

## SPECIFICATION GUIDE

TERRAZZO TILES

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# FIBONACCI STONE

**IMPORTANT** The integrity and lifecycle of a floor system is dependant on the design, materials and installation methods used to construct it, as well as the building's environmental factors and climate the floor system is exposed to. A successful, long lasting floor system requires accurate planning and co-ordination, careful and responsible installation followed by an appropriate care & maintenance regime.

The intention of this guide is to share with our customers our knowledge and experience associated with our products and the use of our products. All information provided in this document must be read and interpreted in conjunction with relevant industry codes and standards. All installations/floor systems have unique requirements and circumstances associated with them, and the products utilised may have different characteristics that make them not compatible, more or less suitable, or simply suitable for the intended application. Where there is conflicting recommendations to that specified in a code or standard please contact Fibonacci Stone for further clarification and support.

Designs, specifications and installations require input from the supplier, designer, engineer, builder, installer and maintenance contractor as well as the client. Fibonacci Stone is committed to achieving the best possible floor system, both in performance and value for its customers and understands its role in this process. All floor systems/installations must meet the relevant industry codes and standards. We advise you obtain a copy of the relevant industry standards from [www.saiglobal.com](http://www.saiglobal.com)

### TERRAZZO TILES MATERIAL & CHARACTERISTICS

When specifying terrazzo tiles, it is important to gain an understanding of the material composition and characteristics of the various types of Terrazzo tiles being considered.

**COMPOSITION** Fibonacci Stone Terrazzo Tiles are produced finished and do not require further polishing following installation. Tiles are manufactured using specialized techniques with the final product consisting of more than 75% natural stone bonded with an inorganic binder (portland cement) and pigment oxides used for colour. This allows the density to increase, resulting an exceptionally strong but **thin profile** product with excellent physical mechanical properties.

**AESTHETIC** Varying according to the nature, colour and grading of the materials used as well as the colour of the bonding paste custom pigment blends are consistently distributed throughout the tile in high dose for depth of colour. Consistent with all cementitious products tonal variation in the final aesthetic will appear due to the natural materials used and moisture evaporation.

Produced standard in honed finish, tiles meet the Slip Resistance requirements for most commercial and residential applications, however upon request, the final finish can varied to polished or natural finishes.

**EDGING & PROFILES** completely homogenous, terrazzo tiles can be profiled to create edging as required. Only use experienced stonemasons with required tools and methods to achieve the required result.

**VERSATILE** the tiles can be polished in-situ to achieve a completely flat floor surface. This is an option sometimes considered for SHOPPING CENTRES and AIRPORTS where trolleys are being utilized.

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**ENVIRONMENTALLY SUSTAINABLE** Completely free from any organic additive and 100% recyclable terrazzo tiles greatly contribute to environmentally sustainable architecture and building design. GREEN BUILDING credits can be obtained due to the high reduction of Portland cement resulting from the specialized patented technologies used to manufacture Fibonacci Stone's terrazzo tiles.

**LIFE-CYCLE** When correctly installed and maintained Terrazzo Tiles have a minimum 30 year life-cycle however the tile surface can be easily polished to remove scratches and markings. Re-polishing installations that have been in-situ for many years is often carried out to repair the floor from scratches and markings bringing the tiled surface back to it's original increase the life-cycle of the final installation.

### MEETING PERFORMANCE REQUIREMENTS

Terrazzo Tiles have excellent physical mechanical properties and have been installed in a wide range of internal and external applications. For this reason when specifying Terrazzo Tiles meeting the performance requirements of the floor system is paramount.

Gain a thorough understanding of the application and obtain information from the designer/engineer/head contractor any structural conditions such as, ground or building movement, excessive deflection or delayed shrinkage onset of the substrate and environmental conditions such as excessive water, sunlight, heat or frost. This will assist you in the correct specification of materials for your installation.

For applications in an existing building or over substrates that have been in place for a long period of time, check the substrate for cracking or signs of obvious movement that may affect the new floor system performance. Keep in mind different floor finishes respond to movement differently. This can assist you to isolate or rectify any structural issues prior to the installation of your new floor finish.

Confirm the loading and wear parameters of the installation and determine the correct materials to achieve the required performance level of the installation.

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**NOTE -** External applications are subject to higher degrees of environmental conditions and climate changes. Terrazzo tiles may not be recommended for some external applications and/or may require specific treatments to best ensure performance in external conditions. For more information and assistance please contact Fibonacci Stone at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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### DIFFERENTIAL MOVEMENT IN THE STRUCTURE OR SUBSTRATE

Movement in the structure or substrate is the most common cause of a reduced lifecycle of a floor system. Planning for anticipated and/or expected movement is challenging and often overlooked.

Cracks occur when forces either externally, internally within a building, or as a result of chemical changes within the building's materials are greater than the floor system can withstand.

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Common causes of cracking in a structural concrete slab are shrinking during curing and ground movement. It is important to ensure the concrete slab is allowed to equilibrate ensuring the moisture level is at an acceptable level throughout the entire slab. Although the surface moisture level may be suitable for adhesion, the slab will continue to shrink as it still contains moisture.

