

RESTORATION

CALCE STORICA

One-component mortar for the consolidation of M15 class masonry structures

One-component pre-mixed masonry mortar, without cement and with great mechanical and adhesion resistance. *Calce Storica* is made of natural hydraulic lime NHL 5, hydrated lime and inert minerals (maximum grain size 1.0 mm). The product is ideal for the consolidation of masonry structures, it does not release water-soluble salts and it avoids the efflorescence formation. Trowel or spray application.

BENEFITS

- Excellent compatibility with masonry structures;
- Without cement;
- High mechanical resistance;
- Class M15 according to UNI EN 998-2;
- Eco-friendly;
- Easy and quick application;
- High adhesion on masonry;
- Excellent chemical resistance;
- Suitable for earthquake areas;
- VOC free.

YIELD

17±10% kg/m² per cm of thickness.

COLOUR

White and grey.

PACKAGING

25 kg paper bag.
Pallet: 56 bags (1400 kg).

APPLICATION FIELDS

Calce Storica is ideal for the consolidation of masonry structures, of vaults (also armed with carbon fibre or aramid bars), of works in green building and in the restoration of the ancient, of reinforced slabs and reinforced joints (Remaking of the joints with *Calce Storica* and carbon fibre bars). The product is also performing in the mortar bedding for foundations of masonry works that require high-strength mortars, and for plasters to consolidate the masonry surface.

STORAGE

Store the product in its original containers tightly closed, away from sun, water and frost, and kept at temperature higher than +5°C (+41°F) and +35°C (+95°F). Storage time: 12 months.

PREPARATION OF SUPPORT

The substrate must be completely hardened and be of sufficient strength. The surface must be thoroughly cleaned, without any friable or inconsistent parts. In cases where the surface is generally friable, it is recommended to remove it completely until a good support is obtained. If the plaster is degraded, it must be removed with electric hammers, compressed air or chisel. Eliminate any saline efflorescence present. If there are uneven and poorly absorbent supports, always apply a suitable layer of *Diathonite Regularization* (see data sheet), in order to improve the adhesion of the mortar to the support. The temperature of the medium must be between +5°C and +35°C.



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MIXING

Mixing the product using a tumbler mixer or in the mixer of the spraying machine, gradually adding water to the powder.

- If a drill with a whip is used it is necessary to mix at low speed, in order not to favour the incorporation of air in the mortar.
- *Calce Storica* Historical Lime should be mixed with 17 - 18% clean water, 4.25 - 4.50 L per bag (25 kg).
- The specified water is indicative.

It is possible to obtain dough with a more or less fluid consistency according to the application to be carried out (recommended consistency classes S3 - S4: semifluid - fluid). Mix until you get a plastic dough, homogeneous and without lumps. Do not mix the dough by hand. Never add extraneous components to the product.

APPLICATION

1. Before applying the mortar, wet the support with low pressure water until it is completely saturated, without leaving a layer of surface water.
Unsatisfactory saturation could compromise the adhesion of the mortar and create cracks.
2. In the case of application with reinforcement net (plates or vaults, armed joints), the net must have an iron cover of at least 2,0 cm and must be detached from the support of at least 1,0 cm with spacers. The minimum thickness of the *Calce Storica* system with reinforcement net is 5.0 cm.
3. *Calce Storica* can be applied to trowel or spraying with spraying machine.
4. When applied by hand and for applications with high final thickness, apply a layer of *Calce Storica* with semi-liquid consistency (S3) as regularization, with a trowel, to standardize the water absorption of the masonry and improve the adhesion.
5. Apply the following layers until the required thickness is reached. Each layer shall have a minimum thickness of 1,0 - 1,5 cm. The

following layers shall be applied when the underlying layer is sufficiently hardened.

6. If the support is made out of different materials (brick, stone, tuff, etc.) or at the corners (opening of doors and windows, edges) insert a fiberglass net (*Polites 140* - see data sheet), to counter the risk of cracking.
7. After the application by trowel, smooth the mortar to obtain a surface as flat as possible.
8. Trowel *Calce Storica* with a sponge trowel. The mortar should be crushed when placing one hand on the surface, the fingers do not sink but leave a slight footprint. A correct fracturing allows to avoid the formation of micro cracks.
9. To improve the seasoning of the mortar, where possible, spread over a polyethylene cloth for about a day after application, in order to maintain a high humidity.

