



LEO VISCONTI

LAYING MOSAIC - instruction manual

PRELIMINARY OPERATIONS

This manual makes use of material kindly supplied by Litokol S.p.A.

Before starting any operations it is essential to identify the surface on which the work is to be carried out. Each substrate (plaster, timber, metal or stone) has different characteristics and will consequently require different treatment. Laying must be carried out in rooms with **temperatures** no lower than 5°C and never higher than 30°C to avoid damaging the mesh.

The **flatness** of the substrate is a factor that must not be overlooked: small irregularities can be corrected using the adhesive itself as a skim coat, while more obvious irregularities (more than 5mm) must be rectified by the use of suitable cement-based skimming compound.

- LITOLIV EXTRA 15 cement-based self-levelling compound, with fast adhesion, quick drying, not subject to shrinkage for thicknesses ranging from 1 to 15mm and very low emission of volatile organic compounds (EMICODE EC1), for interior use.
- LITOLIV S40 ECO cement-based self-levelling compound, with rapid hardening and drying for levelling sub-bases from 3 to 40mm in thickness; it is reinforced with fibre, for interior and exterior use.
- LITOPLAN RAPID thixotropic cement-based skimming compound, ultra-rapid hardening and drying for vertical and horizontal applications, thicknesses ranging from 1 to 25mm.
- LITOPLAN SMART thixotropic cement-based skimming compound, rapid hardening and drying for vertical and horizontal applications on interiors and exteriors in thicknesses ranging from 1 to 25mm. This is a product with very low emissions of volatile organic compounds, for interior and exterior use.

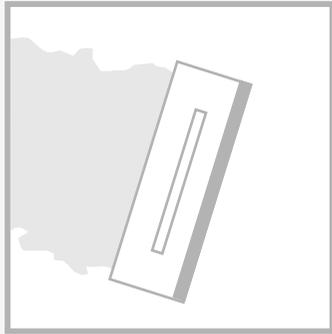
Make sure, also, that the levelling compound does not have cracks or imperfections, and that it is **perfectly clean**, free of loose material, paint, waxes, fats, oils or anything else that could prevent the adhesive from getting a good grip. Concrete substrates must be free of residues of release agents. Advance cleaning with hot water from a pressure washer or by sandblasting is always recommended. Existing ceramic coatings must be thoroughly degreased with alkaline detergents or an aqueous solution of caustic soda.

Whatever the type of substrate, it must be **stable**, completely cured and not subject to shrinkage after the mosaic is laid. In the case of a traditional cement screed the curing time ranges, depending on the season, from 7 to 10 days per centimetre of thickness. Shorter waiting times can be achieved by using special hydraulic binders such as LITOCEM (with normal grip but fast drying) instead of ordinary Portland cement. This will enable vitreous mosaics to be laid after 24 hours. For these types of substrate, the moisture content must not exceed a maximum of 3%. In the case of concrete surfaces, the curing time is at least 6 months. Gypsum-based substrates such as anhydrite-based screeds or plaster rendering must reach a maximum residual moisture of 0.5%. In the case of cement-based premixed renders, we recommend following the supplier's instructions on curing/drying times and mechanical strengths.

When laying mosaic on a floor, the substrate must have adequate mechanical compressive strength depending on the intended use of the rooms. For example, a cement screed on an interior site for residential use must have a compressive strength of at least 20 N/mm², whereas a cement- or plaster-based render applied to an interior wall must have an adhesion to the substrate of at least 0.5 N/mm². In the case of laying on an exterior facade over rendering, make sure that the render itself is suitable for having mosaics bonded to it and that its adhesion to the substrate has a value of at least 1 N/mm².

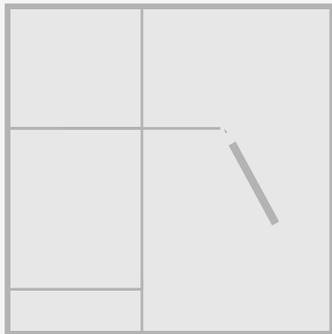
To ensure a good degree of adhesion, substrates must not have a powdery surface. Suitable consolidating primers in an aqueous dispersion such as PRIMER C, compatible with any cement-based binder, noticeably improve the degree of adhesion.

1.



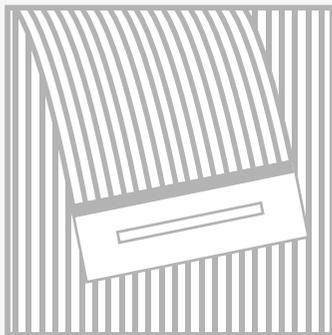
The substrate must be skimmed in advance using a white cement-based adhesive such as LITOPPLUS K55 in order to homogenise the colour and avoid altering the colour of the mosaic. In the case of particularly smooth substrates with low absorbency or subject to vibration and expansion, we recommend mixing LITOPPLUS K55 with LATEXKOL latex diluted 1:1 in water in order to further improve adhesion. Subsequent application of the mosaic can be carried out after the skim coat has hardened completely, which occurs in about 24 hours depending on the ambient temperature.

2.