Excess moisture, shrinkage, deflection, impurities may cause delamination, reduced bond strength and/or cracking in the tiled surface. Cracking and movement can be structurally dangerous. Differential movement throughout a building may be a consequence of poor design, ageing or changing environmental conditions to which a rigid building cannot adapt without fracturing.

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**NOTE** - Consult with the structural engineer of the building to obtain confirmation of the expected movement of the building and the substrate.

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**SETTING OUT** your installation should be related to the siting of movement joints. Movement joints should be detailed on working drawings by the engineer and should be strictly adhered to.

**MOVEMENT JOINTS** are discontinuities in the tile surface intended to perform the following functions:

- a – Separation of the tiled surface from fixed elements such as columns and walls.
- b – Subdivision of large areas of tiled surface into smaller sections to compensate for induced strain from various causes.
- c – To interrupt the tiled surface to match discontinuities in the substrate such as construction joints and movement joints.

When specifying terrazzo tiles we recommend **LATHAM Proprietary joints** [www.latham-australia.com](http://www.latham-australia.com) in accordance with the relevant standard. For latest information about Australian Standards or to obtain a copy a standard go to [www.saiglobal.com](http://www.saiglobal.com)

### TILE FORMAT & SIZE

The selection of tile size and format for your installation is not only related to meeting the aesthetic intent but also should be related to meeting the performance requirements of the floor system. Depending on the final installation the tile format and size may impact the final performance of the finished floor system.

When specifying terrazzo tiles for large HIGH TRAFFIC areas ie. SHOPPING CENTRES & AIRPORTS we recommend square format tiles to increase system performance. For further information and assistance when specifying contact our technical support team at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

**JOINT WIDTH** of your installation must be specified to ensure the final installation meets not only the aesthetic intent but also a set standard.

When specifying terrazzo tiles we recommend in accordance with Australian Standards.

**INTERNAL:** Floors: (3mm) Walls: (2mm)

**EXTERNAL:** Floors: (3-5mm) Walls: (2-3mm) - (depending on tile format)

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**NOTE** - Joint widths can be varied depending on installation. Should you require assistance, please contact our technical support team at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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**FINISH SURFACE** of the tiled surface should be flat and true to within tolerance. Lippage is inherent to all installations but should be kept to a minimum. When specifying we recommend finished tolerances as follows:

- Flatness:  $\pm 4$ mm in 2m from the required plane.
- Lippage: should not exceed 1.5mm between two adjacent tiles.

**SUBSTRATE** adequacy is imperative to the installation performance as excess moisture, shrinkage, deflection, impurities may cause delamination, reduced bond strength and/or cracking in the tiled surface.

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**NOTE** - Consult with the structural engineer of the building to obtain confirmation of the expected movement of the building and the substrate.

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**NEW REINFORCED CONCRETE SUBSTRATE/SLAB** should be constructed in accordance with the relevant industry standard, particularly with regard to shrinkage. New concrete floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

**EXISTING REINFORCED CONCRETE SUBSTRATE/SLAB** should be checked for cracking or signs of obvious movement that may affect the new floor system performance. Concrete floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

**NEW FRAMED SUBSTRATE/FLOOR** Construction of the substructure and the fixing of sheet materials as a background for floor tiling should be in accordance with the relevant standard. New floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

**EXISTING FRAMED SUBSTRATE/FLOOR** should be checked for cracking or signs of obvious movement that may affect the new floor system performance. Floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

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**NOTE** - For information regarding appropriate substrate finish to suit fixing method and materials, contact your Mapei specialist for a recommendation and/or information about their products before making your final decision. Paul Buckley [p.buckley@mapei.com.au](mailto:p.buckley@mapei.com.au) [www.mapei.com.au](http://www.mapei.com.au)

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**SET-DOWN** requirements can vary in accordance with specific requirements of the installation as well as tile thickness, adhesive bed and the thickness of the screed or levelling material (when required).

The set-down can be formulated by measuring the following:

- Tile thickness.
- Adhesive bed. (as per manufacturer's recommendation)
- Levelling compound (as per manufacturer's recommendation) if required.
- Cement Screed (in accordance with the relevant standard) if required.

Screed thickness may vary according to final installation. Contact Fibonacci Stone at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au) for further assistance.

**SCREEDS** are usually required to level the surface for installation and provide a suitable surface for adhesion but also aid with absorbing deflection, shrinkage and/or cracking in the structural slab without transferring it to the tiled surface.

It is recommended to install a cement screed over large substrates. This provides a layer of separation between the structural slab and the tiled surface and aids with absorbing deflection, shrinkage and/or cracking in the slab without transferring it to the tiled surface. Note: Screed thickness may vary according to final installation. Contact Fibonacci Stone for further assistance.

