inalco

PRODUCT MANUAL

MDi | iSLIMM

The creation of MDi involves a multitude of different variables, possible designs and other factors, and it is impossible to take all of them into account in this manual.

Inalco guarantees the quality of MDi products and the compliance of the manufacturing process with Spanish and international standards. However, the integrity of MDi materials must be safeguarded by the fabricator through correct handling and use and by the end user through suitable care and cleaning.

COLOUR PALETTE 3

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COLOUR PALETTE

ICE
Super Blanco
Natural

SILK
Blanco
Natural

SILK
Blanco
Bush-hammered

FIBRE
Blanco
Yuta

SYROS
Super Blanco-Gris
Natural

SYROS
Super Blanco-Gris
Honed Polished

TOUCHÉ
Super Blanco-Gris
Natural

TOUCHÉ
Super Blanco-Gris
Honed Polished

LARSEN
Super Blanco-Gris
Natural

LARSEN
Super Blanco-Gris
Honed Polished

NEW

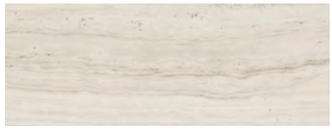
SELENE
Super Blanco-Gris
Honed Polished

MASAI
Blanco Plus
Bush-hammered

PACIFIC
Blanco Plus
Bush-hammered

NEW

ANANDA
Blanco
DT (Digital Texture)



RIFT
Blanco
Natural

PETRA
Crema
Bush-hammered

GEO
Crema
Bush-hammered

SILK
Camel
Natural

SILK
Visón
Natural

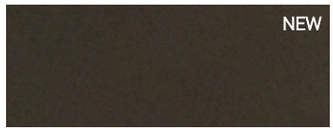
JASPER
Moka
Bush-hammered

ARIZONA
Fresno
Natural

KORTEN
Corten
DT (Digital Texture)

NEW

UMBRA
Marrón
Bush-hammered



NEW

MATTEROA
Taupe
Bush-hammered

FUSION
Iris
Natural

ALEA
Piedra
Natural

BOREAL
Piedra
Natural

MASAI
Piedra
Bush-hammered

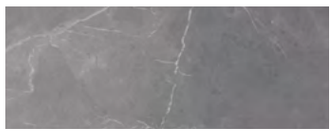
ISEO
Gris
Bush-hammered

METEORA
Gris
Bush-hammered

VINT
Gris
Natural

VINT
Gris
Bush-hammered

GEO
Gris
Bush-hammered

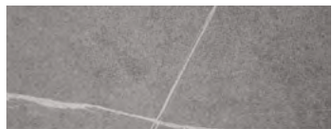


STORM
Gris
Natural

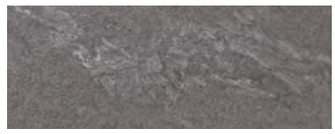
ASTRAL
Gris
Natural

TOTEM
Gris
Bush-hammered

MOON
Gris
Bush-hammered

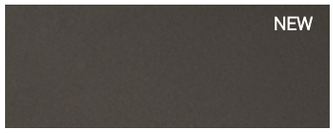


SENDA
Gris
Natural



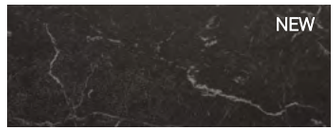
PACIFIC
Gris
Bush-hammered

SILK
Gris
Natural



MATTERIA
Gris
Bush-hammered

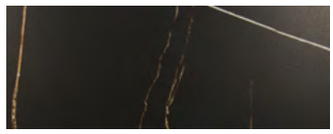
MATTERIA
Antracita
Bush-hammered



BALKAN
Negro
DT (Digital Texture)

METALLO
Metálico
Natural

STORM
Negro
Natural

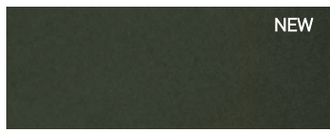


AZALAI
Negro
Natural

THE NEW BLACKS
Amaranto
Natural

THE NEW BLACKS
Castagna
Natural

THE NEW BLACKS
Muschio
Natural



MATTERIA
Muschio
Bush-hammered

THE NEW BLACKS
Prugna
Natural

SILK
Negro
Natural

SILK
Negro
Bush-hammered

FIBRE
Negro
Yuta

THE ADVANTAGES OF iSLIMM AND A COMPARISON WITH OTHER MATERIALS

1. ADVANTAGES

Recyclable and environmentally friendly: INALCO's H_2O FULL DIGITAL technology uses water-based inks and glazes that are environmentally friendlier and more sustainable. INALCO also recycles all the cardboard, plastic and metal that it uses, in addition to wastewater from the production process. INALCO products are fully recyclable.

Lightweight: Thanks to its 6mm slimline thickness, iSLIMM is a lightweight material that is easy to handle and transport.

Resistant to wear and tear: All INALCO products are highly resistant to impacts, thermal shocks and ultraviolet rays. They are resistant to abrasion and they are unaffected by the passage of time, conserving their initial appearance.

Resistant to frost and ice: iSLIMM's low water absorption rate of less than 0.1% makes these products ideal for outdoor environments subject to frost and ice.

Resistant to ultraviolet rays: The surfaces of iSLIMM are colourfast, even when used outdoors.

Easy to clean and care for: No extra care or special products are needed to clean the surfaces. Stains can be removed with water or normal cleaning products.

Stain resistant: iSLIMM is not affected by products like solvents, detergents, bleach, oil, vinegar or citrus juice, provided that the stains are cleaned away within 24 hours.

Hygienic: Because iSLIMM has they have a non-porous surface, this prevents the build-up of bacteria or mould, allowing for direct contact with food products.

Impact resistant: iSLIMM is resistant to knocks and impacts by everyday objects or utensils. (Everyday objects found in kitchens, restaurants, laboratories etc.).

Bending strength: It can withstand a high weight without bending or becoming deformed, maintaining its entire surface flatness.

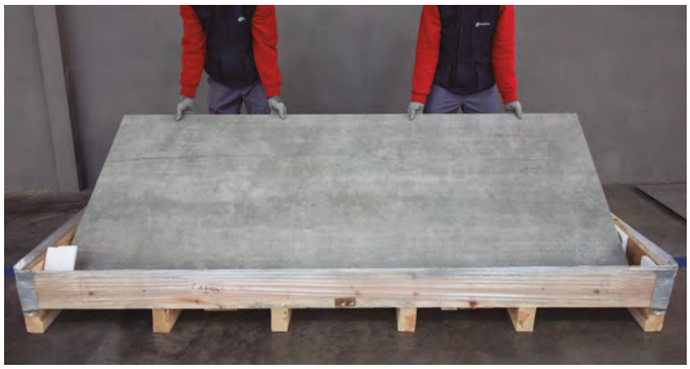
Scratch resistant: Food can be cut directly on top of the surface without it being damaged. Even so, cutting boards, such as iGASTRO by INALCO or boards made of other materials, should be used.

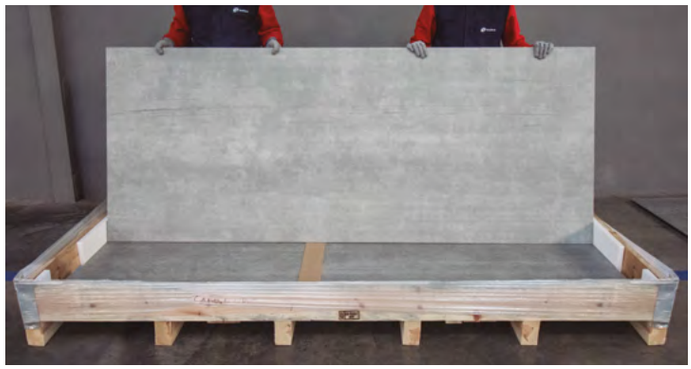
Impervious: Fully impervious vitrified surface

