

## TECHNICAL DATA SHEET

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Extra- fluid thixotropic mortar to be injected for consolidation and re-adhesion of external plasters.

## SPECIAL FEATURES

High permeability, even without wall preliminary wetting, easy leakage cleaning, chemical-mechanical compatibility. Reduced "leakage" during injection.

## COMPOSITION OF THE FORMULA

It consists of natural calcium and special hydraulic binders, chemically stable and with a very low content of soluble salts, limestone aggregates, natural hyperventilated pozzolana and a special combination of fluidizer, retentive and aerating additives. The special formula, produced in planetary dispersion 1/10.000 in less than 20 minutes, results in a homogenous light grey premix. Microfibers can be added to the mortar to improve its mechanical properties in special uses.

## FIELDS OF APPLICATION

Specially formulated product created to solve problems connected with the reinforcement of old facades plasters, undergoing detachment from the wall.

## PREPARATION'S INSTRUCTIONS

Mix vigorously LEDAN CIE with clean water for about 3 minutes . Filter the obtained grout to remove possible small lumps formed in the mixing phase.

RECOMENDED DOSES		
USE	LEDAN CIE	WATER
REINFORCEMENT OF PLASTERS	10 Kg	10 lt
RE-ADHESION OF PLASTER TO THE MASONRY	10 Kg	7 - 8 lt

## INSTRUCTIONS

- 1) Stop properly the possible spill of the product from the plaster with appropriate grouting mortar.
- 2) Carry out the drilling of plasters, stuccos, etc. (the restorer will determine the positioning of the holes case-by-case). Holes diameter min 3mm. For a thickness to fill not lower than 1mm, the maximum distance between holes should not exceed 30 cm.
- 3) Clean thoroughly the holes blowing and sucking air.
- 4) In order to obtain better results and cost reduction inject "in continuous" using the special low-pressure pump. Alternatively, manual or electric traditional equipment can be used.

• If the drilling and cleaning operations are carried out properly, the LEDAN CIE, even without preliminary wetting of the wall and the application of a very low pressure, will flow inside the masonry, permeating evenly. In case it doesn't happen, check again the potential receptivity of the holes made

## LIMITS FOR THE USE

LEDAN CIE is a lime based compound, therefore avoid application in extreme cold conditions (minimum temperature below 5° C) or extremely hot (maximum temperature above 35° C).

## Injection COMPOUND

## EQUIPMENTS FOR USE

LEDAN CIE is a specific formula especially studied to reduce processing costs in the consolidation of large areas plasters. It is suggested to use a low-pressure pump, Alternatively, manual or electric traditional equipment can be used.

PHYSICAL - CHEMICAL FEATURES					
SPECIFIC WEIGHT	1,12 Kg/Dm <sup>3</sup>	LOW	ADHESION	1 N/mm <sup>2</sup>	EXCELLENT
INITIAL SETTING	4 HOURS	LOW	EXUDATION	NONE	EXCELLENT
FINAL SETTING	14 HOURS	LOW	STEAM PERMEABILITY	5 μ	HIGH
WORKABILITY	2 HOURS	LOW	ELASTIC MODULE	6.000 N/mm <sup>2</sup>	EXCELLENT
COMPRESSION STRENGTH	5,9 N/mm <sup>2</sup>	LOW	WATER RETENTION	>85%	EXCELLENT
BENDING STRENGTH	2,6 N/mm <sup>2</sup> (28 gg)	HIGH	SHRINKAGE	0,11 μm	EXCELLENT

N.B. The mortar was characterised taking into account its own application mode. The numerical values refer to averages detected on media lab reproducing wall structures problems.

### EFFLORESCENCE

To evaluate if any soluble salts contained in a mortar, may cause unwanted phenomena of chemical and chromatic alteration, it is possible to carry out a lab test according to the RAL 544/3 regulation. The LEDAN CIE mortar compound undergoing such a test does not cause efflorescence phenomena.

### DURABILITY

Some LEDAN CIE samples undergoing an accelerated aging cycle, simulating a natural aging of about 20 years, resulted in a performance downfall below 3%.

### STORAGE

24 months if kept in dry place and closed containers.

### PACKAGES

Buckets of: 15 Kg

### EXPERIMENTS CARRIED OUT IN BUILDING YARDS UNDER THE "MINISTRY OF HERITAGE AND CULTURAL ACTIVITIES" CONTROL

A product to be used in the cultural heritage sector, not only requires rigorous laboratory studies, but also careful checks in building yards, aiming to verify the effective results on duration and stability, together with the absence of direct and indirect negative effects and possible reversibility. LEDAN CIE, developed thanks to a research promoted and financed by the Public Works Office of Livorno and verified by the Superintendence of Pisa, in order to preserve the external plasters of the St Iacopo church on the spot, it has also been tested in extremely aggressive environments. The inspections carried out after 15 years guarantee the efficacy, the duration and, most of all, the lack of collateral negative effects in the long run.

### SPECIFICATIONS

Injections for re-adhesion of old detached plasters to be preserved, carried out using a pre-mix composed by specific hydraulics binders (C30) chemically stable with a very low content of soluble salts, siliceous and limestone aggregates combined with hyper-fluidizer additives. Due to the application peculiarity, the pre-mix must be tested for not less than 10 years in researches promoted by the Ministry of Heritage and Cultural Activities. As a result the place, the date and the main chemical-physical characteristics of the tested product must be declared. The manufacturer must also provide the reports related to the research activities carried out and ratified by the Public Institution in charge.

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