



## **GENERAL TRADING TERMS (GTT)** **RMC®**

### **PART II** **AFTER SALE INSTRUCTIONS**

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**Italian Breton Patented Technology**

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## **PART A: TECHNICAL MANUAL (PROPERTIES, INSTALATION, USE AND MAINTENANCE INSTRUCTIONS FOR MARBLE BASED ENGINEERED STONE RMC® by EUROSURFACES)**

### **1.1 Purpose**

The purpose of this document is to define the basic technical requirements and guidelines related to its usage, installation and maintenance.

### **1.2 Definitions**

#### **1.2.1 Marble Based Engineered stone**

High-quality, imporous, composite material, built-up from hard, inorganic, polishable granulates, compactly bound together with a binder and a filler, colored with various pigments, having a smooth, resistant surface, in a variety of sizes and with a wide range of applications.

#### **1.2.2 Slab**

The basic machined product in a form of a plate with various thicknesses, miscellaneous surface finishes, in dimensions 1830 x 1230mm. This slab size is extruded from a block with nominal size 185 x 125 x 88 cm. Non standard slab sizes can be processed upon request.

#### **1.2.3 Tile**

The machined product prepared by cutting a slab to a particular size, with various thicknesses. The standard thicknesses are 12, 20 and 30 mm. Non standard thicknesses can be processed upon request.

#### **1.2.4 Final product**

The product in the form of slab, tile, shop fabricated products or special formats after the machining on the final production-line or additionally on other workplaces.

#### **1.2.5 Surface finish**

The standard machining of the product surface on the final production-line is primarily polished. Upon request the product can also be supplied as honed, bush-hammered, satin and aged surface texture.

#### **1.2.6 Aesthetic parameters**

Visual, assessable appearance of the product surface including the color shade, color structure and structural elements.

### 1.2.7 Aggregates (Inert materials)

(Also grains) A set of inorganic, hard, polishable raw materials with natural features of marble in the form of sorted grains of various fractions, constituting the main part of the product. Mixture of natural stone fragments derived from coherent carbonate (marble and limestone).

## 1.3 General product information

### 1.3.1 Product composition

The engineered stone **RMC® by EUROSURFACES** is produced from inert materials - aggregates (marble), binder (unsaturated polyester resin), color pigments and other additives.

### 1.3.2 Description of the production technology

The production technology of the marble based engineered stone **RMC® by EUROSURFACES** is based on two production operations – the production of the semi-finished product (on pressing line) and its machining to the final product (on finalizing line).

### 1.3.3 Production of the semi-finished product

Weighed quantities of specified and prepared inert materials, filler, binder and pigments are mixed. A block of a defined dimensions is prepared from the resulting mixture by the vibrational compression under vacuum. The binder is hardened in the mixture and then kept under normal atmospheric pressure for minimum 7 days of curing.

### 1.3.4 Machining of the semi-finished product

The Blocks undergo gang sawing to reach slabs of required thickness. The surface of the semi-finished product is treated according to the required level. The cutting of the product to the tiles of defined sizes and possible chamfering of the edges is performed according to the requirements.

### 1.3.5 Product surface finish

The product surface can be finished step by step by bush-hammered, honed, satin, aged or polished finishing up to semi gloss or mostly to high gloss.

### 1.3.6 Surface specification of the products with the surface finish: semi-gloss, honed, bush-hammered, satin and aged finish.

The product surface by **honed** variant is matt, with marks remaining after the application of the last previous stage caused with honing (polishing) segments. These marks – continuous „soft scratches“ organized in wide bands building an antislipperness surface finish - are allocated on the product surface in regular interconnected cycles. The product surface may be covered by a thin layer of a dry, milled-off material originating from the honing and eventually chamfering mechanism.

The product surface **by aged finish** variant is grooved, it may also contain protruding or depressed grains exposed during the technological process. The surface may be covered by a thin layer of a dry, milled-off material originating from the mechanism.

The product surface by **bush-hammered and satin** variant is grooved, it may also contain protruding or depressed gain exposed during the technological process. The surface may be covered by a medium large layer of dry, milled-off material originating from the mechanism.

## 1.4 Technical parameters of the product

### 1.4.1 Sizes of the product

The production process results in a Block with size 185 x 125 x 88 (cm). The Block is sawn into slabs with dimensions 1830 x 1230 mm. The guaranteed usable surface is defined by General Commercial Conditions - General Trading Terms I.

From these rough dimensions a whole-format product can be prepared in the form of a tile – in the basic dimensions, other elements may be cut – the tiles.

The products can be manufactured on standard basis in thicknesses 12, 20 and 30 mm. Upon request, other thicknesses can be manufactured.

