

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

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 |
|----------------|----|----|----|----|
| R20 | • | • | • | • |

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 |
|---------------|----|---------|-------|-------|---------|-------|-------|
| | | 1 2 3 4 | 1 2 3 | 1 2 3 | 1 2 3 4 | 1 2 3 | 1 2 3 |
| R20/02 | • | ••••• | •• | | •• | • | • |
| R20/10 | • | ••••• | •• | •• | •••• | •••• | • |
| R20/50 | • | ••••• | •• | •• | •••• | •••• | • |

* 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 ² · mm) | 1.8 | 1.9 | 2.0 |
| Fresh mortar raw density approx. | | kg/m ³ | 2,050 | 2,100 | 2,200 |
| Layer thickness | | mm | 0-10 | 3-40 | 20-200 |
| Compressive strength* | 2 h | N/mm ² | ≥ 5 | ≥ 7 | ≥ 10 |
| | 4 h | N/mm ² | ≥ 8 | ≥ 10 | ≥ 15 |
| | 8 h | N/mm ² | ≥ 10 | ≥ 15 | ≥ 20 |
| | 1 d | N/mm ² | ≥ 15 | ≥ 20 | ≥ 25 |
| | 7 d | N/mm ² | ≥ 30 | ≥ 35 | ≥ 35 |
| | 28 d | N/mm ² | ≥ 55 | ≥ 65 | ≥ 65 |
| Bending tensile strength | 2 h | N/mm ² | ≥ 1.5 | ≥ 2 | ≥ 2 |
| | 4 h | N/mm ² | ≥ 2 | ≥ 2.5 | ≥ 2.5 |
| | 8 h | N/mm ² | ≥ 3 | ≥ 3 | ≥ 3 |
| | 1 d | N/mm ² | ≥ 3.5 | ≥ 4 | ≥ 4 |
| | 7 d | N/mm ² | ≥ 4 | ≥ 5 | ≥ 5 |
| | 28 d | N/mm ² | ≥ 6 | ≥ 7 | ≥ 7 |
| Adhesive pull strength | 7 d | N/mm ² | ≥ 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: 9 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.