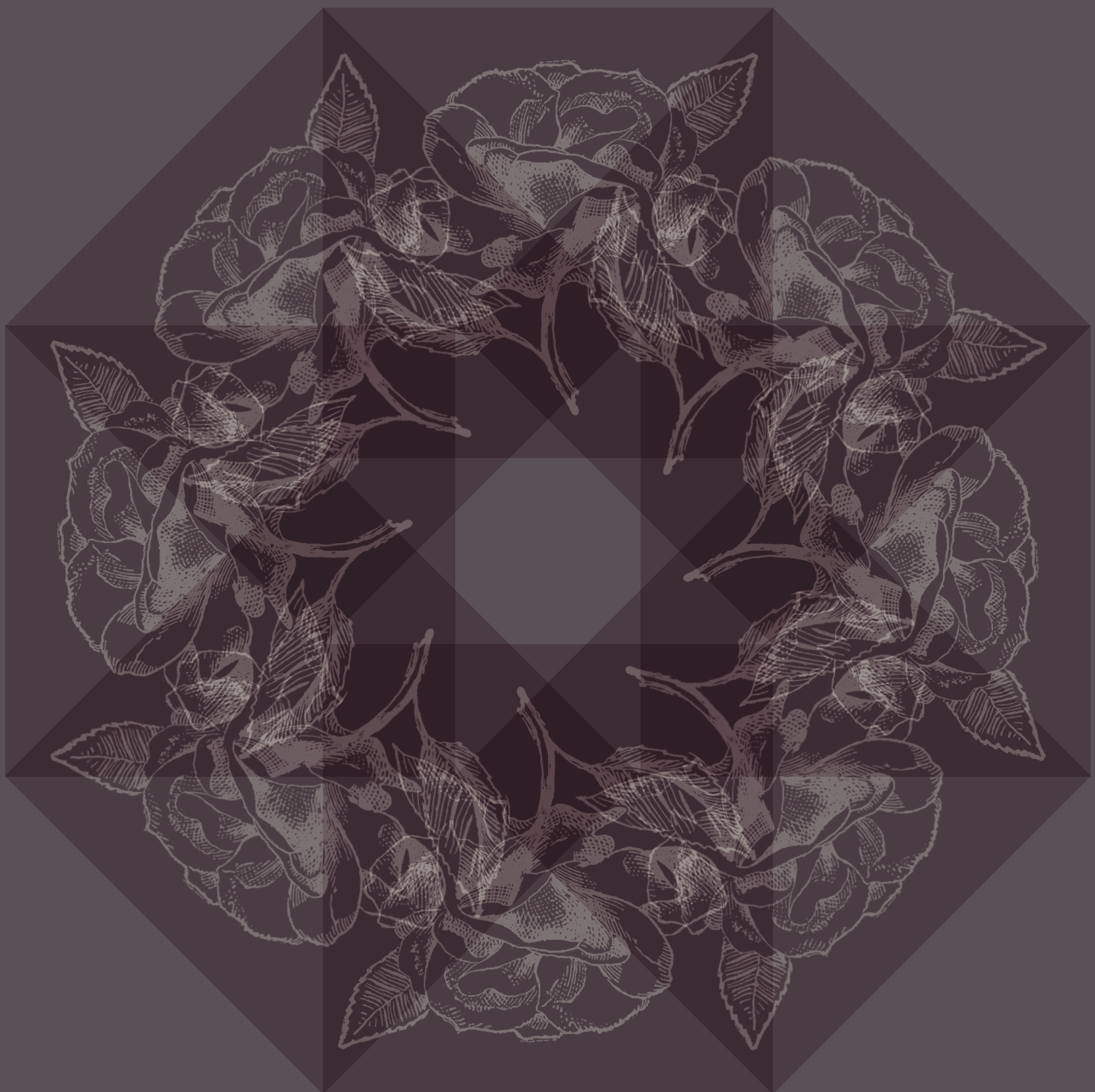


TIPS, INFORMATION AND INSTRUCTIONS

/ A TECHNICAL MANUAL ABOUT YOUR TERRAZZO TILE
ENGLISH VERSION



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INTRODUCTION / A BRIEF HISTORY

The Terrazzo tile production dates back to the end of the XIX century. It coincides with the invention and industrial application of concrete, used in this case as an adhesive to cement together chips of a variety of marble -hence the wide range of colours, which is a typical property of the product. The resulting mixture is cast in different shapes and size by pouring it into moulds.

It is not easy to trace the place where the terrazzo tiles production actually began. It is likely to have been right in San Severino Marche, by the friars of a local religious community. The town became later, during the 1950's, the most important production centre of tiles in Italy.

We can consider the terrazzo tile to be a derivation of the cement tiles, largely used in the late 1800's and early 1900's flooring of mansions and houses. The finer grinding of the marble and the mixture with hydraulic binders and natural oxides are characteristic features of the terrazzo tile.

Grandinetti was founded in 1902 in San Severino Marche and it has been active without interruption since, specializing in such production.

Project, style and artistic quality are undoubtedly inspired to the wonderful Terrazzo alla Veneziana floorings, which were entirely realized on site. They still decorate nowadays some of the most beautiful villas in Italy, such as Palladio's villas. Easily, the tile can be seen as a "prearranged" Veneziana flooring.

The use of decorative ornamental motifs has certainly contributed to add value to terrazzo floors, with Greek frets, border decorations and carpet-like decorations enriching a solid colour background enriching a background in solid colour.

