

TECHNICAL MANUAL

MAXIMUS
MEGA SLAB



RAK
CERAMICS

Close to you worldwide

TECHNICAL MANUAL

MAXIMUS

INDEX

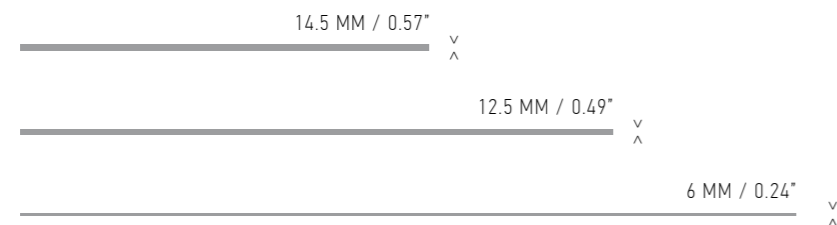
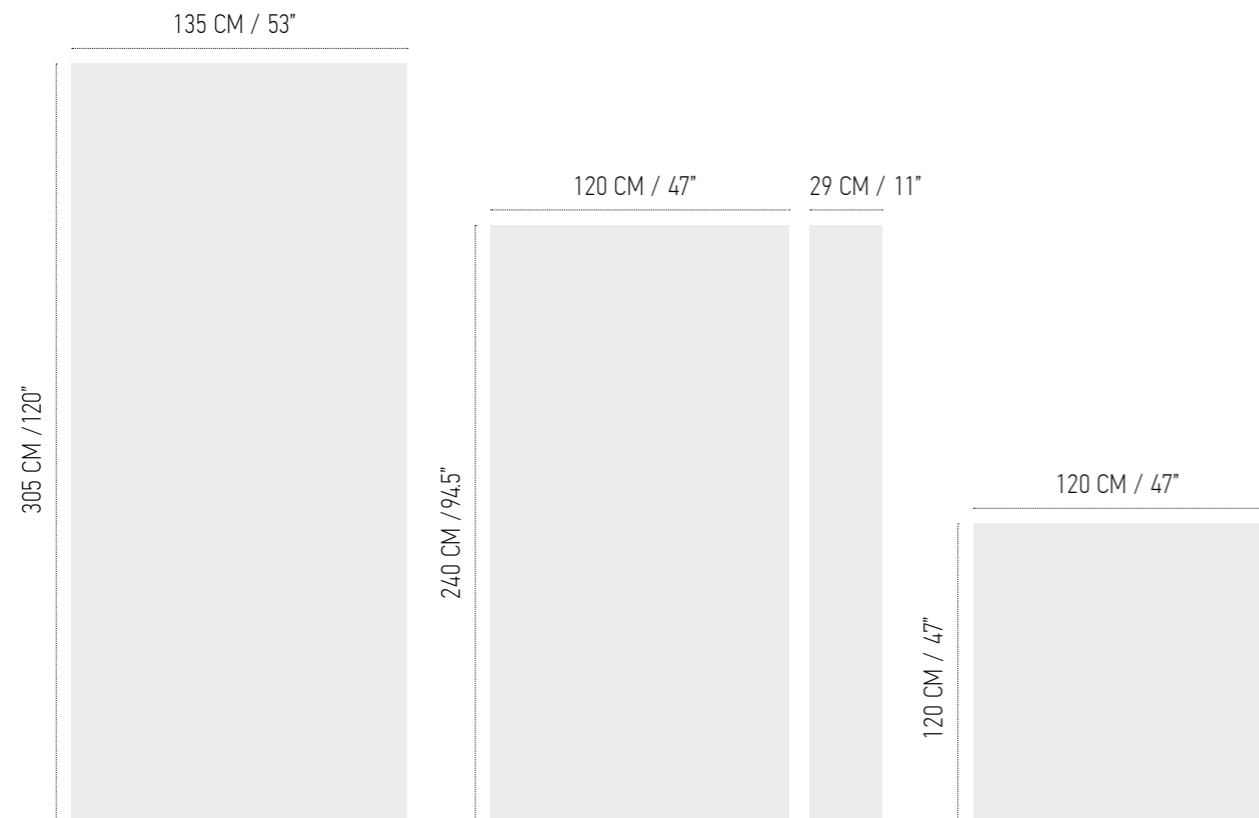
01	THE SYSTEM	04
02	PRODUCT TYPOLOGY & SIZES.....	06
03	TECHNICAL SPECIFICATION	08
04	PACKAGING	12
05	HANDELING	14
06	INSTALATION (WALL, FLOOR AND FAÇADE)	16
07	CLEANING AND MAINTENANCE	20



Big Slabs for Big Ideas - How will you use yours?

