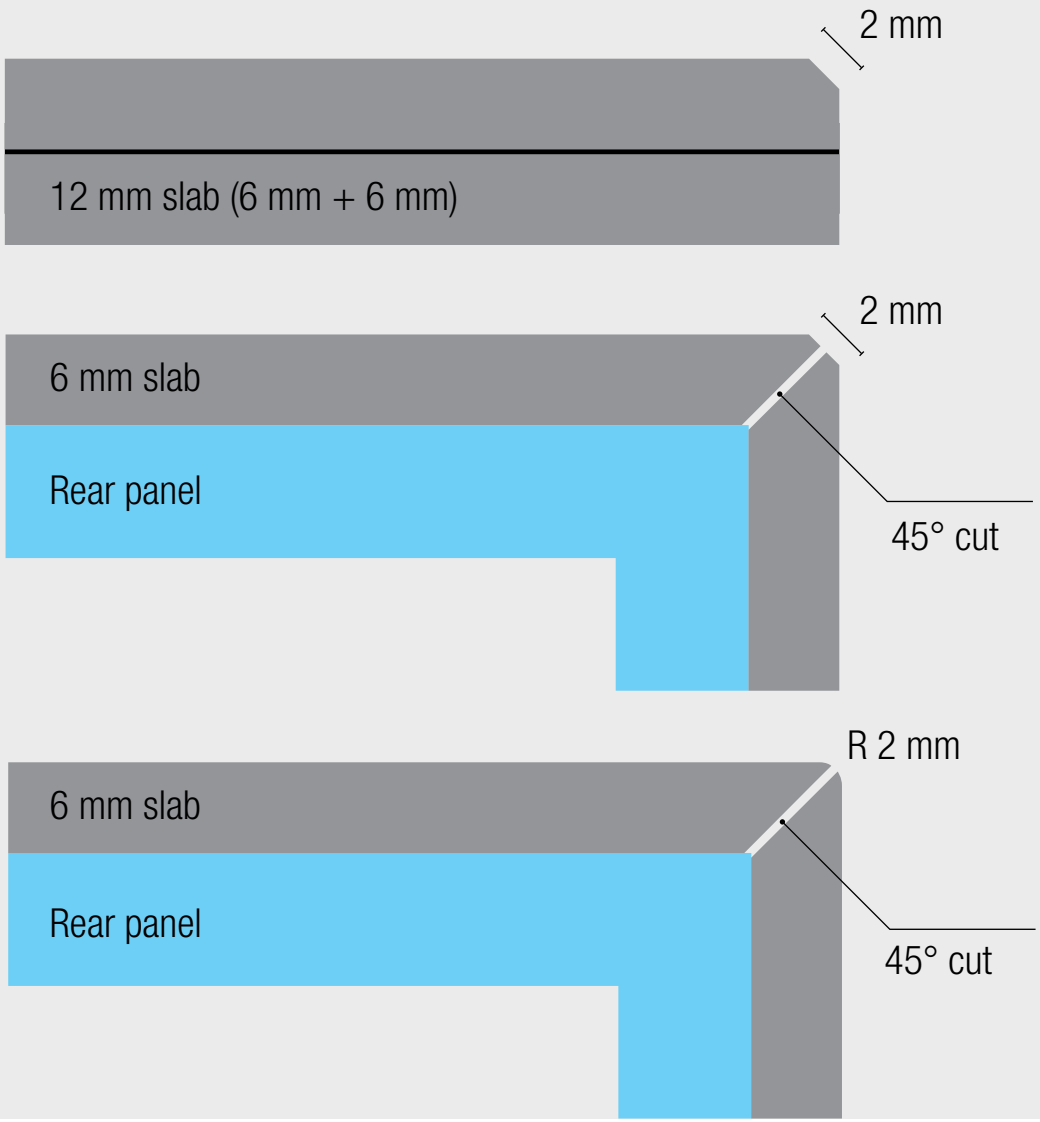
The hole for the cutout must be made inside the cutout area using carefully controlled speed and pressure based on the thickness of the slab being cut and the kind of processing required.