### 1.4.2 Size tolerances of tiles

#### According to EN 15285:2008 - Modular Tiles for Flooring and Stairs

Length, width	Thickness	Rectangularity	Flatness	Straightness of sides
$\pm 0,5$ mm	$\pm 0,7$ mm (not applicable for the satin and aged finish)	$\pm 0,9$ mm	$\pm 0,2\%$ referred to length	$\pm 0,3$ mm

#### According to EN 15286:2013 – Slabs and Tiles for Wall Finishes

Length, width	Thickness	Flatness	Straightness of sides
$<600\text{mm} \pm 0,5$ mm $\geq 600\text{mm}$ and $\leq 1000\text{mm}$ $\pm 0,7\text{mm}$ $>1000\text{mm}$ and $\leq 3500\text{mm} \pm 1\text{mm}$	$\pm 0,7$ mm (not applicable for the satin and aged finish)	$\pm 0,3\%$ referred to length of diagonal or $\leq 4\text{mm}$	$<600\text{mm} \pm 0,9\text{mm}$ $\geq 600\text{mm}$ and $\leq 1000\text{mm} \pm 1,2\text{mm}$ $>1000\text{mm}$ and $\leq 3000\text{mm} \pm 3\text{mm}$ (Tolerance for diagonal lengths mm)

Upon request, each color or **RMC® by EUROSURFACES** product can be provided with its specific data sheet. For further information, kindly consult [www.eurosurfaces.eu](http://www.eurosurfaces.eu).

## 1.5 Recommended use of the product

The Marble based engineered stone **RMC® by EUROSURFACES** may be used for small-sized or large-sized wall and floor tiles, interior or exterior components, construction elements, furniture and accessory components.

It is important to note that for external application, it is necessary to consult with the producer which colors and textures are approved for this usage. In general, the color should be the ones extruded from the raw material as it is without adding pigments, coloring and so forth, like white or beige colors. Additionally, the final texture should not be polished. External usage of **RMC® by EUROSURFACES** engineered stone may be done only by mechanical fixation. Externally the product cannot be installed with adhesive. The system fixation needs to be consulted with the various companies supplying these systems.



## 1.6 Installation rules

To use the product for interior tiles it is necessary to follow these recommendations:

### Recommended thickness depending on the dimension of the tile (standard loaded areas)

Product sizes (mm)	Minimal recommended product thickness (mm )
up to 600 x 600	12
larger and non-standard sizes	the solution has to take the project conditions, installation and load into account 12 – 20 mm

### The influence of the surface finish on the anti-slipperiness properties of the product (tiles)

Increase of slip-resistance	Surface finish
	Bush hammered
	Satin
	Aged
	Honed
	Polished
	

### 1.6.1 Raised floors

When placing the product on the grates of raised floors it is necessary to follow the following recommendation.



#### Recommended thickness:

Recommended product sizes (mm)	Minimum recommended product thickness (mm)
up to 600 x 600	20
more than 600 x 600	25

### 1.6.2 Wall tiles

All product types and all surface finishes are appropriate for interior wall tiles. It is necessary to take the mass of the product into account.

#### Recommended thickness and sizes:

##### Glued wall tiles

Recommended dimensions of the product (mm)	Recommended thickness of the product (mm)
As of design	12

##### Wall tiles on supporting mounted grates

Recommended dimensions of the product (mm)	Recommended thickness of the product (mm)
according to the used system and product	20 - 30

##### Anchored wall tiles

Dimensions of the product (mm)	Minimum recommended thickness of the product (mm)
up to 600 x 600	30, 25, exceptionally 20 (according to the system)
more than 600 x 600	30 or 25 according to the system

### 1.6.3 Stair components

When using the product for stair components it is necessary to follow this recommendation:

## Recommended thickness

Way of laying down the component	Minimum recommended thickness of the product (mm)
whole area on substrate concrete	12 - 20
into construction, self-supporting	30

All production groups of the marble based engineered stone are suitable for usage as a stair component<sup>1</sup>. Attention is to be paid to the anti-slipperiness finish of the tread surface. For each concrete application of the product its sizes must always be considered in relation to its physico-mechanical characteristics and with respect to the system of fixing the product.

### 1.6.4 Worktops

**When using the product for worktops it is necessary to follow these recommendations:**

The higher the thickness of the product, the higher its strength and thermal resistance.

The hardness of the product surface and in this way also the long-term resistance against mechanical damage of the surface is given by the raw materials used.

The product surface is not infinitely resistant to strokes of hard (especially metallic) objects, or to the drops of hard (especially metallic) objects. During selection of the product it is always necessary to take into account its characteristics (raw materials used) and the expected use and load of the final worktop. **RMC® by EUROSURFACES is not recommended for kitchen tops.**

### 1.6.5 Other usage

All the production groups of the marble based engineered stone are suitable for usage as interior and exterior components<sup>2</sup>. Sizes of the used product must always be considered in relation to its physico-mechanical characteristics and with respect to the system of fixing the product. Regarding the resistance to aggressive influences (e.g. exposure to chemicals) the usage of products with characteristics reflecting the aggression of the surrounding environment is recommended. The degree of the surface finish of the product is to be chosen with respect to the expected usage of the product.