We have created a world where big is beautiful, with visually expanded spaces, fewer design interruptions and endless possibilities. A gigantic 3.05m x 1.35m slab, Maximus is available in a range of finishes.

Product Sizes



Product Typology

BODY TYPE	SIZE (CM)	POLISHED	MATT	14.5MM THICK	12.5MM THICK	6 MM THICK
Glazed	135X305	✓	✗	✓	✗	✗
Glazed	120X240	✓	✗	✗	✓	✗
Glazed	120X240	✗	✓	✗	✓	✓
Glazed	120X120	✓	✓	✗	✓	✗
Glazed	29X240	✗	✓	✗	✓	✗
Un Glazed	135X305	✓	✓	✓	✗	✗
Un Glazed	120X240	✓	✓	✗	✓	✗
Un Glazed	120X120	✓	✓	✗	✓	✗

* Maximus Mega Slab is also available in unrectified format : +/- 140cm x 308cm

Unglazed Unpolished

TEST DESCRIPTION	STANDARD TEST METHOD	STANDARD REQUIREMENTS	RAK CERAMICS SPECIFICATION		
			14.5 (135X305 CM)	12.5 (120X240 CM)	12.5 (120X120 CM)
Surface Quality	BS EN ISO 10545-2	a minimum of 95% of the tiles are to be free from visible defects	Minimum of 95% of the tiles are free from visible defects		
Length & Width	BS EN ISO 10545-2	± 0.6%	± 0.1%	± 0.1%	± 0.1%
Thickness	BS EN ISO 10545-2	± 5%	± 5%	± 5%	± 5%
Straightness Of Sides	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Rectangularity	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Center Curvature	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Edge Curvature	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Warpage	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Water Absorption	BS EN ISO 10545-3	≤ 0.5%	≤ 0.1%	≤ 0.1%	≤ 0.1%
Breaking Strength*	BS EN ISO 10545-4	≥ 1300 N	≥ 3500 N	≥ 3000 N	≥ 3000 N
Modulus Of Rupture*	BS EN ISO 10545-4	≥ 35 N/mm ²	≥ 40 N/mm ²	≥ 40 N/mm ²	≥ 40 N/mm ²
Resistance To Surface Abrasion	BS EN ISO 10545-7	-	-	-	-
Resistance To Deep Abrasion	BS EN ISO 10545-6	≤ 175 mm ³	≤ 150 mm ³	≤ 150 mm ³	≤ 150 mm ³
Coefficient Of Linear Thermal Expansion	BS EN ISO 10545-8	Test method available	≤ 7 X 10 ⁻⁶ /°C	≤ 7 X 10 ⁻⁶ /°C	≤ 7 X 10 ⁻⁶ /°C
Resistance To Thermal Shock	BS EN ISO 10545-9	Test method available	No visible defect	No visible defect	No visible defect
Crazing Resistance	BS EN ISO 10545-11	-	-	-	-
Frost Resistance	BS EN ISO 10545-12	Required	No visible damage	No visible damage	No visible damage
Resistance To Household Chemicals & Swimming Pool Salts	BS EN ISO 10545-13	Minimum Class UB	Class UA No visible effect	Class UA No visible effect	Class UA No visible effect
Resistance To Low Concentrations Acids & Alkalis	BE EN ISO 10545-13	Manufacturer to state classification	Class ULA No visible effect	Class ULA No visible effect	Class ULA No visible effect
Resistance To High Concentrations Acids & Alkalis	BS EN ISO 10545-13	Test method available	Class UHA No visible effect	Class UHA No visible effect	Class UHA No visible effect
Resistance To Staining	BS EN ISO 10545-14	Test method available	Min. Class 2 Stains removed	Min. Class 2 Stains removed	Min. Class 2 Stains removed

Note: This technical specification is applicable only to tiles in choice "A".

