

# Mapecrete LI Hardener

**Surface treatment in liquid form with a consolidating effect for new or old concrete floors and concrete surfaces with a dry-shake hardener finishing**

## DESCRIPTION

**Mapecrete LI Hardener** is a water solution of modified lithium silicates for treating the surface of cementitious substrates. It penetrates into the porosity and chemically reacts with the free lime in the cementitious substrate to form a dense microstructure which is chemically durable and resistant to abrasion. After polishing, floors treated with **Mapecrete LI Hardener** are shiny, dust-repellent, more resistant to staining and efflorescence and easy to clean.

## WHERE TO USE

**Mapecrete LI Hardener** is suitable for new or old industrial and civil cementitious floors. It has the capacity of closing the porosity of the cementitious paste and, therefore, increasing the strength of the surface of the floor.

This product is suitable for application on old floors to bring back shine, easy cleanability and strength to the surfaces treated.

**Mapecrete LI Hardener** increases the durability of the floor through the beneficial effect of the lithium salts against the “pop-out” aggregate alkali reaction affecting many floors, due to the effect of reactive aggregates.

Beyond better mechanical characteristics, cementitious floors treated with **Mapecrete LI Hardener** are more resistant to aesthetic defects, such as efflorescence and various types of stains.

## Some application examples

- Surface consolidation of industrial and civil floors (warehouses, shopping centres, car-parks, garages,

craft workshops, etc.) made from concrete and flooring with cementitious dry-shake.

- Surface protection of cementitious floors to increase their resistance to abrasion, scratches and aesthetic defects.
- Final surface treatment after polishing concrete flooring.
- Dust-repellent treatment for industrial and civil floors.

## TECHNICAL CHARACTERISTICS

**Mapecrete LI Hardener** is an inorganic liquid which penetrates superficially into the porosity of cementitious materials and reacts with the lime which is normally produced during the hydration phase of the cement, to form highly-resistant, non-soluble hydrate silicates which increase the density and strength of the cementitious paste.

**Mapecrete LI Hardener** has been developed in MAPEI R&D laboratories. It is not a film-forming product and, therefore, does not form a continuous layer on the surfaces treated. As a result, it is not subject to scratching and/or detachment.

**Mapecrete LI Hardener** is a solution of modified lithium silicates which are resistant to UV rays, thus suitable for application on both internal and external surfaces.

**Mapecrete LI Hardener** is made with lithium silicates (e.g. sodium and potassium); this grants an effective protection against the destructive reaction of reactive aggregates.



TECHNICAL DATA (typical values)			
<b>PRODUCT IDENTITY</b>			
Consistency:	liquid		
Colour:	transparent		
Density (g/cm <sup>3</sup> ):	1.1		
Dry solids content (%):	12.5		
Ion chloride content - minimum requirement ≤ 0.05% – according to EN 1015-17 (%):	≤ 0.05		
pH:	11		
<b>APPLICATION DATA (at +20°C - 50% R.H.)</b>			
Application temperature range:	from +5°C to +40°C		
Minimum waiting time for the product to penetrate:	30 min.		
<b>FINAL PERFORMANCE</b>			
Essential characteristics	Test method	Untreated substrate	Substrate with Mapecrete LI Hardener
Loss of material with Taber abrasion test (H22 disk, 500 g, 100 cycles) (mg):	EN ISO 5470-1	50	35
Capillary absorption (kg/m <sup>2</sup> ·h <sup>0.5</sup> ):	EN 13057	2.3	1.3

## ADVANTAGES

- Non-filming treatment which chemically reacts with the substrate.
- Easy to use and apply.
- Penetrates superficially to form strong, mechanically and chemically-resistant, non-soluble composites.
- Improves resistance to abrasion.
- Reduces the formation of dust and keeps the floor cleaner.
- Improves the appearance of treated surfaces and makes them more shiny.
- Increases the durability of floors.
- Does not contain sodium or potassium which may provoke damaging alkali-aggregate reactions.
- Makes maintenance required on floors much easier.
- Compatible with the environment and not hazardous for installers.

## RECOMMENDATIONS

- Do not apply **Mapecrete LI Hardener** on dusty, crumbling or flimsy substrates.
- Do not apply **Mapecrete LI Hardener** on dirty surfaces or on surfaces which are soaked with oily and/or greasy substances.
- Before applying **Mapecrete LI Hardener**, make sure the surfaces are evenly dry and that there is no stagnant water or puddles.
- Do not use **Mapecrete LI Hardener** for sealing cracks and protect treated surfaces from highly aggressive agents.

## APPLICATION PROCEDURE

**Mapecrete LI Hardener** may be applied on surfaces being both polished or with a dry-shake mineral hardener such as **Mapetop N AR6**, and after cutting the joints where required. If the product is applied on surfaces which are already cured, the treatment may be carried out immediately. Concrete surfaces including those with a

dry-shake hardener such as **Mapetop N AR6** or other cementitious products must be sound, perfectly clean, dry and free of all traces of dust, film-forming anti-evaporation products, grease, oil and any other substance or material which could prevent the consolidating liquid from penetrating.

**Mapecrete LI Hardener** may be applied by spraying it on the surface to be treated with a low pressure pump or poured directly on the floor and then immediately spread out in an even coat. In both cases, the part of the floor treated must be kept constantly wet for at least 20-30 minutes with **Mapecrete LI Hardener** to allow it to penetrate into the substrate. During this phase, it is very important that there are no dry and wet patches on the surface, for the better results of the treatment.

At the end of the phase when the surface is kept constantly wet any excess liquid must be removed manually or with suitable mechanical means and the treated surface must be dried and polished.

After completing the application and drying phases, we recommend waiting until the following day before stepping on the surface, even if the consolidating effect of the product takes place during the next days.

#### **Cleaning**

Tools used to prepare and apply **Mapecrete LI Hardener** may be cleaned quite simply with water. Once hardened, the product may only be removed using mechanical means.

#### **CONSUMPTION**

0.2-0.4 kg/m<sup>2</sup> according to weather conditions and the level of porosity and absorbency of concrete.

#### **PACKAGING**

25 kg plastic drums.

#### **STORAGE**

**Mapecrete LI Hardener** may be stored for up to 12 months in its original packaging in a dry area at a temperature between +5°C and +40°C.

#### **SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION**

**Mapecrete LI Hardener** is not considered hazardous according to current regulation

regarding the classification of mixtures. It is however recommended to use gloves, eyes protection and to take the usual precautions for the handling of chemical products. For further and complete information about the safe use of our product please refer to the latest version of our Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

#### **WARNING**

*Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.*

**Please refer to the current version of the Technical Data Sheet, available from our website [www.mapei.com](http://www.mapei.com)**

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