TOPS

Edges

Whatever kind of edge you intend to use will have to be completed with a chamfer or bevel around the perimeter and its finish can be produced using either automatic machines or manually, using suitable discs.

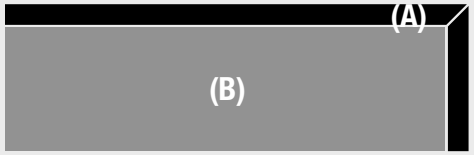
A straight edge must be at least 2 mm wide, while rounded edges must have a curvature angle of at least R 2 mm, and a third edge can be made with 12 mm thick (two 6-mm slabs coupled together) with an angle of less than 30-35° and an upper finish as specified.



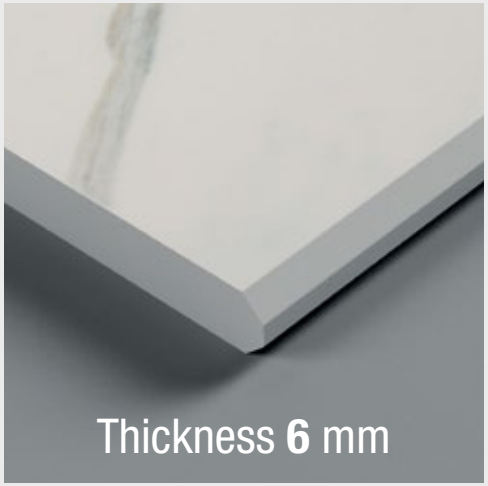
COORDINATED WORKTOPS AND WALL TILES

SOME EXAMPLES OF EDGES

Designs using sandwich parts (6 mm slabs + matting + 6 mm slab bonded together to form a single thickness).



The corner tile (A) must be bonded to a backing made of an inert material (B) with very low thermal expansion in both hot and cold temperatures (for example high-density polystyrene).


Thickness **6** mm


Thickness **12** mm


Thickness **12** mm


Thickness **12** mm

Tops

This solution involves cutting the slabs at 45°.
To achieve an edge with a flawless finish without using section bars, perform the following steps.

1) Spread the adhesive over the base.