* Test performed using 60X60 cm cut pieces from the slab.
* Thickness is nominal

Unglazed Polished

TEST DESCRIPTION	STANDARD TEST METHOD	STANDARD REQUIREMENTS	RAK CERAMICS SPECIFICATION		
			14.5 (135X305 CM)	12.5 (120X240 CM)	12.5 (120X120 CM)
Surface Quality	BS EN ISO 10545-2	a minimum of 95% of the tiles are to be free from visible defects	Minimum of 95% of the tiles are free from visible defects		
Length & Width	BS EN ISO 10545-2	± 0.6%	± 0.1%	± 0.1%	± 0.1%
Thickness	BS EN ISO 10545-2	± 5%	± 5%	± 5%	± 5%
Straightness Of Sides	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Rectangularity	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Center Curvature	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Edge Curvature	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Warpage	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Water Absorption	BS EN ISO 10545-3	≤ 0.5%	≤ 0.1%	≤ 0.1%	≤ 0.1%
Breaking Strength*	BS EN ISO 10545-4	≥ 1300 N	≥ 3500 N	≥ 3000 N	≥ 3000 N
Modulus Of Rupture*	BS EN ISO 10545-4	≥ 35 N/mm ²	≥ 40 N/mm ²	≥ 40 N/mm ²	≥ 40 N/mm ²
Resistance To Surface Abrasion	BS EN ISO 10545-7	-	-	-	-
Resistance To Deep Abrasion	BS EN ISO 10545-6	≤ 175 mm ³	≤ 150 mm ³	≤ 150 mm ³	≤ 150 mm ³
Coefficient Of Linear Thermal Expansion	BS EN ISO 10545-8	Test method available	≤ 7 X 10 ⁻⁶ /°C	≤ 7 X 10 ⁻⁶ /°C	≤ 7 X 10 ⁻⁶ /°C
Resistance To Thermal Shock	BS EN ISO 10545-9	Test method available	No visible defect	No visible defect	No visible defect
Crazing Resistance	BS EN ISO 10545-11	-	-	-	-
Frost Resistance	BS EN ISO 10545-12	Required	No visible damage	No visible damage	No visible damage
Resistance To Household Chemicals & Swimming Pool Salts	BS EN ISO 10545-13	Minimum Class UB	Class UA No visible effect	Class UA No visible effect	Class UA No visible effect
Resistance To Low Concentrations Acids & Alkalis	BE EN ISO 10545-13	Manufacturer to state classification	Class ULA No visible effect	Class ULA No visible effect	Class ULA No visible effect
Resistance To High Concentrations Acids & Alkalis	BS EN ISO 10545-13	Test method available	Class UHA No visible effect	Class UHA No visible effect	Class UHA No visible effect
Resistance To Staining	BS EN ISO 10545-14	Test method available	Min. Class 2 Stains removed	Min. Class 2 Stains removed	Min. Class 2 Stains removed

Note: This technical specification is applicable only to tiles in choice "A".

