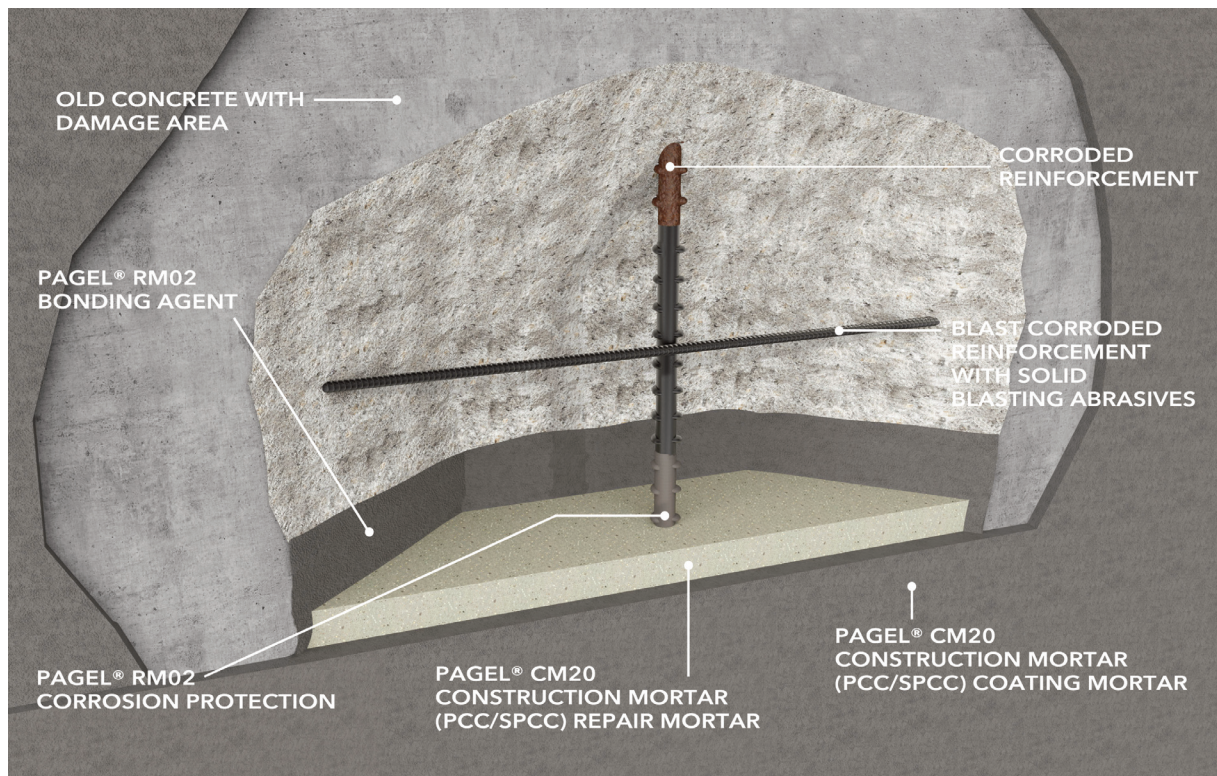


CONSTRUCTION MORTAR

CM20 (PCC/SPCC, RM/SRM) CONSTRUCTION MORTAR

TEST CERTIFICATES AND SUPPORTING DOCUMENTS

- › PCC and SPCC concrete replacement system in accordance with ZTV-ING Part 3, Section 4, DAfStb directive SIB M3, DAfStb directive IH (RM and SRM) and DIN EN 1504-3 for statically relevant applications
- › Verifications of applicability: general building inspection test certificate (abP)
- › Non-combustible - Verification with a test for the classification according to building material class A1 according to DIN EN 13501-1
- › High resistance against a penetration of chlorides - Verification with a test of the chloride migration coefficient according to BAW leaflet (MDCC)
- › High carbonation resistance - Verification with a test of the carbonation rate according to BAW leaflet (MDCC)
- › High frost and frost-deicing salt resistance - Verification by CIF and CDF procedure
- › Verification of the durability in the event of a water change stress acc. to BAW recommendation
- › Confirmation of the voluntary external monitoring by the QDB
- › Factory production control acc. to DIN EN 1504-3
- › Company certification acc. to DIN EN ISO 9001:2015



PROPERTIES

- › Ready to use repair mortar, only requires mixing with water
- › Reduces the ingress of CO₂ and moist (inhibiting carbonisation), largely oil and water impermeable, at the same time equipped with a high alkaline reserve, active protection against corrosion of the reinforcement
- › Soft-plastic processing consistency in the dense phase wet spraying application method with a very good stability on vertical and overhead surfaces in spraying and manual application
- › Open to water vapour diffusion and highly frost and frost-deicing salt resistant

SYSTEM COMPONENTS

| | |
|-------------|--|
| RM02 | Corrosion protection and bonding layer |
| CM20 | Construction mortar |
| MS05 | PCC-Screed |

AREAS OF APPLICATION

- › Repair of concrete, prestressed concrete and reinforced concrete structures with constructional calculation of the mortar
- › Repair of chloride-damaged supports for restoring the load-bearing capacity of car parks and underground garages
- › Increase of the reinforcement cover to improve the fire resistance
- › Repair of concrete in the sea and inland waterways department of the BAW (Federal Waterways Engineering and Research Institute) ZTV-W LB 219

MOISTURE CLASSES BASED ON CONCRETE CORROSION FROM ALKALI-SILICIC ACID REACTIONS

| Moisture class | WO | WF | WA | WS |
|----------------|----|----|----|----|
| CM20 | • | • | • | • |

The aggregates in PAGEL®'s products comply with the requirements of alkali sensitivity class E1 from non-hazardous sources specified under DIN EN 12620.