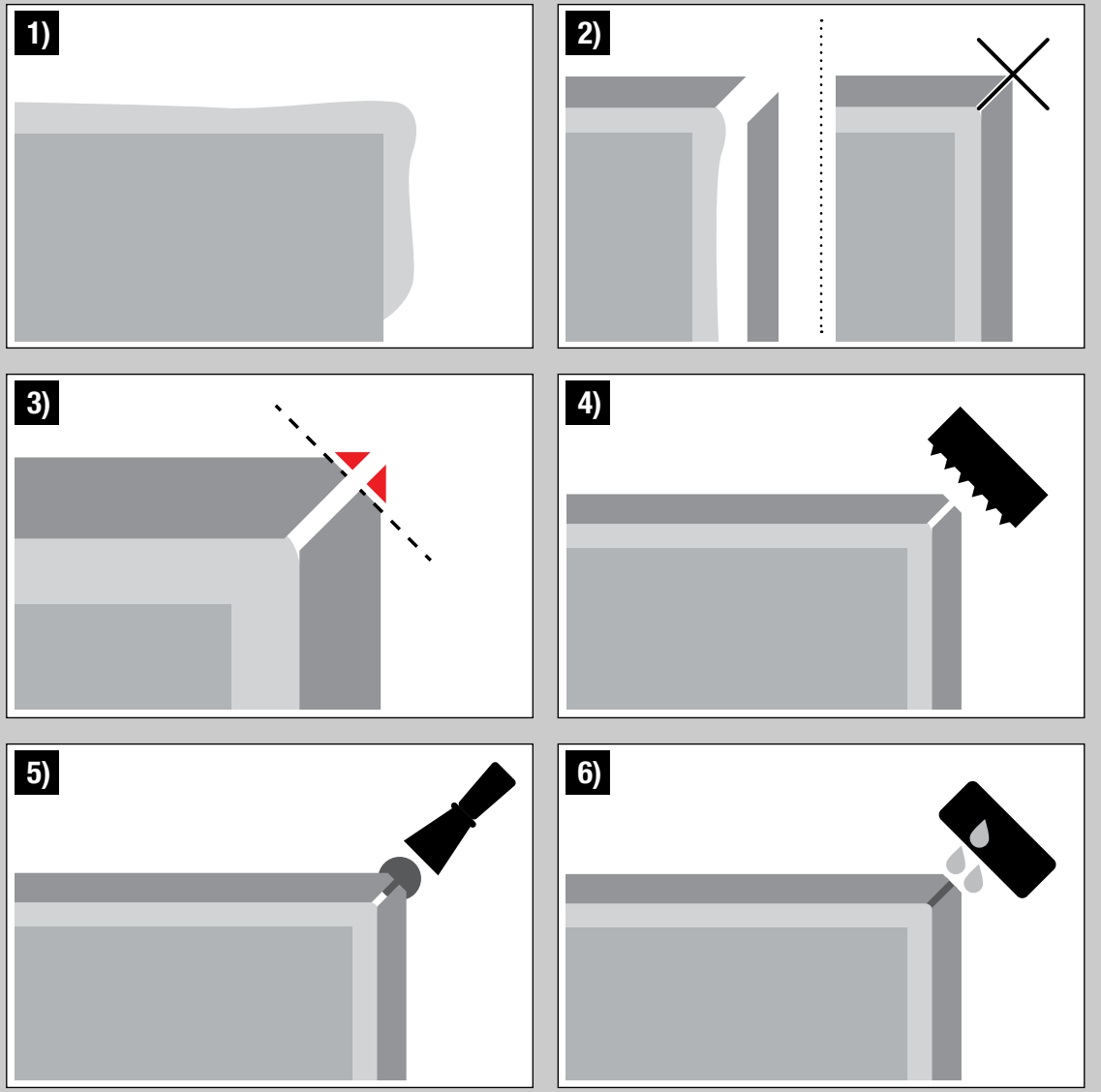
2) Lay the first slab, then position the second slab close to it, using 1 mm spacers.

3) Once the adhesive has set, finish the edge with a manual grinder, removing the raw part.

4) With a rubber pad or a diamond pad, hone the slab's sharp edges.

5) Using a trowel, spread epoxy grout into the joint.

6) Remove the excess grout with a wet sponge, hot water, and alcohol.



Making the edges on-site

1) Spread the adhesive over the base.