A COMPARISON BETWEEN MDi & OTHER MATERIALS:		MDi Natural Bush-hammered DT	MDi Honed Polished	Solid Surface	Ceramic Porcelain Tiles	Quartz	Wood & laminate	Natural stone	Steel	Vinyl	Carpet
Hygienic	Water absorption rate Stain resistance Chemical resistance Prevention of build-up of bacteria	●	●	●	●	●	●	●	●	●	●
Non-porous	Water absorption rate	●	●	●	●	●	●	●	●	●	●
Usable both indoors and out	Water absorption rate Frost resistance Colour fastness test	●	●	●	●	●	●	●	●	●	●
Resistance to high temperatures	Thermal shock Heat resistance	●	●	●	●	●	●	●	●	●	●
Stain resistance	Stain resistance	●	●	●	●	●	●	●	●	●	●
Resistance to detergents	Chemical resistance	●	●	●	●	●	●	●	●	●	●
Thermal shock resistance	Thermal shock	●	●	●	●	●	●	●	●	●	●
Frost resistance	Frost resistance	●	●	●	●	●	●	●	●	●	●
UV resistance	Colour fastness test	●	●	●	●	●	●	●	●	●	●
Scratch resistance	Mohs surface hardness	●	●	●	●	●	●	●	●	●	●
Easy to clean and care for	Water absorption rate Stain resistance Chemical resistance	●	●	●	●	●	●	●	●	●	●
Resistance to wear and tear	Stain resistance Colour fastness test Thermal shock Scratch resistance	●	●	●	●	●	●	●	●	●	●
Impact resistance	----------	●	●	●	●	●	●	●	●	●	●
WHY MDi MAKES SENSE?											
Surfaces	Full Digital technology Smoother-feeling textures 100% control over the design	●	●	●	●	●	●	●	●	●	●
Endless design 360º design	In / Out Full Design A broad choice of formats, finishes and colours A variety of thicknesses	●	●	●	●	●	●	●	●	●	●
Environmental benefits	H_2O Full Digital: - 70% savings on water consumption - 90% reduction in atmospheric emissions - 50% of the materials are recycled and re-used in the production process	●	●	●	●	●	●	●	●	●	●
Fabrication	Easy to cut Easy to handle Easy to machine and assemble	●	●	●	●	●	●	●	●	●	●
Flexibility	Malleable. for 4 and 6-mm thicknesses	●	●	●	●	●	●	●	●	●	●

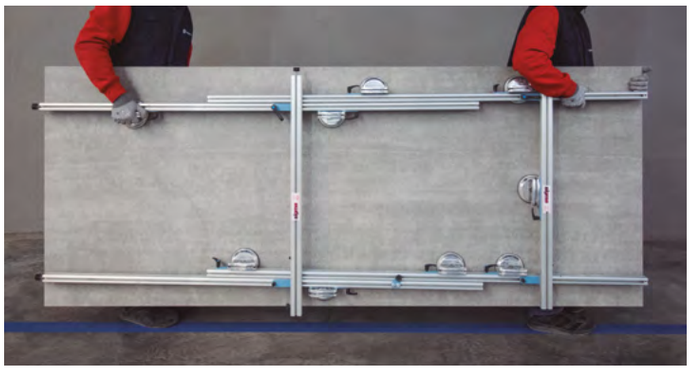
HANDLING, STORAGE AND LOADING (LARGE FORMATS)

1. MANUAL HANDLING

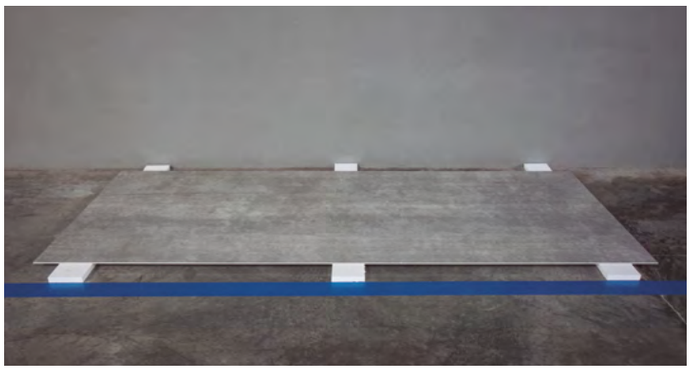




Two people will be needed to remove the slabs from the box.
Remove them slowly in a coordinated way, holding them along the longest side.



Slabs in a 160x320 cm, 150x320 cm or 100x250 cm format can be moved with or without a lifting frame, but always in a straight, vertical position.
To ensure a firm grip, the slab and suction cups should both be moistened.



The slabs can be stored in a horizontal or vertical position. Always place pieces of polystryene foam or similar materials between them to prevent scratches.
When they are stored horizontally, the surface of the slabs must be clean and the surface on which they are laid must be flat.
When they are stored vertically, the slabs must be laid on their longest side on a wood base.

2. HANDLING AND STORAGE USING LIFTING MACHINERY

When forklift trucks are used, the pallet should always be picked up by sliding the forks under the longest side. The forks must have **a minimum distance of 80 cm** between them, with the longest side of the pallet perpendicular to them in such a way that it is centred and fully supported by the forks.

If the pallet must necessarily be picked up with the short side perpendicular to the forks, use forks **at least 2.5 metres** long.

2. HANDLING AND STORAGE USING LIFTING MACHINERY

Before proceeding to load the pallets, check that the fork-lift truck meets the following requirements:

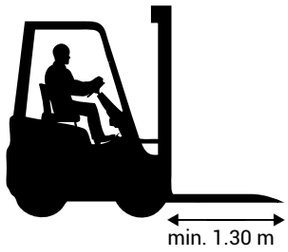
1. The highest point of the fork-lift truck must be less than 2,250 mm, because the entrance to the container is 2,270 mm high.
2. It must have a triplex mast, with a retracted height of less than 2,200 mm. The forks must be able to lift the load 1,440 mm without the extended mast reaching a height of over 2,270 mm.
3. Inalco recommends the use of fork-lift trucks with a loading capacity of 5,000 kg (a 600mm load centre).

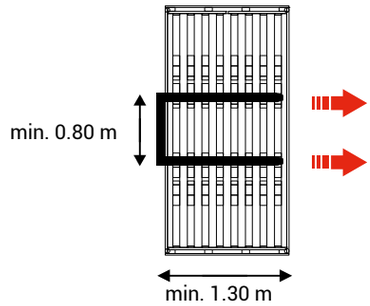
When containers are loaded, enter the pallets with the short side of the box facing forwards, using a fork **at least 2.5 metres** long.

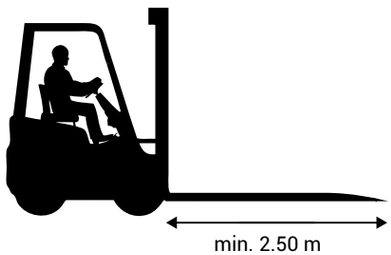
When trucks are loaded, enter the pallets with the long side of the box facing forwards.

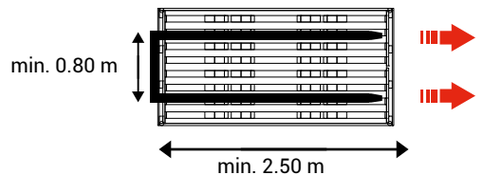
2. HANDLING AND STORAGE USING LIFTING MACHINERY

160 x 320 / 150 x 320 cm iSLIMM RECT

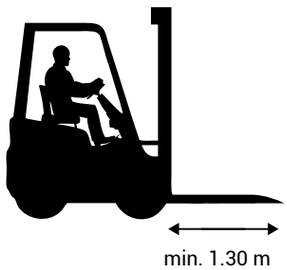


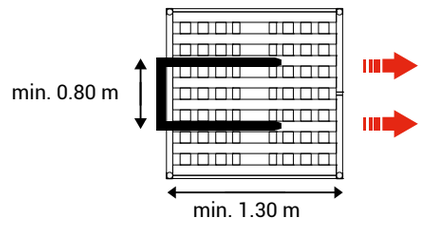




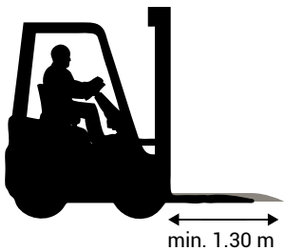


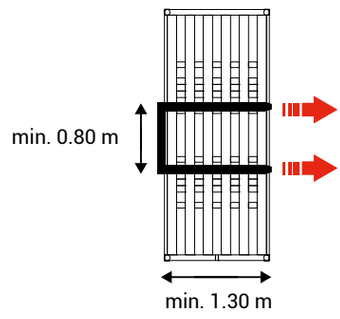
160 x 160 / 150 x 150 cm iSLIMM RECT

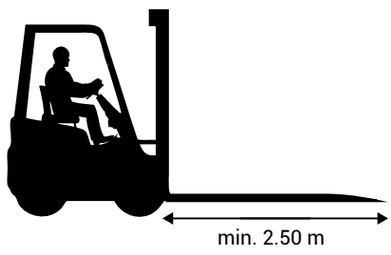


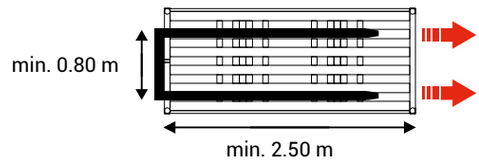


100 x 250 cm iSLIMM RECT









3. LOADING CAPACITY

160 x 320 cm iSLIMM RECT

Wooden box: 172 cm (width) x 346 cm (length) x 36 cm (height).

