



SILESTONE® AND ECO BY COSENTINO® INSTALLATION.

Cosentino® shows in this document how to fit the Silestone® and ECO by Cosentino® tiles for getting the best results in pavement and tiling. From now on when it is said "our product" it is related to both products.

1. PREPARATION OF THE SUPPORT BASE:

- **Cleaning:** Make sure the support base is a dry, clean and dustless surface. In the same way, our products (Silestone® and ECO by Cosentino®) must be clean and dry. Remove any damaged materials and other items which are not part of the base support and our products.
- **Leveling:** If the support base is uneven, the surface shall be levelled by applying regulation mortars. To fit Silestone® or ECO by Cosentino®, it is recommended that the supporting area does not exceed variations of +3 mm. Regularization of the flooring can be carried out with self-leveling mortar.

For vertical parameters, the regularization should be carried out with another type of coatable mortar within two hours. We recommend for better finish in Silestone® and ECO by Cosentino® beveled edges. They help to get a more uniform look.

- **Consistency:** The consistency of the support base should be high (ensuring high traction resistance). If this is not the case, remove until a consistent support base is obtained.
- **Rugosity and porosity:** The support base shall be provided with adequate superficial rugosity and porosity to help the product adherence. The greater the support base's rugosity, the greater adherence there will be between the support base and the stone.
- **Temperature:** Those levels specified in the product datasheets shall be followed. As a general rule, products should not be applied when the temperature of the support base is lower than 5 °C unless otherwise stated in the product technical datasheet.
- **Humidity:** Humidity ranges specified in the product technical datasheets shall be followed. If necessary, due to residual moisture or because the flooring is positioned directly onto the ground then a vapour barrier should be applied with a sprinkling of aggregate until saturation is reached.



Depending on the support surface, we need to take special precautions. As "support surface" we mean those elements which our products are placed on.

Above there are shown the more common support surfaces, but Cosentino recommends to contact with adhesives provider, to treat each case particularly, by the enormous variety of possibilities.

Most common surfaces are:

1.1 Types of Support

CONCRETE

- Weak concrete supports and those in bad condition
 - If the flooring level can be raised, a new coatable top layer can be fitted in 24hours.
 - If this is not possible additional support can be used to reinforce the existing concrete.
- On good condition concrete:
 - Making sure that both the area and the materials are clean then proceed fitting the Silestone® or ECO by Cosentino® tile, using the recommended adhesive.

CERAMIC

If the existing ceramic surfaces are bonded well, a new Silestone® or ECO by Cosentino® covering can be fitted using a primer prior to the application of the cement adhesive.
If the ceramic surfaces are not in good condition, they should be removed and made good.

PLASTER:

A primer should be applied to plaster and very porous supporting surfaces.

In the event of using any other supporting area material, always consult the adhesive manufacturer's technical specifications.

2.- HOW TO APPLY THE ADHESIVE:

It is essential to choose the correct adhesive for the specific support base. Cosentino® recommends following the classification determined by the UNE 12004 regulation.

Due to the high expansion coefficient of Silestone® and ECO by Cosentino®, the use of expanding cement will be required. Because our products are non-porous, normal cements which set through water evaporation (physical drying) should not be used. Therefore, cements which dry chemically must be used. The cement dries due to chemical reactions and is not affected by contact with air.



A potential problem which can arise during the fitting of Silestone® or ECO by Cosentino® is the possible saponification of the polyester resin used as an agglutinating agent, owing to the humidity and alkaline pH which can cause an adhesion between the Silestone®/ECO by Cosentino® and the adhesive. Saponification can easily occur when using standard cement adhesives (arising due to the presence of moisture through the evaporation of the water mixed into the mortar and the alkaline pH of the cements).

As a general rule, for any format, the following products can be considered “versatile” or generic:

Silestone® and ECO by Cosentino: Pegoland Fast Fluido (Puma), Granirapid (Mapei) and Ardex X7g PLUS (Ardex) or Ardex x32.

The suppliers will be able to suggest specific products (including ecological products) which are suitable for a given application, taking into account the characteristics of the job and the type of fitting required. Always check with the supplier.