Screeds must be installed in accordance with the relevant building code and respect the relevant Australian Standard. For latest information about Australian Standards or to obtain a copy a standard go to [www.saiglobal.com](http://www.saiglobal.com)

**ADHESIVES** All monolayer Terrazzo Tiles are classified moisture sensitive and the right choice of adhesive is essential for correct installation. Some adhesives carry a warning that they may react adversely with certain types of tiles.

When specifying we recommend when adhesive materials as follows:

### **NEW & EXISTING REINFORCED CONCRETE SUBSTRATE/SLAB**

Two-component rapid-setting hydrating cementitious adhesive Granirapid - Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

### **NEW FRAMED SUBSTRATE/FLOOR**

Two-component rapid-setting hydrating cementitious adhesive Granirapid - Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

### **SHOWER BASE**

Two-component epoxy-resin-based adhesive Kerapoxy - Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

**BONDING** In accordance with Australian Standards tiles sizes 40x40cm or greater require the installation method of "back buttering" the tiles when installing. This method incorporates a thin coat of adhesive to the entire back of the tile and then laying onto the adhesive bed. This ensures 100% coverage of the tile to achieve maximum bond. This becomes particularly important for **HIGH TRAFFIC** areas such as shopping centres, airports where the use trolleys, scissor lifts or similar is expected.

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When specifying terrazzo tiles we recommend the method of **back-buttering** and **100% adhesive coverage**.

**GROUTING MATERIALS** Selecting the appropriate grout is directly related to the required or expected performance of the completed floor system. Proprietary epoxy or high performance cementitious grouts certified by the manufacturer to relevant industry standards are appropriate.

When specifying we recommend when grouting materials as follows:

**LOW / MEDIUM / HIGH TRAFFIC**      **STANDARD:** Mapei - Ultracolor Plus  
**BEST PRACTICE:** Mapei - Kerapoxy

**EXCESSIVE WATER**      **STANDARD:** Mapei - Kerapoxy

For further information about Adhesive & Grout Materials contact your Mapei specialist before making your final decision. Contact Paul Buckley [p.buckley@mapei.com.au](mailto:p.buckley@mapei.com.au) or [www.mapei.com.au](http://www.mapei.com.au)

**SEALING** Terrazzo tiles are porous and sealing the tiles is required making the tiled area is easier to maintain and maximising the installation performance. Selecting the correct sealer and sealing method depends on the expected conditions the installation will be exposed to as well as the maintenance regime that will be implemented.

Both water-based impregnating sub-surface sealers and water-based acrylic protective coating sealers are compatible with terrazzo tiles. When Specifying always refer to current **SEALING GUIDES**.

### IMPREGNATING SUB-SURFACE SEALER

**TRAFFIC:**      **LOW** RESIDENTIAL, OFFICE  
                  **MEDIUM** RESTAURANTS, BARS INCLUDING AMENITIES, RETAIL  
                  **HIGH** SHOPPING CENTRES, AIRPORTS, HOSPITALS  
                  **EXCESSIVE WATER** SHOWER BASES, BALCONIES

### PROTECTIVE COATING SEALER

**TRAFFIC:**      **HIGH** SHOPPING CENTRES, AIRPORTS, HOSPITALS

For assistance when specifying contact Fibonacci Stone at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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## IMPREGNATING SUB-SURFACE SEALING GUIDE

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## IMPREGNATING SUB-SURFACE SEALING RECOMMENDATIONS

<b>LOW TRAFFIC:</b>	RESIDENTIAL, OFFICE
<b>MEDIUM TRAFFIC:</b>	RESTAURANTS, BARS INCLUDING AMENITIES, RETAIL
<b>HIGH TRAFFIC:</b>	SHOPPING CENTRES, AIRPORTS, HOSPITALS
<b>EXCESSIVE WATER:</b>	SHOWER BASES, BALCONIES

### GROUT TYPE

LOW / MED / HIGH TRAFFIC    **STANDARD:** Mapei Ultracolor Plus  
**BEST PRACTICE:** Mapei Kerapoxy  
**EXCESSIVE WATER:** Mapei Kerapoxy  
MANUFACTURER: Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

### PRE-SEAL

Prior to grouting apply **WATER-BASED IMPREGNATING PRE-SEALER** prior to the tiled surface and into the joints in accordance with the manufacturer's specification.

**SHOWER BASES** and **BALCONIES** Apply water based impregnating pre-sealer to all sides of the tile in accordance with the manufacturer's details and methods.

**RECOMMENDED SEALER**    Timesaver Stone Pre-Seal.  
**MANUFACTURER:** Rockstar Sealing Pty Ltd [www.rockstarsealing.com.au](http://www.rockstarsealing.com.au)

### FINAL SEAL

Following grouting apply water based impregnating sub-surface sealer to the finished tiled surface in accordance with the manufacturer's details and methods.

**RECOMMENDED SEALER**    Green Star Sealer.  
**MANUFACTURER:** Rockstar Sealing Pty Ltd [www.rockstarsealing.com.au](http://www.rockstarsealing.com.au)

### CLEANING & MAINTENANCE

Following final sealing ensure the correct maintenance regime is immediately implemented and adhered to. It is the responsibility of the managing maintenance contractor to obtain the appropriate cleaning products and equipment required to successfully maintain the finished tiled surface in accordance with the recommendations, specifications and methods of the various product manufacturers / suppliers.

