

## 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 mineral inerts (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 efflorescences 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.

## APPLICATION FIELDS

*Calce Storica* is ideal for the consolidation of masonry structures:

- consolidation of vaults, even reinforced with carbon fiber bars or aramide;
- consolidation of works in green building or in ancient restoration;
- bedding for foundation of masonry structures that need high resistant mortars;
- reinforced plates;
- reinforced joints (remake of the joints with *Calce Storica* and carbon fiber bars).
- Consolidation plaster of the masonry surface.

## YIELD

17±10% kg/m<sup>2</sup> per cm of thickness.

## COLOR

Light grey.

## PACKAGING

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

## STORAGE

Store the product in well ventilated areas, away from sunlight, water and ice, at temperature between +5°C (+41°F) and +35°C (+95°F).

Storage time: 12 months.

## PREPARATION OF SUPPORT

- The substrate must be completely hardened and resistant enough.
- The surface must be thoroughly clean, without debris or detaching parts.
- If the surface is crumbly, it is recommended to remove it completely until obtaining a good support.
- If the plaster is damaged, it must be removed with electric hammers, compressed air or with chisel.
- Remove the eventual salt efflorescences.
- In case of not uniform or few absorbent supports, always apply a coat of *Diathonite Regularization* (see technical data sheet), in order to improve the adhesion of the mortar on the support
- The temperature of the support must be between +5°C (+41°F) and +35°C (+95°F).

## MIXING

- Mix the product by using a concrete mixer or in the mixer of the spraying machine, gradually adding water to the powder.
- if a whip drill is used, it is necessary to mix at low speed, to prevent air absorption.
- *Calce Storica* must be mixed with 17 - 18% of clean water, 4.25 - 4.50 l per bag (25 kg).
- The specified water amount is indicative, it is possible to obtain a more or less fluid consistency based on the application that is to be performed (suggested consistency class S3 – S4: semi-fluid / fluid).
- Mix until obtaining a plastic and homogeneous mixture, without clumps.
- Do not mix by hand.
- Do not add other substances to the mixture.



For application videos, product data sheet, safety data sheet and other information.

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Whereas all indications and recommendations supplied herein are stated to the best of our experience and knowledge, they should be considered as indicative only and should be confirmed by exhaustive practical applications. Diasen doesn't know the peculiarity of the processing, or the characteristics of the support. Therefore the applicator should carry out preliminary tests, in order to verify the suitability to the foreseen application, and in any case he will take the responsibility of the intended use. In case of uncertainties or doubts, please contact the company's technical department, provided that this is only a simple assistance for the applicator: he should have the appropriate capabilities and experience in order to determine the more suitable solution. Always respect the latest update of the technical sheet available on [www.diasen.com](http://www.diasen.com).

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## Technical Data

Features		Unit
Yield	17±10% kg/m <sup>2</sup> per cm of thickness	kg/m <sup>2</sup>
Aspect	powder	-
Color	Light grey	-
w/c ratio	0.17 - 0.18 4.25 – 4.50 l per 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 <sup>3</sup>
Application temperature	+5 /+35 +41/+95	°C °F
Drying time (T=20°C/68°F; R.H. 40%)	8	hours
Storage	12	months
Packaging	25 kg plastic bucket	kg

Final performances		Unit	Regulation	Result
Compression resistance after 28 days	17.95	MPa = N/mm <sup>2</sup>	UNI EN 1015-11	class M15
Bending strength after 28 days	5.66	MPa = N/mm <sup>2</sup>	UNI EN 1015-11	-
Compression elastic modulus after 28 days	19.67	GPa	UNI EN 13412	-
Working time at 20°C/68°F	60	min	UNI EN 1015-9	-
Thermal conductivity λ	0.124	W/mK	UNI EN 12667	category T2
Mass density of the mixture	1700±20	kg/m <sup>3</sup>	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±20	kg/m <sup>3</sup>	UNI EN 998-2	-

The above data, even if carried out according to regulated tests, are indicative and they may change when specific site condition vary.

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## APPLICATION

1. Before the application of the mortar, wet the support with water at low pressure, until complete saturation, without leaving a superficial water. A not complete saturation could compromise the adhesion of the mortar and can create cracks.
2. If applied with reinforcement mesh (plates or reinforced vaults, reinforced joints), the mesh must have a 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 system *Calce Storica* with reinforcement mesh is 5.0 cm.
3. *Calce Storica* can be applied by trowel or by spraying machine.
4. In case of hand application and with high final thickness, apply by trowel a layer of *Calce Storica* with semi-liquid consistency (S3), as regularization to uniform the water absorption of the masonry and to improve the adhesion.
5. Apply next layers until reaching the expected thickness. Each layer must have a minimum thickness of 1.0 – 1.5 cm. Next layers must be applied only when the previous one is completely dry.
6. If the support is made of different materials (brick, stone, tuff, etc.) or in correspondence of angles (opening of doors and windows, corners) insert a fiber glass mesh (*Polites 140* – see technical data sheet) to prevent cracks.
7. At the end of the application by trowel, smooth the mortar to obtain a surface as flat as possible.
8. Smooth and prop *Calce Storica* by using a sponge float. The mortar must be smoothed when it is superficially dry (if, when touching the mortar you leave a handprint). A good smoothing impede the formation of micro cracks.
9. To improve the drying, where possible, apply a sheet of polyethylene for about one day from the application, in order to keep a high humidity.

## DRYING TIME

At a temperature of 20°C and 40% relative humidity, the product dries completely in 8 hours.

- Drying time is influenced by environmental relative humidity and by temperature and it may significantly change.
- Look after the humid drying in the first 24 hours.
- In case of high temperatures, direct sunlight or strong ventilation it becomes necessary to keep the masonry moist during the first hours of drying process.
- At 5 ÷ 10°C the drying time is more slowly, it is then recommended to apply the mortar in the central hours of the morning.

To finish the mortar, it is possible to apply, externally, *Argacem HP* or *Argacem MP* and the finish *Plasterpaint* coloured, *Argacem* coloured, *Acrilid Protect Coating* or *Diathonite Cork Render*; internally it can be used the smoother *Argacem MP* to obtain a rough surfaces or in combination with *Argacem Ultrafine*, to realize perfectly smoothed surfaces. Both smoothers used inside can be painted with *C.W.C. Stop Condense*, *Limepaint*, *Diathonite Cork Render* or a breathable water-paint.

## SUGGESTIONS

- Apply *Calce Storica* within 60 minutes from the mixing (at 20°C/68°F and 40% relative humidity).
- Do not apply at temperatures lower than +5°C (+41°F) or higher than +35°C (+95).
- 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

Wash tools with water.

## SAFETY

While handling, always use personal protective equipments and respect the instructions described in product safety data sheet.

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