Rasa & Ripristina

Quick-setting and hardening, thixotropic, fibre-reinforced, anti-shrinkage mortar for repairing, smoothing and structural passivation of concrete with manual application. Composed of hydraulic binder, fibres with a high elastic modulus, selected siliceous aggregates with a maximum grain size of 0.6 mm and specific additives.

TROWEL APPLICATION

FOR INDOOR AND OUTDOOR USE

SINGLE-COMPONENT PRODUCT

R3

CE EN 1504-2

CE EN 1504-3

CE EN 1504-7

Use this QR code for further details on application modalities, safety sheet and other information.

99 Product code

Technical characteristics

Class according to EN 1504-3	**R3**
Compressive strength EN 12190	**37.4 MPa**
Flexural strength EN 196/1	**13.7 MPa**
Corrosion protection of reinforcement according to EN 1504-7	**specification exceeded**
Corrosion resistance EN 15183	**< 1 mm**
Elastic modulus EN 13412	**22.3 GPa**
Shrinkage/expansion prevented UNI EN 12617- 4	**1.88 MPa**

Type of mortar according to EN 1504-2	**Coating (C) according to MC and IR**
Resistance to carbonation EN 13295	**$d_k \leq 1.5$ mm**
Theoretical consumption (per cm of thickness)	**15/17 kg/m²**
CO_2 permeability EN1062-6	**$S_D = 62$ m**
Chloride ion content EN 1015-17	**0.02%**
Bonding UNI EN 1542	**1.89 MPa**
Capillary absorption EN 13057	**0.043 kg/m²h^{0,5}**

Description

Rasa & Ripristina is a premixed, non-shrinking, thixotropic, quick-setting and hardening single-component cement-based mortar composed of sulphate-resistant hydraulic binders that provide fast drying and hardening while maintaining the ability to compensate for hygrometric shrinkage. It meets the principles defined in EN 1504-9 "Products and systems for the protection and repair of concrete structures. Definitions, requirements, quality control and evaluation of conformity. General principles for use of products and systems", the minimum requirements of EN 1504-3 "Structural and non-structural reinforcement", EN 1504-2 "Systems for the protection of concrete surfaces", as anti-carbonation protection and EN 1504-7 "Protection against reinforcement corrosion" for class R3 structural mortars.
Rasa & Ripristina is particularly recommended in cases of structural restoration where corrosion of the fibres is feared due to severe environmental conditions. Indeed, unlike all fibre-reinforced mortars with steel fibres or special metal alloys on the market today, the fibres are of synthetic origin and do not undergo any form of corrosion, oxidation or chemical degradation even under particularly aggressive environmental conditions.
After hardening, Rasa & Ripristina resists the aggression of sulphate salts and adheres perfectly to concrete surfaces, provided they are well prepared.

Physical characteristics

Package	**25 kg**
Consistency	**powder**
Consistency EN 1015-3	**150 mm**
Mixture water	**17 - 18%**
Fresh mortar specific weight	**2000 kg/m^3**

Life in the can EN ISO 9514	**80 min**
Aggregate maximum size	**≤ 0.6 mm**
Workability time	**< 20 min**
Temperature of use	**+5 °C/+35 °C**
Storage period	**12 months in unopened packages away from humidity**

Fields of application

Rapid reconstruction of structural concrete elements, its rapid drying facilitates use in restoration work where it is not possible to wait for the normal curing time of a common cement mortar.
Rasa & Ripristina is recommended for the restoration of concrete or reinforced concrete structural elements to be carried out in a short timeframe, such as:

- Deteriorated parts of a casting, such as castings and gravel nests.
- Structures subjected to severe mechanical stress.
- Retaining walls.
- Water works, reservoirs, dams and canals, etc.
- Road and rail tunnels.
- Structures degraded as a result of oxidation of reinforcement rods and related expulsion of concrete cover.
- Beams, pillars, floors.
- Cornices, balconies, pediments.

Substrate preparation

1. The substrate, through the removal of deteriorated and detaching concrete, must be homogeneous, resilient, rough and clean.
2. Completely remove the oxidised reinforcement by removing rust, varnish or paint with a wire brush or by sandblasting.
3. Consider further protection of the reinforcement bars with a specific passivating grout, Tradimalt Trattamento Ferro.
4. Before using Tradimalt Rasa & Ripristina, wait for Trattamento Ferro to dry and saturate the substrate with water, avoiding stagnation.

Product preparation

Mix Rasa & Restore with 17 - 18% clean water with a mixer at low speed until obtaining a homogeneous, lump-free paste. The mixture should be made in such quantities as to be laid in 12 to 15 minutes (setting start time of the product).
Rasa & Ripristina remains workable for about 15 min at +20 °C.

Application as structural mortar R3

Apply the product by trowel or spatula in several layers with a maximum thickness of 3 - 4 cm. The application should be carried out by filling all gaps as carefully as possible, taking care to avoid the formation of air pockets that could compromise durability over time. The mortar should not be projected but compacted against the substrate and/or reinforcement rods. The product can remain exposed or be protected by cement plaster and/or directly receive any type of interior or exterior finish.
Operate in such a way as to keep materials of equal mechanical performance and elastic modulus in contact.

Application as skim coat

Apply with a metal trowel with a thickness of 2-3 mm per coat. Spread the mortar in two coats, inserting if necessary an alkali-resistant glass fibre reinforcement mesh (130 - 140 g/m2) between the first and second coat.