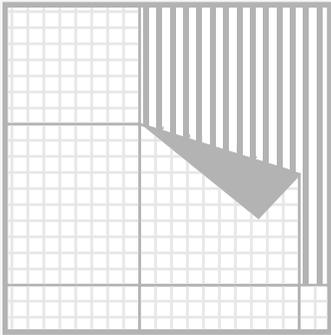
Before proceeding to apply the mosaic, it is advisable to draw lines on the surface to be covered to assist in the correct alignment of the sheets. At this stage squares and level detectors or laser instruments can be useful. Take the total measurement of three sheets, laid out side by side so that the distance between one sheet and the next one is the same as the distance between the tesserae. Mark this measurement, horizontally and vertically, onto the surface to be covered, so that the level and the ruler mark out a grid. The wall will be divided into a series of squares, each of which corresponds to nine sheets of mosaic. It is important to make sure that the distance between one sheet and another is equal to the distance between the individual tesserae, so that all the gaps are equal.

3.*



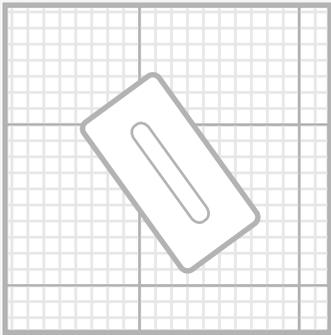
Spread the adhesive using the smooth edge of the spatula and then comb the surface with the 6mm toothed edge. Generally speaking, white adhesives are to be preferred (LITOPPLUS K55) with zero vertical slippage in the case of application on a wall. It is absolutely necessary to use a white coloured adhesive for mosaics in transparent glass (except for those with a black background which require a dark colour: SUPERFLEX K77). Do not cover areas larger than nine sheets at a time.

4.



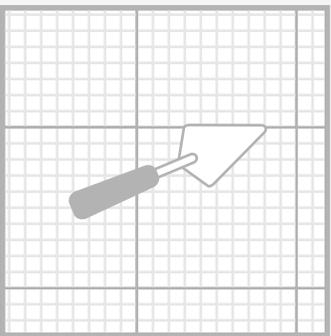
Stick the sheet to the prepared surface with the adhesive. Pay close attention to the distance between one sheet and the adjacent sheets: this must be the same as the distance which divides one individual tessera from another, to hide the division into sheets which otherwise would be noticeable when laying is finished.

5.



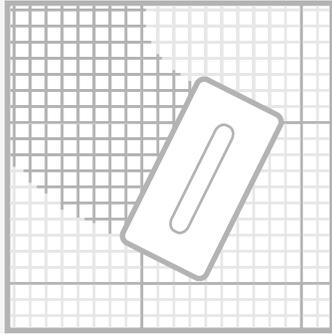
Once the work of laying the sheets on the wall is finished, use a rubber trowel to put pressure on the mosaic and ensure good adhesion of the adhesive to the mesh on the back of the sheets.

6.



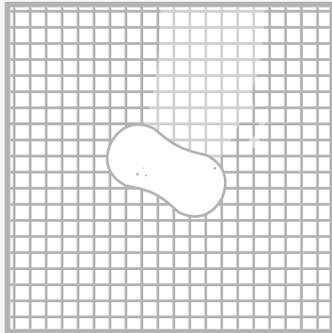
At this point in the laying process, the work carried out so far must be refinished. Before the adhesive acts and no longer allows the positioning of the sheets to be altered, it is advisable to use a pointing trowel to correct any errors of alignment and adjust the spacing dictated by the joints which, as stated above, must be equal to the gaps which divide the individual tesserae. Delicately move the sheets by engaging the backing mesh with a pointing trowel. This is a delicate operation but important for obtaining a homogeneous final effect.

7.



Before grouting, carefully clean the surface. Adhesive residues must be removed while still fresh, but once the adhesive is dry, a pointing trowel can be used to correct small details, and dust and remaining traces can be removed by suction. Check that after resting for at least 24 hours the adhesive has given up a large part of its moisture. Use STARLIKE epoxy grout, and mix components A and B well with a beater. Spread with a hard rubber-coated spatula and distribute the grout diagonally over the wall, taking care to fill all the joints completely. Remove excess grout with white felt (spare part 109GBNC) and refinish with a SWEEPEX cellulose sponge (128G).

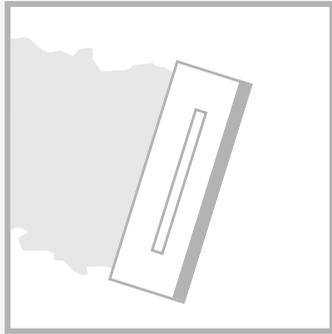
8.



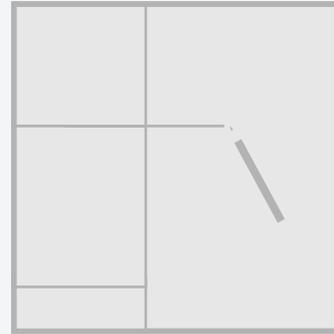
Once the grout has hardened, finish the job by thoroughly cleaning the wall. Clean with LITONET GEL. Sprinkle, wait 20 minutes, then scrub with 109GBNC white felt. Finish with a sponge and water to remove the residue of LITONET and finally dry with a cloth.