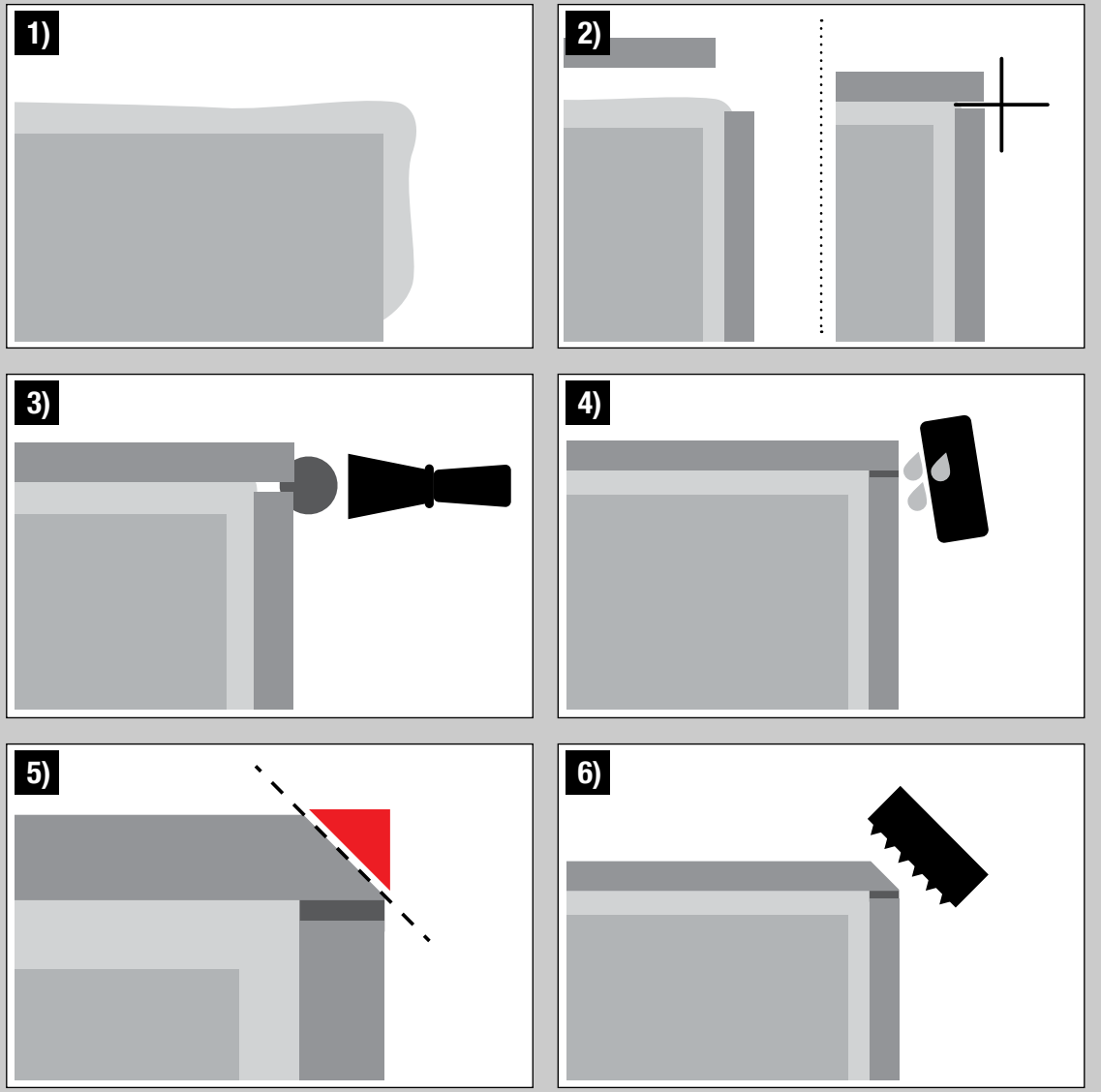
2) Lay the first slab, then position the second slab close to it, using 1 mm spacers.

3) Using a trowel, spread epoxy grout into the joint.

4) Remove the excess grout with a wet sponge, hot water, and alcohol.

5) Once the adhesive has set, finish the edge with a manual grinder, removing the raw part.

6) With a rubber pad or a diamond pad, hone the slab's sharp edges.