Finish with the sponge trowel when the product is setting, moistening with water, if necessary, until a smooth, uniform surface is obtained without joints or overlaps.
The product can then be finished with any coloured paint or thick finish.

Advantages

Reinforcing polymer fibres

Rasa & Ripristina contains polyacrylonitrile (PAN) microfibres specifically inserted to prevent plastic shrinkage of the mortar. The high chemical and mechanical adhesion between the functional groups of the polymer and the cement matrix makes it possible to counteract the tensile stresses caused by shrinkage in the plastic phase, caused by the evaporation of part of the mixing water. The increased ability to counteract shrinkage, induced by the PAN fibres, results in a significant reduction in the formation of surface cracks, which usually occur within the first 24 hours of casting curing.
The introduction of the appropriate amount of fibres into the mortar, makes it possible to form a three-dimensional and homogeneously distributed fibrous structure, which counteracts the occurrence of bleeding and segregation phenomena that, if present, would impair the mechanical performance of the mortar.
In addition, the curing of the mortar is also positively influenced by the addition of the PAN fibres, which, due to their special chemical nature, are characterised by a considerable water retention capacity, which, especially under unfavourable environmental conditions, improves the curing process of the mortar and increases its mechanical properties.

Silica aggregates

Rasa & Ripristina consists of silica sand grains. The aggregate offers high hardness, low reactivity to acid attack and, above all, low water absorption. This quality results in a product that is easily workable even with small amounts of mixing water, offering less shrinkage and higher mechanical properties, which translates into greater durability of the work.

Redispersible polymer powders

Within its formulation, Rasa & Ripristina has polymers dispersed in powder form that are activated on contact with the mixing water, creating a composite material in which the polymeric phase confers numerous advantages to the mortar, in particular allowing it to increase flexural and tensile strength, reduce the elastic modulus and create an intimate bond between the cement mortar and the substrate, even if irregular, improving adhesion.
The presence of specific polymers ensures a better workability during the application and a stronger resistance to water and atmospheric agents in general.

Specification item

Restoration, protection and rapid levelling of deteriorated reinforced concrete with fibre-reinforced, non-shrinking, thixotropic cement mortar to be mixed with water only, such as Rasa & Ripristina by Tradimalt Spa, consisting of selected siliceous aggregates with a grading of 0.6 mm, hydraulic binder, synthetic polymers, polyacrylonitrile (PAN) fibres and specific additives.

Compressive strength at 28 days 37.5 MPa

Designation R3 according to 1504-3.

Coating Designation according to EN 1504-2, according to MC and IR principles, for concrete protection.

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TRADIMALT s.p.a.
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TIRRENA 98049 MESSINA - ITALY
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ML 010/18

Uni En 1504-3
Rasa & Ripristina

Product for the structural repair of concrete by means of PCC cement mortars

Compressive strength: Class R4
Chloride ion content 0.02%
Bonding: 2.4 MPa
Resistance to carbonation: Pass
Elastic modulus: 20.12 GPa
Thermal compatibility part 1: 2.5 MPa
Capillary absorption: 0.35 kg/(m^2 x $h^{0,5}$)
Hazardous substances: complies with section 5.4
Reaction to fire: Euroclass E

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Uni EN 1504-7
Rasa & Ripristina

Cementitious mortar for corrosion protection of concrete reinforcement in buildings and civil engineering works

Tensile adhesion: Pass
Protection against carbonation: Pass
Hazardous Substances: see SDS

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Uni EN 1504-2
Rasa & Ripristina

Surface protection product. Coating.

Permeability to CO_2: 62 m
Capillary absorption and water permeability at atmospheric pressure: 0.043 Kg (m^2 x $h^{0,5}$)
Permeability to water vapour: 44 m

FORTE E CHIARO

This is Tradimalt's way of communicating, in its information and technical-commercial material, the composition of each product and some of the product's key features. Therefore, the focus is on supply chain transparency, not required by any relevant regulation but which Tradimalt nevertheless intends to offer to its customers in order to emphasise the quality of the raw materials, and thus of the product, as well as the safety that the company intends to demonstrate with regard to formulations. The focus is therefore in the "transparency" that the company intends to manifest in the supply chain, which is not required by any current formulation law.

Raw materials contained in the product

Selected raw materials:

- Siliceous aggregates (0 to 0.6 mm) with high hardness and low water absorption;
- Cements, Portland cement 52.5 R type I from cement factories in Italy (>26%);
- Sulpho-aluminous cements, high sulphate resistance, low content of alkalis, which counteract the shrinkage of the mortar during the hydration phase and regulate the gripping time (>10%);
- Grip accelerators, which regulate the speed of reaction;
- Resin, co-polymers, based on vinyl acetate and ethylene, dispersed in powder that improves the adhesion and deformability of mortar (>3%);
- High elastic modulus structural reinforcement fibres, polyacrylonitrile (PAN), which prevent plastic shrinkage of the mortar.

The product can be recycled at the end of its life.

Warnings

- Do not apply on frozen or thawing substrates.
- Do not apply at high temperatures and on absorbent substrates.
- Always moisten the substrates the day before application.
- Protect the mortar from rapid drying and moisten for a few days after application.
- Do not apply on uneven substrates unless properly prepared (mesh).
- Do not apply on painted substrates.
- Do not apply on gypsum substrates.
- Do not apply on loose or crumbling substrates.
- Operating temperature between +5 °C and +35 °C.
- Store the product in its unopened packaging and protected from moisture for up to 12 months.