STANDARD / DRY VAN (239 cm)			HIGH CUBE (269 cm)		
20' cont.	**40' cont.**	**Max. height (container)**	**20' cont.**	**40' cont.**	**Max. height (container)**
5 boxes 409.8 m² 6,550 Kg	15 boxes 1,228.8 m² 19,650 Kg	5 boxes	6 boxes 491.52 m² 7,850 Kg	18 boxes 1,474.56 m² 23,550 Kg	6 boxes

Wooden box	16 slabs 81,92 m² 1,309 Kg

20' cont.
(235 x 589 x 239 cm)

20' cont.
(235 x 589 x 269 cm)

40' cont.
(235 x 1,203 x 239 cm)

40' cont.
(235 x 1,203 x 269 cm)

13.5 m truck	Max. height (truck)
12 boxes 983.04 m² 15,750 Kg	4 boxes

13.5 m truck
(245 x 1,350 x 270 cm)

3. LOADING CAPACITY

150 x 320 cm iSLIMM RECT

Wooden box: 172 cm (width) x 346 cm (length) x 36 cm (height).

STANDARD / DRY VAN (239 cm)			HIGH CUBE (269 cm)		
20' cont.	**40' cont.**	**Max. height (container)**	**20' cont.**	**40' cont.**	**Max. height (container)**
5 boxes 384 m² 6,250 Kg	15 boxes 1,152 m² 18,750 Kg	5 boxes	6 boxes 460.80 m² 7,500 Kg	18 boxes 1,382 m² 22,500 Kg	6 boxes

Wooden box	16 slabs 76.80 m² 1,250 Kg

20' cont.
(235 x 589 x 239 cm)

20' cont.
(235 x 589 x 269 cm)

40' cont.
(235 x 1,203 x 239 cm)

40' cont.
(235 x 1,203 x 269 cm)

13.5 m truck	Max. height (truck)
16 boxes 921.60 m² 16,250 Kg	3 boxes

13.5 m truck
(245 x 1,350 x 270 cm)

3. LOADING CAPACITY

160 x 160 cm iSLIMM RECT

Wooden box: 178 cm (width) x 172 cm (length) x 31 cm (height).

Wooden box	20' cont.	40' cont.	Max. height (container)	13.5 m truck	Max. height (container)
20 slabs 51,2 m² 795 Kg	18 boxes 921,6 m² 13.310 Kg	30 boxes 1.638,4 m² 23.850 Kg	6 boxes	30 boxes 1.638,4 m² 23.850 Kg	4 boxes

20' cont.
(235 x 589 x 239 cm)

40' cont.
(235 x 1,203 x 239 cm)

13.5 m truck
(245 x 1,350 x 270 cm)

150 x 150 cm iSLIMM RECT

Wooden box: 178 cm (width) x 172 cm (length) x 31 cm (height).

Wooden box	20' cont.	40' cont.	Max. height (container)	13.5 m truck	Max. height (container)
20 slabs 45 m² 725 Kg	18 boxes 810 m² 13,050 Kg	32 boxes 1,440 m² 23,200 Kg	6 boxes	32 boxes 1,440 m² 23,200 Kg	4 boxes

20' cont.
(235 x 589 x 239 cm)

40' cont.
(235 x 1,203 x 239 cm)

13.5 m truck
(245 x 1,350 x 270 cm)

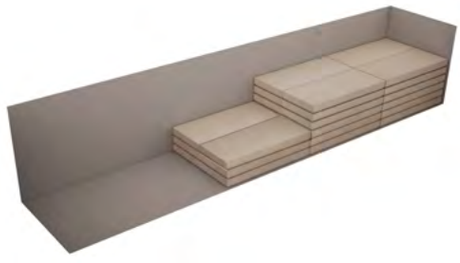
3. LOADING CAPACITY

100 x 250 cm iSLIMM RECT

Wooden box: 112 cm (width) x 268 cm (length) x 31 cm (height).

Wooden box	20' cont.	40' cont.	Max. height (container)	13.5 m truck	Max. height (truck)
20 slabs 50 m^2 795 Kg	24 boxes 1,200 m^2 19,392 Kg	30 boxes 1,500 m^2 23,850 Kg	6 boxes	30 boxes 1,500 m^2 23,850 Kg	4 boxes

20' cont.
(235 x 589 x 239 cm)

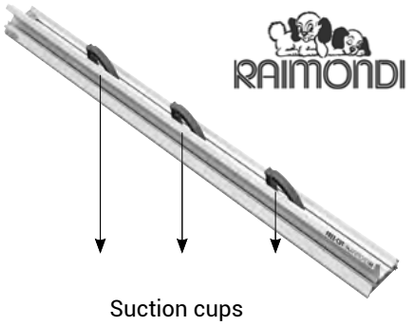


40' cont.
(235 x 1,203 x 239 cm)

13.5 m truck
(245 x 1,350 x 270 cm)

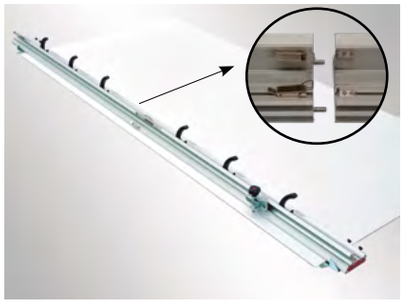
CUTTING LARGE FORMATS

1. REQUIRED MATERIALS FOR STRAIGHT CUTS OF UP TO 3 METRES



Suction cups

Cutting guide rail for up to 1.7 metres. Includes 3 suction cups.

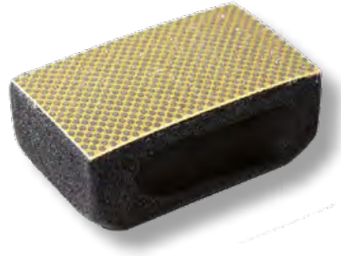


Two guide rails totalling 3.4 metres. Close-up of connector system.

Cutting guide rail for up to 3.10 metres. Includes 2 suction cups.

Gloves.

Pliers to separate the cut sections.



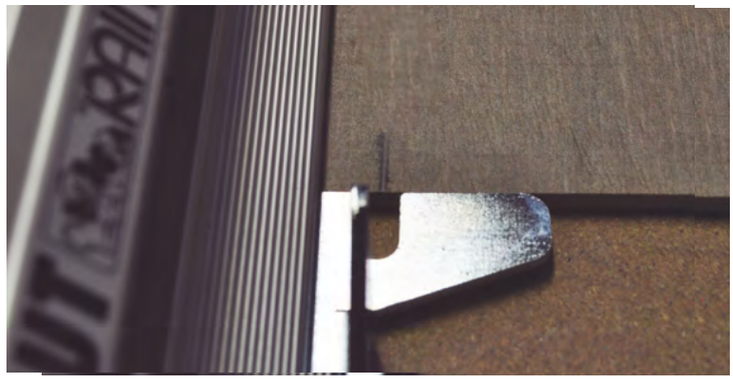
Diamond-coated sanding pad.

2. STEPS

1. FITTING THE GUIDE RAIL IN PLACE

Make sure that you have a flat solid bench to work on, either the same size or longer than the slab to be cut.

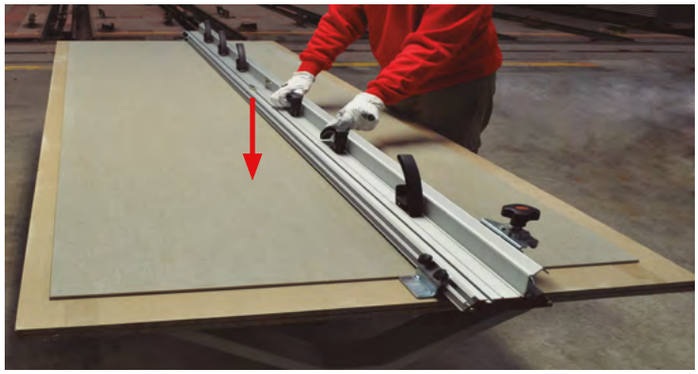
Place the slab on top of the workbench and mark the cutting line at both ends with a pencil.



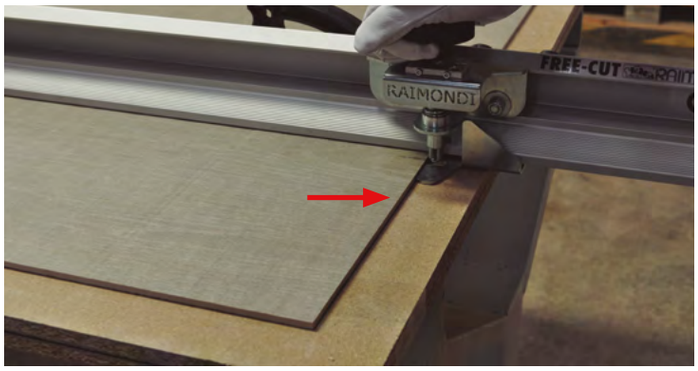
Position the guide rail so that the marks on the squares coincide with the pencil marks.