Use neutral detergents for everyday maintenance. Avoid products containing wax, oils or acids.

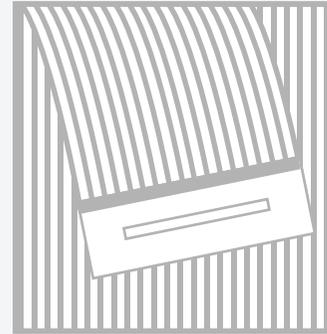
1.



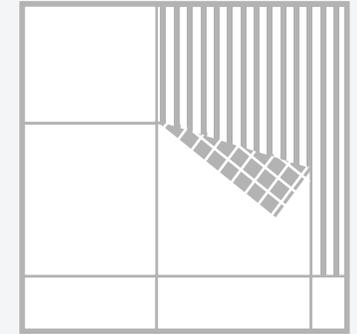
2.



3.*



4.

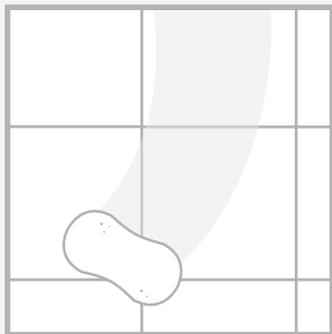


Follow the same steps as described in paragraphs 1, 2, 3* and 4 of the work stage devoted to mounting the mosaic on mesh.

Choose between the following options as regards the use of adhesive products and grout:

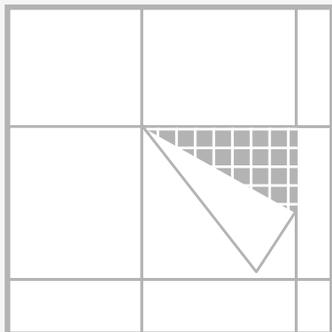
- LITOPPLUS K55 diluted 1:1 with water + STARLIKE as grout.
- STARLIKE used as adhesive and as grout.
- LITOELASTIC as adhesive and STARLIKE as grout.

5.



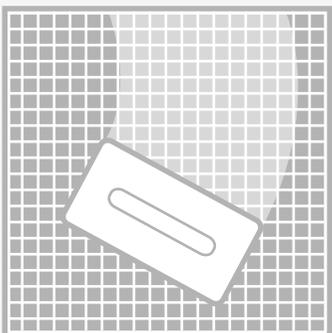
In this case the sheets must be laid with the tesserae in direct contact with the adhesive and with the paper facing the fitter. To remove the paper, use a sponge moistened with water, passing it over the paper and repeating the operation until you notice that the paper starts to separate.

6.



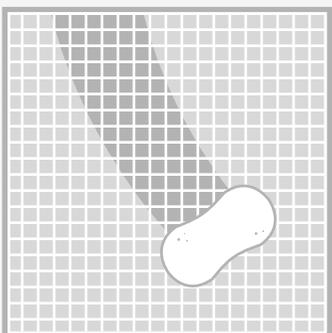
This stage must be carried out with great care since it must be performed not when the adhesive has hardened but when it is still fresh, with the risk, therefore, of slightly altering the position of the sheets. Remove the moistened paper by taking a corner and pulling it slowly in a diagonal direction, with a movement just skimming the wall. If the mosaic is on film, wait for the epoxy cement to harden sufficiently (see the product technical data sheet) and remove the film, taking it by a corner and pulling it slowly in a diagonal direction, with a movement just skimming the wall.

7.



After 24 hours, use a pointing trowel to remove the excess adhesive and clean the mosaic with a sponge moistened with warm water to remove the residues left by the glue holding the paper. Repeat the operation several times, until the tesserae are perfectly clean. Be very careful not to let the water infiltrate the joints which have not been grouted. Choose the grouting product from among the options listed on the previous page. Spread with a hard rubber-coated spatula and distribute the grout diagonally over the wall, taking care to fill all the joints completely. Remove the excess grout with white felt (spare part 109GBNC) and refinish with a SWEEPEX cellulose sponge.

8.



Once the grout has hardened, finish the job by thoroughly cleaning the wall. Clean with LITONET GEL. Sprinkle, wait 20 minutes, then scrub with 109GBNC white felt. Finish with a sponge and water to remove the residue of LITONET and finally dry with a cloth.

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Concrete: Primer C if necessary (in the case of a powdery base) + LITOPPLUS K55 or SUPERFLEX K77

Gypsum-based plasters, plasterboard: Primer X94 + LITOPPLUS K55 or SUPERFLEX K77

Timber or metal panels: LITOELASTIC

Plexiglass/polycarbonate panels: PRIMER 1217 + OTTOSEAL M501

Glass: OTTOSEAL M501

Lightweight panels: LITOPPLUS K55 or LITOELASTIC

Surfaces waterproofed with Hidroflex, Coverflex or Elastocem: LITOPPLUS K55 or SUPERFLEX K77

Existing ceramic or stone tiling: LITOFIX + LITOPPLUS K55 or SUPERFLEX K77



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