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Mortar & Plaster
For Historic Restoration
and Green Building

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Ecologic™ LithoStep

Brick, Stone, and Cast Concrete Repair Material

For the surface repair of brick & stone treads and high density brick, stone and concrete substrates

Ecologic™ LithoStep is a specially formulated repair mortar that is derived from Saint-Astier® Lithomex, a *vertical* Brick and Stone surface repair material. Ecologic™ LithoStep is a modified version of Lithomex and it is useful for *horizontal* brick or stone tread repairs. Ecologic™ LithoStep is also useful either as the base coat or in second and subsequent coats for multiple lift build-ups. Heavier applications of Ecologic™ LithoStep are required where there is a need to build up a repair in lifts to take up deep material loss. Ecologic™ LithoStep can be built up in 1" lifts daily, including pointing of Cast Stone joints, or in 2" lift increments daily when a stainless steel armature is first anchored into the substrate to support the Ecologic™ LithoStep lift installation. It is recommended when recreating the final lift over Ecologic™ LithoStep in applications at either the vertical faces of Cast Stone or where there will be no foot traffic but still have high exposure, such as on top of a Cast Stone coping to use Ecologic™ "LithoCast." Ecologic™ LithoCast, which is also a modified version of Saint-Astier® Lithomex, is used to fully cast missing brick and stone elements or to better recreate a match to the texture and tooling of surrounding Cast Stone when it is applied in the final ¾" -1" coat over Cast Stone facing. See separate Cut Sheet on Ecologic™ LithoCast for its full range of benefits.

Ecologic™ LithoStep is neutral white in color or can be custom colored. Ecologic™ LithoStep is supplied in 55 lb (25kg) pails to which only mixing water is added. It is also available in units of 3 lbs or 15 lbs containers.

Benefits:

Ecologic™ LithoStep has unique qualities which allow it to be shaped immediately or carved using stone carving tools or sanded with PermaGrit® sanding

blocks about a week after the final set, depending upon weather and final curing.

For surface repairs to be successful the materials used for the repair need to have certain characteristics. They should:

- Have a similar but slightly lesser compression strength and tensile strength to that of the original masonry material being repaired.
- Have adequate bond strength.
- Have a good modulus of elasticity.
- Have good vapor permeability.
- Remain durable.
- Be capable of being dressed to a similar profile as the original masonry.
- Remain workable long enough to allow details to be created before an initial set.
- Simulate the color of the surrounding masonry.
- Simulate the texture of the surrounding masonry when properly tooled.
- Be reversible.

Mixing:

Ecologic™ LithoStep can be mixed manually or be mixed mechanically using a drill and paddle mortar mixer, adding approximately 1.1 gallons of water per 55 lb of Ecologic™ LithoStep. For smaller batches mix approximately 64 Milliliters of water to one dry cup of Ecologic™ LithoStep. Mix well for 3-5 minutes. Adjust final water content carefully to consistency required.* For small quantities mixed by hand, add just sufficient water to make a semi dry crumbly consistency, beat vigorously for a few minutes and carefully add a few drops of water at a time until desired consistency is achieved. (8 oz water to 3lbs Ecologic™ LithoStep)

**The addition of too much or too little water can alter colored Ecologic™ LithoStep. It is recommended to use a consistent amount of water to ensure color consistency between batches.*

Application:

The application surface must be clean, free from dust and oils. On porous surfaces, ensure that pre-wetting of the surface is carried out to control excess suction of the mixing water from Ecologic™ LithoStep. Apply Ecologic™ LithoStep before the surface is fully dry. Never apply to surfaces that are over saturated or have standing water. Ecologic™ LithoStep can also be applied to non-rusting lath fastened with non-rusting anchors. The minimum thickness is 3/16" (5mm). Ecologic™ LithoStep can be dressed or cut back to a feather edge when set. For projection / molded work, greater than 4" (100mm) it is necessary to install a stainless steel armature. Apply Ecologic™ LithoStep in layers that can be built out to 2" (50mm) in any single working day. Always dampen the application area between lifts. Ecologic™ LithoStep should be well pressed back in place. If necessary, re-compact by pressing after a couple of hours to suppress any slight shrinkage. Always support Ecologic™ LithoStep with the use of forms and the strategic placement of stainless steel wire and anchors. Simulation of stone / brick features, rough finishes, false joints etc. can be made up to 2 hours from initial application. Where ashlar masonry or very finely jointed masonry has had considerable damage to the arises, flush finishing in Ecologic™ LithoStep with a false struck joint is the ideal solution. If building details are damaged and then will require a lime wash or paint application after the repair, Ecologic™ LithoStep will readily accept Ecologic™ LimeWash and Ecologic™ Potassium Silicate Paint or any Ecologic™ Colorwash Stain. Ecologic™ LithoStep can be used as the base repair material for projecting areas of decorative Cast Stone, natural stone or un-glazed clay brick in places such as moldings and cornices. Ecologic™ LithoStep should then receive the final 3/4" -1" finish using Saint Astier® Lithomex when recreating all fine detailing.

Environmental Requirements:

Materials must be stored and handled to protect them from damage and moisture in accordance with Manufacturer’s instructions. It is recommended to take precautionary measures necessary to assure that excessive temperature changes do not occur. Do not apply Ecologic™ LithoStep unless minimum ambient temperature of 45 degrees F and a maximum of 85 degrees F have been and continues to be maintained for

a minimum of 48 hours prior to application and until Ecologic™ LithoStep has cured. During hot weather protect Ecologic™ LithoStep from uneven and excessive evaporation during the dry, hot weather. It is suggested to provide tarping over the outside of all scaffolding to shelter Ecologic™ LithoStep during inclement weather or to create a conditioned space during excessively hot or cold weather.

Technical Data:

Bulk Density	Lbs./cu ft : 82.5 to 85
Granulometry	From #23 to #200
Consumption	4.7 to 5 lbs. per sq. yd. Per 1/16" of thickness

Setting time (in water with no surcharge): start – 1h-30min / end – 2h-30min. Tests on paste (water addition 18.7%)

Safety:

Wear adequate protective clothing to avoid prolonged contact with the mortar. To avoid dust contact with eyes and possible inhalation wear glasses and the appropriate dusk mask especially in areas not properly ventilated.

Disposal:

Sweep and place bulk material in containers and properly remove for disposal. The final, cured product is not hazardous. Dispose of in a landfill in accordance with all local, state and federal regulations.

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