

## Repair of Terrazzo stairs crackings facing

The terrazzo element is a very compact concrete element with high surface strength and toughness, but with brittleness. If the terrazzo element is laid correctly - according to the installation instructions and its base is stable, the user gets a very durable, tough and firm floor or staircase.

If the building starts to operate - the house is put into use - then when the interior heating starts (especially in winter), the whole building is subject to movement and voltage equalization. This is often reflected in plaster, in expansion joints, or on the surface of tiles.

One of the elements where the movement is visibly manifested is the cladding of the stairs where a transverse crack occurs on the surface. This crack is not a crack limiting strength, but in most cases it is a surface crack that extends to a maximum depth of about 5mm, and does not even affect the inner metal reinforcement. It is this crack that is a reflection of the movement on the construction site, and movement beyond the surface cannot be displayed.

If it were a crack due to traffic = point load on said step, the crack would be on the underside of the element and open downwards. That would be a crack of other design and behavior.

Surface cracks in the terrazzo element can be repaired. Here I present a crack repair procedure on the common two basic colors of the terrazzo element - black and white.

1. **Terrazzo crack** - on a white terrazzo cladding, we have created a similar crack to that found on construction sites. We also include a black terrazzo element with a crack.



Terrazzo element before cracking

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- 2. **Preparation for repair** - cleaning the joint - the crack on the construction site is usually already filled with dirt, which is clogged into a thin capillary crack clogged with water when cleaning. Therefore, it is necessary to mechanically remove this dirt from the joint. Removal is carried out for example with a thin breaking knife in the direction of the joint.



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3. **Joint degreasing** - if the terrazzo element is already in construction, the terrazzo element's surface is greasy. The sealant would not properly anchor on this element. Therefore it is necessary to degrease the place of repair and jointing firstly. Degreasing is performed with ACETON thinner (acetone).

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- 4. **Preparation of putty** - for repair is used eg putty from Bellinzoni - Mastice 2000. It is a two-component epoxy putty, for repairing terrazzo elements, natural stone and stone elements.

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It is made in transparent, white and black - the most used. Transparent and white putty can be colored with special dyes from the same company. - more at [www.bellinzoni.com](http://www.bellinzoni.com) . For repair it is necessary to mix the color of the sealant before adding hardener. We repaired the black element with the basic black Mastic 2000, for the white element we mixed white and transparent sealant. By comparing this mastic with the color of the element, we can easily estimate the final color.



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5. **Preparation of sealant** - always prepare such amount of sealant that after mixing with hardener we are able to process in approx. 10 minutes = push into cleaned cracks. The hardener / putty ratio is according to the instructions. Subsequently, the sealant hardens and its processing - pressing into the joint, becomes impossible. Care must be taken to properly mix the putty and hardener into the entire amount of putty.



6. **Applying the sealant into the joint** - the sealant is pushed into the joint in the transverse direction - perpendicular to the joint, several times in the same place, so that the joint is well filled. We try to keep the sealant layer as thin as possible on the surface of the element - we have to grind this layer of sealant, which is unnecessary costs.

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- 7. **Grinding of putty** - normally putty on the surface of the element is hard for grinding after about 30-45 minutes. Grinding is usually carried out by dry sandpaper so that all the sealant on the element top is removed. The terrazzo element is then cleaned of dust. The advantage is to work with the grinder with dust extraction - we did not have it for the test.



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- Unification of the surface** - after grinding the sealant from the surface of the element it is necessary to unify the whole terrazzo element shade. Unification of the area is carried out by regrinding the diamond blade - we recommend the roughness of the final diamond 100-200. Grinding is performed under water. It is important to sand the entire surface of the element. If the element is in the staircase, using the staircase will unify this element with the other elements - the stairs unify in about a month. **mpregnation of the repaired Terrazzo element after repair** - let the repaired element dry - depending on the temperature approx. 30-60min. Subsequently, we impregnate the element, which closes the element against water and contamination. It is good to do about 10 hours, or the next day to apply one more coat.



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9. **Impregnation of the repaired Terrazzo element after repair** - let the repaired element dry - depending on the temperature approx. 30-60min. Subsequently, we impregnate the element, which closes the element against water and contamination. It is good to apply about 10 hours later or the next day one more coat.