<sup>1</sup> For dark colors as RMC Mina or RMC Dark Grey we strongly not recommend to use polished surface due to possible higher sensitivity to scratches

<sup>2</sup> For external usage we don't recommend RMC Imperador, Alpenina, Branco Estremoz, Encarnado, Lioz P.P., Mina, Moleanos, Verde Braganca.



## 1.7 Maintenance and cleaning of the RMC® product

### 1.7.1 General information about maintenance and cleaning

Resistance of the **RMC® by EUROSURFACES** product surface to mechanical and chemical influences is given by the raw materials used (marble, hardened polyester resin). The hardness of the surface (3 – 4 grade according to Mohs), compactibility and a very low absorbability make the product highly resistant to common influences.

Even so, the protection of the product surface under a long-term exposure to abrasive impurities (this is relevant mainly for a product installed on the floors) is the reason for recommending the regular maintenance and cleaning of the product surface. This ensures the stability of the surface finish and of the aesthetic appearance of the product.

The cleaning and maintenance of the marble based engineered stone **RMC® by EUROSURFACES** depends on the sort of surface finish of the product, on the location of the product, on the mechanical load of the product, etc. The cleaning and maintenance, especially of larger surfaces, are recommended to be realized by a specialized company experienced in maintenance of the **RMC® by EUROSURFACES** products or marble engineered stone.

### 1.7.2 Important instructions for cleaning the products

**Eurosufaces strongly recommends using tested and certified cleaning and protecting agents such as Eurosufaces Cleaning Agent CA1 and Impregnation IM1 from Eurosufaces Chemical System collection.**

Before using other chosen cleaning or protecting agents (especially valid for industrial cleaning agents for the cleaning of floors), it is necessary to test it on a small area and only after the evaluation of the results on a dried-up product to carry out the overall application.

Most of the agents are to be diluted according to the instructions of their producers.

After using cleaning agents it is always necessary to remove the cleaning agent and the released impurities from the product surface quickly and carefully and to wash the surface thoroughly with pure water.

Longer and not necessarily required exposure to aggressive cleaning agents may erode the product surface.

The product surface (especially its polished surface finish) does not resist in the long-term to exposure to strong alkalis (NaOH, KOH...) and does not resist even in the short-term to the fluorhydric acid (HF). These chemicals are contained in some cleaning agents, which are available on the market. Therefore, for cleaning the surfaces it is important to use only products, which are suited for the cleaning of marble based engineered stone; they may not be identical to the cleaning agents for natural marbles.

For cleaning, especially after the installation and jointing of floor tiles or for the cleaning of the tiles, which are highly dirty in the long term, use recommended products and not the mixtures of chemicals (lye, hydrochloric acid, hypochlorite...). The cleaning and maintenance, especially of larger surfaces, are recommended to be realized by specialized company experienced in maintenance of the **RMC® by EUROSURFACES** products or marble based engineered stone.



It is necessary to take into account and keep the recommendations of the producers pertaining to the usage (e.g. dilution...) and with the safety regulations of used agents. It is necessary to use protecting instruments according to the instructions from their producers.

Also the below mentioned facts, based on experiments and practical experience, are to be assessed and taken into consideration. Only general instructions are provided here, because the producer of the marble based engineered stone has no influence on the individual conditions of performing the maintenance.

### **1.7.3 Recommended equipment for mechanical maintenance of the product on floors**

One-disk floor washer with 200 – 300 rpm (for all operations) water vacuum cleaner, or water extractor nylon pads with boar's hair (for washing), white microfilament mop for applying and spreading waxes and impregnations in aluminium construction.

## **1.8 Cleaning of the individual product surface**

### **1.8.1 Cleaning of the surface after installation or before the application of protecting wax / impregnation layer**

An appropriate cleaner is applied to the surface of the product (best done by machine, always with PAD disks). After its action (only for the shortest necessary period) should be the cleaner together with the released impurities carefully removed (in the best case by a machine called water extractor, where rinsing of the impurities under pressure and their evacuation are taking place at the same time). Consequently, it is recommended to wash the product surface with pure water.

### **1.8.2 Protection of the product with polished surface**

Protecting and impregnating agents are always applied to a clean and dry surface.

Protecting and impregnating agents are applied and spread by a microfilament mop. Excessive agent is to be wiped away. After the protecting or impregnating coating is dry, it is polished-over. When polishing-over is done by a machine it is always necessary to use only the disks with artificial fibers and not disks with steel wires!

During application it is possible to apply the waxes subsequently in several layers (up to three), always after drying-up, perpendicularly to the preceding layer. It is necessary to leave a pause of at least 24 hours between the applications of waxes of various types.

Washing of the floor tiles is not possible earlier than after 24 hours from the wax application.

### **1.8.3 Protection of the product surface on floors with low mechanical and abrasive load**

These surfaces are to be cured regularly (with a 0.5 – 2 years period according to the traffic level) with the RR / 1 or AS 11 wax (Bellinzoni products) by using a machine. In the case of heavier traffic it is possible to provide basic protection by the application of the Mythos wax and possibly

by subsequent application of the RR / 1 and AS 11 waxes (Bellinzoni products) (the application of different waxes is to be separated by at least 24 hours delay).