2. STEPS

2. SCORING THE SLABS



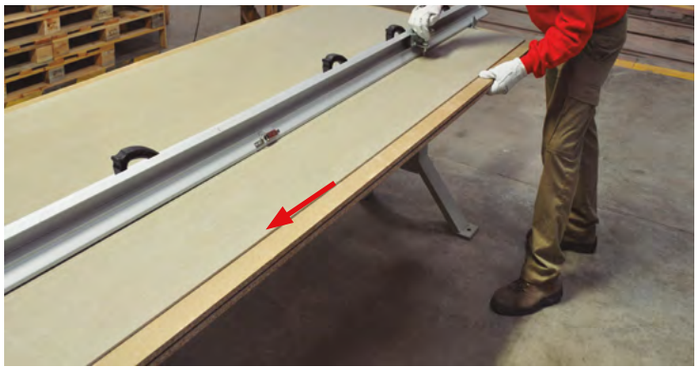
Lock the cutting guide rail in place using the suction pads so that it cannot move. Check that the guide is properly positioned, making sure that the cutting disc slides over the marks drawn on the surface of the slab. If necessary, re-adjust the position of the guide rail.



Start to score the slab at a distance of 10 cm from the edge and continue right to the end to mark the cutting line.
A constant speed and pressure must be applied to cut the slab properly.

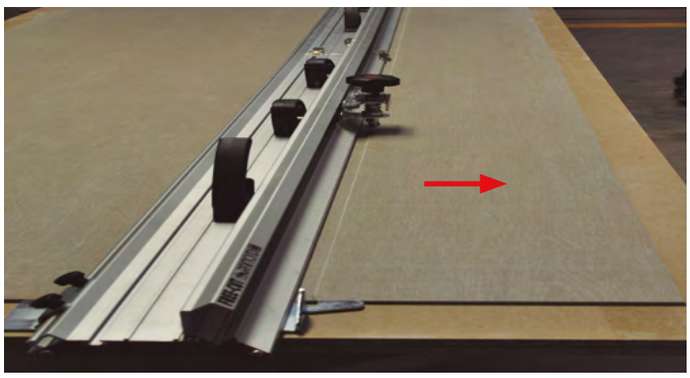
2. STEPS

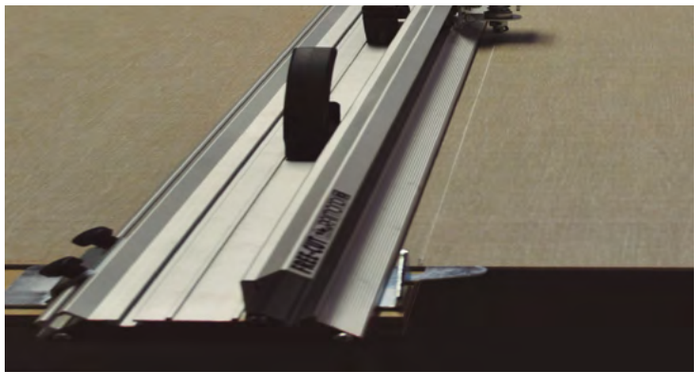
2. SCORING THE SLABS



Move the cutter back to the starting point and repeat the operation, applying constant uniform pressure across the whole surface.

3. BREAKING OFF SCORED SECTIONS

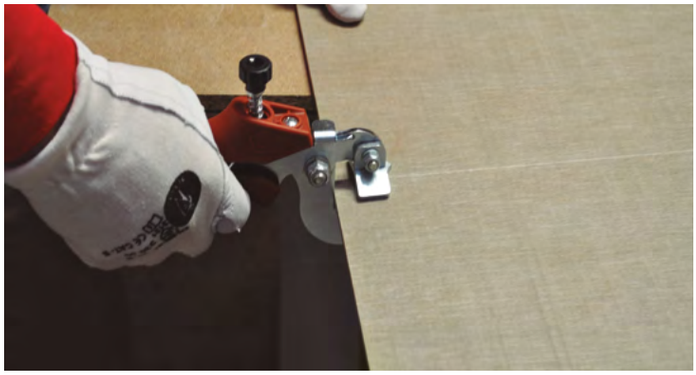




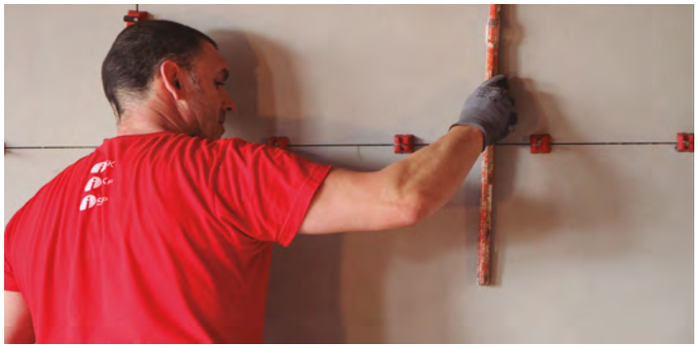
Move the guide rail so that the scored line on the slab is aligned with the edge of the workbench.
Release the suction pads to free the guide rail.

2. STEPS

3. BREAKING OFF SCORED SECTIONS



To break off the scored section, put the scored line of one end of the slab into the jaws of the pliers. Close the pliers and gradually increase the pressure until the slab starts to break.
Repeat this operation at the other end until the slab starts to break.



The slab can be hand cut when the section to be broken off is large enough to be held. When the scored line has been aligned with the edge of the workbench, two people must apply downward pressure onto the protruding piece in a fast uniform way. The other section, on top of the workbench, must be fully immobilized during the cutting process.

4. SANDING THE EDGES

For an optimum finish, sand the edge of the slab with a diamond-coated sanding pad.

3. REQUIRED MATERIALS FOR OTHER CUTS AND HOLES

Gloves

Protective goggles

Mask

Drill + bit for porcelain tiles

Radial tile saw + diamond blade cutting disc (Würht Super-Fine)

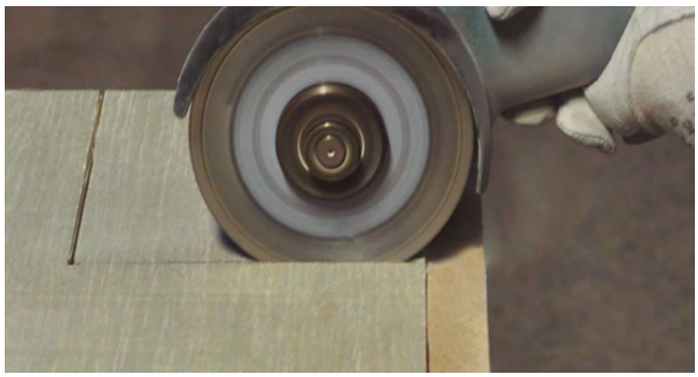
Diamond core drill bit (for attaching to angle grinder)

4. OTHER CUTS AND HOLES

L-SHAPED CUTS

Mark the area to be cut.

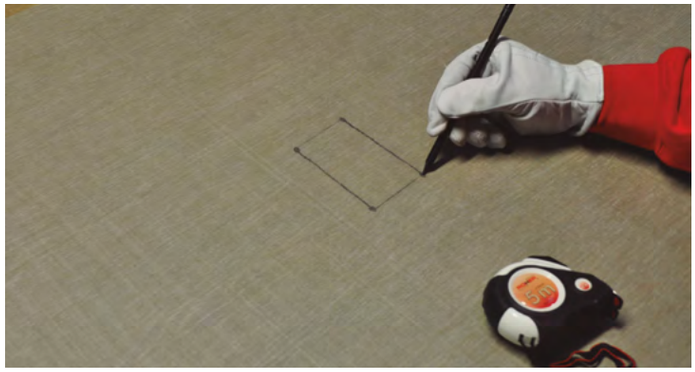
The inside angle should be rounded by first drilling a hole, using a water-cooled drill bit for porcelain tiles.



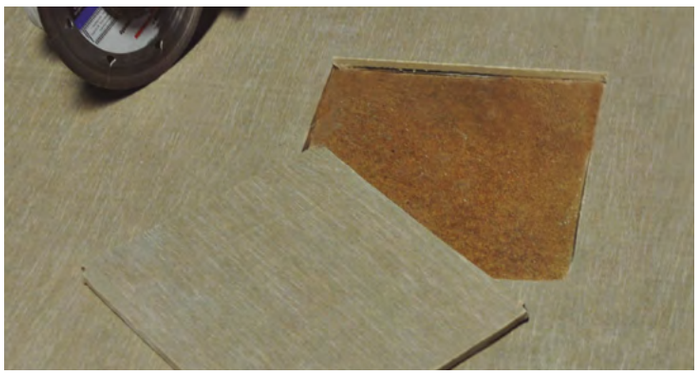
Then use a radial tile saw to cut the slab as required.

