

# QUICK REPAIR MORTAR

**R20/02 QUICK REPAIR SCREED**  
**R20/10 QUICK REPAIR MORTAR**  
**R20/50 QUICK REPAIR CONCRETE**

## TEST CERTIFICATES AND SUPPORTING DOCUMENTS

- › Concrete substitute system according to
  - DIN EN 1504-3 "Concrete replacement for statically and non-statically relevant repair" (**R20/10** and **R20/50**)
  - DIN EN 13813 "Cement screed for wearing layers" (**R20/50**)
- › High frost-deicing salt resistance - Verification by CDF procedure
- › High sulfate resistance - Verification by testing acc. to DIN 19573
- › High resistance to chloride penetration - Verification by testing of the chloride migration coefficient
- › Factory production control acc. to DIN EN 1504-3
- › Company certification acc. to DIN EN ISO 9001:2015

## PROPERTIES

- › Ready to use, cementitious repair mortar
- › Durable solution for urgent repair works
- › Loadable after 2 hours from  $\geq +5$  °C ambient temperature
- › Building material class A1 acc. to decision 2000/605/EC of the European Commission dated September 26, 2000
- › Restfeuchte nach 24 h  $\leq 4$  % (CM-Verfahren)

## SYSTEM COMPONENTS

- RM02** Corrosion protection
- R20/02** Quick repair screed
- R20/10** Quick repair mortar and bonding agent
- R20/50** Quick repair concrete

## AREAS OF APPLICATION

- › Quick repairs from
  - Concrete and mortar surfaces
  - Screeds
  - Stairs
  - Floor and wall surfaces
  - Canal areas

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

Moisture class	WO	WF	WA	WS
<b>R20</b>	•	•	•	•

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 / DIN 19573

	XO	XC	XD	XS	XF	XA*	XM	XWW
		1 2 3 4	1 2 3	1 2 3	1 2 3 4	1 2 3	1 2 3	1 2 3 4
<b>R20/02</b>	•	••••	••	••	••••	•		
<b>R20/10</b>	•	••••	•••	•••	••••	•••	•	•••
<b>R20/50</b>	•	••••	•••	•••	••••	•••	•	

\* Having sulfate attack up to 600 mg/l

## TECHNICAL DATA

TYPE			R20/02	R20/10	R20/50
Grain size		mm	0-0.2	0-1.0	0-5.0
Amount of water	max.	%	16	13	12
Processability time approx.	20 °C	min	15	15	15
Consumption approx.		kg/(m <sup>2</sup> · mm)	1.8	1.9	2.0
Fresh mortar raw density approx.		kg/m <sup>3</sup>	2,050	2,100	2,200
Layer thickness		mm	0.5-10	3-40	20-200
Compressive strength*	2 h	N/mm <sup>2</sup>	≥ 5	≥ 7	≥ 10
	4 h	N/mm <sup>2</sup>	≥ 8	≥ 10	≥ 15
	8 h	N/mm <sup>2</sup>	≥ 10	≥ 15	≥ 20
	1 d	N/mm <sup>2</sup>	≥ 15	≥ 20	≥ 25
	7 d	N/mm <sup>2</sup>	≥ 30	≥ 35	≥ 35
	28 d	N/mm <sup>2</sup>	≥ 55	≥ 65	≥ 65
Bending tensile strength	2 h	N/mm <sup>2</sup>	≥ 1.5	≥ 2	≥ 2
	4 h	N/mm <sup>2</sup>	≥ 2	≥ 2.5	≥ 2.5
	8 h	N/mm <sup>2</sup>	≥ 3	≥ 3	≥ 3
	1 d	N/mm <sup>2</sup>	≥ 3.5	≥ 4	≥ 4
	7 d	N/mm <sup>2</sup>	≥ 4	≥ 5	≥ 5
	28 d	N/mm <sup>2</sup>	≥ 6	≥ 7	≥ 7
Adhesive pull strength	7 d	N/mm <sup>2</sup>	≥ 1.5	≥ 2	≥ 2
Classification according to EN 1504-3			R3	R4	R4

\* Mortar compressive strength tested as specified by DIN EN 196-1;  
Concrete compressive strength tested as specified by DIN EN 12390-3

**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.)

## 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 ( $\geq 1.5 \text{ N/mm}^2$ , KEW  $\geq 1.0 \text{ N/mm}^2$ ) 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 layers of **RM02** Corrosion Protection and Bonding Agent seamlessly to exposed and prepared reinforcement. Follow the technical data sheet.

#### Fine screed: **R20/02**

If necessary, close existing cavities and pores by brushing or scratch filling. Apply **R20/02** Rapid Repair Fine Screed wet-on-wet in one step with suitable tools and smooth after an appropriate waiting time. For spray application request separate technical advice if necessary.

#### Manual processing: **R20/10** and **R20/50**

The mineral bonding agents **R20/10** must be brushed seamlessly into the pre-wetted, slightly moist concrete substrate with a brush or broom. The subsequent mortar layer must be applied fresh-in-fresh. Apply **R20** Quick Repair Mortar/Concrete in one step into the as yet unsolidified bonding agent, distribute and smooth it evenly.

### FOLLOW-UP TREATMENT:

Exposed grout 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.