#### **1.8.4 Protection of the product surface on floors with higher mechanical and abrasive load**

These surfaces are to be treated regularly (with a 0.5 – 1 year period according to the traffic level) always in multiple way with the Mythos wax (Bellinzoni product) with possible subsequent application of the RR / 1 or AS 11 waxes (Bellinzoni products) by using a machine (the application of different waxes is to be separated by at least 24 hours delay).

#### **1.8.5 Regular maintenance of the floor areas with polished surface**

It is possible to wash the floor tiles after at least 24 hours since the wax application.

It is very advantageous to use special agents for everyday regular surface washing, because they combine the washing effect with the spread of thin protective wax layer, which prevents progressive removal of the basic protective layer and prolongs its durability substantially. On no account acids, strong alkalies or detergents containing fat are used for washing.

#### **1.8.6 Protection of product with aged, honed surface**

It is recommended to provide protection of the products with such surface finishes by means of impregnation agents Porosil, Idea XC, Ker 13D (Bellinzoni products), HMK S 31(HMK Moeller Stonecare product – smaller areas). By using these agents, a water-repellent layer is created on the product surface, which prevents intrusion of impurities into the coarser parts of surface layer.

Protective and impregnation agents are always applied and spread on a clean and dry surface by a microfilament mop. Excessive agent is to be wiped away. After drying-up the protective and impregnation layer is to be polished-over.

When application and spreading is done by a machine it is always necessary to use exclusively the disks with artificial fibers and not disks with steel wires!

According to the degree of surface load it is necessary to renew the impregnation after some time.

#### **1.8.7 Protection of bush hammered surface**

For protection of a product with such surface finish the impregnation agents, Idea XC, Ker 13D (Bellinzoni products), HMK S 31(HMK Moeller Stonecare product) are recommended. By using these agents, a water-repellent layer is created on the product surface, which prevents intrusion of impurities into the coarser parts of surface layer and highlights the color shade of the product.

Impregnation agents are always to be applied and spread on a clean and dry surface by a microfilament mop. Excessive agent is to be wiped away. After drying-up the impregnation layer is to be polished-over.

When spreading is done by a machine it is always necessary to use only the disks with artificial fibers and not disks with steel wires! Only necessary amount of the impregnation agent is to be applied, the excessive amount of the agent is to be removed from the product surface.

According to the degree of surface load it is necessary to renew the impregnation after some time.

### **1.8.8 Regular maintenance of floor areas with honed, aged and satin surface**

It is possible to wash the floor tiles after at least 24 hours since the impregnation application.

Washing of an impregnated surface is to be done only with lukewarm water. In case of greater contamination 1 spoon of LEM-3 (Bellinzoni product) or we can also use Cleaning Agent | CA1 (Eurosurfaces Chemical System) agent is to be added to a pail of water.

The usual washing is done in this case without any usage of detergents.

On no account acids, strong alkalies or detergents containing fat are to be used for washing.

According to the degree of surface load it is recommended to renew impregnation regularly.

## **1.9 Protection of surface of furniture components, countertops, wall tiles**

The product used in households and on interior wall tiles does not require a special protection, it is sufficient to wipe it with warm water or to use usual household non-abrasive agents. When the surface has to be more water-repellent or oil-repellent (especially on countertops), it is possible to use the impregnation agents Block D 70, Porosil, Idea XC (Bellinzoni products), New Microkem DC 8 (Industrial Chem Italia product), Impregnation | IM1 (Eurosurfaces Chemical System).

These agents build a film on the surface of the product, which makes it harder for impurities to stick to the surface and makes usual cleaning easier. These agents are applied and polished-over manually by a soft rag, or possibly by using a manual polishing equipment (e.g. manual eccentric grinder with mounted polishing disc). Before that the surface must be cleared from mechanical impurities, dust and it must be washed.

### **1.10 Protection against abrasive mechanical impurities**

When higher mechanical load of the product combined with greater presence of abrasive and liquid contaminants is expected it is recommended to install a cleaning zone (brushes) in front (entrances) of the surface. Especially in winter season, this zone collects a great part of impurities and in this way protects the product surface and prevents quick decrease of the protective wax layer. It is recommended to install the cleaning zones especially in shops, offices, halls, corridors with the entrance directly from the street.

### **1.11 Renewal of floor tiles (polished surface)**

In case of damage (gloss loss) of the surface of floor tiles it is possible to renew the surface by re-polishing or redoing any texture desired (honed). The gloss of the surface is returned to new. This



operation can be carried out only by experienced, specialized companies with appropriate equipment. It is always necessary to test the renewal first, possibly on a small, unexposed area.

The method used is the same carried out on natural marble using displaceable polishing machines.