4. OTHER CUTS AND HOLES

RIGHT-ANGLED CUTS



A round hole should first be drilled in the inside angle, using a water-cooled drill bit for porcelain tiles.



Then use a radial tile saw to cut the slab as required. Remove the piece that has been cut out.

4. OTHER CUTS AND HOLES

HOLES

Attach a diamond core drill bit to a radial tile saw. To make the hole, mark the surface to be cut by placing the head of the core drill bit onto the surface at an angle of approximately 75º-80º. Then perforate it with the bit perpendicular to the slab, cooling the bit with water if necessary, as per the technical data sheet.

Remove the piece that has been cut out.

LAYING SLABS ON WALLS AND FLOORS

1. PRELIMINARY STEPS

HYGIENE AND SAFETY MEASURES

When rectified slabs are handled, all necessary safety precautions should be taken. For this purpose, use:

Protective gloves

Safety goggles

Mask

Vacuum cleaner

PRIOR CONSIDERATIONS

The state of the surface where the slab will be laid must be checked

The substrate should be stable and flat, with no cracks. Any dust, lime, cement or dirt remains should be removed and the substrate should not be at all damp.

Environmental conditions

Application temperature of cement-based adhesive: +5ºC to +35ºC.
Cement-based adhesive should not be used when there is a risk of frost or ice or during very hot weather.
Cement-based adhesive should not be used on rainy days either.

WHEN FLOORS ARE TILED, DIFFERENT TYPES OF JOINTS SHOULD BE TAKEN INTO ACCOUNT

Joints planned by the project engineer or architect:

- **Structural joints, detailed in the building plans.** They absorb movements by the building. These joints should be left in place and never covered over with slabs.

- **Perimeter joints.** They isolate the paved floor from other surfaces, such as the meeting point between two walls or the wall and floor, changes of plane, or meeting points with other types of materials.
  These joints should have a minimum width of 5 mm and they should be continuous. They help to offset any accumulated stress that might otherwise push up the slabs.
  They can be filled with a compressible material like expanded polystyrene or silicon or be concealed by a skirting.

- **Movement, expansion or intermediate joints.** They absorb movements due to changes in the temperature of the slabs, adhesive or substrate, preventing expansion or contraction movements.
  More joints will be needed for surfaces that might be subject to big changes in temperature or vibrations.

  In floors subject to heavy or hard-wheeled traffic or over which heavy loads might be dragged, the layout of the joints should be planned so as to avoid them in transit areas. If this is not possible, metal-edged profiles should be used to conceal them.
  These joints must run through the depth of the slabs, bonding adhesive and mortar screed and they should have a width of no less than 5 mm. They can be covered with profiles or filled with elastic material or grouting, providing that at least one month has elapsed since the mortar screed was laid.

1. PRELIMINARY STEPS

Joints around the slabs:

They should have a minimum width of 1.5 mm / 0.06". These joints absorb possible settlement movements and compensate for deviation tolerances in the length and width of the slabs.

THE REQUIRED MATERIALS

- Spirit level.
- Straight edge at least 2 metres / 78.74" long.
- Primer and a roller. A coat of primer improves the cement-based adhesive's bonding capacity, particularly on non-porous surfaces.

Manufacturer	Product
Mapei	Eco Prim Grip
Kerakoll	Keragrip Eco

- Class C2 cement-based adhesive. Adhesives of this kind contain a high percentage of polymeric resins. Their main advantage is their high elasticity and strong bonding capacity.
  An appropriate adhesive for the type of slab and envisaged substrate must be used. Always follow the adhesive manufacturer's instructions.
- A tile levelling system for slimline slabs. When the cement-based adhesive sets, a certain lippage or unevenness in the slabs can occur. To ensure optimum end results, particularly with big formats, a piece levelling system must be used (such as the Rubí, Raimondi or Tuscan levelling systems).
- Spacers. Pieces should never be laid abutted, without a joint. The joints between them should never be less than 2 mm / 0.08" in width. The resulting gap should be filled with suitable grouting of a colour similar to the slabs. Always follow the grouting manufacturer's instructions.
- 2 notched trowels, one 10mm / 0.39"-12mm / 0.47" trowel for the substrate and another 3mm / 0.12" one for the slabs.
- In the case of large formats, an aluminium carrying frame with suction pads for handling the slabs.
- A continuous rim diamond tile saw (such as Super-Fine by Würth) for any necessary cut-outs when tiling complicated areas like light boxes, ventilation grills etc.

Never use a rubber mallet to tap the slabs into place. Use a rubber trowel.

2. LAYING SLABS ON WALLS

PREPARING THE WORKSITE

Find a place to work with enough room to move the slabs unhindered. Make sure that you have a flat solid bench to work on, either the same size or longer than the slab to be cut. Check that the work surface is level.

PREPARING THE SUBSTRATE AND HANDLING THE SLABS

Any remains of other materials, such as cement or plaster, should be removed. The substrate must be free from dust, grease and moisture. It must also be solid and crack-free. Check that it is flat.

In the case of large formats, wet the slab and suction pads on the carrying frame with a sponge and water to ensure a firmer grip, especially when the slabs have relief textures. Centre the carrying frame on the slab and press the suction cups down with your foot so that they stick firmly to it.

2. LAYING SLABS ON WALLS

APPLYING THE CEMENT-BASED ADHESIVE

The cement-based adhesive must be spread using the floating and buttering method over the substrate and underside of the slab.

Use a 3mm / 0.12" notched trowel to cover the entire underside of the slab evenly with cement-based adhesive, including the corners and edges.

Mark out the area where the slab will be laid on the wall to economize on the cement-based adhesive that is used.
Use a 10mm / 0.39'-12mm / 0.47" notched trowel to spread the cement-based adhesive evenly over the substrate.

On the substrate and underside of the slab, apply the cement-based adhesive perpendicular to the long side of the slab so that any air below it can escape. Make sure that the coat of adhesive is always the same thickness.

2. LAYING SLABS ON WALLS

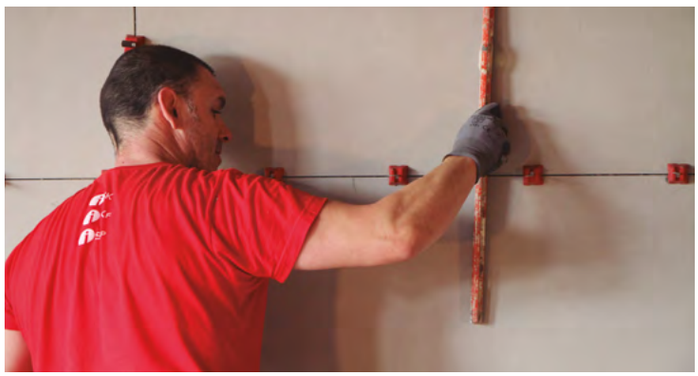
LAYING THE SLABS

Once the cement-based adhesive has been applied, work can proceed on laying the slabs, remembering that a joint of at least 1.5 mm / 0.06" must be left between each one. This distance can be ensured by using spacers. To lay large-format slabs, use a carrying frame handled by two workmen.

Levellers and spacers should be inserted between the slabs, pressing down on the former with the gun supplied with the levelling set. Several different levelling systems are available, such as Raimondi, Tile Level by Rubí, the Tuscan Levelling System or Planfix Italmond. The number of levellers used on each side of the slab will depend on the format of the latter. Thanks to this kind of product, it is quicker and easier to lay slabs and all of them will be absolutely level.

After laying the slabs, tap them to remove any air bubbles in the cement-based adhesive.

Finally, with the aid of a spirit level, check that the slabs are level and leave them to dry as per the manufacturer's instructions.



2. LAYING SLABS ON WALLS

GROUTING THE SLABS

Once the indicated drying time has elapsed, make sure that the joints are clean before grouting them with a suitable product in a similar colour to the slabs.

CLEANING THE SURFACE

Comply with the necessary drying times indicated by the manufacturer before proceeding to clean off any grout residues, using a damp sponge.

3. LAYING SLABS ON FLOORS

PREPARING THE WORKSITE

Find a place to work with enough room to move the slabs unhindered. Make sure that you have a flat solid bench to work on, either the same size or longer than the slab to be cut. Check that the work surface is level.

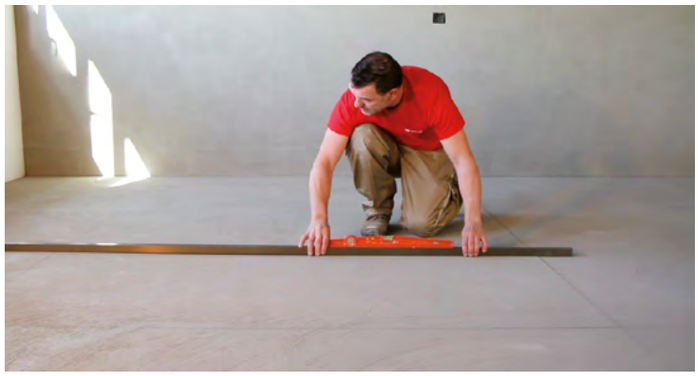
PREPARING THE SUBSTRATE WHERE THE SLABS ARE TO BE LAID

There are many different kinds of substrates: concrete, conventional partition walls, existing tiled surfaces, natural stone, wood etc. Specific recommendations and a particular type of adhesive will apply in each case.

