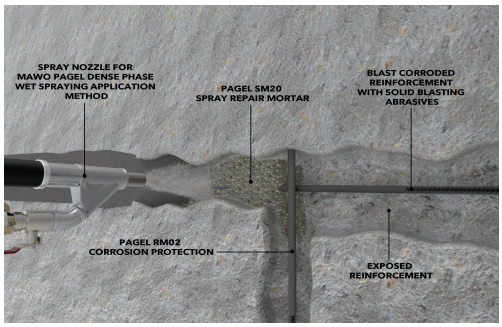
# SPRAY MORTAR (SPCC/M2)

## SM20 SPRAY MORTAR (SPCC) (0-2.0 mm)

## TEST CERTIFICATES AND SUPPORTING DOCUMENTS

› SPCC concrete replacement system acc. to ZTV-ING Part 3, Section 4, DAfStb directive SIB M2, DAfStb directive IH and DIN EN 1504-3 for statically irrelevant 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
› 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 ingressing of $CO_2$ and moisture (inhibiting carbonisation), largely oil and water impermeable, at the same time equipped with a high alkaline reserve, active protection against corrosion of the reinforcement and resistant to saponification
› Soft-plastic processing consistency in the dense phase wet spraying application method with a very good stability on vertical and overhead surfaces
› Is supplied as a system and consists of the following system components:

**RM02 CORROSION PROTECTION AND BONDING AGENT**
**SM20 SPRAY MORTAR (SPCC) (0-2.0 mm)**
**MS05 PCC SCREED (0-0.5 mm)**

## AREAS OF APPLICATION

› Repair of reinforced concrete, concrete and prestressed concrete structures in the MAWO PAGEL DENSE PHASE WET SPRAYING APPLICATION METHOD for bridges and civil engineering structures
› Repair of chloride-damaged supports of car parks and underground garages in the MAWO PAGEL DENSE PHASE WET SPRAYING APPLICATION METHOD
› Increase of the reinforcement cover to improve the fire resistance (building material class A1, non-combustible)

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

| Moisture class | WO | WF | WA | WS |
|---|---|---|---|---|
| **SM20** | • | • | • | • |

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**

| | XO | XC | XD | XS | XF | XA |
|---|---|---|---|---|---|---|
| | | 1 2 3 4 | 1 2 3 | 1 2 3 | 1 2 3 4 | 1 2 3* |
| **SM20** | • | • • • • | • • • | • • • | • • • | • • |

* Having sulfate attack up to 600 mg/l
With protective measures according to DIN 1045-2

## TECHNICAL DATA

| TYPE | | | SM20 SPCC/M2 |
|---|---|---|---|
| Grain size | | mm | 0–2 |
| Amount of water | max. | % | 12 |
| Processing time approx. + 20 °C | | min | 45 |
| Consumption approx. | | kg/(m² · mm) | 1.85 |
| Layer thickness (in total, 2 layers) | | mm | 10-60** |
| Fresh mortar raw density approx. | | kg/m³ | 2,200 |
| Compressive strength* | 7 d | N/mm² | ≥ 40 |
| | 28 d | N/mm² | ≥ 50 |
| Adhesive pull strength | 7 d | N/mm² | ≥ 2 |

* Testing of compressive strength in accordance with DIN EN 196-1; DAfStb directive IH storage B

** permissible overall layer thickness acc. to ZTV-ING 50 mm

**Note:** All fresh and solid mortars are 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 pallet 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.)
Admixtures: acc. to DIN EN 934-2

## 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.

**Reinforcing steel:**
Blast all rust off exposed reinforcement bars until the underlying metal has been exposed acc. to purity grade SA 2 ½ in accordance with DIN EN ISO 12944-4.

**CORROSION PROTECTION:**
Apply two coats of **RM02** CORROSION PROTECTION AND BONDING AGENT in accordance with the technical data sheet to the derusted reinforcing steel using a brush without leaving any gaps.

**BONDING LAYER:**
No additional bonding layer is required for the application in the MAWO PAGEL DENSE PHASE WET SPRAYING APPLICATION METHOD.

**MIXING:**
The dry mortar is ready to use and has only to be premixed with water for the dense phase wet spraying application method.
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 and fill into the feed pump.

**APPLICATION:**
**SM20** SPRAY MORTAR in the MAWO PAGEL DENSE PHASE WET SPRAYING APPLICATION METHOD:
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 follow-up treatment 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.

The information provided in this leaflet, application instructions and other recommendations are based on extensive research and experience. They are, however, not binding, in particular with regard to third party proprietary rights, and do not relieve the customer of his responsibility to verify that the products and processes are suitable for the intended application. The indicated test data are mean values and average analyses. Deviations are possible when delivery takes place. Recommendations that differ from those provided in this leaflet require written confirmation. Planners and operators are responsible for ensuring that this leaflet is the latest edition and for obtaining information on the latest technological developments. Our customer service staff will be happy to answer your questions at any time. Many thanks for your interest in our products. This technical data sheet supersedes all previously issued product information. Please visit our website for the latest valid version of this brochure at www.pagel.com.

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