## **1.12 Answers to frequent questions of the customers**

### **1.12.1 What is it RMC® by EUROSURFACES?**

**RMC® by EUROSURFACES** is a compact, hard, imperious, composite product supplied in the form of slabs, tiles, or special formats with a wide range of applications in private, public and industrial sector as bathroom vanity units, tables, window-sills, floor tiles, wall tiles, mosaics, etc.. Taking into account the used raw materials and production technology, **RMC® by EUROSURFACES** achieves excellent properties due to its strength and compatibility. The wide range of color shades, surface finishes, thicknesses and sizes enables always to choose a suitable combination conforming to both esthetical and qualitative requirements.

### **1.12.2 What is RMC® by EUROSURFACES made from?**

**RMC® by EUROSURFACES** is produced from high-quality natural raw materials (marble), marble granulates, from a small amount of color pigments and quality polyester resin. Between 93-95% of the product mass is formed by natural components; therefore, the content of the polyester resin is 5-7%.

### **1.12.3 Is RMC® by EUROSURFACES the same throughout its volume or is its color and structure built only on the surface?**

**RMC® by EUROSURFACES** has homogeneous structure and color throughout its volume, the front and back faces of the product can be machined and polished, any holes and grooves can be milled, edges can be treated. The shade and the structure will be identical.

### **1.12.4 What is the comparison of RMC® by EUROSURFACES to natural stone, marble or Corian®?**

**RMC® by EUROSURFACES** has in comparison to natural marble greater flexure strength, at the same thickness is more resistant against e.g. impact and load. With the **RMC® by EUROSURFACES** products marble range, you will get the feeling of solid marble, but with multiple times lower absorption of the surface... **RMC® by EUROSURFACES** is harder and more resistant than natural marble. In addition, quantities, homogeneity and fashion colors are designed according to the market trend...

The **RMC® by EUROSURFACES** surface is hard, resistant and durable.

### **1.12.5 Is the RMC® by EUROSURFACES product harmless to health?**

The product is certified by Breton S.p.A. as health harmlessness, the certificate declares the suitability of using **RMC® by EUROSURFACES**. Also it is Eco-Friendly and Eco-Sustainable.





### **1.12.6 Are the chromatic and structural particles/irregularities, shades taking their part at the appearance of the RMC® by EUROSURFACES surface intentional?**

**RMC® by EUROSURFACES** is mainly built from several chromatic components and granulates of different sizes, which determine its characteristic color structure. These components, which are inevitably created during the production process, are from a greater part mixed together and from a smaller part they remain in the original form, in order to achieve the characteristic appearance of **RMC® by EUROSURFACES**. For this reason, varicolored parts, as well as structural elements of various sizes are always visible on the product surface.

### **1.12.7 Is it necessary to take into account the thermal expansion when using the RMC® by EUROSURFACES product as floor and wall tiles?**

The polyester resin used as a binder causes not only the increase in the strength characteristics, but also in the thermal expansion of the product, which is higher than the thermal expansion of natural stone or ceramics. Therefore, it is necessary to take this fact into consideration during designing the floors and wall claddings from **RMC® by EUROSURFACES** and which chemicals need to be used during installation.

## **1.13 Fire Fighting Data**

### **1.13.1 Flammable Properties**

Marble based engineered stone **RMC® by EUROSURFACES** doesn't contribute to fire.

Thermal decomposition products resulting from polymer and pigments degrading at elevated temperatures include various hydrocarbons, carbon dioxide, carbon monoxides, soot and water. Fumes of metal oxides could be also released.

### **1.13.2 Extinguishing Media**

Water, dry chemical, CO<sub>2</sub>, foam.

### **1.13.3 Fire Fighting Instruction**

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.

## **1.14 Hazardous Identification During Handling**

### **1.14.1 Potential Health Effects**

Engineered stone **RMC® by EUROSURFACES** is not hazardous as shipped and used.

When the processes of sawing, routing, drilling, sanding and polishing are carried out as dry process, there is the greatest generation of airborne dust. When these operations are carried out with water for cooling, lubrication and dust depression, then the quantity of airborne dust is reduced by 90 – 98%. These reducing cover potential exposure to workers.



However, stone work operations such as sawing, routing, drilling, sanding and polishing can generate dust. High concentration of dust can irritate eyes, nose and respiratory passages and cause coughing and sneezing.

### 1.14.2 Personal Protective Equipment

Observe local safe handling procedures.

Eye, face protection:	Wear safety glasses during operations such cutting, blasting, drilling, honing or routing.
Respirators:	During cutting, blasting, drilling, honing, polishing or routing operation always use masks (recommended FP3 type). Masks are selected and used based on the form and concentration of the contaminant in the air. Avoid breathing dust!
Protective clothing:	Wear leather or cotton gloves when handling larger pieces and during operation such as cutting, routing or drilling.
Protective footwear:	Use steel toed footwear when handling larger pieces.

### 1.14.3 Procedures and Controls

Observe local safe handling procedures. Handle with care.

