

# RP 4200

## fiber-reinforced cementitious mortar for non-structural repairs of concrete & masonry

(for layers up to 5 cm thick)

class R2

- Class PCC R2 repair mortar according to EN 1504-3
- General purpose (GP) mortar, class CS IV, W2 according to EN 998-1
- High thixotropy -  
Application thickness up to 5 cm
- Excellent adhesion to concrete and building stones
- Controlled shrinkage -  
Very good dimensional stability



## RP 4200

### fiber-reinforced cementitious mortar for non-structural repairs of concrete & masonry

#### DESCRIPTION

Polymer-modified, cement-based, fiber-reinforced mortar, containing silica fume, suitable for non-structural repairs of concrete structures, as well as for repair, rendering and pointing of masonry.

It exhibits mechanical properties and modulus of elasticity compatible to low-strength concrete and masonry, very good dimensional stability and strong adhesion to conventional substrates (concrete, brick, stone, etc.).

Due to its high thixotropic properties, it can be applied in thicknesses up to 5 cm in a single layer without sagging, providing an excellent finish to the final surface. Classified as class PCC R2 cementitious mortar for non-structural repairs of concrete structures according to European standard EN 1504-3, as well as general purpose (GP) cementitious rendering mortar, class CS IV, W2 according to EN 998-1.

#### APPLICATIONS

RP 4200 is suitable for non-structural repairs of low-quality concrete elements due to its similar low modulus of elasticity, as well as for repair, rendering and pointing of masonry.

It can be applied by hand, with a trowel or a suitable spraying machine, on both horizontal and vertical surfaces.

Indicative applications:

- Restoring of concrete surfaces in non-structural applications.
- Overall strengthening of load-bearing masonry.
- Restoring of disintegrated masonry by filling cracks and reconnecting the masonry to the load-bearing structure.
- Construction and pointing of masonry.
- Filling of honeycombs and repair of defects in non-structural applications.
- Forming of coves (fillets) prior to waterproofing applications.
- Increasing the concrete cover of reinforced concrete elements.

#### PROPERTIES / ADVANTAGES

- Low modulus of elasticity, compatible with low-strength concrete and masonry.
- Very good mechanical properties in compression, flexure and tension.
- Ideal for the repair of low-quality concrete structures and masonry.
- Very good adhesion to concrete and common building materials, such as brick, stone, etc.
- Thick layers (up to 5 cm) can be achieved without sagging.
- Excellent workability and finishing.
- Very good dimensional stability.

#### HARMONIZED STANDARDS / REGULATIONS

- **EN 1504-3:2004:** Polymer-modified cementitious mortar (PCC), based on hydraulic cement, for non-structural repair of concrete elements, class R2. Fully meets the requirements of the standard.
- **EN 1504-9:2008:** Products and systems for the protection and repair of concrete structures - General principles for the use of products and systems. Meets the requirements of the standard according to Principle 3 (CR - Concrete Restoration) & 7 (RP - Preserving/Restoring Passivity).
- **EN 998-1:2016:** General purpose (GP) rendering mortar for internal and external renders, class CS IV, W2. Fully meets the requirements of the standard.
- **Regulation (EC) No. 305/2011:**
  - CE marked according to EN 1504-3 with Declaration of Performance (DoP): RP4200/CPR-7-13/071/2020.
  - CE marked according to EN 998-1 with Declaration of Performance (DoP): RP4200/CPR-7-13/072/2020.

## APPLICATION INSTRUCTIONS

- Deteriorated or loose concrete must be removed until the substrate is solid, strong and rough. In general, the substrate must be clean and free of cement and paint residues, dust, grease, etc. Surfaces should be cleaned by high-pressure water jetting, sand-blasting or light percussive tools.
- Where reinforcing steel is present, it must be cleaned uniformly around its entire perimeter until free of rust, to Sa 2½ (ISO 8501-1).
- Before application, the substrate must be soaked with water until saturated. Allow excess surface water to evaporate or remove it using compressed air.
- The content of the bag (25 kg) is gradually added into 3.75-4.00 kg of clean water under continuous stirring for at least 3 minutes, until a homogenous mixture is formed having the desired consistency. It is recommended to use a low speed electric mixer (300 rpm). Avoid manual mixing as it requires greater quantities of water which are detrimental to some characteristics of the product, such as mechanical strength and shrinkage.
- **RP 4200** is applied with a trowel or a suitable spraying machine in layers up to 5 cm thick. First create a scratch coat by pressing the repair mortar on the substrate to form a thin layer and fill pores or pits in the surface. Ensure the entire surface to be repaired is covered by the scratch coat. The repair mortar is then applied by firmly pressing and compacting its layer.
- When applying in multiple layers, the surface of each layer must be roughened in order to achieve the best

possible adhesion. Each layer must be applied before the previous one has completely set, about 2-3 hours (+23°C) after its application.

