

MasterEmaco N5200

Universal, fast setting, polymer modified, fibre reinforced, repair and levelling mortar

DESCRIPTION

MasterEmaco N5200 is a universal, single component, polymer modified, fast setting, repair, reprofiling and levelling mortar that meets the requirements of the new European Norm EN 1504 part 3 class R2.

MasterEmaco N5200 is a ready-to-use material that contains special cements, well graded sands, hydraulic binders, carefully selected polymers and fibres (polyacrylonitril) to reduce shrinkage and improve physical and application properties. Applied nanotechnology has been used to significantly reduce shrinkage.

When mixed with water, it forms a highly thixotropic mortar that can easily be hand or trowel applied in thicknesses from 3 up to 100 mm in one layer.

FIELD OF APPLICATION

MasterEmaco N5200 can be applied inside and outside, on horizontal, vertical and overhead surfaces, in dry and wet environments.

MasterEmaco N5200 is used for the non-structural repair of concrete elements such as:

- Balconies edges
- Building facades
- Parapet walls
- Precast panels
- Beam edges
- Stair nosings

FEATURES AND BENEFITS

- Formulated with new nanotechnology to minimise shrinkage and crack tendency.
- Superb application properties and feel on the trowel.
- Smooth, creamy but non-slump mortar.
- Excellent high build capacity - can be applied 80 - 100 mm in horizontal or vertical applications in one layer, or even 70 – 80 mm overhead.
- Easy to create profiles and corners without formwork.
- Can be used as fairing coat and patch repair mortar in one.
- It can be over coated in only 4 hours.
- Good strength development exceeding requirement of EN1504 part 3 class R2

- Low modulus of elasticity.
- Low chromate (Cr[VI] < 2 ppm).
- Chloride-free.
- Self-curing and does not need prolonged water or high humidity curing, nor should it be covered with plastic sheets for more than 24 hours.

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|  0086 | |
| Master Builders Solutions UK Ltd 11 0086-CPD-30609099 | |
| EN 1504-3 Concrete repair product for non-structural repair PCC mortar (based on hydraulic cement, polymer modified) EN 1504-3 Principles 3.1 / 3.2 / 3.3 / 4.4 / 7.1 / 7.2 | |
| Compressive strength | class R2 |
| Chloride ion content | ≤ 0,05 % |
| Adhesive bond | ≥ 0,8 MPa |
| Thermal compatibility | |
| - Freeze-Thaw | ≥ 0,8 MPa |
| - Thunder Shower | ≥ 0,8 MPa |
| - Dry cycling | ≥ 0,8 MPa |
| Capillary absorption | ≤ 0,5 kg/m ² ·x h ^{0,5} |
| Reaction to fire | A1 |
| Dangerous substances | complies with 5.4 |

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APPLICATION METHOD

(a) Surface Preparation

Hardness and durability of concrete are increasingly important parameters for the preparation of the support. This is particularly valid for repair and/or protection of concrete formulated according to the most recent concrete technology. It is therefore recommended to determine a diagnosis in advance, in order to adapt choices and the way how to prepare the support to these parameters. Consult your Master Builders Solutions representative for additional information.

Concrete must be fully cured, clean and sound to ensure good adhesion. All loose traces of concrete or mortar, dust, grease oil, etc. must be removed.

Damaged or contaminated concrete should be removed to obtain a keyed surface. Non-impact/vibrating cleaning methods, e.g. shot blasting, sandblasting or high water pressure blasting are recommended. Aggregate should be clearly visible on the surface of the concrete structure after surface preparation.

Cut the edges of the repair vertically to a minimum depth of 3mm.

If reinforcing steel is visible, clean to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 12944-4. Ensure back of rebar is also clean. Only in case of chloride contamination of the concrete or when depth of cover is less than 5 mm, should the reinforcement be protected by using MasterEmaco P5000 AP (see technical data sheet).

The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying MasterEmaco N5200. The surface must be mat-damp, but without standing water.

For improved build thicknesses or when working on large areas, apply bond or contact layer of the MasterEmaco N5200 mortar.

Alternatively, MasterEmaco P5000 AP can also be applied as the bonding slurry.

Apply MasterEmaco N5200 wet on wet on the bonding layer.

(b) Mixing

Open the bags MasterEmaco N5200 a short time before the mixing is started. Damaged or opened sacks should not be used.

Pour the minimum amount of mixing water into a clean vessel.

Mixing water needed: 3.5 to 4.0 litres per 20kg bag depending upon consistency required. Add the MasterEmaco N5200 powder rapidly and continuously and mix MasterEmaco N5200 with a suitable paddle attached to a powerful, slow speed electric drill (max. 400 rpm) for 3 minutes until a lump-free, plastic consistency is achieved. Only use clean uncontaminated water.

Allow the mortar to rest for 2 - 3 minutes and then remix briefly, adjusting the consistency when required.

In exceptional conditions (hot climate, etc.) only remix the mortar when early stiffening occurs.

Note: Do not retemper the mortar by adding extra water. Add water if necessary but never exceed the maximum water demand!