#### CLEANING – DAILY

- Mop up spills ASAP
- Static mop floor removing large grit particles that may scratch the surface.
- Clean floor with a PH neutral detergent using an auto-scrubber fitted with cleaning pad suitable for smooth surfaces.
- **Do not use products that contain acid or alkaline.**
- Clean edges and hard to get places.

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### MAINTENANCE – ANNUALLY.

- Static mop floor removing large grit particles that may scratch the surface.
- Clean floor with a PH neutral detergent using an auto-scrubber fitted with cleaning pad suitable for smooth surfaces.
- **Do not use products that contain acid or alkaline.**
- Clean edges and hard to get places.
- Clean up excess water using a wet vacuum or mop immediately.
- Buff the floor using a buffing machine fitted with a suitable buffing pad.

### RE-SEAL - EVERY 2-5 YEARS DEPENDING ON USE.

- Static mop floor removing large grit particles that may scratch the surface.
- Clean floor with a PH neutral detergent using an auto-scrubber fitted with cleaning pad suitable for smooth surfaces.
- **Do not use products that contain acid or alkaline.**
- Clean edges and hard to get places.
- Clean up excess water using a wet vacuum or mop immediately.
- Apply 2 coats **Green Star Sealer** using a suitable applicator, leave for 10 min and remove excess sealer using a clean dry cloth or flat head micro-fibre pad.
- Buff the floor using a buffing machine fitted with a suitable buffing pad.

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## INSTALLATION GUIDE

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**NOTE TO THE INSTALLER** – It is important to select the right materials for the installation, ensure you are using proprietary materials and check, their compatibility in accordance with the supplier's recommendations. When installing Fibonacci Stone products, methods of installation are to be in accordance with the relevant standards and/or "best practice" industry standard.

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### TERRAZZO TILES MATERIAL & CHARACTERISTICS

When installing terrazzo tiles, it is important to gain an understanding of the material composition and characteristics of the various types of Terrazzo tiles being considered.

**COMPOSITION** Fibonacci Stone Terrazzo Tiles are produced finished and do not require further polishing following installation. Tiles are manufactured using specialized techniques with the final product consisting of more than 75% natural stone bonded with an inorganic binder (portland cement) and pigment oxides used for colour. This allows the density to increase, resulting an exceptionally strong but thin profile product with excellent physical mechanical properties. All monolayer Terrazzo Tiles are classified moisture sensitive and the right choice of materials and installation methods is essential to the success of your installation.

**AESTHETIC** Consistent with all cementitious products tonal variation in the final aesthetic will appear due to moisture evaporation. Terrazzo tiles will continue to release small amounts of moisture throughout the life of the installation. Terrazzo tiles will typically show a lighter shade to the perimeter of the tile known as "TV effect". This is a result of evaporation of moisture but also the smaller aggregate within the tile congregating to the perimeter.

**VERSATILE** the tiles can be polished in-situ to achieve a completely flat floor surface. This is an option sometimes considered for SHOPPING CENTRES and AIRPORTS where trolleys are being utilized.

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**EDGING & PROFILES** completely homogenous, terrazzo tiles can be profiled to create edging as required. Only use experienced stonemasons with required tools and methods to achieve the required result.

**STORAGE** Terrazzo Tiles are packed and supplied humid or damp to maintain the balanced moisture content within the tile allowing continuous curing during transit and storage. It is important to maintain the balance in humidity between the surface and back of the tile during storage.

Store tiles in a dry secure warehouse.

- Do not store tiles in direct sunlight or in high temperatures.
- Do not stack pallets.
- Protect tiles/pallets from rain or wet conditions.
- Protect from high levels of dust.

It is important to inspect the tiles thoroughly when received and/or prior to installation. Minor marks, chipping and small pinholes may appear in the tile and are not structural and therefore are not considered defects. Tiles with excessive chipping or marking from polishing should be used for cuts or may be subject to a warranty claim.

**HANDLING / SEASONING** Prior to any installation remove tiles from their packaging and allow them to season in their final environment. This allows initial shrinkage in the tile to occur and any excess moisture to evaporate from the as the tile adjusts to its final environment. This will assist achieving maximum bond strength and to maximise the integrity of the installation/floor system.

Seasoning depends on the tile size, format & thickness as well as the final environment & climate conditions. Typical recommended period for seasoning in an indoor environment 22° - 25°C with air circulation: **min 14 days**.

### SEASONING METHOD:

- Ensure tiles have been stored correctly.
- Unpack and stack tiles vertically in their final environment with spacing between each tile (min 5mm) allowing air circulation to occur.
- Season the tiles in their final environment, internal or external.
- Keep away from rain and water during seasoning.
- Avoid extreme heat.
- Maintain consistent temperature for best results. (Avoid extreme variation in temperatures)
- Seasoned tiles should be free of excess moisture.
- Ensure seasoned tiles are at a suitable temperature for installation. (Tiles seasoned in higher temperatures or sunlight must be allowed to cool before installation).