* Test performed using 60X60 cm cut pieces from the slab.
* Thickness is nominal

Glazed

TEST DESCRIPTION	STANDARD TEST METHOD	STANDARD REQUIREMENTS	RAK CERAMICS SPECIFICATION		
			14.5 (135X305 CM)	12.5 (120X240 CM)	12.5 (120X120 CM)
Surface Quality	BS EN ISO 10545-2	a minimum of 95% of the tiles are to be free from visible defects	Minimum of 95% of the tiles are free from visible defects		
Length & Width	BS EN ISO 10545-2	± 0.6%	± 0.1%	± 0.1%	± 0.1%
Thickness	BS EN ISO 10545-2	± 5%	± 5%	± 5%	± 5%
Straightness Of Sides	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Rectangularity	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Center Curvature	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Edge Curvature	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Surface Flatness: Warpage	BS EN ISO 10545-2	± 0.5%	± 0.15%	± 0.15%	± 0.15%
Water Absorption	BS EN ISO 10545-3	≤ 0.5%	≤ 0.4%	≤ 0.4%	≤ 0.4%
Breaking Strength*	BS EN ISO 10545-4	≥ 1300 N	≥ 3500 N	≥ 3000 N	≥ 3000 N
Modulus Of Rupture*	BS EN ISO 10545-4	≥ 35 N/mm ²	≥ 40 N/mm ²	≥ 40 N/mm ²	≥ 40 N/mm ²
Resistance To Surface Abrasion	BS EN ISO 10545-7	Manufacturer to state classification	PEI CLASS 2-4	PEI CLASS 2-5	PEI CLASS 2-4
Resistance To Deep Abrasion	BS EN ISO 10545-6	-	-	-	-
Coefficient Of Linear Thermal Expansion	BS EN ISO 10545-8	Test method available	≤ 7 X 10 ⁻⁶ /°C	≤ 7 X 10 ⁻⁶ /°C	≤ 7 X 10 ⁻⁶ /°C
Resistance To Thermal Shock	BS EN ISO 10545-9	Test method available	No visible defect	No visible defect	No visible defect
Crazing Resistance	BS EN ISO 10545-11	Required	No crazing	No crazing	No crazing
Frost Resistance	BS EN ISO 10545-12	Required	No visible damage	No visible damage	No visible damage
Resistance To Household Chemicals & Swimming Pool Salts	BS EN ISO 10545-13	Minimum GB	Class GA No visible effect	Class GA No visible effect	Class GA No visible effect
Resistance To Low Concentrations Acids & Alkalis	BE EN ISO 10545-13	Manufacturer to state classification	Class GLA No visible effect	Class GLA No visible effect	Class GLA No visible effect
Resistance To High Concentrations Acids & Alkalis	BS EN ISO 10545-13	-	-	-	-
Resistance To Staining	BS EN ISO 10545-14	Minimum Class 3	Min. Class 4 Stains removed	Min. Class 4 Stains removed	Min. Class 4 Stains removed

Superior quality raw materials like kaolin, clay, feldspar, silica, and colouring inks are imported from Europe and other parts of the world to manufacture Maximus Mega Slabs, without compromising on its breaking strength, water absorption, dust, termite and chemical resistance.

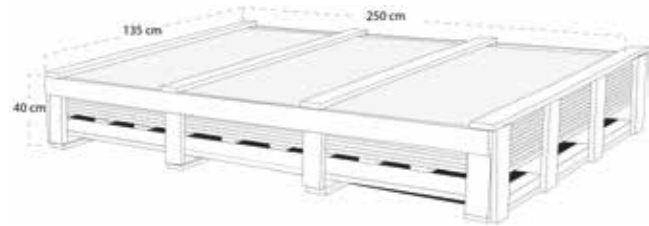
Maximus Mega Slabs are exceptionally hard, resist thermal shock better than any material available today, are virtually non-porous and are a green product. Installation is quicker and easier because of the dimensions of the product.

Flooring, wall cladding, kitchen counter tops, vanity tops, steps and risers, and bath surrounds are all possible. Only your imagination can limit its use.

Note: This technical specification is applicable only to tiles in choice "A".

* Test performed using 60X60 cm cut pieces from the slab.
* Thickness is nominal

Packaging Details



Horizontal Pallet

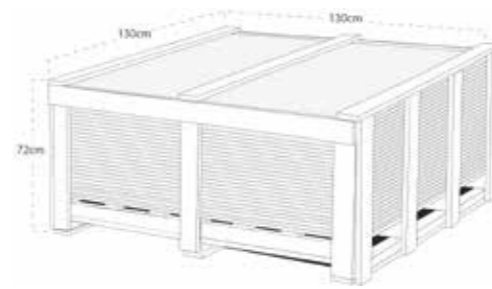


PALLET DIMENSIONS (CM)

FINISH	Length	Height	Width
Polished	250	40	135
Matt	250	40	135
Matt	250	40	135

TILE THICKNESS: 12.5MM

FINISH	TILE SIZE (CM)	TILE AREA (sqm)	KG per pc	PCS per pallet	TILE AREA per pallet (sqm)	WEIGHT per pallet (kg)
Polished	120x240	2.88	88	10	28.8	935
Matt	120x240	2.88	92	10	28.8	975
Matt	29x240	0.7	22	40	28	935