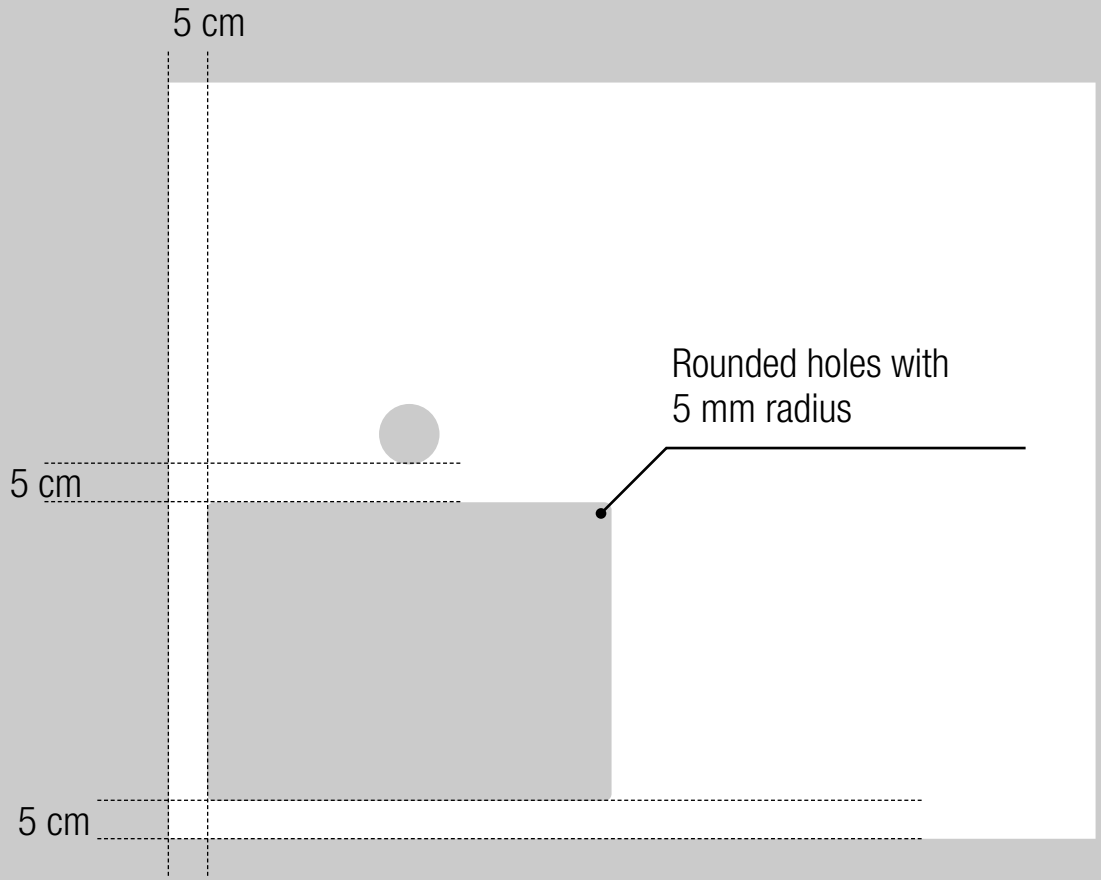
TOPS

Holes for cutouts

During the top design stage, when making the holes for the taps and the cutouts apply a minimum distance of 5 cm from the outer edges, with respect to the edges and in the event of a series of cutouts (double sink or opening for a hob).

The inner corners must have a minimum radius of 5 mm (Fig. 1).

The top outer edges must always chamfered.



Watch the video

TOPS

Circular holes

Using a diamond bur, start cutting the hole with the hammer drill function switched off, cutting the slab at an angle of approximately 75°.

Slowly straighten the drill, moving it carefully from side to side and taking care to keep both the bur and the slab wet.