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**NOTE** - Seasoning time may be reduced depending on terrazzo product and seasoning environment / method. For more information contact our technical support team at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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## INSTALLATION GUIDE

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**MEETING PERFORMANCE REQUIREMENTS** Prior to beginning your installation it is important to gain a thorough understanding of the application. Obtain information from the designer/engineer/head contractor any structural conditions such as, ground or building movement, excessive deflection or delayed shrinkage onset of the substrate and environmental conditions such as excessive water, sunlight, heat or frost. This will assist you in the correct selection of materials and methods used for your installation.

For applications in an existing building or over substrates that have been in place for a long period of time, check the substrate for cracking or signs of obvious movement that may affect the new floor system performance. Keep in mind different floor finishes respond to movement differently. This can assist you to isolate or rectify any structural issues prior to the installation of your new floor finish.

Confirm the loading and wear parameters of the installation and determine the correct materials and method of installation to achieve the required performance level of the installation.

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**NOTE** - External applications are subject to higher degrees of environmental conditions and climate changes. Terrazzo tiles may not be recommended for some external applications and/or may require specific treatments to best ensure performance in external conditions. For more information and assistance please contact Fibonacci Stone at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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### DIFFERENTIAL MOVEMENT IN THE STRUCTURE OR

**SUBSTRATE** Movement in the structure or substrate is the most common cause of a reduced lifecycle of a floor system. Planning for anticipated and/or expected movement is challenging and often overlooked.

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Consult with the structural engineer of the building to obtain confirmation of the expected movement of the building and the substrate

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Cracks occur when forces either externally, internally within a building, or as a result of chemical changes within the building's materials are greater than the floor system can withstand.

Common causes of cracking in a structural concrete slab are shrinking during curing and ground movement. It is important to ensure the concrete slab is allowed to equilibrate ensuring the moisture level is at an acceptable level throughout the entire slab. Although the surface moisture level may be suitable for adhesion, the slab will continue to shrink as it still contains moisture.

Excess moisture, shrinkage, deflection, impurities may cause delamination, reduced bond strength and/or cracking in the tiled surface. Cracking and movement can be structurally dangerous. Differential movement throughout a building may be a consequence of poor design, ageing or changing environmental conditions to which a rigid building cannot adapt without fracturing.

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**SETTING OUT** your installation should be related to the siting of movement joints. Movement joints should be detailed on working drawings by the engineer should be strictly adhered to.

**MOVEMENT JOINTS** are discontinuities in the tile surface intended to perform the following functions:

- a) Separation of the tiled surface from fixed elements such as columns and walls.
- b) Subdivision of large areas of tiled surface into smaller sections to compensate for induced strain from various causes.
- c) To interrupt the tiled surface to match discontinuities in the substrate such as construction joints and movement joints.

When installing terrazzo tiles we recommend **LATHAM Proprietary joints** [www.latham-australia.com](http://www.latham-australia.com) in accordance with the relevant standard. For latest information about Australian Standards or to obtain a copy a standard go to [www.saiglobal.com](http://www.saiglobal.com)

Sometimes it is necessary for their positioning to be left to the discretion of the contractor. In such circumstances consult your **LATHAM** specialist. [www.latham-australia.com](http://www.latham-australia.com)

**TILE FORMAT & SIZE** The selection of tile size and format for your installation is not only related to meeting the aesthetic intent but also should be related to meeting the performance requirements of the floor system. Depending on the final installation the tile format and size may impact the final performance of the finished floor system.

For large **HIGH TRAFFIC** areas ie. **SHOPPING CENTRES, AIRPORTS**, large format and/or tile formats that are not square as well as tile patterns that are not straight ie. brick or staggered pattern, irregular directional or curved patterns may reduce system performance. For more information and assistance please contact Fibonacci Stone at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

**JOINT WIDTH** of your installation must be specified to ensure the final installation meets not only the aesthetic intent but also a set standard. When specifying terrazzo tiles we recommend in accordance with Australian Standards.

**INTERNAL:** Floors: (3mm) Walls: (2mm)

**EXTERNAL:** Floors: (3-5mm) Walls: (2-3mm) - (depending on tile format)

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**NOTE** - Joint widths can be varied depending on installation. Should you require assistance, please contact our technical support team at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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**FINISH SURFACE** of the tiled surface should be flat and true to within tolerance. Lippage is inherent to all installations but should be kept to a minimum. Recommend finished tolerances as follows:

- Flatness:  $\pm 4\text{mm}$  in 2m from the required plane.
- Lippage: should not exceed 1.5mm between two adjacent tiles.

**SUBSTRATE** adequacy is imperative to the installation performance as excess moisture, shrinkage, deflection, impurities may cause delamination, reduced bond strength and/or cracking in the tiled surface.