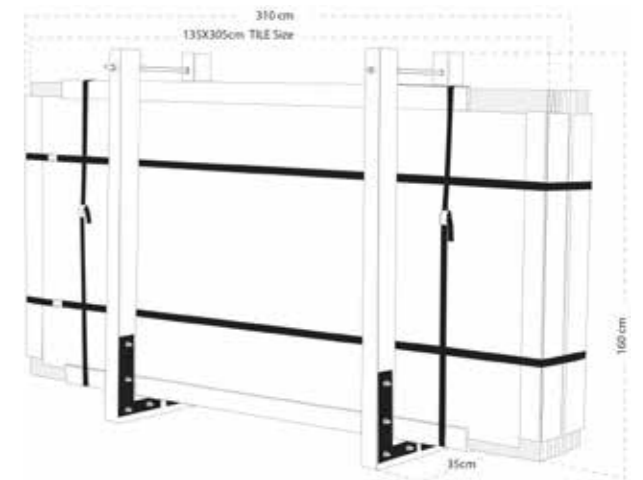
Box Pallet

PALLET DIMENSIONS (CM)

FINISH	Length	Height	Width
Polished	130	72	130
Matt	130	72	130

TILE THICKNESS: 12.5MM

FINISH	TILE SIZE (CM)	TILE AREA (sqm)	KG per pc	PCS per pallet	TILE AREA per pallet (sqm)	WEIGHT Per pallet (Kg)
Polished	120x120	1.44	44	40	57.6	1810
Matt	120x120	1.44	46	40	57.6	1890



Vertical Pallet

PALLET DIMENSIONS (CM)

FINISH	Length	Height	Width
Polished	310	160	35
Matt	310	160	35

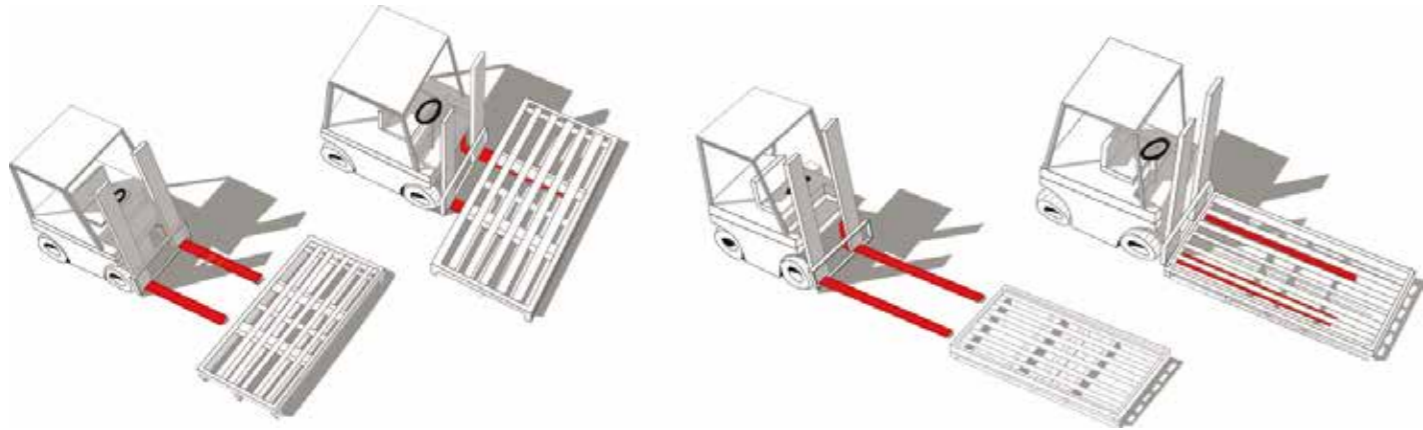
TILE THICKNESS: 14.5MM

FINISH	TILE SIZE (CM)	TILE AREA (sqm)	KG per pc	PCS per pallet	TILE AREA per pallet (sqm)	WEIGHT Per pallet (Kg)
Polished	135X305	4.12	143	12	49.44	1765
Matt	135X305	4.12	150	12	49.44	1848

Note: All tile dimensions mentioned above are rectified. Unrectified size is available in +/-140x308cm on request
All weights and thickness mentioned in the above table are approximate average.