Engineering controls:	Use ventilation and water cooled tooling and equipment that is adequate to keep employee exposure to airborne concentrations below recommended limits. Provide for appropriate exhaust ventilation and dust collection at machinery.
Storage requirements:	No special requirements, should be stored in dry, clean place without oil or other contaminants.
Shipping requirements:	Appropriate banding material has to be used.
Waste disposal procedures:	Observe local regulations for disposal.

### 1.14.4 First Aid Procedures

#### Inhalation

If larger amounts of dust are inhaled, remove to fresh air. If breathing becomes difficult, seek medical assistance immediately.

**Eye contact**

In case of eye contact, flush eyes with plenty of water for at least 15 minutes. Consult a physician.

**Skin contact**

The compound is not likely to be hazardous, but flushing of the skin with soap and water is advisable.

**Ingestion**

Consult a physician.

**1.15 Disposal Consideration**

Product disposal: Dispose of in accordance with state and local regulations.

**1.16 Other information****Disclaimer Notice**

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material.

## **PART B - INSTALLATION INSTRUCTIONS: FOR MARBLE BASED ENGINEERED STONE RMC® by EUROSURFACES**

### **1.17 Installation Process of the Product**

#### **1.17.1 General Rules**

During installation of the marble based engineered stone **RMC® by EUROSURFACES** it is necessary to conform to relevant standards, MSDSs (Material safety data sheets) of used products, recommendations of the producers of the subfloor mixtures and of the producers of glues, jointing and dilatation materials some of the recommendations are listed in this document. Furthermore, it is necessary to assess and take into account the following facts, which are based on tests and practical experience. Only general hints are introduced here, because the manufacturer of the engineered stone has no influence on the individual building conditions and performance.

- Suitability of the individual product types of **RMC® by EUROSURFACES** for the usage in the given environment especially with respect to the mechanical-physical characteristics of the **RMC® by EUROSURFACES** products (e.g. a higher thermal expansion and contraction, lower absorbability...);
- Characteristics of the used product **RMC® by EUROSURFACES** must be consistent with characteristics of all other used construction materials;
- The behavior of the **RMC® by EUROSURFACES** product after installation depends on the quality of the installation and fixation;
- During installation it is necessary to pay special attention to the quality of the subfloor surface;
- Carrying out joint-less installation of the floor and wall tiles from the **RMC® by EUROSURFACES** product is not recommended;
- It is recommended to have the **RMC® by EUROSURFACES** product installed by a specialized company, which is experienced in installing engineered or natural stone;
- It is necessary to adhere to the preparation technology and production procedures given by the producers of the used subfloor mixtures, gluing and jointing materials and other used construction chemicals;
- After jointing is performed it is necessary to follow the correct technology of the product cleaning.



## 1.17.2 Installation of Floor and Wall Tiles

### 1.17.2.1 Recommended Primer and Adhesive

It is always recommended to use a primer on the substrate. There are primers for absorbent and nonabsorbent bases and the proper type should be used accordingly. We recommend to use for nonabsorbent substrate **Contact Bridge | CB1** (Eurosurfaces Chemical System) and for absorbent substrate **Penetration Primer | P1** (Eurosurfaces Chemical System). For normal internal installation, EUROSURFACES recommends along with the approval of the chemicals producer an adhesive type C2FTE, C2TES2, C2TES1 and.

### 1.17.2.2 Recommended Jointing Materials

During installation the producer recommends to use the following jointing materials for dilatation joints. When silicone sealant is used it is necessary to use a neutral type only!

**Neutral silicone sealant** is single – component sealant executed in the form of solid paste. As the paste is extruded of the package, it turns vulcanized into a silicone rubber by air humidity. Vulcanization starts on the surface and penetrates the mass; the speed of this process depends on the relative air humidity.

For jointing between the tiles, usual mastic used for natural marble can be used in order to have properties allowing the joint to be re-polished. If the tiles don't intend to be re-polished, then cement grout class CG2WA or CG2 can be used. Joints coloring should be selected as per client requirements. We recommend to use **Grout | G1** from Eurosurfaces Chemical System.

### 1.17.2.3 Tools and Instruments

To fulfill the installation, the worker has to be equipped with at least these tools and instruments:

- Toothed spatulas: to apply and spread uniformly the adhesive binders,
- Smooth spatula: to rub the glue in the subfloor and to spread a layer of the glue on the back face of a tile,
- Angle, meter, ruler, water level, plumb, etc. for accurate measuring and leveling of the tiles and slabs,
- Lath batten, ruler, etc.: for fixing and continuously checking of the flatness of tiles and slabs during installation,
- Rubber or plastic spatulas: to apply and spread the jointing material or binder,
- Sponge: for correcting the smoothness of the joint and for rubbing down the remains of jointing material from the tile and cleaning the surface,
- Hammer, drilling machine, drills, sewing machine with diamond circular saw cooled down by water: for possible size adjustments or other corrections,
- Boards, plywood, foil: to protect newly-installed floor tiles.



