

# WHG/LAU PLANT MORTAR

## FD20 WHG/LAU MORTAR

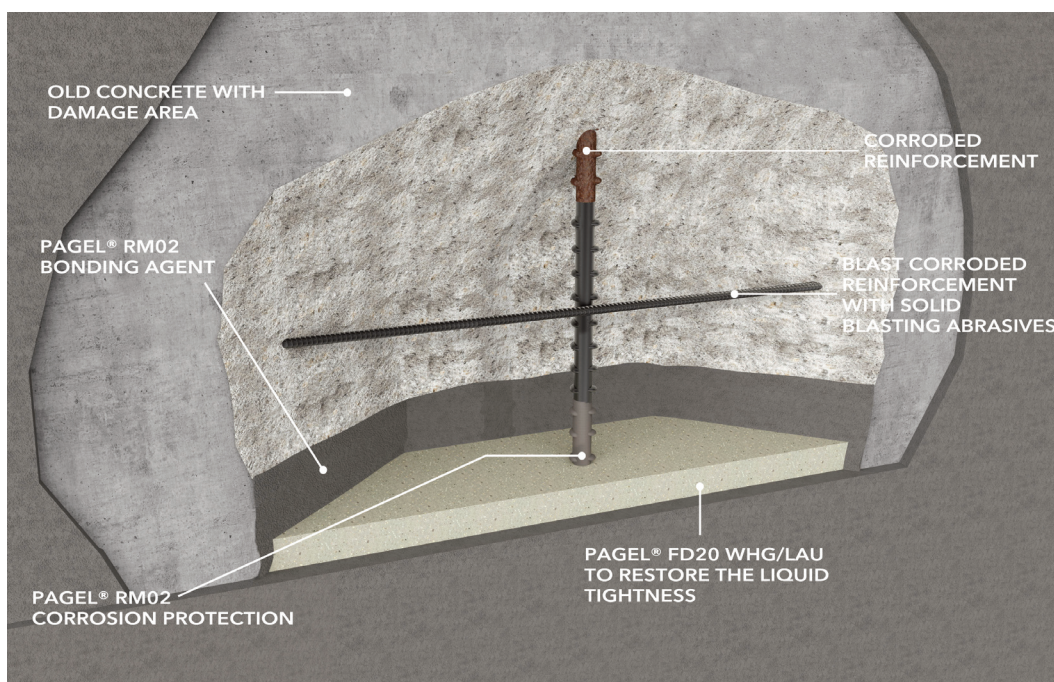
### TEST CERTIFICATES AND SUPPORTING DOCUMENTS

- › PCC Concrete replacement system acc. to
  - ZTV-ING Part 3, Section 4
  - DAfStb-Guideline protection and repair of concrete components (RL SIB)
  - DIN EN 1504-3 „for statically and non statically relevant applications“
- › General building authority approval of the DIBt for restoring the liquid tightness of concrete structures in LAU facilities (approval number Z-74.11-171)
- › High frost and frost-deicing salt resistance - Verification by CIF and CDF procedure
- › High mechanical resistance - groups II and III in accordance with DIN EN 13813, Table 1
- › Building material class A1 (Non-combustible) - Verification with a test for the classification according to DIN EN 13501-1
- › Factory production control acc. to DIN EN 1504-3 and DIN EN 13813
- › Externally monitored by the QDB (Qualitätsgemeinschaft Deutsche Bauchemie)
- › Company certification acc. to DIN EN ISO 9001:2015

Using PAGEL<sup>®</sup> WHG-LAU mortar to restore the liquid tightness of concrete structures in LAU facilities, the requirements and specifications of the general building authority approval Z-74.11-171 must be observed.

### APPLICATION EXAMPLE

Restoration of the liquid impermeability of a concrete sealing structure in a LAU plant with **FD20** LAU/WHG-Mortar



## PROPERTIES

- › Ready-to-use repair mortar for LAU plants
- › Only requires mixing with water
- › Processable by manual application
- › Soft plastic processing consistency with very good stability on vertical and horizontal surfaces, even overhead
- › Hoher Carbonatisierungswiderstand - reduces the ingressing of CO<sub>2</sub> and moist
- › High frost and frost-deicing salt resistance
- › Open to water vapour diffusion
- › Largely oil and water impermeable

