

PAGEL[®]

SPEZIAL-BETON



U[®]HF_S

SUPER HIGH STRENGTH GROUT



- Frost and road-salt resistant
- High fatigue resistance
- Cementitious
- Pumpable
- A1 Non-combustible

*... we produce great grout
- worldwide!*

V 1 HF PAGEL SUPER HIGH STRENGTH GROUT

PRODUKTE

- V 1/3OHF PAGEL SUPER HIGH STRENGTH GROUT (0-1/8" inch / 0-3 mm)
- V 1/6OHF PAGEL SUPER HIGH STRENGTH GROUT (0-1/4" inch / 0-6 mm)

PROPERTIES

- Cementitious non-shrink grout that is equal in strength to epoxy.
- Cement-based and chloride-free
- Frost and deicing-salt resistant CDF-tested in compliance with DIN CEN/TS 12390-9
- Controlled and even expansion
- Microsilica modified
- Impermeable to water and highly resistant against oils and fuels
- Certified to fire protection class A1 as specified by EN 13501 and DIN 4102
- Vapour permeable
- High fatigue resistance
- Absorbs vibrations
- Pumpable and easy to pour
- Complies with the DafStb Directive (VeBMR) on the "Manufacture and use of cementitious concrete and grout"
- Externally tested and factory quality controlled in compliance with the DafStb VeBMR Directive
- Produced using ISO 9001 certified production and factory-controlled production processes

APPLICATION

SUBSTRATE: Clean thoroughly, remove all loose and unsound material such as cement slurry etc using a grit or water jet blaster or similar until the underlying grain structure is reached. The underlying substrate must have sufficient pull-off strength (i.m. ≥ 218 PSI).

Remove all of the rust from any exposed reinforcement bars with a sandblaster (Sa 2 1/2 as specified under DIN EN ISO 12944-4).

Wet the surface approx. 6-24 hours before grouting until capillary saturation.

FORMWORK: Attach in such a way that it is leak proof and robust. Seal around concrete base with, e.g. sand or dry mortar.

MIXING: The grout is supplied ready for use and only needs to be mixed with water. Measure out the quantity of water specified on the packaging and pour most of it 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 another 2 minutes until it forms a uniform mass. Once the grout is ready mixed, apply immediately. If using a mixing and delivery pump and outputting material continuously, we recommend installing an agitator downstream of the mixing and delivery pump to ensure that the material is properly mixed. If using a mixing and delivery pump such as: PABEC II; we recommend the agitator: Putzmeister Dynamat.

MIXING WATER: Drinking water quality

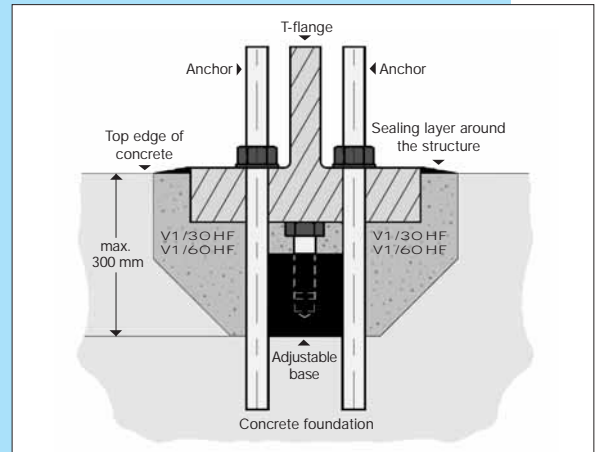
GROUTING: The mixture must be poured from one side or corner only in one continuous pour. When grouting large areas, we recommend to pour the grout starting in the centre of the foundation plate, using a funnel or delivery house. On machine installations, cavities should be filled first (up to around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

CAUTION: On completion of the grouting, exposed areas must be immediately protected from premature water evaporation for a period of 3-5 days (wind, drafts, direct sunlight).

Methods that can be used to protect the grout: Misting the grout with water, covering it with foil and strips of felt, thermal insulation or a material that retains moisture,

FIELDS OF APPLICATION

- Turbines, compressors
- Wind turbines, cast joints
- Portal and container transport systems



O1 PAGEL EVAPORATION PROTECTION. When using O1 PAGEL EVAPORATION PROTECTION, observe the information on the Technical Data Sheet O1 PAGEL EVAPORATION PROTECTION.

Temperature limits for application (substrate, air and grout temperature): 41 °F to 95 °F

Applying the concrete in low temperatures and using cold mixing water will delay the concrete's strength development, require that it is intensely mixed and will reduce its flowability. High temperatures speed it up.

Protruding grout: Do not exceed the specified 2 inch 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).

Non-iron metals: Cement and cementitious building materials may cause non-iron-metals (e.g. aluminium, copper, zinc) to loosen or come off where they are tied in. Please contact us for technical advice.

PAGEL-GROUT

Cement:
DIN EN 197-1 compliant

Aggregates:
EN 12620 compliant

Additives:
EN 450, AbZ, EN13263 compliant (quick ash, microsilica etc.)