The substrate should be stable and flat, with no cracks. Any dust, lime, cement or dirt remains should be removed and the substrate should not be at all damp.

The flatness of the substrate should be checked, using a spirit level or similar. If necessary, use a suitable levelling product to level it.

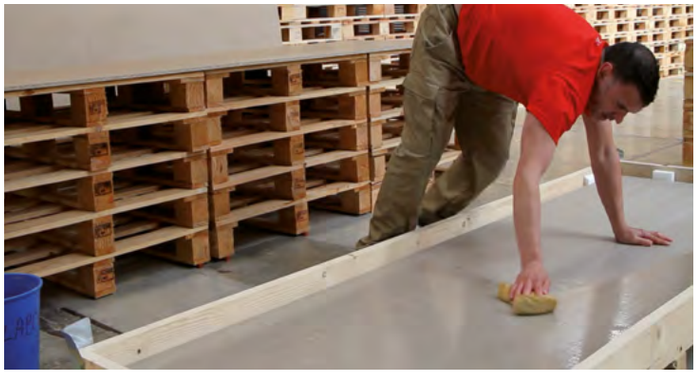
The substrate should be given a coat of primer with a roller, whether it is a newly made or an existing one.



3. LAYING SLABS ON FLOORS

HANDLING THE SLABS

In the case of large formats, wet the slab and suction pads on the carrying frame with a sponge and water to ensure a firmer grip, especially when the slabs have relief textures. Centre the carrying frame on the slab and press the suction cups down with your foot so that they stick firmly to it.



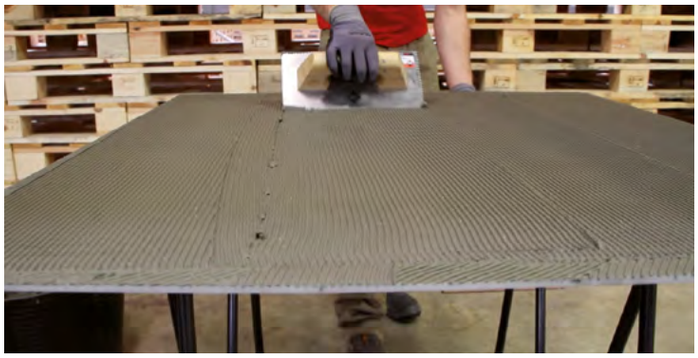
APPLYING THE CEMENT-BASED ADHESIVE

The floating and buttering method must be used, covering both the substrate and the underside of the slabs with the adhesive.

Spread the cement-based adhesive over the entire underside of the slab, using a 3 mm notched trowel, making sure that the corners and edges are covered.

Mark out the area of the floor where the slab will be laid to economize on the cement-based adhesive that is used.
Use a 10 / 12 mm notched trowel to spread the cement-based adhesive evenly over the substrate.

On the substrate and underside of the slab, apply the cement-based adhesive perpendicular to the long side of the slab so that any air below it can escape. Once the slabs have been laid, the final thickness of the adhesive should be about 3 / 4 mm.



3. LAYING SLABS ON FLOORS

LAYING THE SLABS

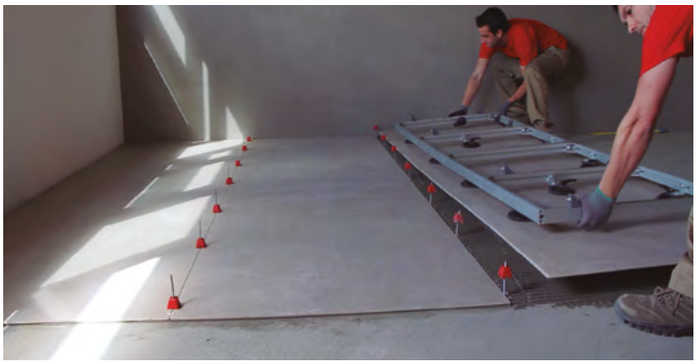
Once the cement-based adhesive has been applied, work can begin on laying the slabs, remembering that a joint of at least 1.5 mm / 0.06" must be left between each one. This distance can be ensured by using spacers. To lay large-format slabs, use a carrying frame handled by two workmen.

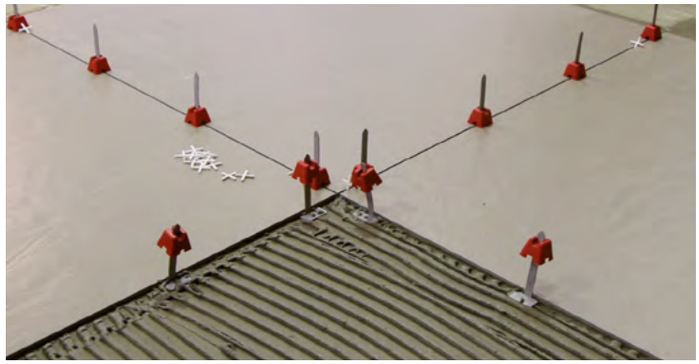
Levellers and spacers should be inserted between the slabs, pressing down on the former with the gun supplied with the levelling set. Several different levelling systems are available, such as Raimondi, Tile Level by Rubí, the Tuscan Levelling System or Planfix Italmond. The number of levellers used on each side of the slab will depend on the format of the latter. Thanks to this kind of product, it is quicker and easier to lay the slabs and all of them will be absolutely level.

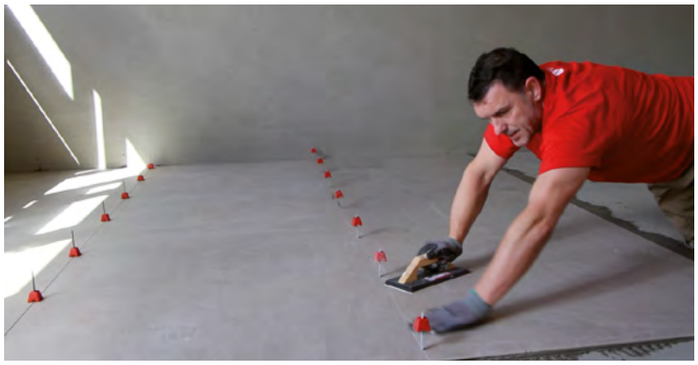
After laying the slabs, tap them to remove any air bubbles in the cement-based adhesive.

Finally, with the aid of a spirit level, check that the slabs are level and leave them to dry as per the manufacturer's instructions. Do not tread on them while they are drying.

Once the drying time is over, remove the tile levellers with the aid of the gun supplied with the levelling set.







3. LAYING SLABS ON FLOORS

GROUTING THE SLABS

After the slabs have been left to dry, as per the stipulated drying time, make sure that the joints between them are clean before grouting them with a suitable product in the same colour as the slabs.

IMPORTANT

When grouting slabs in a polished finish, do not use grouts coloured with “lamp black”, since the pulverized coal used to formulate them will penetrate the surface pores, making it very hard to remove.

CLEANING

For more information on cleaning INALCO materials, see our cleaning guide at www.inalco.es

TECHNICAL INFORMATION

1. TECHNICAL CHARACTERISTICS AS PER THE APPLICABLE STANDARD

TECHNICAL CHARACTERISTICS

iSLIMM by INALCO is a non-toxic environmentally-friendly product compliant with European legislation, in accordance with the current version of EU Regulation no. 305 of the EUROPEAN PARLIAMENT AND THE COUNCIL and specific standards.

All INALCO's first-choice products comply with and even surpass ISO standards 13006 and EN 14411.

INALCO also has an internal Quality Control System which it applies to the whole manufacturing and storage process.