Such decorative motifs -classics today- were developed during the first decades of the twentieth century. They are classified as geometric and floral, according to the main cultural trends of the time – Liberty (1910/1920), called Floral in Italy, and Futurism (1930/1940), in which geometric patterns are preferred.

Since then, the Tile has featured high quality and long life, in addition to exceptionally crafted design, so much as to be used in the complete restoration of period mansions and villas, with superb results.

Those artistic creations are now under the patronage of the Superintendence for Architectural Heritage.

CONTEMPORARY PRODUCTION

Over the last decade, the use of terrazzo floors has been gaining success again, after a period in which other materials had been preferred.

It is thanks to the skilful use of this product in high quality restoration, a market segment that becomes more important year by year, that the beauty and high quality of terrazzo floors is so much appreciated today. New manufacturing techniques have been developed, providing remedy to the weak points in production. The following have contributed to the success.

- A protective process, carried out with specific products that preserves the tiles in use from permanent stains.
- The availability of polished finishing that makes not necessary a complete polish after tiling.
- The easy commercial availability.

More recently, the terrazzo tile entered the world of interior covering in bathroom and kitchen, providing specific décor solutions such as mosaics, finishing bulls, tops for shaped shelves, mirror frames (see on Decem Tassellatum catalogue). As a niche product, the terrazzo tile has a small market share, but an important one, given its high quality and prestige. It is also remarkable the use in the restoring of public buildings, churches, historic buildings, besides to a large application in refined projects for private customers. In this context, also the cement tile is used.

MANUFACTURING PROCESS

As said above, cement tile and terrazzo tile are both produced by mixing marble chips — for the terrazzo — or finely ground marble — for the cement tile — with cement and natural oxide. The mixture is then cast into moulds.

Still today, the product is hand-made, with special attention to the realization of motifs.

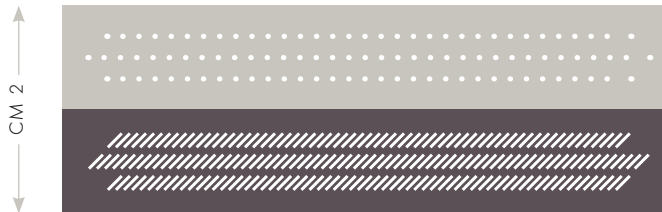
The whole process follows the traditional handmade manufacturing method.

A rotative press is used for the production of the double-layer, solid-colour tiles, as well as for the one-layers.

TILE SECTION EXAMPLE OF THE FORMAT CM 20X20

WITH THE UNDER LAYER

WALKING SURFACE



UNDER LAYER

IN A SINGLE LAYER

WALKING SURFACE



CM 1,2

FLOOR TILES

/ GRANIGLIA / GRA VENEZIANA / ROMANORUM OPUS MUSIVUM / MOSAICI
/ FRAGMENTA

INTRODUCTION

These tiles are made of a mixture of marble granules or chips and mineral powder with cement, water and natural colourings. They can be either smooth or matt, and need to be polished after laid. All the tiles undergo a smoothing process in the factory and can be polished after laid. A special protective finish is needed after laid.

SIZE, SHAPE AND WEIGHT

10x10x1 .2 cm – Kg/sqm 30

20x20x1 .2 cm – Kg/sqm 30

25x25x1 .3 cm – Kg/sqm 32

40x40x1 .7 cm – Kg/sqm 40.5

40x40x2 cm – Kg/sqm 50

60x60x1 .7 cm – Kg/sqm 40.5

60x60x2 cm – Kg/sqm 50

Hexagon side 11 .50 cm – Kg/sqm 30

Hexagon side 14.43 cm – Kg/sqm 30

special sizes by request

OPAQUE FINISHED TILES

SUBSTRATE

It is important to prepare a well compressed tile foundation, clear from grease, oil dust and scaling. When cracks would be present on the screed, we recommend to fill them with suitable material. The screed should have a proper maturation period before tile laying.

LAYING

For the installation, use an appropriate high-performance adhesive such as Mapei Keraflex Maxi S1 o Kerakoll H40 flex. Please follow instruction for use. Remove any trace of glue from the surface and the gap between tiles.

LAYING WITH MORTAR

See page 22-23: Sandstone tiles/outdoor floors laying.

JOINTS

We provide grout in a wide range of colours or grout in neutral colour and an appropriate amount of colourants to obtain the shade desired. Please wait for the prescribed time for the adhesive hardening before applying the grout (7/8 days at least). Leave a 2 mm* gap between the tiles. In case of contrast in colours (e.g. black grout on a white floor), we recommend the use of a specific protective before-grouting product, and the carrying out of a preliminary test.

** European Standard normative recommend to lay floors leaving gaps between tiles, in order to prevent coming off and cracking of the tiles. However, the Terrazzo Tiles are placed in contact, following tradition. A liquid grouting is requested in this case, using a large putty knife to make the fluid paste seep in the commissures.*

POLISHING

In order to achieve best results, the floor should be even, with a maximum difference in level of 1 mm between tiles. Use abrasive grindstone minimum 60 grit. An extra rough grindstone could cause damage to the tiles. Please wait for the prescribed time for the hardening of adhesive and grout. Restore the grouting with coloured grout in case it had been taken off with the first polishing. After polishing, let the floor dry out free from any kind of covering (paper, cardboards, plastic, etc.).

WASHING INSTRUCTIONS

Do not use acid detergents, wax removers and alkali products, as they cause damage to tiles and polish. The neutral cleaner FILA CLEANER, in a 1:30 dilution in warm water, is suitable for the purpose. Apply with a soft, non-abrasive disc for machine cleaning, or a mop.