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**NOTE** - Consult with the head contractor/structural engineer of the building to obtain confirmation of the expected movement of the building and the substrate.

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Prior to beginning your installation confirm the following:

**NEW REINFORCED CONCRETE SUBSTRATE/SLAB** is constructed in accordance with the relevant industry standard, particularly with regard to shrinkage. New concrete floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

**EXISTING REINFORCED CONCRETE SUBSTRATE/SLAB** Is checked for cracking or signs of obvious movement that may affect the new floor system performance. Concrete floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

**NEW FRAMED SUBSTRATE/FLOOR** Construction of the substructure and the fixing of sheet materials as a background for floor tiling is in accordance with the relevant standard. New floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

**EXISTING FRAMED SUBSTRATE/FLOOR** is checked for cracking or signs of obvious movement that may affect the new floor system performance. Floors intended for tiling should be provided with an appropriate finish to suit the method of fixing to be used.

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**NOTE** - For information regarding appropriate finish to suit fixing method and materials, contact your Mapei specialist for a recommendation and/or information about their products before making your final decision. Paul Buckley p.buckley@mapei.com.au www.mapei.com.au

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**SET-DOWN** requirements can vary in accordance with specific requirements of the installation as well as tile thickness, adhesive bed and the thickness of the screed or levelling material (when required).

The set-down can be formulated by measuring the following:

- Tile thickness.
- Adhesive bed. (as per manufacturer's recommendation)
- Levelling compound (as per manufacturer's recommendation) if required.
- Cement Screed (in accordance with the relevant standard) if required.

Screed thickness may vary according to final installation. Contact Fibonacci Stone at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au) for further assistance.

**SCREEDS** are usually required to level the surface for installation and provide a suitable surface for adhesion but also aid with absorbing deflection, shrinkage and/or cracking in the structural slab without transferring it to the tiled surface.

It is recommended to install a cement screed over large substrates. This provides a layer of separation between the structural slab and the tiled surface and aids with absorbing deflection, shrinkage and/or cracking in the slab without transferring it to the tiled surface. Note: Screed thickness may vary according to final installation. Contact Fibonacci Stone for further assistance.

Screeds must be installed in accordance with the relevant building code and respect the relevant Australian Standard. For latest information about Australian Standards or to obtain a copy a standard go to [www.saiglobal.com](http://www.saiglobal.com)

**SUBSTRATE SURFACE PREPARATION** must be in accordance with Australian Standards for the specific background you will be adhering to ensuring the surface is adequate for maximum bond. The following are typical methods and requirements to assist you.

- Ensure the substrate is clean and free from impurities and debris.
- Reinforced Concrete Slabs or Screeds must be cured to a minimum of 5.5% moisture content.
- Prepare the substrate with a suitable primer and or where water can penetrate the tile from below (or behind) ensure the correct waterproofing membranes are installed. We recommend using a reputable, professional waterproofing contractor for these installations.
- Protect and ensure the primed or waterproofed surface is free of impurities, dust, debris, before beginning the installation of tiles.

We advise you contact your Mapei specialist for a recommendation and/or information about their products before making your final decision. Contact Mapei at [www.mapei.com.au](http://www.mapei.com.au) for further information.

**PRIMERS** When using primers, attention is drawn to the need for complete compatibility between –

- a) the substrate and all primers used on the substrate; and
- b) the particular adhesive used to fasten the tiles to the substrate.

For typical installations over a reinforced solid concrete substrate we recommend Mapei Primer G. We advise you contact your Mapei specialist for a recommendation and/or information about their products before making your final decision. Contact Mapei at [www.mapei.com.au](http://www.mapei.com.au) for further information.

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**ADHESIVES** All monolayer Terrazzo Tiles are classified moisture sensitive and the right choice of adhesive is essential for correct installation. Some adhesives carry a warning that they may react adversely with certain types of tiles.

We recommend when adhesive materials as follows:

### NEW & EXISTING REINFORCED CONCRETE SUBSTRATE/SLAB

Two-component rapid-setting hydrating cementitious adhesive **Granirapid** - Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

### NEW FRAMED SUBSTRATE/FLOOR

Two-component rapid-setting hydrating cementitious adhesive **Granirapid** - Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

### SHOWER BASE

Two-component epoxy-resin-based adhesive **Kerapoxy** - Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

**BONDING** In accordance with Australian Standards tiles sizes 40x40cm or greater require the installation method of "back buttering" the tiles when installing. This method incorporates a thin coat of adhesive to the entire back of the tile and then laying onto the adhesive bed. This ensures 100% coverage of the tile to achieve maximum bond. This becomes particularly important for **HIGH TRAFFIC** areas such as shopping centres, airports where the use trolleys, scissor lifts or similar is expected.

When installing terrazzo tiles we recommend the method of **back-buttering** and **100% adhesive coverage**.

**GROUTING MATERIALS** Selecting the appropriate grout is directly related to the required or expected performance of the completed floor system. Proprietary epoxy or high performance cementitious grouts certified by the manufacturer to relevant industry standards are appropriate.