## SYSTEM COMPONENTS

- RM02** Corrosion protection and bonding agent
- FD20** WHG/LAU-Mortar

## AREAS OF APPLICATION

- › Repair of plants and building components in structural and non-structural engineering for storage, filling and handling (LAU plants) of substances up to a stress group "medium"
- › Restoration of liquid impermeability in LAU plants of concrete sealing constructions for undisturbed liquidsdamaging concrete and polluting water for up to 144 hours
- › PCC Mortar system for the protection against water polluting liquids for certain installation thicknesses for indoor and outdoor use
- › Suitable for areas subject to vehicle traffic from vehicles with pneumatic and Vulkollan tyres

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

Moisture class	WO	WF	WA	WS
<b>FD20</b> (PCC/M3)	•	•	•	•

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*	XM
		1 2 3 4	1 2 3	1 2 3	1 2 3 4	1 2 3**	1 2 3
<b>FD20</b>	•	•••••	•••••	•••••	•••••	•••	••

\* Having sulfate attack up to 600 mg/l

\*\* Proof of sulphate resistance in accordance with DIN 19573, Appendix C

## TECHNICAL DATA

TYPE			FD20
Grain size		mm	0-2
Amount of water	max.	%	12
Processing time	+ 20 °C	min	≥ 45
Consumption approx.		kg/(m <sup>2</sup> · mm)	1.85
Fresh mortar raw density approx.		kg/m <sup>3</sup>	2,200
Layer thickness (in total, 2 layers)		mm	15-50**
Compressive strength*	1 d	N/mm <sup>2</sup>	≥ 30
	7 d	N/mm <sup>2</sup>	≥ 40
	28 d	N/mm <sup>2</sup>	≥ 50
Bending tensile strength*	1 d	N/mm <sup>2</sup>	≥ 4
	7 d	N/mm <sup>2</sup>	≥ 5
	28 d	N/mm <sup>2</sup>	≥ 8
Adhesive pull strength	7 d	N/mm <sup>2</sup>	≥ 2
E-Module	28 d	N/mm <sup>2</sup>	≥ 30,000
Classification according to EN 1504-3			R4

\* Testing of bending tensile and compressive strength in accordance with DIN EN 196-1;  
DAFStb directive SIB storage B

\*\* Permissible overall layer thickness acc. to DIBt general building inspection approval (abZ) No. Z-74.1-171

**Note:** All fresh and solid mortars are tested at 20 °C ± 2. 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<sup>®</sup> 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/mm<sup>2</sup>, KEW 1.0 N/mm<sup>2</sup>) 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.

### Non-iron metals:

Cement and cement-bound building materials may cause non-iron-metals in the transitional area of the contact surface (e.g. aluminium, copper, zinc) to loosen. Please contact us for technical advice.

### 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.

### Mixing water:

Drinking water quality

### Temperature range:

+5 °C to + 35 °C

Low temperatures and cold mixing water reduce strength development, require intensive forced mixing and reduce flowability. Higher temperatures accelerate strength development and can also reduce the flowability.

### APPLICATION:

#### Corrosion protection:

If necessary, apply two coats of **RM02** corrosion protection and bonding bridge to exposed and prepared reinforcement. Observe the technical data sheet.

### Manual application:

The mineral bonding bridge **RM02** must be brushed onto the pre-wetted, surface-dry matt damp substrate with a brush or broom without gaps and pore deep. The subsequent coating must be applied fresh-in-fresh. Apply **FD20** WHG/LAU mortar fresh-in-fresh with suitable tools on the bonding bridge. Compact, spread and smooth the material afterwards.

### Mechanical application:

The processing of the **FD20** WHG/LAU plant mortar in the MAWO-PAGEL® dense phase wet spraying procedure.

The spraying of the mortar can be carried out with conventional screw feed pumps with a variable speed drive suitable for this application. Keep the nozzle as square as possible with a distance of approximately 50 cm from the surface to be coated. The first spray mortar layer is sprayed on with a high compressed air flow to support the bonding bridge. The subsequent sprayed layers are applied at a conveying speed adapted to the position of the respective component and with adapted compressed air support. The adjustment of the conveying speed and air output should be carried out by specialised personnel depending on the actual conditions. Post-treatment and smoothing of the surfaces can be carried out immediately after completion of the spraying work.

### 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, foil covers with jute sheets, thermofoils or moisture-retaining covering sheets, **O1** Evaporation protection.

The technical data sheet must be observed when using **O1** Evaporation protection.