SPECIFIC TREATMENTS

Wax coating

Apply FILA MP/90 stain repellent on the clean, dry floor. Use a paint brush, a cloth or a proper applicator. When dry, remove the exceeding product with FILA SOLV, using a cloth. After a 24 hours wait, the floor can be polished with one or two coats of FILA CLASSIC wax, the second coat applied two hours after the first. Buff using a floor polisher with white tool disc or a woollen cloth.

Kitchen and bathroom wall coverings

For a better stain repellent effect, apply a coat of HYDROREP (waterproofing) with pasting brush. Apply then a coat of FILOFAB (oil repellent), 24 hours later. Both products do not change the original appearance of the tiles.

MAINTENANCE

Ordinary cleaning

Wash the floor with a solution of Fila Cleaner in warm water (1:30).

Use monthly Fila Classic in water (2/3 glasses in a bucket of water) to preserve the wax coating.

To remove wax completely, use a solution of Fila PS/87 in water (1:5).

STORAGE

Keep in dry, covered place. Rain and humidity may penetrate the material, causing damage. Install the floor in short, so as to prevent efflorescence forming and colour fading.

POLISHED TILES

/ MATT / ANTIQUE / POLISH AND BEVELLED

SUBSTRATE

It is important to prepare a well compressed tile foundation, clear from grease, oil, dust and scaling. When cracks would be present on the screed, we recommend to fill them with a suitable material. The screed should have a proper maturation period before tile laying.

LAYING

For the installation, use an appropriate high-performance adhesive such as Mapei Keraflex Maxi S1 o Kerakoll H40 flex. Please follow instructions for use. Remove any trace of glue from the surface and the gap between tiles.

JOINTS

We provide grout in a wide range of colours or neutral coloured grout and an appropriate amount of colourants to obtain the shade desired. Please wait for the prescribed time for the adhesive hardening before applying the grout (7/8 days at least). Leave a 2 mm* gap between tiles.

We recommend to apply a specific protective product before grouting. Coloured resin grout can be used as well. Rinse with water and mop when the grout becomes dry.

** European Standard normative recommend to lay floors leaving gaps between tiles, in order to prevent coming off and cracking of the tiles. However, the Terrazzo Tiles are placed in contact, following tradition. A liquid grouting is requested in this case, using a large putty knife to make the fluid paste seep in the commissures.*

WASHING INSTRUCTIONS

Do not use acid detergents, wax removers and alkali products, as they cause damage to tiles and polish. The neutral cleaner FILA CLEANER, in a 1:30 dilution in warm water, is suitable for the purpose. Apply with a soft, non-abrasive disc for machine cleaning, or a mop.

SPECIAL TREATMENTS

Wax coating

Apply FILA MP/90 stain repellent on the clean, dry floor. Use a paint brush, a cloth or a proper applicator.

When dry, remove the exceeding product with FILA SOLV, using a cloth.

After a 24 hours wait, the floor can be polished with one or two coats of FILA CLASSIC wax, the second coat applied two hours after the first. Buff using a floor polisher with white tool disc or a woollen cloth.

Kitchen and bathroom wall coverings

For a better stain repellent effect, apply a coat of HYDROREP (waterproofing) with pasting brush. Apply then a coat of FILOFAB (oil repellent), 24 hours later. Both products do not change the original appearance of the tiles.

Extra cleaning

Coloured stains: apply FILA SR/95 on the stain, then rinse well.

Oil and grease stains: spray FILA NONSPOT on the stain. Brush when dry.

Advice: The use of FILA SR/95 and FILA NONSPOT might take off wax from the floor. Repeat the wax treatment.

MAINTENANCE

Ordinary cleaning

Wash the floor with a solution of Fila Cleaner in warm water (1:30).

Use monthly Fila Classic in water (2/3 glasses in a bucket of water) to preserve the wax coating.

To remove wax completely, use a solution of Fila PS/87 in water (1:5).

STORAGE

Keep in dry, covered place. Rain and humidity may penetrate the material, causing such damage as efflorescence forming and colour fading.

GRANDINETTI SRL


Via O. Marziario, 2/4
 62027 San Severino Marche (MC)
 Tel. 0733645770 / Fax 0733979501
 www.grandinetti.it
 grandinetti@grandinetti.it



GRANIGLIA TILES FOR INTERIORS
 SINGLE-LAYERED: 20X20X13 / 25X25X13 / 40X40X17 / 60X60X17
 DUAL-LAYERED: 20X20X2.1 / 25X25X2.5 / 40X40X33

Composition: marble grit, ground marble, Portland 425 RK, colouring oxides when required, water.

TEST		UNI EN 13748-1	
	RESULTS	NORMATIVE REFERENCE	VALORE LIMITE
Dimensions	Regolare		
Water absorption	5,30%	4.2.6	Max 8%
Breaking strength/load (20x20x12; 25x25x13)	8,9 Mpa	4.2.4	Min 5 Mpa
Breaking strength/load (40x40x17)	9,2 Mpa	4.2.4	Min 5 Mpa
Breaking strength/load (40x40x33; 60x60x17)	5,4 Mpa	4.2.4	Min 5 Mpa
Slip resistance polish	USRV 47	4.2.5	
Slip resistance antique finish	USRV 31	4.2.5	
Slip resistance matt	USRV 13	4.2.5	
Reaction to fire	A1	4.2.7	

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GRANIGLIA TILES FOR INTERIORS T.U. (GRANIGLIA VENEZIANA, FRAGMENTA) 40X40X17MM – 60X60X17MM			
Composition: marble grit, ground marble, Portland 425 RK, colouring oxides when required, water.			
TEST		UNI EN 13748-1	
	RESULTS	NORMATIVE REFERENCE	COMPLIANCE CRITERIA
Dimensions	Regular		
Water absorption	4,70%	4.2.6	Max 8%
Breaking strength/load	5,4 Mpa	4.2.4	Min 5 Mpa
Slip resistance matt	USRV 47	4.2.5	
Slip resistance antique finish	USRV 31	4.2.5	
Slip resistance polished	USRV 13	4.2.5	
Reaction to fire	A1	4.2.7	

- Average relative figures, not absolute values.