Terrazzo Tiles are porous and extra care should be taken when grouting.

- Allow 7 days before grouting.
- Clean Joints of any excess adhesive or debris.
- Ensure that joints are filled completely.
- Completely cover the entire surface of the tile with grout to avoid "framing" should any grout not be removed.
- Do not use dark or contrasting grout.
- Ensure excess grout is immediately removed. Do not allow grout to dry on the surface of the tile, as it will become difficult to remove.  
(Use proprietary grout cleaners)

We recommend grouting materials as follows:

### LOW / MEDIUM / HIGH TRAFFIC

**STANDARD:** Mapei - Ultracolor Plus

**BEST PRACTICE:** Mapei - Kerapoxy

### EXCESSIVE WATER

**STANDARD:** Mapei - Kerapoxy

We advise you contact your Mapei specialist for a recommendation and/or information about their products before making your final decision. Contact Mapei at [www.mapei.com.au](http://www.mapei.com.au) for further information.

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**EXTREME CLIMATE CONDITIONS** Installations are at their most vulnerable during and immediately following installation. Climate conditions can vary and it is important to avoid installations under the following conditions.

- Very hot days
- When hot wind will blow over the installation during the bonding process.
- When direct sun will fall on the installation during the bonding process.
- When rain is predicted immediately following the installation.

For installations under hot conditions, direct sunlight or hot winds, protect the tiled surface by placing moist hessian cloth over the installation to assist in maintaining a consistent temperature during the initial curing stage of adhesive.

**DURING & FOLLOWING INSTALLATION** Terrazzo tiles are porous and sealing the tiles is required making the tiled area is easier to maintain and maximising the installation performance. It is recommended that a reputable sealing contractor carry out all cleaning & sealing applications. This is also an integral part to the handover process to the client or the cleaning contractor.

The following recommendations are important to the successful care & maintenance during and following installation.

- Protect installation from construction damage.
- Protect tiled surface from acid and alkaline.
- Do not use scissor lifts on the installation until installation/adhesive is completely cured.
- Protect the tiles from stains, abrasions and excess water.
- Do not use products that contain acid or alkaline.
- Remove stains immediately. (Most stains can be removed through wiping, scrubbing or routing care)
- Use proprietary neutral detergents for regular cleaning.
- Appoint a reputable contractor for the pre-seal and initial clean & seal following installation.
- Schedule annually a reputable contractor to clean & seal the installation.

Use only proprietary products in accordance with the manufacturers recommendations and confirm compatibility with the terrazzo.

**SEALING** Terrazzo tiles are porous and sealing the tiles is required making the tiled area is easier to maintain and maximising the installation performance. Both water-based impregnating sub-surface sealers and water-based acrylic protective coating sealers are compatible with terrazzo tiles. Always refer to current **SEALING GUIDES**.

**CLEANING & MAINTENANCE** Following final sealing ensure the correct maintenance regime is immediately implemented and adhered to.

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**NOTE** - Although the technical details, products and methods contained in this guide are to the best of our knowledge and experience, all the above must in every case be taken as indicative and anyone using the information must ensure beforehand that it is suitable for the application.

For further assistance with your installation contact 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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## STORAGE & HANDLING / SEASONING GUIDE

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### STORAGE

Terrazzo Tiles are packed and supplied humid or damp to maintain the balanced moisture content within the tile allowing continuous curing during transit and storage.

It is important to maintain the balance in humidity between the surface and back of the tile during storage.

Store tiles in a dry secure warehouse.

- Do not store tiles in direct sunlight or in high temperatures.
- Do not stack pallets.
- Protect tiles/pallets from rain or wet conditions.
- Protect from high levels of dust.

It is important to inspect the tiles thoroughly when received and/or prior to installation. Minor marks, chipping and small pinholes may appear in the tile and are not structural and therefore are not considered defects. Tiles with excessive chipping or marking from polishing should be used for cuts or may be subject to a warranty claim.

### HANDLING / SEASONING

Prior to any installation remove tiles from their packaging and allow them to season in their final environment. This allows initial shrinkage in the tile to occur and any excess moisture to evaporate from the as the tile adjusts to its final environment. This will assist achieving maximum bond strength and to maximise the integrity of the installation/floor system.

Seasoning depends on the tile size, format & thickness as well as the final environment & climate conditions. Typical recommended period for seasoning in an indoor environment 22° - 25°C with air circulation: **min 14 days**.

#### SEASONING METHOD:

- Ensure tiles have been stored correctly.
- Unpack and stack tiles vertically in their final environment with spacing between each tile (min 5mm) allowing air circulation to occur.
- Season the tiles in their final environment, internal or external.
- Keep away from rain and water during seasoning.
- Avoid extreme heat.
- Maintain consistent temperature for best results. (Avoid extreme variation in temperatures)
- Seasoned tiles should be free of excess moisture.
- Ensure seasoned tiles are at a suitable temperature for installation. (Tiles seasoned in higher temperatures or sunlight must be allowed to cool before installation).