Handeling Maximus

- Maximus extra Large format slabs arrive in oversized crates, which require specific handling equipment. To prevent damage from occurring during forklift operation, specific fork sizes must be used. For example, to handle a crate of 135cm x 305cm tiles from the side, 112cm/ 44" long forks are recommended.
- To handle the same crate from the narrow end requires forks that are at least 213cm/ 84" long. Lifting multiple crates with longer forks may require forklifts with a greater lift capacity.
- Specialized tools and equipment are currently available for the handling and installation of large porcelain surface. Innovative trowels with unique notch configurations can help increase the consistency of the mortar coverage on the back of the tile.



HANDELING EQUIPMENTS

Handeling device to free move 150X150 Slabs
(use 2 for 305cm Slab)



Double Suction Cup 115 MM



Modular Bench BM 180



LEVELLING EQUIPMENTS

RLS Clips for Tiles 10-12 MM thick
(1/2" - 3/4") - 400 pcs bag



Wedges in 1000 pcs / carton



Adjustable Pliers for wall and Floor Covering



CUTTING EQUIPMENTS

Free cut guide with complete outfit
Max. cut of length-156 CM



Free cut Extension Length - 170 CM



Cutting off Pliers for tiles / Slabs
Thickness 6-12 MM



MECHANICAL FIXING EQUIPMENTS

Fix Stainless Steel Hook
for 8 MM thickness tiles - 500 pcs



Cut Grooving Machine
850w-230v 50/60hz



Instalation

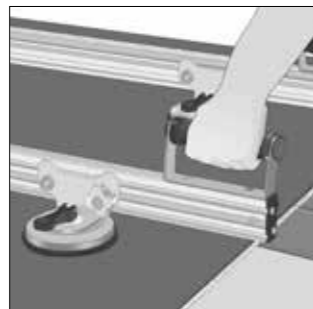
Laying "Maximus" slabs requires similar laying conditions to those required for traditional format slabs. Maximus requires the adhesive to be applied both on the setting bed and on the back of the slab.

Maximus Slabs For Flooring Require The Following Conditions:

- A flat surface that is clean and free from dust, scraps and any lumps of cement
- The setting bed must be uniform and have already undergone the drying shrinkage process
- Repair of any cracks
- Any uneven parts on the surface must be filled with suitable levelling compounds

Instruments Required

- Cement-based powder adhesive for full spread, class "C2E according to EN12004 and S1 according to EN12002 standards"
- 3x3 mm square toothed trowel and 15 mm round toothed trowel
- Frame with suction cups for handling or double suction cups
- Non-bounce plastic mallet 170x370 mm
- Levelling system: base clip + wedge + pliers



Bonding To The Floor

- Ensure that the surface to be covered is solid, flat and free from dust and oil/grease.
- Use the adhesives described above mixed according to the specifications indicated in the technical data sheet of the chosen adhesive.
- Spread the adhesive onto the surface to be covered with a 15 mm round toothed trowel across an area of 5/10 cm more than the dimensions of the slab.
- With the slab in a vertical position on the handling frame, spread the adhesive onto the back of the slab with a 3x3 mm square toothed trowel.
- Using the frame with suction cups, bring the slab into a horizontal position and lay it.
- To guarantee uniform bonding of the slab, the special 170x370 mm non-bounce plastic mallet must be used, tapping from the middle towards the edges so as to remove any air pockets between the back of the slab, the adhesive and the surface to be tiled using the levelling system

Bonding To The Wall

- Ensure that the surface to be covered is solid, flat and free from dust;
- Cement-based powder adhesive for full spread, class "C2E according to EN12004 and S1 according to EN12002 standards";
- Spread the adhesive onto the surface to be covered with a 15 mm round toothed trowel across an area of 5/10 cm more than the dimensions of the slab;
- With the slab in a vertical position on the handling frame, spread the adhesive onto the back of the slab with a 3x3 mm square toothed trowel;
- Using the handling frame in a vertical position lay the slab;
- Before releasing the slab from the handling frame, ensure that the adhesive will hold it in place;
- To guarantee complete bonding of the slab and eliminating any air, tap from the middle towards the edges using the non-bounce plastic mallet;
- Before bonding the next slab, fix the hidden mechanical hook to the wall with the relevant nails (length 27 mm) using the gas-powered nailing machine.

Ventilated Façade

Maximus Mega Slab – Ventilated Façade Systems

A ventilated façade is a coating system on the outside of a building which leaves a ventilated chamber between the coating (façade) and the building insulation. Considered as the best solution for maximising insulation whilst reducing unwanted condensation or thermal bridge problems, ventilated façades provide excellent thermal-hygrometric solutions.