TOPS

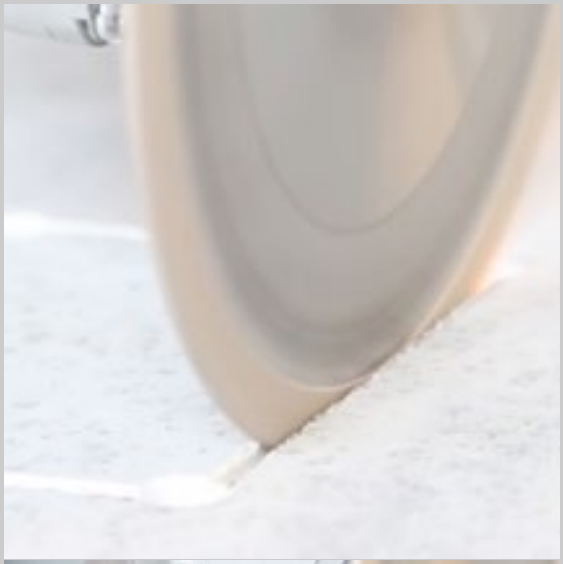
Rectangular holes

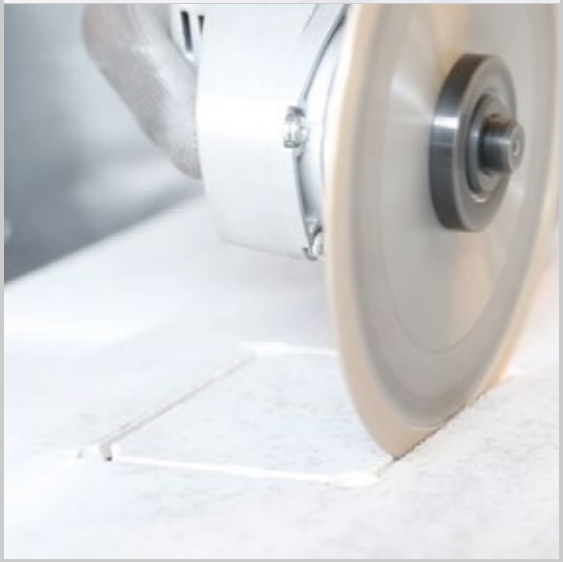
First of all, using a pencil, mark out the rectangular hole required.

Using a drill with a diamond bit (6-7 mm), start cutting the slab with the hammer drill function switched off, working at an initial angle of approximately 75°.

Then proceed to cut out the hole, applying constant pressure and carefully moving the drill from side to side.
It is very important to keep both the drill bit and the slab wet.

Proceed by cutting along the marked line, using an angle grinder with a diamond disc fitted.





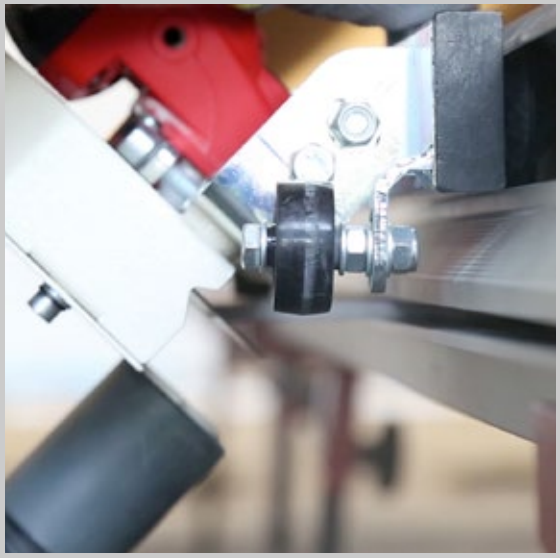
TOPS
45° angles

Using slanted discs mounted on CNC machines, 45° cuts can be made for use in joints between the various shapes and to make the finished item into a single element (panels to conceal vertical side edges, built-in containers/sinks etc).

The edge used in this application must then be manually bevelled with a suitable tool, and final-polished (only the 12 mm slabs, i.e. those made of two 6-mm slabs coupled together) using polishing wheels in increasing order of abrasive force.

Start cutting the slab with a 45° angle using the cutting bar accessory. Proceed by slowly cutting at a 45° angle, at a constant speed, along the entire edge of the slab.

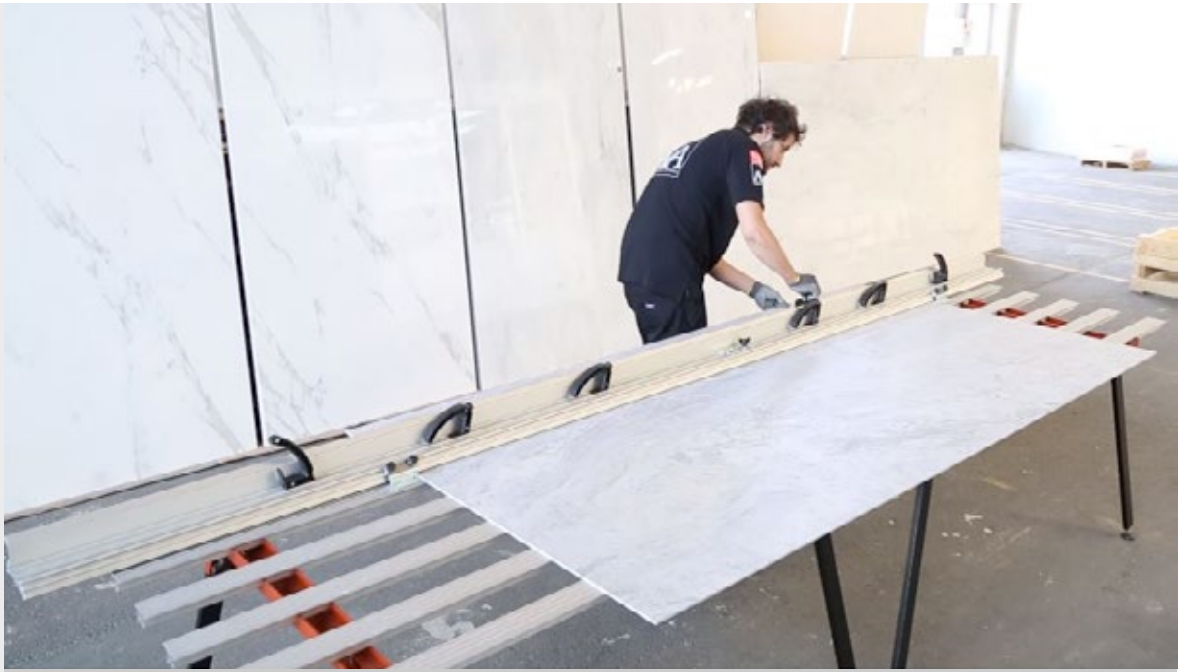
Lastly, hone the slab's sharp edges with a rubber pad or a diamond pad.