### 1.17.3 Subfloors

The preparation of subfloors must be in compliance with the requirements of relevant standards and project documentation.

Eurosurfaces strongly recommends using Penetration Primer P1 or Contact Bridge CB1 from Eurosurfaces Chemical System depending on subfloor type.

**All subfloors on which the product is installed must be dry, stable, solid, compression-resistant, sufficiently flat and cleared from removable particles, dry surface „cement grout“, dust, fats, oils, wax, paints, dismantling chemical agents and everything that could decrease their adherence. These removable particles must be removed in the best case by sand blasting, (milling off or honing also possible), which is followed by sucking up the remains with a vacuum cleaner. The subfloors have to be suitable for the acceptance of the load and endure the stress expected in the specific application.**

### 1.17.4 Color Shade Consistency

Being made from natural raw materials the color variations of the product could appear. The product is sorted by the producer according to the basic color standards. Slight optical color differences are proper and should be respected. There is mostly one color shade packed on one pallet and always one color shade in the same cardboard box.

In spite of the fact, before starting the installation it's necessary to open several boxes with the tiles, lay the tiles on the floor under natural light and check the color consistency.

To avoid any problems with color consistency on the floor its recommended to lay down the tiles consecutively one by one from several checked open cardboard boxes, not only from one cardboard box.

### 1.17.5 Environment Conditions during the Installation

The installation can be started only after making sure that the temperature and moisture conditions meet the conditions prescribed by the technical brochures of the used adhesives.

For a longer period than 24 hours the temperature cannot decrease beneath +5 °C and exceed +30 °C.

The surfaces must not be strongly heated up by the sun before the installation (it is recommended to accomplish the installation during colder hours). In a dry and ventilated environment, it is necessary to pay special attention to a film creation on the adhesive. It is necessary to spread the adhesive on small areas and check the moistening. The bottom face of the formats must not be wet or dirty after previous cutting.

### 1.17.6 Application of Adhesives

First, the actual base is checked, for it has to be perfectly flat, dry, mature, without cracks, and carefully cleaned. Parts that are not tightly bound with the base have to be removed.

The preparation and application of the adhesive is performed according to the technical conditions of the producer. The prepared adhesive must be perfectly homogeneous and easily spreadable. Always only such an amount is prepared, which is possible to apply before the adhesive starts to lose its adhesiveness and applicability.

The prepared adhesive is first well rubbed as a thin layer to the base by a smooth spatula to build a quality transition between the base, the adhesive and the tile. Only such an area will be prepared, which prevents drying of the surface layer of the adhesive at those places, where the tiles were still not installed. Afterwards the layer of the adhesive is spread on the base by a toothed spatula.



The toothed spatula also delimits the thickness of the adhesive layer and by its individual teeth it creates a space for the uniform spread of the adhesive after the tile is laid down.

The uniform spread of the adhesive during the installation of the tiles can be checked by lifting off of the tile. The tooth-formed adhesive layer is continuously to be checked, whether it does not lose its adhesiveness (by a finger test).



It is necessary to use the system with **double coating** in such a manner that at least 85 % of the tile surface is glued-on. A continuous 1mm layer of the adhesive is applied on the bottom face of the tile and only after that the gluing of the tile to the tooth-formed adhesive applied to the base will be accomplished. The final thickness of the adhesive can be 2-10 mm, depending on the used adhesive.

During the installation of the floor tiles the flatness is to be checked continuously.

The tiles should be installed by keeping the joint from 2 up to 4 mm according to the characteristics of the base, the sizes, dimensional stability and thermal expansion coefficient of the product and according to the environment, where the installation takes place.

It is necessary to avoid horizontal mismatch (protrusion) between individual tiles, especially at those places, where the dynamic loading of the area is expected (traveling of vehicles). It is necessary to abide by the rules and regulations of the adhesive and chemical supplier for detailed application.

### 1.17.7 Dilatation and Dividing Joints

During solution of the dilatation joints it is necessary to take into account the relevant standards, the project documentation and the characteristics of the product, especially its thermal expansion.

The dilatation joints on the installed area must consistently follow the dilatation joints already existing on the subfloor, on the load-bearing structure and on the walls (main object joints).

It is necessary to keep the dilatation joints near the wall connections, columns and other constructional parts passing through the floor (peripheral joints). The product is installed at approximately 1 cm distance from the walls, columns, breaks, corners, etc.; the gap is covered by a skirting and filled with elastic binder.

In the case of large areas, the dividing joints are created by dividing the area according to the following manner:

- squares of approximately 4x4 m for installation on area exposed to high traffic, mechanical, dynamical or thermal load and on the subfloors subject to motions or flexures,
- squares of approximately 7x7 m on stable areas,
- This system is the same as used for other surfacing materials such as natural marble or ceramic. The joint must be continuous with the rest of the subfloor supports.

The dilatation joint should have a rectangular cross-section with the side ratio 2:1.