For large format pieces of Silestone®, as a general rule, a suitable solution would be, for example, Ardex X77 for the interior, exterior, flooring and walls, or Ardex X78 for large format interior or exterior flooring. From the Puma range, Pegoland Flex Record **C2 TE S2** (Dual component) could be used for normal setting, or Pegoland Fast Extra **C2 FT S1** (Dual component) for fast setting. In the Mapei range, dependant upon application or the type of support, are Elastorapid 115-5-2006, Keraquick+Latexplus or Keralastic.

Prior to beginning large format work always check the suitability and specification of adhesives to ascertain the correct product for the project in the terms of the adhesive's characteristics.

3.- SLAB LAYING

The cement adhesive must be mixed in a clean container, with the recommended amount of water, using a slow electric mixer, blend until a smooth lump-free mortar.

The fitting should be carried out within the curing time of the adhesive, that is, the time it takes to dry superficially. The mortar should not be remixed, nor should more water be added to it to attempt to extend its useful life.

The fitting should be carried out using the double sealing method (adhesive on the piece and the support), exerting gentle pressure and applying lateral movement on the piece to ensure that the adhesive is completely in contact with the piece.

After laying the pieces, they can be adjusted as long as the “curing time” of the adhesive is not reached.

Use cross joints and leave one joint between the pieces (without any filler). Fill in every corner of the joint, making sure that there are no air bubbles or untreated areas.

Choosing the joint width:

We remind the thermal expansion coefficient for Silestone® and ECO by Cosentino®, in the worst conditions , 20°C thermal jump and for 2 m length slabs we can find up to 3mm larger.

But the performance of an entire system depends on several factors, including the support, the anchoring, adhesive, position, temperature, etc. So giving a value of thermal expansion of the whole is very difficult, as it depends on the final configuration and factors beyond our products.

Roughly speaking, based on experience Cosentino SA in works already completed, it is recommended that joints have a size of 2 mm per 30 cm square. Example:

30x30	2 mm
60x60	4 mm
90x90	6 mm

Slabs should never be laid on the header face, that is, without any placement joints between the slabs.

On newly constructed sites, it is recommended not to lay the pieces until structural movements stop.

4.- GROUTING

Check that the joints are not covered by the adhesive. 24 hours after laying the slabs before applying the grouting material.The application should be carried out using a rubber trowel, applying pressure until the grouting correctly penetrates the joint and removing excess grout from the surface of the piece with the same trowel. Once it starts to dry, it will start to lose its sheen and the joints should be cleaned and smoothed with a moist sponge before being left to harden. Bloom may continue to be present after the initial cleaning so further cleaning with a damp sponge may be necessary

The structural and perimeter joints should always be respected, both in the support and in the covering. The sealing of these joints should be carried out with elastic materials or those with suitable prefabricated structures. It is recommended to leave a perimeter joint of 5 mm between the flooring and the vertical structures.

It is recommended to position expansion joints:

-In interior floors, every 30 m².

It should be taken into account that the expansion joints of interior flooring coincide with those of the building. These joints should not be covered with any kind of rigid covering.

An inspection of the joint should be carried out every five years, checking for the presence of cracks, crevices, etc.



Cosentino recommends the use of products such as Morcencolour universal jointing (Puma) and Kerapoxy (Mapei) or Ardex FC flex (6 mm) or Ardex MG (8 mm and moisture-sensitive) for Silestone®.

For large format pieces, where the same colour as Silestone®/ECO by Cosentino® is desired, Cosentino recommends as a re-joining material for coverings Colorsil, in the different tones.

Instructions for use and specific recommendations in the products' technical specifications should be followed at all times.

OTHER ISSUES TO CONSIDER:

Finishes: Cosentino recommends the use of polished in its application as flooring, when those areas where the material is not subject to high humidity environments. Suede finish requires more maintenance than polish finish.

The finish volcano has a protective surface treatment applied, and due to the very rough finish requires more maintenance and is not recommended for high traffic rooms.

For proper maintenance and cleaning of Silestone® / ECO by Cosentino®, consult the document "USE AND CARE for flooring."

In the case of installation in large spaces, and when the weather or air conditioning systems installed generating humidity below 60%, you should consult the document "Silestone and electrostatic energy". This document also applies to ECO by Cosentino®, since the performance of the resin is homologous in this case.

Further information on your nearest Cosentino Center or locate it in www.silestone.com