FLOOR TILES

/ PASTINA

INTRODUCTION

The cement tile composition is a mixture of mineral powder, cement, water and natural colorants (colouring oxides). Tiles come out finished or rough, and can be polished on site. A protection treatment with specific products is required after laying.

DIMENSIONS AND WEIGHT

200x200x12 mm– Kg/sqm 30

250x250x13 mm– Kg/sqm 32

600x600x17 mm– Kg/sqm 40.5

ROUGH PRODUCTS

SUBSTRATE

It is important to prepare a well compressed tile foundation, clear from grease, oil, dust and scaling. When cracks would be present on the screed, we recommend to fill them with a suitable material. The screed should have a proper maturation period before tile laying.

LAYING

For the installation, use an appropriate high-performance adhesive such as Mapei Keraflex Maxi S1 o Kerakoll H40 flex. Please follow instructions for use. Remove any trace of glue from the surface and the gap between tiles.

LAYING WITH MORTAR

See page 22-23: Sandstone tiles/outdoor floors laying

JOINTS

We provide grout in a wide range of colours or neutral coloured grout and an appropriate amount of colourants to obtain the shade desired. Please wait for the prescribed time for the adhesive hardening before applying the grout (7/8 days at least). Leave a 2 mm* gap between tiles. We recommend to apply a specific protective product before grouting. Coloured resin grout can be used as well. Rinse with water and mop when the grout becomes dry.

* European Standard normative recommend to lay floors leaving gaps between tiles, in order to prevent coming off and cracking of the tiles. However, the Terrazzo Tiles are placed in contact, following tradition. A liquid grouting is requested in this case, using a large putty knife to make the fluid paste seep in the commissures.

POLISHING

In order to achieve best results, the floor should be even, with a maximum difference in level of 1 mm between tiles. Use abrasive grindstone minimum 60 grit. An extra rough grindstone could cause damage to the tiles. Please wait for the prescribed time for the hardening of adhesive and grout. Restore the grouting with coloured grout in case it had been taken off with the first polishing. After polishing, let the floor dry out free from any kind of covering (paper, cardboards, plastic, etc.).

WASHING INSTRUCTIONS

Do not use acid detergents, wax removers and alkali products, as they cause damage to tiles and polish. The neutral cleaner FILA CLEANER, in a 1:30 dilution in warm water, is suitable for the purpose. Apply with a soft, non-abrasive disc for machine cleaning, or a mop.

PROTECTIVE TREATMENT

Make the first cleaning with FILA CLEANER 1:10 in water, then apply two coats of FILA FOB stain repellent on the clean, dry floor. After a 24 hours wait, the floor can be polished with one or two coats of FILA CLASSIC wax, the second coat applied two hours after the first. Buff using a floor polisher with white tool disc or a woollen cloth.

MAINTENANCE

Ordinary cleaning

Wash the floor with a solution of Fila Cleaner in warm water (1:30). Use monthly Fila Classic in water (2/3 glasses in a bucket of water) to preserve the wax coating. To remove wax completely, use a solution of Fila PS/87 in water (1:5).

STORAGE

Keep in dry, covered place. Rain and humidity may penetrate the material, causing such damage as efflorescence forming and colour fading.

Wax coating

Apply FILA MP/90 stain repellent on the clean, dry floor. Use a paint brush, a cloth or a proper applicator. When dry, remove the exceeding product with FILA SOLV, using a cloth. After a 24 hours wait, the floor can be polished with one or two coats of FILA CLASSIC wax, the second coat applied two hours after the first.

Kitchen and bathroom wall coverings

Buff using a floor polisher with white tool disc or a woollen cloth. For a better stain repellent effect, apply a coat of HYDROREP (waterproofing) with pasting brush. Apply then a coat of FILOFAB (oil repellent), 24 hours later. Both products do not change the original appearance of the tiles.

POLISHED TILES

/ MATT / ANTIQUE / POLISH AND BEVELLED

SUBSTRATE

It is important to prepare a well compressed tile foundation, clear from grease, oil dust and scaling. When cracks would be present on the screed, we recommend to fill them with suitable material. The screed should have a proper maturation period before tile laying.

LAYING

For the installation, use an appropriate high-performance adhesive such as Mapei Keraflex Maxi S1 or Kerakoll H40 flex. Please follow instruction for use. Remove any trace of glue from the surface and the gap between tiles.

JOINTS

We provide grout in a wide range of colours or neutral coloured grout and an appropriate amount of colourants to obtain the shade desired. Please wait for the prescribed time for the adhesive hardening before applying the grout (7/8 days at least). Leave a 2 mm* gap between the tiles. We recommend the use of a specific protective coating before grouting and the carrying out of a preliminary test. Be careful not to leak the grout onto the tiles. Colour resin grout can be used as well. Rinse well with water and mop.