The dilatation joint can be created by using the original dilatation strips.

The elastic filling is built by using an elastic sealing gasket (rope), which is pressed down into the joint. The width of the rope is chosen greater than the width of the joint (1 cm wide joint -rope with the diameter of 1.5 cm). The upper part of the joint is filled according to the requirements for the traffic on the floor with the jointing neutral silicone binder (standard traffic). Before the binders are applied the edges of the dilatation joint are to be impregnated by the PRIMER agent.

The dilatation joints must be secured by the edge-protecting profiles in the case of dynamic loading (traveling of vehicles), in the case of increased dynamic loading protecting metal profiles are recommended, which have the shape of transitional bridge that covers the joint.

Unsown full-format tiles must be installed along the working and dividing joints; cut sizes implied by the field dimensions must be installed inside the fields.

### 1.17.8 Jointing

During the preparation and application of the jointing materials it is necessary to follow the instructions of their producers.

The tiles should be installed by keeping the joint size from 2 up to 4 mm according to the characteristics of the base, the sizes, dimensional stability and thermal expansion coefficient of the product and according to the environment, where the installation takes place.

In the case of small areas without a high mechanical or thermal load the width of the joint is chosen 2 – 4 mm.

In the case of large areas, larger tiles or higher mechanical or thermal load the width of the joint is chosen 2 – 4 mm and the joint after each 5th – 6th tile is joined by a silicone jointing material.



The jointing of dilatation joints and of the joints done with silicone binder is carried out as the first. Then, the jointing with cement jointing materials is done after 3-5 days depending on the temperature and humidity of the place.

Before filling the joints is necessary to clean it to improve the adherence of the filling product.

The cementing jointing materials are always spread over the whole tile. After the setting of the material in the joint starts (never earlier!), the surface of the joint is prepared (smoothed) with a moistened sponge and the remains of the jointing material are rubbed down from the tiles.

It is necessary to wait before the start of the jointing according to recommendations of the chemicals manufacturer.

### 1.17.9 Cleaning of the Tiles After Finishing Jointing

After application is complete, the area must be cleaned and protected before usage. Tiles must be covered with plastic canvas or bubble wrap in order to protect the area from dust or other abrasive residues.

In areas subjected to abrasion and/or high traffic we recommend that a treatment to extend hardness of RMC products should be carried out by a specialised company.

The application of a sealer is recommended in areas exposed to aggressive products, like kitchens or bathrooms.

**Under no circumstances should an acid or alkalis cleaning agent be used, as this will damage the marble permanently. Only neutral cleaning products are recommended.)**

### 1.18 Installation of the Product as Stair Component

During the installation the mechanical-physical characteristics of the product have to be taken into account (flexural strength, thermal expansion ...). The junction to wall must enable longitudinal changes of the stair component, i.e. the space on the interface between the wall and the component must be filled with an elastic material, which enables dilatation.

In case of gluing to concrete, the substrate layer has to be made from quality and mature concrete. For gluing it is necessary to use the same system as indicated above.

### 1.19 Installation of Glued Wall Tiles

#### 1.19.1 Gluing

The gluing should be done in double, that is, the glue should be applied on the support and on the back of the tiles. Except for clear instructions from the manufacturer indicating a different method, the utilisation of a pressure method and lateral movement is recommended allowing better execution of the facing.



The glue should really contact all of the back area of the tiles and never less than 85% of the area, where it should be controlled during the setting. For such purposes, it is sufficient to extract in regular intervals a tile just applied and analyse the respective back.

At the time of execution of the facing, no adverse atmospheric conditions should occur, such as temperatures less than 5° C or more than 30°C, relatively low or very high humidity, strong wind, or direct sunlight.

The excess glue that flows out through the junctions should be immediately extracted with a wet cloth or sponge using water. No other acidic cleaning product should be used whatsoever.

The tile cuts in the work should be done with a diamond blade.

### 1.19.2 Junctions between the tiles

The setting of the tiles should be done in a manner in which the junctions are defined between the tiles with a minimum of 2 mm of width. In the case of tiles of 600 mm on walls subject to frequently getting wet or condensations, we recommend that the width not be less than 3 mm.

### 1.20 Installation of Exterior Facades

For external application, it is necessary to consult with the producer which colors and textures are approved for this usage. In general, the color should be the ones extruded from the raw material as it is without adding pigments, coloring and so forth. Additionally, the final texture should not be polished. External usage of **RMC®** engineered stone may be done only by mechanical fixation. Externally the product cannot be installed with adhesive. The system fixation needs to be consulted with the various companies supplying these systems.

RMC material properties allow assembly of large formats in smaller thicknesses (12 or 20 mm) and thus significantly reduce demands on the supporting structure and total cost of the facade. The main installation principles are similar to those of natural stone.

For more information about facade installation kindly contact your

Eurosurfaces sales representative or send us your questions on [sales@eurosurfaces.eu](mailto:sales@eurosurfaces.eu)

