

# QUICK-SETTING GROUT

V2/20 QUICK-SETTING GROUT

V2/50 QUICK-SETTING GROUT

V2/160 QUICK-SETTING GROUT

## TEST CERTIFICATES AND SUPPORTING DOCUMENTS

- › Certificate of conformity DAfStb Directive (VeBMR) "Herstellung und Verwendung von zementgebundenem Vergussbeton und Vergussmörtel" (Manufacture and use of cement-bonded concrete grout and grout) (QDB)
- › Product for the anchoring of reinforcing bars acc. to DIN EN 1504-6 "Verankerung von Bewehrungsstäben" (Anchoring of reinforcing bars)
- › High frost-deicing salt resistance -Verification by CDF and CIF procedure
- › High chloride penetration resistance - verified by testing the chloride migration coefficient
- › Factory production control acc. to DIN EN 1504-6
- › Factory production control acc. to DIN EN 1504-3
- › Company certification acc. to DIN EN ISO 9001:2015

## PROPERTIES

- › Pumpable
- › Controlled swelling
- › High early strength after 2 h ( $\geq 15 \text{ N/mm}^2$ )
- › Extremely low shrinkage behaviour
- › Low w/c value
- › Low development of hydration heat
- › High frost and frost-deicing salt resistance
- › High resistance to chloride penetration
- › Impermeable to water and largely resistant to mineral oils and fuels
- › Building material class A1 acc. to decision 2000/605/EC of the European Commission dated September 26, 2000 (published in the official journal L258)

## AREAS OF APPLICATION

- › Quick-setting grout and concrete grout for precision machines of any kind
- › Turbines, generators, compressors, diesel engines and other power equipment exposed to high dynamic loads
- › Fixators and support points
- › Steel and concrete columns
- › Prefabricated concrete parts and structural steelworks
- › Bridge bearings and bridge transition structures
- › Crane rails and radio telescopes, iron and steel works as well as mines
- › Rail support systems
- › Paper plants, chemical plants and refineries, wind turbines, mobile phone transmission masts
- › Iron and steel works as well as mines

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

Moisture class	WO	WF	WA	WS
<b>V2</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

	XO	XC	XD	XS	XF	XA*	XM
	1 2 3 4	1 2 3	1 2 3	1 2 3 4	1 2 3 4	1 2 3**	1 2 3
<b>V2/20</b>	•	••••	•••	•••	••••	•••	•
<b>V2/50</b>	•	••••	•••	•••	••••	•••	•
<b>V2/160</b>	•	••••	•••	•••	••••	•••	•

\* Having sulfate attack up to 600 mg/l

\*\* With protective measures according to DIN 1045-2

### Classification acc. to the DAfStb VeBMR directive:

	Flowability class	Slump flow class	Shrinkage class	Early strength class	Compressive strength class
<b>V2/20</b>	Categorisation	f2	-	SKVM 0	C60/75
<b>V2/50</b>	Categorisation	-	a3	SKVB 0	C70/85
<b>V2/160</b>	Categorisation	-	a3	SKVB 0	C70/85



## TECHNICAL DATA

TYPE			V2/20	V2/50	V2/160
Grain size	mm		0-2	0-5	0-16
Undergrouting height	mm		6-50 (80)	20-125 (200)	80-400 (640)
Amount of water	max.	%	13	12	10
Consumption approx.		kg/m <sup>3</sup>	2,000	2,000	2,100
Fresh mortar raw density approx.		kg/m <sup>3</sup>	2,250	2,250	2,300
Processing time approx.	20 °C	min	30	30	30
Slump flow	5 min	mm	≥ 650	-	-
	30 min	mm	≥ 550	-	-
Measure of extension	5 min	mm	-	≥ 700	≥ 700
	30 min	mm	-	≥ 620	≥ 620
Swelling	24 h	Vol.-%	≥ 0.1	≥ 0.1	≥ 0.1
Compressive strength*	2 h	N/mm <sup>2</sup>	≥ 15	≥ 15	≥ 15
	4 h	N/mm <sup>2</sup>	≥ 25	≥ 25	≥ 25
	6 h	N/mm <sup>2</sup>	≥ 35	≥ 35	≥ 35
	12 h	N/mm <sup>2</sup>	≥ 40	≥ 40	≥ 40
	1 d	N/mm <sup>2</sup>	≥ 45	≥ 45	≥ 45
	7 d	N/mm <sup>2</sup>	≥ 70	≥ 70	≥ 70
Bending tensile strength*	28 d	N/mm <sup>2</sup>	≥ 80	≥ 90	≥ 90
	2 h	N/mm <sup>2</sup>	≥ 3	≥ 3	≥ 3
	4 h	N/mm <sup>2</sup>	≥ 4	≥ 4	≥ 4
	6 h	N/mm <sup>2</sup>	≥ 5	≥ 5	≥ 5
	12 h	N/mm <sup>2</sup>	≥ 6	≥ 6	≥ 6
	1 d	N/mm <sup>2</sup>	≥ 7	≥ 7	≥ 7
E-Module (static)	7 d	N/mm <sup>2</sup>	≥ 25,000	≥ 25,000	≥ 25,000
	28 d	N/mm <sup>2</sup>	≥ 35,000	≥ 35,000	≥ 35,000
		N/mm <sup>2</sup>	≥ 35,000	≥ 35,000	≥ 35,000

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

Concrete compressive strength tested as specified by DIN EN 12390-3

According to the DAfStb-Rili VeBMR the maximum grouting height must not exceed 25 times the largest grain size. Any deviating grouting height (values in brackets) must be approved by the planner.

**Note:** All stated test values correspond to the DAfStb VeBMR directive.

Testing of fresh and solid mortars at 20 °C ± 2 °C, storage of the test specimen after 24 hours until the strength test in water 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<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.)

Admixtures: acc. to DIN EN 934-4

## 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.

### FORMWORK:

Attach in such a way that it is leak-proof and robust. Seal on the concrete substrate. Use non-absorbent formwork.

### Protruding grout:

Do not exceed the specified 50 mm when allowing grout to protrude and observe the structural specifications.

When grouting dynamically stressed and prestressed base plates and machine foundations that are subject to high compression strengths at the edges, the grout should ideally be applied to be flush with the bearing plate, provided with a 45° edge using formwork or cut off flush with the bearing plate before it has set. This will prevent any stresses from becoming superimposed on one another and from becoming annihilated (observe static and structural specifications).

### 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.

### GROUTING:

The mixture must be poured from one side or corner only in one continuous pour. When grouting large areas, we recommend to pour the grout starting in the centre of the foundation plate, using a funnel or filling hose. Cavities should be filled first (up to around just below the top edge) and then the machine plate or similar.

### 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.