** European Standard normative recommend to lay floors leaving gaps between tiles, in order to prevent coming off and cracking of the tiles. However, the Terrazzo Tiles are placed in contact, following tradition. A liquid grouting is requested in this case, using a large putty knife to make the fluid paste seep in the commissures.*

WASHING INSTRUCTIONS

Do not use acid detergents, wax removers and alkali products, as they cause damage to tiles and polish. The neutral cleaner FILA CLEANER, in a 1:30 dilution in warm water, is suitable for the purpose. Apply with a soft, non-abrasive disc for machine cleaning, or a mop.

PROTECTIVE TREATMENT

Make the first cleaning with FILA CLEANER 1:10 in water, then apply two coats of FILA FOB stain repellent on the clean, dry floor. After a 24 hours wait, the floor can be polished with one or two coats of FILA CLASSIC wax, the second coat applied two hours after the first. Buff using a floor polisher with white tool disc or a woollen cloth.

MAINTENANCE

Ordinary cleaning

Wash the floor with a solution of Fila Cleaner in warm water (1:30). Rinse and wring out the mop frequently. Use monthly Fila Classic in water (2/3 glasses in a bucket of water) to preserve the wax coating. To remove wax completely, use a solution of Fila PS/87 in water (1:5).

Extra cleaning


Coloured stains: apply FILA SR/95 on the stain, then rinse well.

Oil and grease stains: spray FILA NONSPOT on the stain. Brush when dry.

Advice: The use of FILA SR/95 and FILA NONSPOT might take off wax from the floor. Repeat the wax treatment.

STORAGE

Keep in dry, covered place. Rain and humidity may penetrate the material, causing such damage as efflorescence forming and colour fading.

GRANDINETTI SRL Via O. Marziario, 2/4 62027 San Severino Marche (MC) Tel. 0733645770 / Fax 0733979501 www.grandinetti.it grandinetti@grandinetti.it			
GRANIGLIA TILES FOR INTERIORS T.U. (GRANIGLIA VENEZIANA) 40X40X17MM – 60X60X17MM			
Composition: marble grit, ground marble, Portland 425 RK, colouring oxides when required, water.			
TEST		UNI EN 13748-1	
	RESULTS	NORMATIVE REFERENCE	COMPLIANCE CRITERIA
Dimensions	Regular		
Water absorption	7,90%	4.2.6	Max 8%
Breaking strength/load (20x20x12 25x25x13)	11,8 Mpa	4.2.4	Min 5 Mpa
Breaking strength/load (60x60x17)	7,6 Mpa	4.2.4	Min 5 Mpa
Slip resistance polished	USRV 46	4.2.5	
Slip resistance bevelled	USRV 49	4.2.5	
Reaction to fire	A1	4.2.7	

- Average relative figures, not absolute values.

FLOOR TILES

/ ANIMA

INTRODUCTION

The Anima Tile composition is a mixture of mineral powder, cement, water and natural colorants.

They come out in Natural finishing, Treated finishing and Wax finishing.

They do not undergo a polishing process in production and cannot be polished in use.

The colours are due to natural oxides and mixed binders in the composition.

The surface of the tile is uneven, with ripples, small holes, haze, dots, bulges.

DIMENSIONS AND WEIGHT

200x200x12 mm– Kg/sqm 32

600x600x19 mm– Kg/sqm 48

Hexagon side 115 mm–Kg/sqm 32

Extra size

NATURAL MATERIAL

SUBSTRATE

It is important to prepare a well compressed tile foundation, clear from grease, oil dust and scaling. When cracks would be present on the screed, we recommend to fill them with suitable material. The screed should have a proper maturation period before tile laying. Remove any trace of dampness from the substrate with MAPEI TRIBLOCK P. Do not lay Anima Tile on a wet substrate.

LAYING

For the installation, use an appropriate high-performance adhesive such as Mapei Keraflex Maxi S1 o Kerakoll H40 flex. Please follow instruction for use. Remove any trace of glue from the surface and the gap between tiles.

Cover the floor with non-woven sheets after laying for protection. Be careful not to dirty and scratch the tile surface.

JOINTS

Anima Tile laying do not usually include joints and grout application.

We can provide grout in a wide range of colours or neutral coloured grout and an appropriate amount of colourants to obtain the shade desired. Please wait for the prescribed time for the adhesive hardening before applying the grout (7/8 days at least). Leave a 2 mm* gap between the tiles. We recommend the use of a specific protective coating before grouting and the carrying out of a preliminary test. Be careful not to leak the grout onto the tiles.

Rinse well with water and mop.

* European Standard normative recommend to lay floors leaving gaps between tiles, in order to prevent coming off and cracking of the tiles. However, the Cement Tiles are placed in contact, following tradition.

WASHING INSTRUCTIONS

Do not use acid detergents, wax removers and alkali products, as they cause damage to tiles and polish. The neutral cleaner FILA CLEANER, in a 1:30 dilution in warm water, is suitable for the purpose. Apply with a soft, non-abrasive disc for machine cleaning, or a mop.

PROTECTIVE TREATMENT

Have the treatment done by experienced personnel. Use floor wax, acrylic finish or a specific product for conglomerate and test the result before laying.

MAINTENANCE

Washing instructions

Wash the floor with a solution of Fila Cleaner in warm water (1:30). Rinse and wring out the mop frequently.

STORAGE

Keep in dry, covered place. Rain and humidity may penetrate the material, causing such damage as efflorescence forming and colour fading.