Special cuts and finishes

To ensure a clean cut and optimum hole dimensions, we recommend you rest the slab on a work bench with appropriately sized aluminium section bars.
This kind of bench can ensure the stability and flatness required by the workstation.

In the case of shaping or special processing, such as cutting curved lines, we recommend you consult a professional cutting centre (e.g. marble cutters and glaziers).



MANUAL straight line CUTTING

1) Secure the cutter bar using the suction cups so that the scoring wheel is aligned with the cut to be made.

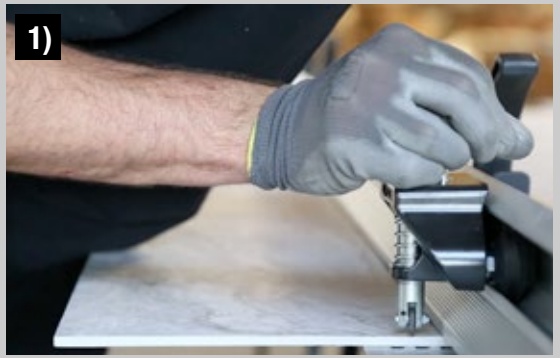
2) Start by scoring the two ends first, along a length of approximately 2-5 cm.

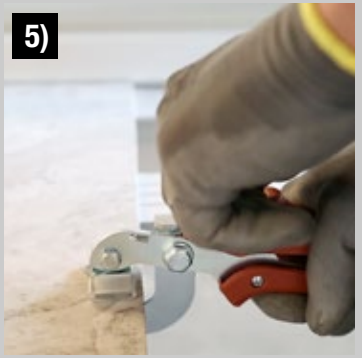
3) Complete the scoring, by running along the entire length of the slab, making sure to keep both the cutting speed and the pressure on the scorer constant.

4) Now move the slab onto the bench, positioning it so that the scored line is protruding by approximately 10-15 cm.

5) Proceed by breaking off using the cut-off pliers at both ends, then continue along the scored line.

6) With a rubber pad or a diamond pad, hone the slab's sharp edges.





MANUAL curved lines CUTTING

Using a pencil, mark out the cut to be made.

Proceed by cutting the slab along the marked line, using an angle grinder equipped with a diamond disc.

CUTOUTS FOR ELECTRICAL SOCKETS

To make the hole for fitting electrical sockets, you should first plan the position of the hole, which should be - where possible - within at least 5 cm of each edge of the slab; then place the slab on a stable, flat, and clean work surface, with the good side facing up.

Once the hole has been marked out, proceed using a drill with a tungsten or diamond bit (with the hammer function switched off) and cooling with water to prevent the bit and the slab overheating.

Proceeding as described, make the four holes in the respective corners, with a minimum radius of 5 mm, and then cut out with an angular grinder fitted with a continuous rim diamond disc (the disc size must be proportionate to the size of the hole being made).

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