

LAYING SUGGESTIONS

The information contained in this manual will assure that the mosaics produced by **CVS ITALIA S.R.L.** (made from a mixture of marble powder and resin) are correctly installed, by utilizing tile-laying material manufactured by **LITOKOL S.P.A.**

PRELIMINARY VERIFICATION OF THE LAYING SURFACE

Before proceeding with the installation, it is essential to check that the laying surface possesses the following characteristics:

SMOOTHNESS

It is fundamental that the laying surface be absolutely smooth and flat. For these 6 mm thick mosaics, surface irregularities must not exceed +/- 1.5 mm. Slight unevenness can be corrected using just the adhesive as a leveling agent, while more pronounced irregularities (> 5 mm) will need to be corrected using specific screed mortars such as:

- **LITOLIV EXTRA15** Quick-drying and hardening, non-shrink, self-leveling compound with very low emissions of volatile organic substances (VOC) for leveling floors of 1 to 15 mm. - **EMICODE EC1**, for indoor use.
- **LITOLIV EXPRESS** Quick-hardening and drying self-leveling cement mortar, for the leveling of fiber-reinforced sub floors with an internal thickness of 3 to 40 mm - **EMICODE EC1** - for indoor use.
- **LITOPLAN SMART** Cement-based, thixotropic, quick-hardening and drying, leveling agent for vertical and horizontal applications in thicknesses ranging from 1 to 25 mm. - **EMICODE EC1** - Suitable for both indoor and outdoor use.

MAXIMUM CURING AND HUMIDITY LEVELS

Regardless of what kind of substrate you are dealing with, the maturation process must be completed before installing the mosaics to assure that it is stable and will not shrink after the tiles have been laid. When using traditional cementitious screeds, curing times can vary from 7 to 10 days per centimeter of thickness, depending on the season.

Waiting time can be shortened by using special, normal-hold, quick-drying hydraulic adhesives such as **LITOCEM** or **LITOCEM PRONTO** rather than Portland cement, thus allowing vitreous mosaics to be laid after just 24 hours. For this kind of substrate, humidity levels must not exceed 3%.

For concrete surfaces, curing takes at least 6 months.

Maximum residual humidity in gypsum-based substrates such as anhydrite screeds or gypsum plasters must not exceed 0.5%. For premixed, cement-based plasters, we recommend adhering to the manufacturer's indications with regards to curing, drying times and mechanical resistance.

CLEANING

Substrates must always be perfectly clean and smooth, with no chipping or traces of paint, wax, grease, oils that could compromise the adhesive properties of the bonding agent. Concrete substrates must not have of any release agent residue.

It is always advisable to preventively clean surfaces with a hot-water jet-spray cleaner or sander. Ceramic-tiled surfaces must be thoroughly de-greased with an alkaline detergent or with a solution of diluted caustic soda and then rinsed and dried.

MECHANICAL RESISTENCE

For flooring, the substrate must be able to withstand the mechanical and compressive forces it will be subjected to in the environment in which it is to be located.

For example, a cementitious screed in an indoor, residential setting must have a compressive strength of at least 20 N/mm², while cement or gypsum plasters on interior walls need to have a bond strength of at least 0.5 N/mm². For outdoor installation, be sure to use a plaster designed for mosaic applications.

In order to guarantee adequate adhesion, the substrate surfaces must be dust-free. This quality may be optimized by using a consolidating primer in aqueous dispersion such as **PRIMER C**, compatible with any kind of cement/epoxy-polyurethane adhesive.

PREPARATION OF THE SUBSTRATE FOR MOSAIC INSTALLATION

Should the laying surface be excessively smooth, low-absorption or subject to vibrations and dilations, we recommend optimizing adhesion by applying a mixture of **LITOPPLUS K55** (Superwhite cementitious adhesive, enhanced, with zero vertical slip and extended open time) and a latex solution of one part **LATEXKOL** with an equal amount of water. The mosaic can be installed only after the screed has completely hardened, usually in about 24 hours depending on the ambient temperature. Before laying the mosaics, it is advisable mark guidelines on the laying surface in order to properly position the mosaic sheets. At this point it may be advantageous to use a framing square, level or laser square.

