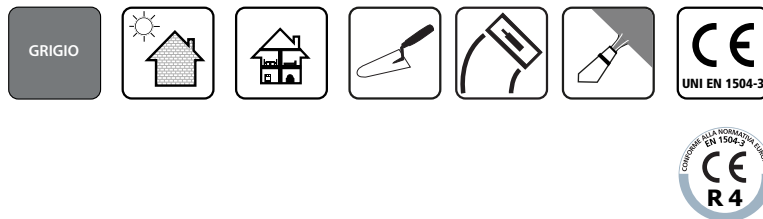


Repair 450

Thixotropic, structural, fibre-reinforced polymer-modified cement mortar, class R4 in accordance with the UNI EN 1504-3 standard, with controlled hygrometric shrinkage, specifically designed for restoration and skim coating of concrete for applications at a thickness of between 5 and 50 mm

Repair 450 is a thixotropic, polymer-modified structural mortar, with controlled hygrometric shrinkage, made with high-resistance hydraulic binders, selected aggregates, special additives and HT fibres. **Repair 450** is specifically designed for the reconstruction or skim coating of concrete, applicable at variable thicknesses of between 5 and 50 mm. Formulated in the new **Licata SpA Research and Development Laboratories, Repair 450** stands out for its easy workability, superior adhesion strength and wetting properties, excellent thixotropy, combined with superior mechanical strength. Controlled hygrometric shrinkage is the added value which the **Licata SpA Research and Development** team devoted specific studies to. Dimensional stability allows **Repair 450** to be applied also in high thickness in a single coat (up to 50 mm), minimising cracking throughout all the product life phases (application, plastic phase, curing).



MAIN AREAS OF APPLICATION

Repair 450 was formulated to ensure the best performance levels in restoration and restructuring work on the most commonly used cement substrates in construction. **Repair 450** can be laid in variable thicknesses of between 5 and 50 mm by hand or by machine, efficiently accommodating all the application requirements of construction sites.

It is mainly intended for use in:

- Renovating concrete, even with expose metal rebars
- Local repairs to cement-based flooring
- Reinforcement and strengthening of pillars, infrastructure pylons, bridges, buildings, etc.
- Repairs on balcony rises, corners, damaged edges

For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

- Easy workability. The combined spreadability, easy detachment of tools and simple working are obtained thanks to the use of latest-generation additives, reducing the level of difficulty and any delays in the laying process.
- High adhesion strength. **Repair 450** is a polymer-modified mortar (PCC). The adhesion values obtained after exposure to extreme conditions of frost, heat and chemical aggression are proof of its reliability over time in restoration work.
- Mechanical strength. The high-performance hydraulic binders, selected inert materials with constant particle size curve and the pozzolanic additives lend it superior mechanical values. **Repair 450** falls into the highest class in terms of bending strength and compression resistance of the **1504-3** standard and fully meet the requirements of class **R4**.
- Outstanding wetting and thixotropic properties. • The special additives contained in **Repair 450** make for easy application both vertically as well as over-head.
- Controlled hygrometric shrinkage. The presence of fibres and the special formula of **Repair 450** minimise cracking even in the case of high thicknesses in a single coat.



APPLICATION METHOD

Preparing the substrate

Mechanically remove all flaking parts or easy to peel off. Clean the area of application thoroughly so that it is free of dust residue from surface treatments such as: detergents, oily substances, mineral or organic greases, waxes, traces of gypsum and salt.

Preparing the mixture

You need 4-4.5 litres of clean water (UNI EN 1008) for every 25 kg bag (i.e. 16-18% in mass).

Pour the product into a clean tub, containing $\frac{3}{4}$ of the mixing water, mix for around 3 minutes with a mixer at low speed, gradually adding the remainder of the water until you achieve an even thixotropic mixture without any lumps. Avoid splitting the packs to perform partial mixtures.

The product stored in open bags and only used in part may no longer meet the technical characteristics listed in this document.

Application

The previously prepared substrate must be wet with water until saturated, so that it is in conditions of Saturated surface dry (SSD).

Apply the product as it is, laying a thinner, well pressed gripping agent before increasing the thickness. Even out using a trowel and compact if necessary. **Repair 450** can be painted over after 24 hours and it develops its resistance fully after 28 days of curing.

For thicknesses of more than 50 mm, proceed by applying a second coat onto the hardened first coat.

Do not apply **Repair 450** on substrates if there is a film of water on the surface, if they are completely dry or in extreme conditions, such as: walls exposed to the midday sun or frozen over.

Make sure the temperature of the room, of the substrate, and of the product during application falls between +5 °C and +35 °C.

PRODUCT INFORMATION

Appearance	grey powder
Particle size	< 2 mm
Powder consumption	≈18 kg/m ² every 10 mm in thickness
Mixing water	16-18% of powder weight
Workability time at 20 °C	≈ 40 minutes
Application thickness per coat	5 - 50 mm
Application temperature	between +5 °C and +35 °C
Storage	12 months in a dry, protected place in sealed packs, at temperatures of between +5 °C and +35 °C
Packaging	25 kg bag
Density	1950-2050 kg/dm ³
Mixture pH	approx. 12

PERFORMANCE

Characteristic	Test Method	Normative requirement	Performance
Compression resistance	EN 12190	≥45 MPa	>58 MPa
Chloride ion content	EN 1015-17	≤0.05%	<0.003%
Adhesion strength	EN 1542	≥2.0 MPa	>2.8 MPa
Resistance to carbonation	EN 13295	dk≤45	NPD
Elastic module	EN 13412	≥20 GPa	>27 GPa
Thermal compatibility of freeze/thaw cycles	EN 13687-1	≥2 MPa	>2 MPa
Thermal compatibility after thunder shower	EN 13687-2	≥2 MPa	>2 MPa
Thermal compatibility, dry thermal cycling	EN 13687-4	≥2 MPa	>2 MPa
Capillary water absorption	EN 13057	≤0.5 kg m ⁻² h ^{-1/2}	0.16 kg m ⁻² h ^{-1/2}

WARNINGS

- Professional-grade product.
- Do not water or more powder to the mixed product.
- Alkaline material: protect your eyes and skin during application.
- After use, wash tools with water while the mixture is still fresh.
- The room temperature and degree of humidity affect the workability, grip and drying times.
- Monitor the product curing suitably for at least the first 24 hours after laying, protect fresh mortar against rapid drying, against direct sunlight, strong wind and heavy rain.

SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

NOTES

This technical data sheet replaces and cancels all previous versions.

The indications and performance levels provided in this document are based on our current technical-scientific knowledge and in any case should be considered as purely indicative since the conditions of use are in no way under our control. The purchaser must therefore check the suitability of the product for his or her specific needs, assuming all responsibility deriving from its use. Our technical-sales network guarantees a speedy response and is at your disposal for any clarifications or queries regarding the use and processing of **licata SpA** products.

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