WAXED MATERIAL

SUBSTRATE

It is important to prepare a well compressed tile foundation, clear from grease, oil dust and scaling. When cracks would be present on the screed, we recommend to fill them with suitable material. The screed should have a proper maturation period before tile laying. Remove any trace of dampness from the substrate with MAPEI TRIBLOCK P. Do not lay Anima Tile on a wet substrate.

LAYING

For the installation, use an appropriate high-performance adhesive such as Mapei Keraflex Maxi S1 o Kerakoll H40 flex. Please follow instruction for use. Remove any trace of glue from the surface and the gap between tiles. Cover the floor with non-woven sheets after laying for protection. Be careful not to dirty and scratch the tile surface.

JOINTS

Anima Tile laying do not usually include joints and grout application.

WASHING INSTRUCTIONS

Do not use acid detergents, wax removers and alkali products, as they cause damage to tiles and polish. The neutral cleaner FILA CLEANER, in a 1:30 dilution in warm water, is suitable for the purpose. Apply with a soft, non-abrasive disc for machine cleaning, or a mop.

PROTECTIVE TREATMENT

Apply one or two coats of liquid wax (e.g. FILA CLASSIC) after laying and before grouting, if intended. Let the floor dry out, then apply two coats of solid wax (e.g. FILA NATURWAX). Complete treatment with a finishing wax, choosing from the followings: FILA CLASSIC, FILA SATIN, FILA MATT, FILA LONGLIFE. Always follow instructions on the label.

MAINTENANCE

Wash the floor with a solution of Fila Cleaner in warm water (1:30). Rinse and wring out the mop frequently. Regularly use the washing-waxing procedure with warm water and floor wax (a small glass in bucket of water). Wax with FILACCLASSIC, not diluted, to renew the wax coat. Use a floor polisher for the maintenance of the wax on the floor.

STORAGE

Keep in dry, covered place.

Rain and humidity may penetrate the material, causing such damage as efflorescence forming and colour fading.

This is a craft product, not subject to European regulation.

FLOOR TILES

/ PIETRINI / OUTDOOR FLOORS

INTRODUCTION

The composition is a mixture of mineral powder, cement, water and natural colorants. The tiles come out unpolished. This is a specific product for outdoor application. The surface of the tiles will have shades and efflorescence when still packed.

DIMENSIONS AND WEIGHT

200x200x21 mm– Kg/sqm 51

250x250x25 mm– Kg/sqm 60

400x400x35 mm– Kg/sqm 80


WET CEMENT MORTAR LAYING

1. Mix together cement and sand in ratio 1:4.
2. Add water in order to obtain a fluid mixture
3. Apply with a trowel on small areas, so as to lay one tile at a time. Level to a 2/3 cm. thickness.
4. Lay the tile into place and press to level.
5. Paintbrush with a liquid mixture of cement and water the back side of the tile before laying.
6. Once installation is complete, wash the floor with buffered acid to clean the surface of any laying residues as well as any efflorescence normally present in the tiles.


SEMI-DRY CEMENT MORTAR LAYING

Sand and cement with a small quantity of water


1. Mix together cement and sand in ratio 1:4.
2. Add water in order to obtain a semi-dry mixture.
3. Apply on small areas and level to a 5 cm. thickness. Weather conditions may cause the mixture to harden rapidly, so it is advisable to cover only a small area at a time.
4. Spread cement powder over the underlay.
5. Drizzle with water until the powder thickens to the density of grease or modelling clay. This procedure is essential to the final result. It is not necessary, though, when the underlay is wet enough to moisten the cement powder.
6. Lay the tiles one by one, with spacers of 1 mm. No extra water is need.
7. Press evenly. When any tile would not level, you have to remove it, level the underlay, and repeat the procedure of points 5-6.
8. Apply the sealing grout in the gaps after 5/6 days.
9. Once installation is complete, wash the floor with buffered acid to clean the surface of any laying residues as well as any efflorescence normally present in the tiles.

GRANDINETTI SRL Via O. Marziario, 2/4 62027 San Severino Marche (MC) Tel. 0733645770 / Fax 0733979501 www.grandinetti.it grandinetti@grandinetti.it			
TERRAZZO TILES FOR OUTDOOR FLOORS (UNPOLISHED) 25X25X25 MM – 40X40X35 MM			
Composition: marble grit, ground marble, Portland 425 RK, colouring oxides when required, water.			
TEST		UNI EN 13748-1	
	RESULTS	NORMATIVE REFERENCE	COMPLIANCE CRITERIA
Dimensions	Regular		
Water absorption	5,8% (classe 2)	4.2.6	Max 8%
Breaking strength/load (20x20x25 mm)	5,2 Mpa (classe 3)	4.2.4	Min 4 Mpa
Breaking strength/load (40x40x35 mm)	5,2 Mpa (classe 3)	4.2.4	Min 4 Mpa
Slip resistance	USRV 47	4.2.5	
Reaction to fire	A1	4.2.7	

- Average relative figures, not absolute values.

GRANDINETTI SRL Via O. Marziario, 2/4 62027 San Severino Marche (MC) Tel. 0733645770 / Fax 0733979501 www.grandinetti.it grandinetti@grandinetti.it			
TERRAZZO TILES FOR OUTDOOR FLOORS ("WASHED") 25X25X25 MM – 40X40X35 MM			
Composition: marble grit, ground marble, Portland 425 RK, colouring oxides when required, water.			
TEST		UNI EN 13748-1	
	RESULTS	NORMATIVE REFERENCE	COMPLIANCE CRITERIA
Dimensions	Regular		
Water absorption	5,8% (classe 2)	4.2.6	Max 6%
Breaking strength/load	5,2 Mpa (classe 3)	4.2.4	Min 4 Mpa
Slip resistance	USRV 54	4.2.5	
Reaction to fire	A1	4.2.7	

- Average relative figures, not absolute values.