Additional substances:
DIN EN 934-4 compliant



V 1 HF PAGEL SUPER HIGH STRENGTH GROUT

TECHNICAL DATA

| TYPE | | V 1 /3OHF | V 1 /6OHF |
|---------------------------------|---|----------------|----------------|
| Grain size | inch / mm | 0-1/8" / 0-3 | 0-1/4" / 0-6 |
| Coating thickness | inch / mm | xx / 30-300 | xx / 40-400 |
| Amount of water | % max. | 9 | 9 |
| Consumption (dry mortar) | app. lbs/ft ³ / kg/dm ³ | 143 / 2.30 | 143 / 2.30 |
| Density of freshly mixed mortar | app. lbs/ft ³ / kg/dm ³ | 152 / 2.45 | 152 / 2.45 |
| Working time | 68 °F min | app. 60 | app. 60 |
| Slump flow | 5 min inch | ≥ 21.65 | - |
| | 30 min inch | ≥ 17.72 | - |
| Slump | 5 min inch | ≥ 23.62 | ≥ 23.62 |
| | 30 min inch | ≥ 20.47 | ≥ 20.47 |
| Expansion | 24 h Vol. % | ≥ + 0.1 | ≥ + 0.1 |
| Compressive strength* | 24 h PSI (MPa) | ≥ 10,150 (70) | ≥ 10,150 (70) |
| | 7 d PSI (MPa) | ≥ 13,050 (90) | ≥ 13,050 (90) |
| | 28 d PSI (MPa) | ≥ 18,850 (130) | ≥ 16,675 (115) |
| | 56 d PSI (MPa) | ≥ 19,575 (135) | ≥ 17,40 (120) |
| | 91 d PSI (MPa) | ≥ 18,575 (135) | ≥ 17,40 (120) |

Note: All test data are guide values only. All testing is performed at our main German production facilities. The values obtained at other production sites can vary.

* Grout compressive strength tested as specified by DIN EN 196-1: Concrete compressive strength tested as specified by DIN EN 12390-3
 V1/30HF: Correl. compressive strength factor: Prism compression strength 1.57 x 1.57 x 6.30 inch : Cube compression strength 150 mm³ = 1.0
 All stated test values correspond to DAfStb VeBMR - Directive.



Storage: 9 month, in a dry and cool location in, sealed in the original containers
Packaging: 44 lbs bag / 20-kg bag, euro-pallet **2,116.41 lbs** / 960 kg
Hazard class: Non-hazardous substance, observe safety data on packaging
Giscode: ZP1



Exposure class according to:

DIN 1045-2 and EN 206-1

PAGEL - SUPER HIGH STRENGTH GROUT

| | XO 0 | XC 1 2 3 4 | XD 1 2 3 | XS 1 2 3 | XF 1 2 3 4 | XA 1 2 3 | XM 1 2 3 |
|-----------|---------|---------------|-------------|-------------|---------------|-------------|-------------|
| V 1 /3OHF | • | •••• | ••• | ••• | •••• | •• | • |
| V 1 /6OHF | • | •••• | ••• | ••• | •••• | •• | • |

Moisture classes in reference to concrete corrosion caused by alkaline silica reactions

| Moisture class | WO | WF | WA | WS |
|----------------|-----|------|----------------------------------|---|
| | dry | damp | damp • External alkali supply | damp • External alkali supply • Strong dynamic stress |
| V 1 /3OHF | • | • | • | • |
| V 1 /6OHF | • | • | • | • |

All of the aggregates used in PAGEL products are obtained from safe sources and correspond with the alkali sensitivity class E I as specified under DIN EN 12620.

Classification according to DAfStb VeBMR - Directive
 Product: PAGEL - GROUT

| | V 1 /3O HF | V 1 /6O HF |
|----------------------------|------------|------------|
| Flowability class | f1 | a2 |
| Shrinkage class | SKVM 0 | SKVB 0 |
| Early strength class | A | A |
| Compressive strength class | C110/130 | C100/115 |

| CE | | |
|---|--|------------|
| 0921 | | |
| PAGEL* SPEZIAL-BETON GmbH & Co. KG, D-45355 Essen | | |
| Year = see batch number | | |
| 0921 - CPD - 2096 | | |
| EN 1504-6:2006 | | |
| V 1 /3OHF / V 1 /6OHF PAGEL - SUPER HIGH STRENGTH GROUT Product for anchoring reinforcing bars (on the basis of hydraulic cement) | | |
| Product name | V 1 /3OHF | V 1 /6OHF |
| Extraction resistance | ≤ 0,6 mm at a load of 75 kN | |
| Chloride ion content | 0,005 M.-% | 0,006 M.-% |
| * Glass transition temperature | NPD | |
| Fire behaviour | Euro class A1 | |
| * Creep behaviour while under tensile stress after 3-months uninterrupted stress with 50 kN (only for polymers) | NPD | |
| Release of hazardous substances | In accordance with EN 1504-6:2006, 5.3 | |

NPD: „No Performance Determined“



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This technical data sheet supersedes previously issued information.