



INSTALLATION MANUAL

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1. Use the correct tools for installation:

Angle grinder or cutting table with water cooled-diamond blades to avoid chips on the edges.

Notched trowel to spread mortar or adhesive and rubber trowel for grouting.

Spirit Level for leveling and cross spacers for joints.

White rubber mallet.

Vessels to mix and prepare adhesive or mortar.

2. The concrete substrate must have good consistence. Its tensile strenght will not be smaller than 1N/mm². Before starting installation of stone tiles, it should be confirmed that concrete substrate is dry.

In basements or groundfloors, where water table is close to the floor, it will be necessary to waterproof the substrate. In rough or sloped substrates, it will be required a leveling mortar layer.

Leveling layer must dry before installation of natural stone. As a general standard, a period of 28 days for drying is required before installation.

3. Substrate must be completely clean, free of dust, either kind of particles, grease, etc. If it is not clean, bonding problems could happen.

4. Natural stone absorptivity and substrate properties will condition the adhesive type chosen.

Tino does not recommend the use of sand mortars, as the sand contains salts that diluted in water and absorbed by the stone, can cause efflorescences.

According to ISO 13.007-1:2010 Standard Classification of Adhesives, recommendations of adhesive for each kind of stone material are:

Limestones and sandstones: C1 adhesive for indoors and C2 adhesive for outdoors.

Marbles and granites: C2 adhesive for indoors and outdoors.

Stone with fiberglass or mesh back reinforcement: R adhesive (reactive)

5. In order to ensure 100% contact between pieces and substrate, stone tiles must be installed using the “buttering” technic. This technic consists of applying a uniform thin layer of adhesive in both sides, piece and substrate, using a notched trowel. The adhesive will always be used according to instructions of the adhesive producer.

6. Install pieces by tapping them with the rubber mallet until reaching a total flattening of the grooves created in the adhesive with the notched trowel.

7. Grouting process consists of filling the joints between pieces with grouting material. Joints must be clean of adhesive, dirt and either kind of particle. In this way, effectiveness of grouting material will be increased.

Joint sizes recommended by Tino:

Minimum size: 1,5mm. With smaller size and appropriate viscosity of the grouting material, joints will not be correctly filled.

Indoors recommended joint: 2mm.

Outdoors recommended joint: 5mm. In order to absorb dilatation and contraction processes caused by environmental conditions.

Stone pieces joints must always respect perimetral and structural joints.

8. Grouting material must be applied 24-48h after ending stone pieces installation.

Environmental conditions will be important to define this time lapse, as the water used in the adhesive must evaporate to avoid moisture spots which could cause efflorescences.

9. Grouting material will be applied in the joint gap with a rubber trowel. Traditional grouting, consisting of spreading material over the pieces, must not be used; the reasons to avoid this are the problems to clean pieces because of their porosity.

10. To avoid grouting material sticked in the joints, use a humid sponge to release it just after finishing grouting process.

11. When stone pieces are installed with surface finish (honed, polished, brushed, etc), a covering must be used to protect such finish during construction process. In this way natural stone product installed will not be damaged and also will be easier to clean.



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