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TERRAZZO TILES FOR OUTDOOR FLOORS (SMOOTH) 250X250X22 MM – 400X400X35 MM			
Composition: marble grit, ground marble, Portland 425 RK, colouring oxides when required, water.			
TEST		UNI EN 13748-1	
	RESULTS	NORMATIVE REFERENCE	COMPLIANCE CRITERIA
Dimensions	Regular		
Water absorption	5,3% (classe 2)	4.2.6	Max 6%
Breaking strength/load (200x200x22 mm)	5,3 Mpa (classe 3)	4.2.4	Min 4 Mpa
Breaking strength/load (400x400x35 mm)	5,2 Mpa (classe 3)	4.2.4	Min 4 Mpa
Slip resistance	USRV 47	4.2.5	
Reaction to fire	A1	4.2.7	

- Average relative figures, not absolute values.

NOTES ABOUT FLOORS

/ EXPANSION JOINTS

Expansion joints –or strain joints- are intended to prevent cracks and detachment of tiles.

They consist in prearranged gaps in the underlay/tiled lay, and allow the settlement between sections of tiled floor.

What is the result if the floor is not provided with joints?

As the spontaneous formation of straight fissures has been observed on floors without expansion joints, we can easily say that the joints will form in any case, but in an uncontrolled way.

It is therefore advisable that the draftsman should consider the installation of strain joints, according to the technical features of layers and to the area to be tiled.

There are three different strain joints, with different function:

1. Body joint: always to be used in correspondence with the superficial joints.
2. Perimeter joints: always to be used on the edge of the whole surface, where it comes in contact with different areas, such as walls, pillars, etc.
3. Division joints: these are intended to reduce the mechanical stress due, for example, to temperature variation. The division joints divide large areas into small, roughly square sections, which dimensions should be from 2/3 metres for outdoor floors to 5/8 metres for internal floors. Prepare smaller sections in case of underfloor heating.

/ COLOURS IN DECORATIONS

Decoration colours require a different process from that of tiles in solid colours to be prepared. For this reason, there is a visible variation in colour shade. The hues are different, but well matched with one another. More variation can be given by the decorator, who skilfully prepares an appropriate mixture in relation to the shape and dimensions of the decoration. We use special mixture, with very small marble grain, for the tiny areas of delicate figures, giving them perfect definition. The grain size varies in different parts of the same figure, so that one single tile may feature many a shade of the same colour.

In contrast to the common practice of simplification in manufacturing, which allows the use of one single mixture for any decoration, we follow the old tradition in creating high quality product, relying on experienced decorators.

Choosing Grandinetti decorated tiles means choosing a unique product, with its specific features. Any variation in colour is due to the manufacturing process and to the discretion of professionals.

WALL COVERINGS

/ TESSELLATUM / DECEM / INCISI

INTRODUCTION

The Tiles for wall lining are made of a mixture of marble granules or chips and mineral powder with cement, water and natural colourings. They come out pre-finished, an after-laying finishing is need.

DIMENSIONS AND WEIGHT

100x100x12 mm– Kg/sqm 30

200x200x12 mm– Kg/sqm 30

Please follow the same instructions as for terrazzo tiles, at page.

As for the treatment, follow instructions in the section kitchen and bathroom, at page 16.

Apply the glue with a notched trowel on small areas, then position the tiles placing 3 mm spacers.

Press carefully to level.

Let the adhesive stick, then putty the wall. Use a fine-grained grout (Mapei Keracolor o Kerakoll Fugabella).

Cement grey colour is suitable for all the Tessellatum.

TESSELLATUM

The Tessellatum needs to be laid with 3 mm spacers. Use a notched trowel for laying.

Make sure that the tiles are well levelled. After laying, proceed to filling the entire surface. Use grout type Mapei Keracolor or Kerakoll Fugabella (preferably grey cement on all types of Tessellatum), follow the manufacturer's instructions. Once you have the dough, spread it over the entire surface with a rubber spatula making sure that the product penetrates well into all the joints (the level of the grout must be below the surface of the tiles). When finished (when the grout starts to "coagulate") remove the excess with a sponge. After 24 hours, pass the finish with stainless wire sponge.

DECEM

The Decem must be laid with normal glue for flooring and spacers from 2 mm to 6 mm.

Make sure that the tiles are well levelled. After laying, proceed to filling the entire surface.

Use grout, for example, Mapei Keracolor or Kerakoll Fugabella (preferably grey cement on all types of Tessellatum), follow the manufacturer's instructions. Once you have the dough, spread it over the entire surface with a rubber spatula making sure that the product penetrates well into all the joints (the level of the grout must be below the surface of the tiles). When finished (when the grout starts to "coagulate") remove the excess with a sponge. After 24 hours, pass the finish with stainless wire sponge.

NOTES

For models IP 12-13-15, proceed as in the previous chapter "TESSELLATUM".

For model IP 14, proceed with the laying, by pulling together the vertical sides and separating the horizontal ones 3mm.

For the other models, perform the laying by pulling together the tiles completely.

In all cases, grout exactly as in the previous chapter "TESSELLATUM".

ACCESSORIES

Special terrazzo tiles are designed to realize stairs, kitchen and bathroom countertops, panel wood coatings, doorsteps and floors in special formats, even very large.

THICKNESSES

Cm 2 / Cm 4

FINISHING

Polished, antique, matt.