EXPOSURE CLASS ALLOCATION ACC. TO: DIN EN 206-1 / DIN 1045-2 / ZTV-W LB 219 / ZTV-ING PART 3

| | XO | XC | XD | XS | XF | XA* | XM | XW | XALL | XDYN | XSTAT | XBW |
|-------------|----|---------|-------|-------|---------|-------|-------|-----|------|------|-------|-----|
| | | 1 2 3 4 | 1 2 3 | 1 2 3 | 1 2 3 4 | 1 2 3 | 1 2 3 | 1 2 | | | | 1 2 |
| CM20 | • | • • • • | • • • | • • • | • • • • | • • | • • | • • | • | • | • | • • |

* Having sulfate attack up to 600 mg/l

TECHNICAL DATA

| TYPE | | | CM20 (PCC, RM) | CM20 (SPCC, SRM) |
|---------------------------------------|---------|--------------------------|----------------|------------------|
| Grain size | | mm | 0-2 | 0-2 |
| Amount of water | max. | % | 12 | 12 |
| Processing time | + 20 °C | min | ≥ 45 | ≥ 45 |
| Consumption approx. | | kg/(m ² · mm) | 1.85 | 1.85 |
| Fresh mortar raw density approx. | | kg/m ³ | 2,200 | 2,200 |
| Layer thickness (in total, 2 layers) | | mm | 10-60** | 10-60** |
| Compressive strength* | 1 d | N/mm ² | ≥ 30 | n. b. |
| | 7 d | N/mm ² | ≥ 40 | ≥ 45 |
| | 28 d | N/mm ² | ≥ 50 | ≥ 55 |
| Bending tensile strength* | 1 d | N/mm ² | ≥ 4 | n. d. |
| | 7 d | N/mm ² | ≥ 5 | ≥ 5 |
| | 28 d | N/mm ² | ≥ 8 | ≥ 8 |
| Adhesive pull strength | 7 d | N/mm ² | ≥ 2 | ≥ 2 |
| E-Module | 28 d | N/mm ² | ≥ 30,000 | ≥ 35,000 |
| Classification according to EN 1504-3 | | | R4 | R4 |

* Testing of bending tensile and compressive strength in accordance with DIN EN 196-1: DAfStb directive IH storage B

** permissible overall layer thickness acc. to ZTV-ING 50 mm
n. d.: not determined

Note: All fresh and solid mortars were tested at 20 °C ± 2 °C. Higher or lower temperatures result in deviating properties of fresh respectively solid mortars and test results. Depending on the temperature, the consistency can be adapted with a slight reduction of the mixing water.

Storage: 12 months. Cool, dry, free from frost. Unopened in its original container.
Delivery form: 25-kg bag, Euro palette 1,000 kg
Hazard class: Non-hazardous material, observe information on packaging.
GISCODE: ZP1

PAGEL® PRODUCT COMPOSITION:

Cement: acc. to DIN EN 197-1
Aggregate: acc. to DIN EN 12620
Additions: acc. to DIN EN 450, general building inspection approval (abZ),
DIN EN 13263 (fly ash, microsilica, etc.)

APPLICATION

SUBSTRATE PREPARATION:

Remove loose and unsound material such as cement slurry and dirt etc. using suitable methods, e.g. shot-blasting or similar until the underlying solid grain structure has been exposed.

A sufficient average tear strength (1.5 N/mm², KEW 1.0 N/mm²) must be ensured.

Prewetting:

Prewet the concrete substrate to capillary saturation for approx. 6-24 hours.

Reinforced concrete:

The grade of surface preparation of reinforcement as well as other metallic parts is based on the requirements of the current applicable regulations and must be ensured before the application.

CORROSION PROTECTION:

Apply two complete coats of **RM02** PAGEL® CORROSION PROTECTION AND BONDING AGENT using a brush.

MIXING:

The dry mortar is supplied ready to use and only needs to be mixed with water. Fill the specified amount of water apart from a residual amount into a clean and suitable mixing device (e.g. compulsory mixer). Add the dry mortar and mix for at least 3 minutes. Add the remaining water and mix for at least another 2 minutes until it forms a homogeneous mass.

APPLICATION:

MANUAL APPLICATION:

BONDING AGENT: Use a brush or broom and brush **RM02** onto the prewetted, slightly moist concrete substrate until it has penetrated right down into the pores and without leaving any gaps. The subsequent mortar coating must be applied wet-on-wet. Apply **CM20** PCC compressively to the bonding layer before it starts setting using conventional tools, distribute and smoothen.

SPRAYING APPLICATION:

CM20 SPCC in the MAWO-PAGEL® WET SPRAYING APPLICATION:

The spraying of the mortar can be carried out with conventional screw feed pumps with a variable speed drive suitable for this application. Hold the nozzle preferably at a right angle with a distance of approx. 50 cm to the area to be coated. The first layer of spray mortar is sprayed on with a high compressed air flow to support the bonding layer. The application of the additional spray layers is carried out with a conveying speed correspondingly adapted to the position of the respective structural component and adapted compressed air support. The post processing and the smoothing of the surfaces can be carried out immediately after the completion of the spray works.

Air compressor: 5 m³/min, 5 bar

Temperature range: + 5 °C to + 35 °C

Mixing water: Drinking water quality

FOLLOW-UP TREATMENT

Fresh mortar areas must be protected from premature water evaporation (from wind, draughts, direct exposure to sun, etc.) immediately on completion of the work for a period of 3-5 days.

Suitable curing methods:

Water spray, cover foil with jute sheets, thermofoils or moisture-retaining covering sheets.