(c) Application

The surface must be mat-damp, but without standing water. For optimum curing of the product the temperatures during application of MasterEmaco N5200 are between +5°C and +30°C.

MasterEmaco N5200 can be hand or trowel applied to the desired layer thickness of 3 to max 100mm.

Apply the mixed MasterEmaco N5200 directly to the prepared damp substrate, or wet on wet onto the primed surface.

A thin scrape coat or contact layer before building up to the required thickness, wet on wet, will improve the wet adhesion and cohesion of the mortar.

Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen, typically after approximately 45 - 60 minutes at 20°C.

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In these environmental conditions, MasterEmaco N5200 can be over-coated, after approximately 4 hours.

Consult your Master Builders Solutions specialist for more information. At lower temperatures and/or higher humidity these times will be extended.

COVERAGE

Approximately 80 bags are required to produce 1m³ of fresh mortar. 20kg bag will yield approximately 12.5 litres of mortar, when mixed with 3.7 litres water/bag.

FINISHING AND CLEANING

Tools and mixer must be cleaned immediately after use with water. Cured material can only be removed mechanically.

CURING

Full cure is reached in 28 days after the application at a constant temperature of 23°C.

WORKING TIME

30 – 45 minutes in 20°C ambient and substrate temperature.

PACKAGING

MasterEmaco N5200 is available in 20kg paper bags.

STORAGE

Store at ambient temperatures, out of direct sunlight, in cool, dry warehouse conditions and clear of the ground on pallets protected from rainfall prior to application.

SHELF LIFE

12 months if stored at above mentioned storage conditions.

WATCH POINTS

- Do not apply MasterEmaco N5200 at temperatures below +5°C nor above +30°C.
- Do not add cement, sand or other substances that could affect the properties of MasterEmaco N5200.
- Never add water or fresh mortar to a mortar mix which has already begun to set.

- Keep the mixing water ratio between the recommended limits.
- Protect the freshly applied material against rainfall for minimum 24 hours.
- In dry, hot and windy conditions use e.g. MasterKure curing compounds for optimum curing.

HANDLING AND TRANSPORT

Usual preventive measures for the handling of chemical products should be observed when using this product, for example do not eat, smoke or drink while working and wash hands when taking a break or when the job is completed.

Specific safety information referring the handling and transport of this product can be found in the Material Safety Data Sheet. For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

Disposal of product and its container should be carried out according to the local legislation in force. Responsibility for this lies with the final owner of the product.

CONTACT DETAILS

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| Product Data | | | |
|---|--------------------|---------------------|---------------------------------------|
| Property | Standard | Data | Unit |
| Chemical Base | - | Cement | - |
| Colour | - | Grey | - |
| Grain Size maximum | - | 1.0 | mm |
| Chloride Ion Content | EN 1015-17 | ≤ 0.03 | % |
| Layer Thickness minimum maximum | - | 3 100 | mm |
| Fresh Mortar Density | - | Approx. 1.9 | g/cm ³ |
| Mixing Water for 20 kg Bag | - | ca. 3.5 – 4.0 | l |
| Working Time ¹ | - | 30 – 45 | Minute |
| Setting Time ¹ initial final | - | 45 – 75 60 – 120 | Minute |
| Application Temperature (ambient and substrate) | - | +5 - +30 | Celcius |
| Compressive Strength 1 day 28 days | EN 12190 | ≥ 10 ≥ 30 | N/mm ² |
| Adhesion to Concrete 28 days | EN 1542 | ≥ 1.8 | N/mm ² |
| Adhesion to Concrete 28 days after Freeze-Thaw (50 cycles with salt) | EN 13687-1 | ≥ 1.7 | N/mm ² |
| Adhesion to Concrete 28 days after Thunder-Shower (50 cycles) | EN 13687-2 | ≥ 1.9 | N/mm ² |
| Adhesion to Concrete 28 days after Dry Cycling (50 cycles) | EN 13687-4 | ≥ 1.9 | N/mm ² |
| Capillary Absorption 28 days | EN 13057 | ≤ 0.5 | kg.m ⁻² .h ^{-0.5} |
| Cracking Tendency (I) | Coutinho Ring | No Cracking | Up to 180 days |
| Cracking Tendency (II) | DIN type V-channel | No Cracking | Up to 180 days |
| Water Quality | BS 6920 | - | Compliant |

Note: ¹ Hardening times are measured at 21°C ± 2°C and 60% ± 10% relative humidity. Higher temperatures will reduce these times and lower temperatures will extend them. Technical data shown are statistical results and do not correspond to guaranteed minima. Tolerances are those described in appropriate performance standards.

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Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Solvent Based Products

Use in well ventilated areas; avoid inhaling. Suitable respiratory equipment may be needed, eg when spraying. Can cause skin, eye irritation. Wear protective eye shields and gloves during use. Do not smoke or allow sparks or naked lights when stored or in use.

Resin Products

Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

Spillage

Chemical products can cause damage; clean spillage immediately.

DISCLAIMER

"Master Builders Solutions UK Ltd " (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.