In the other enclosed photos we tried to add the result of the repair of terrazzo elements. There is always a difference when the terrazzo element is immediately after repair - the surface is saturated with water = it may be darker, differently soaked = stains on the surface. In the following pictures, these cracks are photographed close up and subsequently from the height from which the floor is checked - that is about 100 - 120 cm, according to building standards. I didn't see a man walking up his knees in a staircase apartment building.

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Photo of the repaired joint in the black terrazzo immediately after repair



Photo of repaired joints in the terrace immediately after repair - wet surface

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Photo repaired cracks - white terrazzo - the next day, photo close up - about 20cm

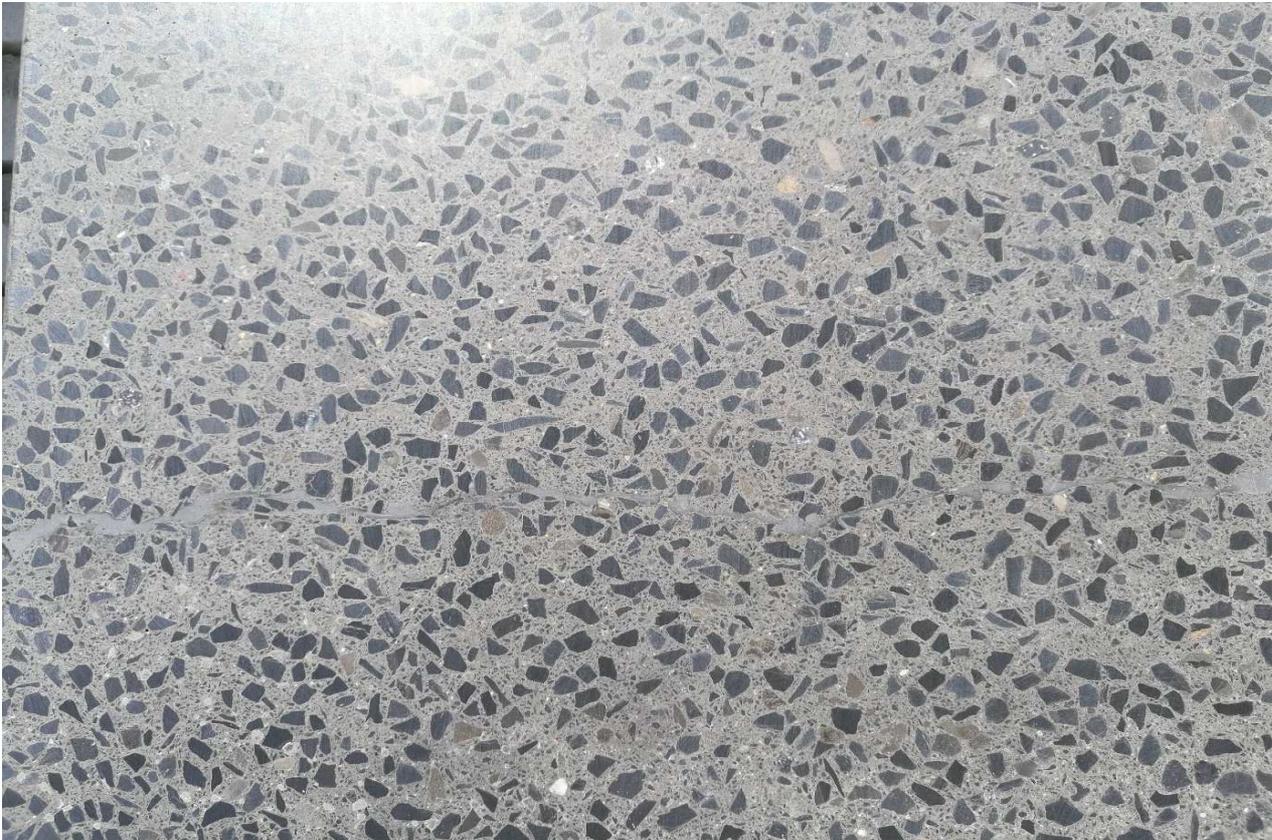


Photo repaired cracks - black terrazzo - the next day, close up - about 20cm

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Photo repaired cracks - white terrazzo - the next day, photo from a height of about 1.0 - 1.2m

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Photo repaired cracks - black terrazzo - the next day, photo from a height of about 1.0 - 1.2m