DRYING TIME

At a temperature of 23 °C and relative humidity of 50% the product dries completely in 8 hours.

- The drying times are influenced by the relative humidity of the environment, the temperature and may vary also in a significant way
- Make sure the curing of the product is completed within the first 24 hours.
- At 5–10 °C the curing is slower, it is therefore recommended to apply the mortar in the middle hours of the morning.
- In situations of high temperatures, hot sun or strong ventilation it is necessary to keep the masonry moist during the first stages of drying.

To finish the mortar, on outdoor applications *Argacem HP* o *Argatherm* smoothers or finishes such as *Acrilid Protect Coating* o *Diathonite Cork Render* can be applied on top of the hardened product. On indoor applications it can be used the smoother *Argacem HP* to obtain a rough surfaces or *Argacem Ultrafine* to realize perfectly smoothed surfaces. Both smoothers, when used in indoor applications, can be painted with *C.W.C. Stop Condense*, *Limepaint*, *Diathonite Cork Render* or a breathable paint.



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SUGGESTIONS

- Applicare *Calce Storica* within 60 minutes from the mixing (at 23°C/73.4°F and 50% relative humidity).
- Do not apply at temperatures lower than +5°C (+41°F) or higher than +35°C (+95°F).
- During summer season apply the product during the cooler hours of the day, away from sun.
- Do not apply in case of imminent threat of rain or frost, in conditions of strong fog or with relative humidity level higher than 70%.

CLEANING

The equipment used can be washed with water before curing the product.

SAFETY

During handling, always use personal protective equipment and follow the product safety data sheet

* The reported data even if performed according to standard test methodologies are indicative and may be subject to changes to the specific site conditions.

Technical Data*

Features		Units
Yield	17±10% kg/m ² per cm of thickness	kg/m ²
Aspects	powder	-
Colour	White and grey	-
w/c ratio	0,17-0,18 4,25 – 4,50 L per each bag (25 kg)	L/kg
Maximum grain size	1,0	mm
Maximum application thickness per coat	2,5	cm
Anhydrous mass weigh (material in powder) (UNI EN 998-2)	1240 ± 20	kg/m ³
Application temperature	+5 /+35	°C
Drying time (T=+23°C; U.R. 50%)	8	hours
Storage	12	Month
Packaging	25 kg Paper bag	kg



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Final performances		Unit	Regulation	Result
Compression strength after 28 gg	16,2	MPa = N/mm ²	UNI EN 1015-11	class M15
Bending strength after 28 gg	3,7	MPa = N/mm ²	UNI EN 1015-11	-
Compression elastic modulus after 28 gg	19,67	GPa	UNI EN 13412	-
Workability time at 23°C	60	min	UNI EN 1015-9	-
Thermal conductivity λ	0,124	W/mK	UNI EN 12667	-
Vapour permeability coefficient (μ)	12	-	UNI EN 1745	-
Reaction to fire	class A1	-	UNI EN 13501-1	-
Volumetric mass density	1700 \pm 20	kg/m ³	UNI EN 1015-6	-
Consistency class of the fresh mortar	158 - 168	mm	UNI EN 1015-3	class S3 - S4
Mass density of the hardened mortar	1450 \pm 20	kg/m ³	UNI EN 998-2	-



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The indications and prescriptions given, while representing our best experience and knowledge, are to be considered indicative and must be confirmed by comprehensive practical applications. Diasen does not know the specificities of the process, let alone the determining characteristics of the application support. Therefore, before using the product, the applicator must in any case perform preliminary tests, to verify the perfect suitability for the intended use and, in any case, assumes any responsibility that may arise from its use. In case of uncertainties and doubts, please contact the technical office of the company before the start of the work, it being understood that this support is a simple aid for the applicator, which must in any case guarantee the possession of adequate skills and experience for the laying of the product and for the identification of the most appropriate solutions. Always refer to the latest updated version of the data sheet, available on the website www.diasen.com that cancels and replaces each other