- When used as a rendering mortar on masonry or concrete, **RP 4200** should be applied in combination with a 110 g/m<sup>2</sup> fiberglass mesh embedded in the middle of the layer thickness.
- The finished surface must be protected immediately after the repair from weather conditions and kept moist for 48 hours.

## CLEANING OF EQUIPMENT

Clean all tools and application equipment with water immediately after use. Hardened material can only be mechanically removed.

## RECOMMENDATIONS

- Temperature during application should be between +5°C and +35°C.
- Do not add cement, aggregates or other additives.
- Do not mix the product with dirty or salty water.
- Do not add water beyond the recommended dosage.
- Avoid application under direct sunlight or in strong winds.
- Postpone application if high temperatures or frost are expected during the first 24 hours after application.
- Do not add water when the mixture begins to set.
- During the curing period protect the fresh surface from rapid water evaporation, rainfall and frost.

| TECHNICAL CHARACTERISTICS                                       |                |                                                  |
|-----------------------------------------------------------------|----------------|--------------------------------------------------|
| PRODUCT CHARACTERISTICS                                         |                |                                                  |
| Appearance                                                      |                | cementitious powder                              |
| Colour                                                          |                | grey                                             |
| Bulk density                                                    |                | 1.40 ±0.05 kg/lt                                 |
| Chloride ion content (EN 1015-17)                               |                | < 0,05%                                          |
| Maximum aggregate size                                          |                | 2.4 mm                                           |
| APPLICATION CHARACTERISTICS (+23°C / 50% R.H.)                  |                |                                                  |
| Mixing ratio                                                    |                | 15-16% b.w. (3,75-4,00 kg water / 25 kg bag)     |
| pH                                                              |                | > 11                                             |
| Density                                                         |                | 1.95 ±0.05 kg/lt                                 |
| Pot life                                                        |                | 60 minutes (22°C)                                |
| Application temperature                                         |                | minimum: +5°C / maximum: +35°C                   |
| Application thickness per layer                                 |                | 5-50 mm                                          |
| Consumption                                                     |                | approximately 16-18 kg/m² for a 1 cm thick layer |
| PERFORMANCE CHARACTERISTICS                                     |                |                                                  |
| according to EN 1504-3: 2004                                    |                |                                                  |
| Capillary absorption (EN 13057)                                 |                | ≤ 0.50 kg·m <sup>-2</sup> ·h <sup>-0,5</sup>     |
| Compressive strength<br>(EN 12190)                              | after 24 hours | ≥ 5.0 N/mm²                                      |
|                                                                 | after 7 days   | ≥ 19.0 N/mm²                                     |
|                                                                 | after 28 days  | ≥ 25.0 N/mm²                                     |
| Flexural strength<br>(EN 196-1)                                 | after 24 hours | ≥ 2.0 N/mm²                                      |
|                                                                 | after 7 days   | ≥ 4.5 N/mm²                                      |
|                                                                 | after 28 days  | ≥ 7.5 N/mm²                                      |
| Adhesive bond (EN 1542, MC 0,40)                                |                | ≥ 2.0 N/mm²                                      |
| Restrained shrinkage/expansion (EN 12617-4, MC 0,40)            |                | ≥ 2.0 N/mm²                                      |
| Thermal compatibility Part 1, Freeze-Thaw (EN 13687-1, MC 0,40) |                | ≥ 2.0 N/mm²                                      |
| according to EN 998-1: 2016                                     |                |                                                  |
| Compressive strength (EN 1015-11)                               |                | ≥ 6.0 N/mm² (Class CS IV)                        |
| Adhesion (EN 1015-12)                                           |                | ≥ 2.0 N/mm² - FP: B                              |
| Capillary water absorption (EN 1015-18)                         |                | c ≤ 0.20 kg/m²·min <sup>0,5</sup>                |
| Water vapour permeability coefficient (EN 1015-19)              |                | μ 15/35                                          |
| Thermal conductivity, λ <sub>10,dry</sub> (EN 1745)             |                | 0.82 W/mK (table A12 for P=50%)                  |
| Reaction to fire                                                |                | Class A1                                         |

**Note:** Measurements were conducted in a laboratory environment. The varying conditions present on-site (temperature, humidity, ventilation, substrate absorptency) may affect the material's properties.

## SAFETY PRECAUTIONS

- The product contains cement which has an alkaline reaction with water and is classified as irritant.
- Always wear appropriate personal protective equipment for eyes and skin (protective clothing, gloves and goggles).
- If skin contact occurs, rinse well with plenty of clean water.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Refer to the product's Safety Data Sheet for further information on safe handling and precautions.
- **PRODUCT FOR PROFESSIONAL USE ONLY.**

## PACKAGING - STORAGE

Available in:

- 25 kg paper bags.

**Storage:** 12 months from production date, if stored in original, sealed packaging, protected from direct sunlight and moisture.

## LEGAL NOTICE

The technical characteristics and recommendations for the use and application of the **FINOMIX** range of products are based on the knowledge and experience of the company. The above information shall be considered merely indicative and subject to confirmation after long-term practical application. For this reason, anyone who intends to use the product must

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