1. TECHNICAL CHARACTERISTICS AS PER THE APPLICABLE STANDARD

Technical characteristics ISO 13006 / GROUP Bla UNE - EN 14411 GROUP Bla			Reference standard	Required value	Obtained mean value
Physical characteristics	Water absorption		EN-ISO 10545-3	≤ 0.5 %	≤ 0.2 %
	Breaking strength	iSLIMM	EN-ISO 10545-4	≥ 700 N	Surpasses required value
		Standard thickness		≥ 1300 N	
	Bending strength		EN-ISO 10545-4	≥ 35 N / mm²	Surpasses required value
	Resistance to deep abrasion		EN-ISO 10545-6	≤ 175 mm³	≤ 135 mm³
	Linear thermal expansion		EN-ISO 10545-8	Method available	≤ 9 x 10^{-6} K^{-1}
	Thermal shock resistance		EN-ISO 10545-9	Method available	Resistant
	Frost resistance		EN-ISO 10545-12	Required	Resistant
Chemical characteristics	Resistance to household cleaning products and swimming pool additives		EN-ISO 10545-13	GB Min.	Resistant (A)
	Resistance to low concentration acids and alkalis		EN-ISO 10545-13	As indicated by manufacturer	Resistant (LA)
	Resistance to staining		EN-ISO 10545-14	Class 3 Min.	Class 5
Dimensional characteristics / Permissible deviation from work size	Length and width		EN-ISO 10545-2	± 0.6 % / ± 2.0 mm	± 0.6 % / ± 2.0 mm
	Thickness		EN-ISO 10545-2	± 5 % / ± 0.5 mm	± 5 % / ± 0.5 mm
	Warpages of edges		EN-ISO 10545-2	± 0.5 % / ± 1.5 mm	± 0.5 % / ± 1.5 mm
	Wedging		EN-ISO 10545-2	± 0.6 % / ± 2.0 mm	± 0.6 % / ± 2.0 mm
	Flatness		EN-ISO 10545-2	± 0.5 % / ± 2.0 mm	± 0.5 % / ± 2.0 mm

2. TEST SCONDUCTED ON iSLIMM

WATER ABSORPTION RATE [EN-ISO 10545-3]
This determines the product's water absorption rate (0.1%).

5	4	3	2	1
max				min

STAIN RESISTANCE [EN-ISO 10545-14]
This determines the surface's tendency to absorb stains.

A	B	C	NATURAL, BUSH-HAMMERED & SANDBLASTED
max		min	

A	B	C	POLISHED
max		min	

CHEMICAL RESISTANCE [EN-ISO 10545-13]
The surface is not affected following the application of different products, solvents, bleaches etc.

A	B	C	NATURAL, BUSH-HAMMERED & SANDBLASTED
max		min	

A	B	C	POLISHED
max		min	

LIGHT RESISTANCE [DIN 51094]
A slab is exposed to a powerful 400 W light for 30 days, with no perceptible colour change or surface wear and tear.

5	4	3	2	1
max				min

HEAT RESISTANCE [EN-ISO 10545-9]
It does not burn or undergo any change when subjected to 10 cycles of temperatures ranging from 15ºC to 145ºC.

5	4	3	2	1
max				min

FROST RESISTANCE [EN-ISO 10545-12]
It is unaffected when subjected to over 100 freeze-thaw cycles of between +5ºC and -5ºC.

5	4	3	2	1
max				min

THERMAL SHOCK RESISTANCE
A metal recipient with a temperature of 200ºC is rested on a slab at a temperature of 15ºC, with no resulting damage.

5	4	3	2	1
max				min

$$\text{min} = \frac{\text{Low resistance to test}}{\text{Mid-level result}}$$

$$\text{max} = \frac{\text{High resistance to test}}{\text{Optimum result}}$$

CLEANING

1. REMOVING CEMENT RESIDUES

When the slabs have been laid and grouted, the surface will be covered in an opaque cement film that masks its real appearance. The surface must be thoroughly cleaned to remove any surplus grouting material or dirt caused during the installation process. A slightly acidic detergent should be used (such as Deterdek by Fila or AKEMI Acid Cleaner) which does not give off any toxic vapours, damage the joints or slabs, or have a harmful effect on the environment.

Follow these steps in all cases:

- Before proceeding to clean the surface, wait until the grout is fully set. The manufacturer will specify the required setting time.
- Moisten the surface previously with clean water.
- Dilute 1 part of the cleaning product in 5 or 10 parts of water, depending on the amount of dirt. Wet the whole surface well with the solution, using a mop, and leave it to act for about 10 minutes.
- Rinse the surface several times with lots of clean water so as to remove the waste material and dirt.
- If the dirt (cement) residues are very dry or there are a lot of them, repeat the above procedure as many times as necessary, rubbing them with a plastic-bristled brush to aid the cleaning product.

Always carry out a prior cleaning test on an unlaid slab before cleaning the surface.

2. EVERYDAY CLEANING

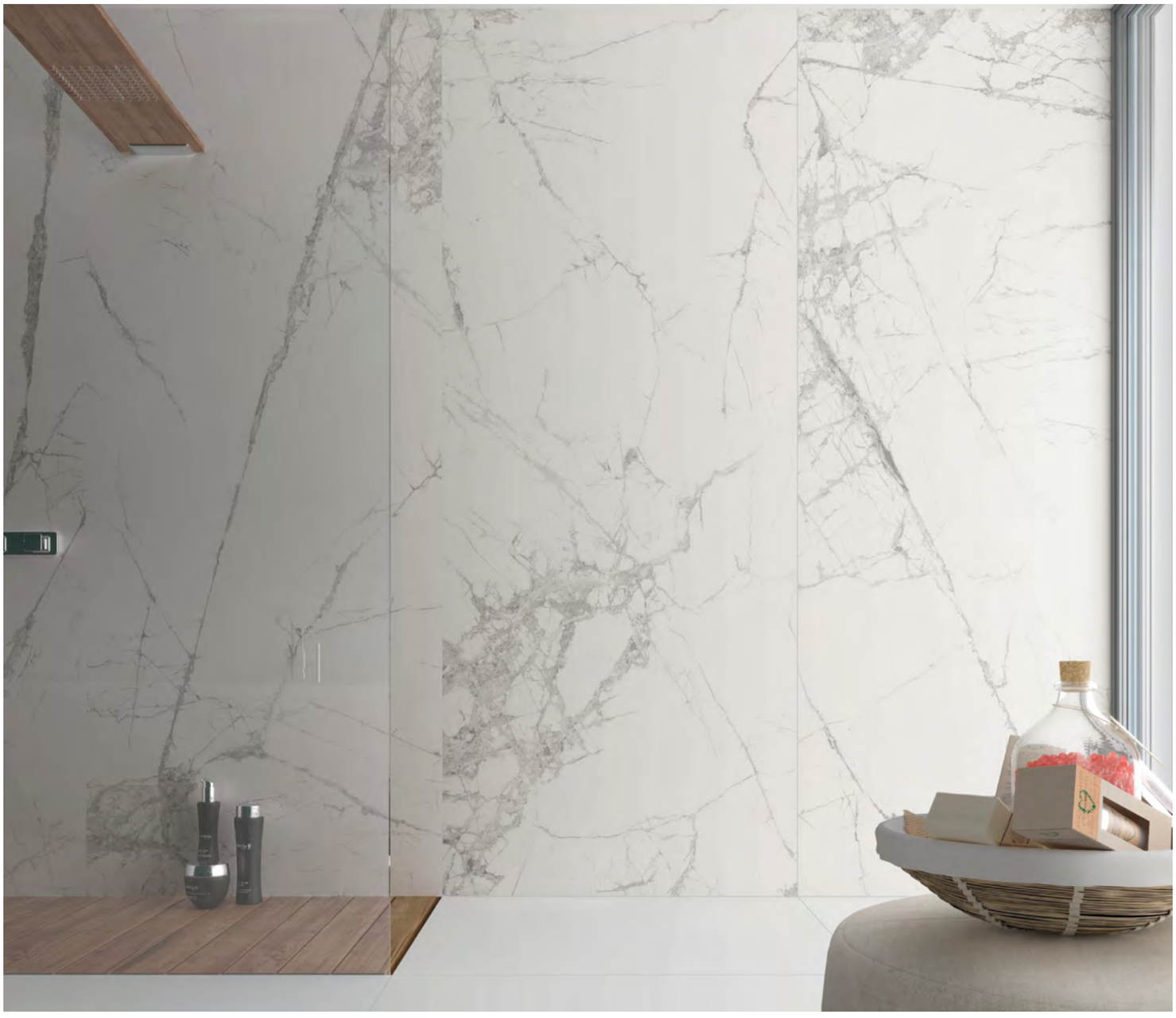
iSLIMM is a non-porous surface, which makes it very easy to clean.

To remove environmental dust, use a dry dust mop. Do not use wax-based products, polish, or products with strong acids like hydrofluoric or sulphuric acid.

To care for the surface, a slightly acid detergent diluting a small amount in water.

Do not clean the surfaces with metal or abrasive scouring pads.

In the course of time, after continuous use of the surface, it can be given a thorough clean if necessary by following the cleaning process used when it was first laid.



3. CLEANING INSTRUCTIONS BY TYPE OF STAIN

NATURAL, BUSH-HAMMERED AND SANDBLASTED SURFACES

Stains should be removed as soon as they occur to prevent them from drying. Before any kind of product is used on the surface, test it out on a concealed area and leave it to act for 4 to 5 minutes. Then rinse it with plenty of water to check that the surface's colour or shine is not affected.

Examples of suitable commercial cleaning products for MDi iSLIMM surfaces are solvents, grease removers and ammonia.