FINISHING OF THE EDGES

Torus, feathered and chamfered, Owl-beak.

Use very dried mixes and with the right quantity of cement in order to reduce to the maximum the shrinkage of strong anchor mortars. Steps and special pieces during processing are plastered (filling of holes). The plaster may be visible to the eye. Frequently it is possible to notice small spinning on walls, floors, etc.. sometimes they are structural adjustments. The steps in graniglia are affected by these phenomena occurring with the usual spinning in one or more parts of the step, often in an irrational way. Therefore, we recommend, before choosing this type of product, to ensure that surfaces of laying are suitable for the installation. As regards graniglia stairs, countertops and other accessories offer exceptional quality over time.

LAYING / TIPS / FEATURES

During the laying, use very dry mixes and with the right quantity of concrete, in order to avoid any crack on steps and the shrinkage of anchor grouts. Other laying methods are valid (included the usage of melted concrete in replacement of normal concrete on installation grout), as long as you keep in mind that you have to reduce to the maximum the shrinkage of anchor grout. Once having formed the foundation as mentioned above, apply by brush a coat of mortar (made of water and concrete) on the section underneath the step. Then complete the laying and proceed in this way for all the steps.

Note

During the processing stage, steps and complementary pieces are grouted (filling of holes). When the product is finished, grout may be visible to the eye. Frequently, in houses or building sites you can notice small cracks on walls, on floors, etc.: sometimes, they are just structural adjustments. Steps made of terrazzo tile are affected by these phenomena, which occur with usual cracks on one or more step's sections, often arisen irrationally. Therefore, before choosing this type of product, we recommend to ensure that the surfaces are suitable for installation. As regards wear resistance, terrazzo tile stairs offers exceptional quality over time.

POLISHING OF SPECIAL TERRAZZO TILE FLOORS

The laying is not different from what we've already said about normal terrazzo tile. Instead, as regards the polishing, you must follow this sequence:

1. Use 60 grit grinding wheel until the floor surface is flat. Some holes will appear.
2. Use 120 grit grinding wheel.
3. Grout the entire surface, using the specific grout, and make sure you close all the holes.
Waiting time for the next phase: from 5 to 10 days, depending on the temperature/season.
4. (Note) As an alternative, you can use resinous grout: by doing so, there would be no waiting time.
5. Use again 120 grit grinding wheel until you remove all the grout from the surface.
6. Use 220-400-600-LUX grit grinding wheels.

INFORMATION AND SUGGESTIONS

- Samples and colours in our display stands should be considered as only indicative, because the variable nature of the raw materials that make up terrazzo tiles may give rise to different shades of hue, also substantial.
- The colour of complementary pieces, skirting boards, decorations and plain colours may change in different tones between them.
- The continuous variability of the raw materials and the craftsmanship of the manufacture give rise to colour differences even in the same batch.
- For this fundamental and insurmountable limit of production, the seller can never guarantee homogeneity of colour of its floors. Complementary pieces (steps, doorsteps, countertops, etc.) are made of different grain sizes compared to those of terrazzo tiles.
- There may be even more substantial diversity of colour shades between different batches: for this reason, we recommend you to order all the material you need in a single commission.
- Customers choose the colour they want from those shown in our catalogue. Taking into account that there are differences of tone between plain colour and decorated terrazzo tile, it is preferable to avoid the combination of the same colours, in order to not underline these differences between them.
- Differences of tone are inevitable also between a sample and its batch, always because of the variability of raw materials that make up the artifact.

TONES

Terrazzo tiles (made of flakes or pebbles, more or less large), pastina tiles, cement tiles and all agglomerated materials we produce, are concrete structures obtained by a vibrating press and composed of mineral components, powders and marble flakes.

In some cases, in the mixture we add natural oxides: they have the purpose of colouring the entire mass.

The final product is obtained from a set of mixtures made from components that are variable in nature.

Unlike other types of flooring, the colour is not due to an enamel or paint surface; for this reason, it is impossible to guarantee the absolute uniformity of tone, also in the same batch.

It should also be said that the surfaces of these floors, in contact with the air, undergo what is commonly referred to as "natural oxidation": this phenomenon tends to slowly even out the tone.

The difference of tone is further highlighted on floors polished after laying, rather than on polished, matt or antique finish floors.

GENERAL NOTES

- The surface of terrazzo tiles has a natural porosity that shows the presence of small holes.
- Thickness variations of +/- 10% are within production tolerances
- Marble chips, especially if large (> 1 cm), can be cracked. This aspect does not compromise the quality of the tile and is not considered a defect.
- The perimeter of a terrazzo tile, especially if opaque, can never be perfect: grouting and polishing will remedy this temporary defect called "chipping".
- The polished finish needs to be accompanied by chamfering. Otherwise, there would be substantial difficulties of laying, beyond what is described in the previous paragraph.
- The intensity of the colour is greatly modified (temporarily) by the moisture contained in the terrazzo tile:

WET MATERIAL THE COLOUR IS MORE INTENSE AND DARKER
DRY MATERIAL REAL COLOUR

For issues of production, the terrazzo tiles are packed in our factory with a good residue of moisture. In order to verify the correspondence of the product, let the terrazzo tile dry near a heat source. The speed of drying in the perimeter compared to that one in the center can cause marks on the perimeter. They naturally disappear after a few days from the laying, especially if the place is well ventilated.

The information contained in this brochure are the result of our decades of experience in the production of the floors and of the experience of business partners in other specific areas. Our technical department is available to provide further more specific information or topics, related to our products not covered in this manual.