SUPER HIGH STRENGTH GROUT C100/115

HF50 SUPER HIGH STRENGTH 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)
› Factory production control acc. to DIN EN 1504-6
› Company certification acc. to DIN EN ISO 9001:2015 and DIN EN ISO 14001:2015

PROPERTIES

› High flowability
› Low w/c value
› High strengths after 24 h and high final strengths
› Pumpable
› Complies with the requirements of building material class A1 (non-combustible) as specified under decision 2000/605/EC of the European Commission dated September 26, 2000 (published in the official journal L258)

AREAS OF APPLICATION

› Grouting of wind turbines
› Joint grout
› Filling cavities
› Grouting of prefabricated parts

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

Moisture class	WO	WF	WA	WS
HF50	•	•	•	•

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**
HF50	•	• • • •	• • •	• • •	• • •	• • •

* 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
HF50	Categorisation	-	a2	SKVB 0	A	C100/115

PAGEL Spezial-Beton GmbH & Co.KG 46355 Essen Werk Essen VeBMR QDB QUALITÄTSGEMEINSCHAFT DEUTSCHE BAUCHEMIE

TECHNICAL DATA

TYPE			HF50
Grain size		mm	0–5
Undergrouting height		mm	20–120 (300)**
Amount of water	max.	%	8
Consumption (dry mortar) approx.		kg/m³	2,200
Fresh mortar raw density		kg/m³	2,350
Time for application		min	≥ 90
Slump flow		mm	≥ 600
Measure of extension	24 h	Vol.-%	≥ 0.1
Compressive strength*	1 d	N/mm²	≥ 60
	7 d	N/mm²	≥ 90
	28 d	N/mm²	≥ 115
Bending tensile strength	1 d	N/mm²	≥ 8
	7 d	N/mm²	≥ 11
	28 d	N/mm²	≥ 14
E-Modul (static)	28 d	N/mm²	≥ 30,000

* Testing of compressive strength in accordance with DIN EN 12390-3
** According to DIN 18088-5:2020-10
n. d. = not determined

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: 12 months. Cool, dry, free from frost. Unopened in its original container.
Delivery form: 25-kg bag, Euro pallet 1,000 kg, 1000 kg Big Bag
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 934-4

PROCESSING

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.

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.
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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.

PAGEL Spezial-Beton GmbH & Co. KG
Wolfsbankring 9 Tel. +49 201 68504 0
45355 Essen · Germany Fax +49 201 68504 31
www.pagel.com · info@pagel.com