TYPE OF STAIN	STEP ONE	STPE TWO TYPE OF DETERGENT*	EXAMPLE OF DETERGENTS**
Cement, pencil marks, lime scale, scratches by metal objects, rust	Wash with water as soon as possible and rub the area gently with a cloth.	Acid	AKEMI Acid Cleaner, Deterdek by FILA, commercial cement remover
Epoxy grouting residues		Acid	AKEMI Epoxy Remover, Fila CR10, grease remover
Fat, grease, food, rubber, ink, felt tip pen, blood, nicotine, vomit, urine, etc.		Acid Solvent	AKEMI Stone Cleaner, AKEMI Intensive Cleaner, Fila PS/87
Graffiti, paint, varnish		Solvent	AKEMI Graffiti Remover, Fila NoPaint Star, commercial solvent
Coffee, tea, juice, soft drinks		Alkaline Oxidizing	AKEMI Algae and Moss Remover POWER, Fila SR/95
Candle wax or wax for repairing scratches, tree resin, remains of adhesive tape		Solvent	AKEMI Wax Stripper, AKEMI AFIN Acryclean, Filasolv, commercial solvent
Silicone		Acetone	AKEMI AFIN Acryclean, Fila Zero Sil, acetone
Dirty joints, wax-based care products		Acid	AKEMI Intensive Cleaner, Fuganet
Rust		Acid	AKEMI Rust Remover
Stains caused by plants, leaves, flowers or ink		Alkaline Solvent	AKEMI Algae and Moss Remover POWER
Hairspray, shoe polish		Alkaline	AKEMI AFIN Acryclean
Soot	Remove with a vacuum cleaner	Acid	AKEMI Stone Cleaner

* Acidic detergents: lime scale remover, cement remover, paint remover etc.
Alkaline detergents: basic cleaning products like grease removers or ammonia.
Solvents: Turpentine, acetone, alcohol, universal solvents etc.
Oxidizing detergents: diluted bleach, hydrogen peroxide etc.

** For further information, visit www.akemi.com / www.filasolutions.com

3. CLEANING INSTRUCTIONS BY TYPE OF STAIN

POLISHED SURFACES

As with natural and bush-hammered surfaces, the stains should be cleaned away as soon as they occur to prevent them from drying.

Clean the surface with a damp cloth and soapy water and then dry it with an absorbent cloth. If the stain persists, moisten it with hot water, leave it to act, and then dry the surface with a clean dry cloth.

To clean surfaces with a polished finish, remember that their chemical resistance is lower than that of other finishes and so some substances might affect their appearance.

Examples of suitable commercial cleaning products for MDi iSLIMM surfaces are solvents, grease removers and ammonia.Before any type of cleaning product is used on the surfaces, test it out on an area that is not very visible to check that the shine or colour are not affected by the product.

Avoid using abrasive cleaning products or sponges, FERROKIT, hydrofluoric acid, other concentrated acids, bleach and products with a pH of over 11 or under 4.

Inalco recommends cleaning utensils suitable for glassware (AKEMI Cleaner for Glass and Plastics / AKEMI Techno Ceramic Daily Cleaner).

MATERIAL SAFETY DATA SHEET

1. IDENTITY OF THE PRODUCT AND MANUFACTURER

Product:
iSLIMM

Recommended uses:
On walls and floors, indoors and out.

Manufacturer:
INALCO (Industrias Alcorenses Confederadas S.A.)
Tel.: (+34) 964 368000
www.inalco.es
C/ San Salvador, 54, 12110 Alcora (Castellón - SPAIN)

Emergency telephone no.:
Medical Toxicological Information Service (+34) 91 562 0420

2. HAZARDS IDENTIFICATION

Classification of product:
The product is not classified as hazardous in accordance with Regulation (EC) No. 1272.

Hazards identification:
The product is inert and it does not pose any danger to health or to the environment with normal use. During the cutting and polishing process, dust may be released with suspended particles of crystalline silica (SiO_2) in an inhalable fraction.

Other hazards:
There are no hazards associated with the product. It is advisable to perform cutting operations in a well-ventilated place or using water-cooled cutting equipment due to the product's content in breathable crystalline silica.

3. INFORMATION / COMPOSITION OF COMPONENTS

Chemical composition: Mixture

Substance	CAS	EINECS	Concentration
Crystalline Silica	14808-60-7	238-878-4	10 - 15 %

4. FIRST AID

The product in its finished form does not require special preventive measures. During cutting, polishing, grinding or drilling operations, preventive measures should be taken to keep silica dust to a minimum.

Inhalation: Remove from the source of exposure to fresh air. Seek medical attention in the event of discomfort.

Contact with eyes: Flush eyes with abundant water for several minutes.

Contact with skin: The dust is not irritating to the skin. Wash with soap and water.

Ingestion: Not applicable.

5. FIRE-FIGHTING MEASURES

Extinguishing media: The product is not flammable and it is not a source of combustion. In the event of a fire in the inmediate area, there is no restriction with regard to the extinguising media.

Specific hazards arising from the mixture: The product's composition does not constitute a hazard in the event of fire.

Recommendations for firefighters: No special recommendations are needed.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Not applicable.

Environmental precautions: No special measures are required.

Cleaning-up method: Not applicable.

7. HANDLING AND STORAGE

Precautions for safe handling: The product requires special handling with suction cup systems, and special precautions must be taken when it is manually handled. Cut-resistant gloves should be used to prevent accidental injuries due to breakages. Shoes and safety goggles must be worn as protection against flying particles during machining or cutting. Avoid over-exertion when handling the slabs manually.

Storage: No special storage measures are required, except for protection against impacts so as to avoid possible breakages. The product should be stored in its original packaging until it is used.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters: Due to the possible release of dust during cutting and polishing operations, wet cutting and polishing systems should be used. The regulations regarding exposure values to crystalline silica are determined by Directive 2000/39/EC and Spanish Royal Decree 374, which refers readers to the values published by the INSHT.

DAILY EXPOSURE LIMIT VALUES (DELV)		
Substance	**CAS no.**	**DELV**
Crystalline Silica	14808-60-7	0.1 mg / m^3 (*)
Inhalable dust fraction		3 mg / m^3 (*)

(*) Limit values applied in Spain. See the applicable values for each pertinent country.

Exposure controls: Exposure to dust released during machining processes (cutting or polishing) must be controlled and kept to a minimum. To do so, joint and individual protective measures must be taken.

Minimize the generation of dust using mechanical ventilation systems and water supply systems.
Avoid the use of compressed air and make sure the air is constantly filtered.

Personal protection:

Respiratory protection:
Use respiratory protection against type P3 particles (EN-143).

Eye protection:
Use protective goggles to protect against flying particles.

Hand Protection:
The use of mechanical protective gloves is recommended to avoid accidental cuts due to broken parts.

Skin protection:
No skin protection is required.

9. PHYSICAL / CHEMICAL CHARACTERISTICS

Physical State:	Solid
Odour:	Odourless
Colour:	Depends on the model
PH:	Not applicable
Density:	2390 – 2410 Kg / m^3
Solubility in water:	Insoluble
Boiling point:	Not applicable
Melting point:	Not applicable
Other information:	No relevant data are known

10. STABILITY AND REACTIVITY

Reactivity:	Not applicable
Chemical stability:	Stable
Possibility of hazardous reactions:	None known
Conditions to avoid:	Formation of dust during the processes
Incompatible materials:	Avoid contact with strong acids for prolonged periods
Hazardous decomposition products:	None known

11. TOXICOLOGICAL INFORMATION

The dust generated during the machining, cutting and polishing processes contains silica particles in suspension. Prolonged exposure to breathable crystalline silica (SiO_2) can cause lung fibrosis and silicosis.

The symptoms are manifested by an appreciable loss of lung capacity.

12. ECOLOGICAL INFORMATION

The product is not harmful to the environment and neither does it release materials that might be environmentally hazardous.

13. DISPOSAL CONSIDERATIONS

Taking as a reference, current legislation: European Directive 91/156 / EEC, Spanish Waste Act 10/98, and Spaniish Royal Decree 1481 on Waste Disposal.

The waste generated by iSLIMM materials can be disposed of through an authorized waste disposal manager.

Cardboard, paper and wood packaging should be recycled by authorized managers.

14. TRANSPORT INFORMATION

Transport by land (ADR/RID):	Unrestricted
Transport by sea (IMDG):	Unrestricted
Transport by air (ICAO/IATA):	Unrestricted

15. REGULATORY INFORMATION

This Material Safety Data Sheet (MSDS) has been drafted following the guidelines of the CLP Regulation (EC Regulation 1272).

16. OTHER INFORMATION

NFPA 704 risk rating system.

Risk – Health:	0
Flammability:	0
Reactivity:	0

The product should not be used for purposes other than those specified by the manufacturer.

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