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## CARE & MAINTENANCE GUIDE

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### DURING & FOLLOWING INSTALLATION

Terrazzo tiles are porous and sealing the tiles is required making the tiled area is easier to maintain and maximising the installation performance. It is recommended that a reputable sealing contractor carry out all cleaning & sealing applications. This is also an integral part to the handover process to the client or the cleaning contractor.

The following recommendations are important to the successful care & maintenance during and following installation.

- Protect installation from construction damage.
- Protect tiled surface from acid and alkaline.
- Do not use scissor lifts on the installation until installation/adhesive is completely cured.
- Protect the tiles from stains, abrasions and excess water.
- Do not use products that contain acid or alkaline.
- Remove stains immediately. (Most stains can be removed through wiping, scrubbing or routing care)
- Use proprietary neutral detergents for regular cleaning.
- Appoint a reputable contractor for the initial clean & seal following installation.
- Schedule annually a reputable contractor to clean & seal the installation.

Use only proprietary products in accordance with the manufacturers recommendations and confirm compatibility with the terrazzo.

### SEALING & CLEANING

Selecting the correct sealer and sealing method depends on the expected conditions the installation will be exposed to as well as the maintenance regime that will be implemented. Sealers act as moisture barriers, surface protectors as well as aid with stain removal.

Consultation between the Client, Designer, Head Contractor, Installer, Sealing Contractor and Fibonacci Stone is recommended to ensure specification compatibility. For large projects the installation of a test area is recommended. We recommend you provide relevant product information and a sample of the terrazzo tile to your cleaning contractor to ensure the products being used are compatible and not harmful to the product.

### CLEANING & MAINTENANCE

Following final sealing ensure the correct maintenance regime is immediately implemented and adhered to. It is the responsibility of the managing maintenance contractor to obtain the appropriate cleaning products and equipment required to successfully maintain the finished tiled surface in accordance with the recommendations, specifications and methods of the various product manufacturers / suppliers.

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**NOTE** - Cleaning & Maintenance regimes vary according to sealer applied to the finished tiled surface. Refer to **SEALING GUIDE** for details. **IMPREGNATING SUB-SURFACE SEALER** and **PROTECTIVE COATING SEALER**.

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For further assistance please contact our technical support team at 1300 342 662 or email at [info@fibonaccistone.com.au](mailto:info@fibonaccistone.com.au)

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# PROTECTIVE COATING SEALING AND CLEANING GUIDE

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**HIGH TRAFFIC** Recommendations for SHOPPING CENTRES, AIRPORTS, HOSPITALS and installations where the cleaning & maintenance regime incorporates mechanical equipment that uses excessive amounts of water regularly.

## GROUT TYPE

RECOMMENDED FOR HIGH TRAFFIC      STANDARD: Mapei Ultracolor Plus  
BEST PRACTICE: Mapei Kerapoxy

MANUFACTURER: Mapei Australia Pty Ltd [www.mapei.com.au](http://www.mapei.com.au)

**PRE-SEAL** Prior to grouting apply WATER-BASED IMPREGNATING PRE-SEALER prior to the tiled surface and into the joints in accordance with the manufacturer's specification.

RECOMMENDED SEALER      Timesaver Stone Pre-Seal.  
MANUFACTURER: Rockstar Sealing Pty Ltd [www.rockstarsealing.com.au](http://www.rockstarsealing.com.au)

**FINAL SEAL** Following grouting apply WATER-BASED ACRYLIC PROTECTIVE COATING SEALER to the finished tiled surface in accordance with the manufacturer's specification.

RECOMMENDED SEALER      Supershine UHS Polish.  
MANUFACTURER: Rockstar Sealing Pty Ltd [www.rockstarsealing.com.au](http://www.rockstarsealing.com.au)

## CLEANING & MAINTENANCE

Following final sealing ensure the correct maintenance regime is immediately implemented and adhered to. It is the responsibility of the managing maintenance contractor to obtain the appropriate cleaning products and equipment required to successfully maintain the finished tiled surface in accordance with the recommendations, specifications and methods of the various product manufacturers / suppliers.

### CLEANING – Daily

- Mop up spills ASAP
- Static mop floor removing large grit particles that may scratch the surface.
- Clean floor with a PH neutral detergent using an auto-scrubber fitted with cleaning pad suitable for smooth surfaces.
- Do not use products that contain acid or alkaline.
- Clean edges and hard to get places.
- Clean up excess water using a wet vacuum or mop immediately.
- Burnish the floor using UHS machine fitted with burnishing pad. (45 minutes)

### MAINTENANCE – Every 8-10 weeks.

- Static mop floor removing large grit particles that may scratch the surface.
- Clean floor with a PH neutral detergent using an auto-scrubber fitted with cleaning pad suitable for smooth surfaces.
- Clean edges and hard to get places.
- Clean up excess water using a wet vacuum or mop immediately.
- Apply 2 coats Supershine UHS Polish. Allow 12 hours curing time.
- Burnish the floor using UHS machine fitted with burnishing pad. (45 minutes)

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