Advantages of Ventilated Façade Systems

- **Energy Saving** – Excellent thermal insulation, reduction in heat/cool dispersal, and less heat absorption in warm climates.
- **Technical and Aesthetic Durability** – Significant reduction in deterioration due to pollution, does not absorb dust or dirt, easy to clean and maintain and promotes humidity dispersal.
- **Healthier Environment** – Increased comfort for users and meets all hygiene, health and environmental protection standards.



Ventilated Façade Laying Option 1

C.A.T 3 Oculito Concealed

Rediwa C.A.T 3 concealed is a concealed and longitudinal chemical mechanical fastening system. Suitable for lower floors in high rise structures or all over coating on low rise structures. The concealed system gives a neat, clean finish.

The concealed mechanical fasteners are made from stainless steel clamps screwed to the vertical structure. The ceramic is held in position by the steel clamps as their flanges are inserted in the grooves made previously on the ceramic edges. The grooves are made using an industrial machine under the highest levels of safety control to guarantee that both the depth and width of the grooves are in keeping with safety standards.

Between the back of the ceramic and the vertical sub-structure, in a longitudinal shape, there is an MS-type elastic adhesive cord which provides the system with a chemical longitudinal fastening.

This elastic adhesive absorbs the ceramic coating movements caused by wind and ensures that the tile is not in direct contact with the structure, therefore absorbing the thermal expansions between the different materials. The chemical longitude fastening also ensures that in the event of accidental breakage due to any kind of impact, the ceramic will remain attached to the sub structure and not become detached.

Ventilated Façade Laying Option 2

C.A.T 3 Visible

Rediwa C.A.T 3 visible is a support and retention fastening system using clips on the ceramic borders. Suitable for higher floors in high rise structures or all over coating on budget conscious low rise structures.

The clips are made from stainless steel and lacquered in the same colour as the ceramic tiles so that they will blend into the façade and provide a neat appearance. The clips include a flexible material made from EPDM which is attached between the back of the clamp and the ceramic to make it easier to absorb expansions and avoid tensions and/or plate movements caused by wind. The clips are attached to the vertical structure using self-tapping screws. This allows ceramic pieces to be quickly and easily replaced if needed.

In addition, to ensure complete safety of the system, the whole contact surface between the ceramic and the vertical profile (coinciding with the vertical joints), will be sealed with an adhesive MS cord. This prevents the ceramic from becoming detached in the event of any kind of impact or damage.

Cleaning And Maintenance

Maximus products are non porous (due to their high quality raw materials, stringent production parameters and state of the art technology), hence any dust or deposited waste cannot penetrate the surface.

But it is necessary to remove them from the surface. For most cases only a damp cloth is sufficient for cleaning.

Regular cleaning highlights the aesthetic features of the surface gives it exceptional shine.

For highly aggressive cleaning caused by some common food and substances follow the table below.

TYPE OF STAIN	CHEMICAL PRODUCT	EXAMPLE
Grease	Alkaline - Solvent	Detergent
Oil	Solvent	Ammonia
Ink	Oxidant - Solvent	Alcohol
Rust	Acid	Hydrolic acid
Lime	Acid	Descaling products
Cement	Acid	Hydrolic acid
Wine	Alkaline	Ammonia or Bleach
Coffee	Alkaline - Solvent	Ammonia or Bleach
Rubber	Solvent	Alcohol
Plaster	Acid	Hydrolic acid
Candle wax	Solvent	Alcohol
Iodine	Oxidant	Bleach
Blood	Oxidant	Bleach
Ice cream	Alkaline	Detergent
Resins	Solvent	Alcohol
Fruit juices	Oxidant	Bleach

Disclaimer: The aim of this manual is to offer helpful suggestions about handling and maintaining maximus mega slabs. Due to nature of sintered ceramic material, it is highly advisable to consult expert for these purpose. RAK Ceramics cannot be held responsible for any damage resulting from application of information and suggestions contained in this technical manual.

Notes





P.O. Box - 4714,
Ras Al Khaimah,
United Arab Emirates (U.A.E)
Tel : +971 7 2467000
Fax: +971 7 2445270
info@rakceram.com



www.rakceramics.com