TYPES OF MOSAICS

CVS ITALIA S.R.L. provides both 3-dimensional and flat mosaics.

Flat mosaics may be used either for flooring or cladding, both indoor and out, while the 3-D mosaics are adaptable only for indoor walls.

Grouting is not advisable for 3-D mosaics.

CHOICE OF ADHESIVE

- **LITOELASTIC**: High-performance reactive adhesive, two-part epoxy-polyurethane for the fixing of ceramic tiles, mosaics, natural and reconstituted stone.
- **STARLIKE®**: Two-component acid-resistant epoxy mortar for the installation and grouting of ceramic tiles and mosaics with joints of 1 to 15 mm width.

INSTALLATION GUIDE

After having chosen the appropriate adhesive and prepared the mixture according to the indications on the package or spec sheet, it is advisable to first apply the adhesive mortar to the laying surface with the smooth edge of the trowel to assure that the color remains consistent, followed immediately by a further application of the product by means of a 3.5 mm (cod. 121/D 3.5x3.5) notched trowel. Install the mosaic sheets, tapping them into place with a rubber trowel (**COD. 946GR**) to guarantee perfect adhesion, eliminating air bubbles and keeping the glue from flowing back into the joints between the tiles thus leaving sufficient space for subsequent grouting.

HAMMAM INSTALLATION

The hammam or Turkish bath is a prominent feature in wellness programs, where people relax in extremely humid, warm-to-hot rooms (from 30°C to 60°C).

The interiors of these structures often consist in prefabricated panels or forms (benches, beds, niches, etc.) made of expanded polystyrene covered in impermeable material to which mosaics may be directly applied. Here again, **LITOELASTIC** or **STARLIKE®** adhesives should be used, and grouting effectuated exclusively with **STARLIKE®** epoxy grout.

INSTALLATION IN WET AREAS (BATHROOMS AND SHOWERS)

Installation in wet areas such as bathrooms or shower stalls calls for the use of the two-component, epoxy-polyurethane adhesive, **LITOELASTIC** or **STARLIKE®**, the two-component epoxy grout.

Subsequent grouting should be done using **STARLIKE®** epoxy grout.

GROUTING

Before grouting the joints, it is essential to verify that the adhesive used in the installation process has thoroughly dried and hardened and that the joints are perfectly dry. At this point, manually remove any residual adhesive that may have seeped into the joints.

CVS ITALIA S.R.L. recommends grouting our mosaics with **STARLIKE®** epoxy grout, produced by **LITOKOL S.P.A.** because it guarantees the following advantages:

- Bright, uniform color
- Particularly wide range of colors choices
- Practically zero water absorption
- Extremely easy to apply and clean
- Highly durable for long-lasting results

CAUTION:

1. Always carefully follow the indications on the package or spec sheet. Spec sheets in a variety of languages can be downloaded at www.litokol.it.
2. Make sure work site conditions are suitable for mosaic installation.

STARLIKE® is particularly versatile and may be used in a variety of applications such as:

- Indoor and outdoor flooring and cladding
- Bathrooms and shower stalls
- Hammams and steam rooms
- Kitchens
- Interior design elements such as doors, bars and counters, even for boats

HOW MUCH ADHESIVE AND GROUT SHOULD BE USED

The quantity of adhesive indicated here refers to applications using a notched 3.5x3.5 mm (cod. 121/D 3.5x3.5) mosaics trowel.

Type of mosaic:	flat or three-dimensional
Adhesive:	LITOELASTIC : 1.8 kg/sq. m. STARLIKE® : 1.6 kg/sq. m.

Amount of **STARLIKE®** stucco needed for the various types of flat mosaics :

Veneziana:	2.3 kg/ sq. m. -
Esagoni:	3 kg/ sq. m.
Volo:	1.80 kg/ sq. m.
Meteorite:	1.35 kg/ sq. m.
Fasce:	2.2 kg/ sq. m.
Fasce rigate:	1.7 kg/ sq. m.

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