PAGEL®

# PAGEL®-JOINT FILLER GROUT

V S®-P

## PROPERTIES

- non-shrinking joint filler grout, with a gel-like consistency, extremely easy to shape, for the automated filling of joints between pre-fabricated parts
- certified to fire protection class A1 as specified by EN 13501 and DIN 4102
- easy to mix for application using twin-shaft manual mixers, compulsory mixers and adequate continuous mixers that employ the new "sump mixing principle"
- can be pumped using conventional spiral pumps and at delivery rates specifically adapted to the relevant joint sections
- develops high early and final strengths
- expands in a controlled way and consequently forms optimum shear joints within the filled joint sections
- frost and deicing-salt resistant
- waterproof
- highly resistant to mineral oils
- low water/cement ratio
- externally tested and factory quality controlled in compliance with DAfStb VeBMR - Rili according to the DIBt's general building design specifications Z-21.8-1792 and Z-21.8-1929
- approved under the building authority's regulations within the scope of **PFEIFER-VS®- Rail Systems: BZ: Approval number Z-21.8-1792 ISI: Approval number Z-21.8-1929**

| **Classification according to DAfStb VeBMR Rili** | |
|---|---|
| V S®-P PAGEL®-JOINT FILLER GROUT | |
| flowability class | ./. |
| shrinkage class | SKVMII |
| early strength class | A |
| compressive strength class | C55/67 |

## FIELDS OF APPLICATION

- joint filler grout used in the building authority approved **PFEIFER-VS®-ISI/BZ-Systems**[3D]
- for filling vertical and horizontal joints between prefabricated reinforced concrete parts
- for filling building joints, groves and hollow spaces

| **Moisture class based on concrete erosion from alkali silicic acid reactions** | | | | |
|---|---|---|---|---|
| **moisture class** | **WO** | **WF** | **WA** | **WS** |
| | **dry** | **wet** | **wet**<br>• external supply of alkalis | **wet**<br>• external supply of alkalis<br>• subject to high levels of dynamic stress |
| V S®-P | • | • | • | • |

The aggregates in PAGEL's products comply with the requirements of alkali sensitivity class E1 from non-hazardous sources specified under DIN EN 12620.

**Exposition category according to:**
**DIN 1045-2 and EN 206-1**
**PAGEL – JOINT FILLER GROUT**

| | XO | XC | XD | XS | XF | XA | XM |
|---|---|---|---|---|---|---|---|
| | 0 | 1 2 3 4 | 1 2 3 | 1 2 3 | 1 2 3 4 | 1 2 3 | 1 2 3 |
| V S®-P | • | • • • • | • • • | • • • | • • • • | • • | • |

PAGEL Spezial-Beton GmbH & Co.KG 45355 Essen Werk Essen Z-21.8-1792 Z-21.8-1847 QDB

# PAGEL®-JOINT FILLER GROUT

## VS®-P

### TECHNICAL DATA

| TYPE | | | VS®-P |
|---|---|---|---|
| **size** | | mm | 0–2 |
| **coating thickness*** | | mm | 10–40 |
| **amount of water** | | % | 13 |
| **consumption** | | kg/dm³ | app. 2 |
| **processing time** (20 °C) | | min. | app. 60 |
| **slump** DIN 18555 | | mm | app. 170 |
| **slump** inspected on site** | | mm | 120-160 |
| **expansion** | 24 h | Vol. % | + 0.3 |
| **compressive strength***** EN 196-1 (prism) | 1 d | N/mm² | ≥ 40 |
| | 7 d | N/mm² | ≥ 60 |
| | 28 d | N/mm² | ≥ 70 |
| **bending strength** | 1 d | N/mm² | ≥ 4 |
| | 7 d | N/mm² | ≥ 7 |
| | 28 d | N/mm² | ≥ 10 |

All test data are guide values, proofed in our German manufacturing plants, - values from other manufacturing plants may vary.

* DIN EN 196-1-compliant compressive strength testing
All of the test values provided correspond to DafStb VeBMR – directive

**TEMPERATURE LIMIT:** +5 °C to +35 °C

* Not relevant to the filling of the PFEIFER VS®Rail System$^{3D}$ prefabricated part joint sections

** Slump inspected on site: Alternatively, use a PVC pipe with a 70 mm internal diameter, 100 mm high, coated with a release agent to trowel onto a smooth, wetted plate, and measure

*** fc, cube, established using a prism, incl. correction factor 0.85

**storage:** 12 months. Cool, dry, free from frost. Unopened in its original packaging.
**packaging:** 25-kg-bag, euro-pallet 1,000 kg
**hazard class:** no dangerous substance follow safety data sheet
**giscode:** ZP1

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 |

### APPLICATION

**SUBSTRATE/CONTACT AREAS**
**CONCRETE BASE:** Clean thoroughly, remove all loose and unsound material, as well as any cement slurry, oil, grease, etc.using suitable equipment and procedures until the grain structure that will be capable of bearing the grout has been exposed; the base must have a sufficiently high pull-off strength (i.m. ≥ 1.5 N/mm²). Wet surface to capillary saturation (e.g. using a mist spray nozzle, crop sprayer or wet sponge).

**PFEIFER-VS®- RAIL SYSTEMS:** Remove the covering tape before assembly and move the cable loops into their intended position. Where required, remove any loose and/or objects or materials (grease, oil, etc) that could impede adhesion. Once the prefabricated concrete parts have be positioned inside the structure, insert a Ø 12 mm concrete reinforcing rod into the entire joint where it overlaps with other joints by threading it through the loops in accordance with the building authority's regulations. The insides of the **VS®-Rail** sections do not need to be pre-wetted.
**FORMWORK/SEALING:** Fully seal one side of the prefabricated parts' joints using a foam cord, rubber hose or, alternatively, VS®-P PAGEL JOINT FILLER GROUT. Once the joint has been sealed with VS®-P PAGEL JOINT FILLER GROUT, leave to set. Once set, start filling the remainder of the joint starting from the opposite side, working from the bottom to the top, with grout.

**MIXING:** The grout is supplied ready for use and only needs to be mixed with water. Pour all of the water with the exception of a small residual amount into the compulsory mixer, add the dry grout and mix for approx. 3 minutes. Add the remaining water and mix for another 2 minutes. Start using the grout to fill the joints immediately after mixing.

**FILLING:** VS®-P PAGEL JOINT FILLER GROUT has been designed for being filled into joints through the use of a suitable spiral pump with a control gear for adjusting the pump's delivery rate to the prefabricated part joint's section. The joint nozzle (e.g. VS®-P PAGEL JOINT NOZZLE) should be fitted with a remote control for the delivery pump. The joint section should be filled from the bottom to the top by keeping the nozzle slightly immersed in the grout that has already been injected into the joint, as a result of which the new grout being injected into the joint section will be pushed upwards without the inclusion of any air. When doing so, the nozzle must be aimed alternately at both of the joint's outer sides in order to make sure that it is fully filled.
Compatible grout pumps: Putzmeister Strobl Strobot 406S; PFT N2V; Putzmeister S3V, Putzmeister S5; M-Tec Speedy P15V (only 380V); Mader Variojet FU; Mader WM Mini.
Compatible mixing and delivery pump: M-TEC Duo 2000.

**FINISHING:** Remove any seals that may have been applied immediately after filling the joint to keep for future use and smoothen the joint grout so as to make it flush with the prefabricated part's surface.

**FINISHING TREATMENT:** Depending on weather conditions, it may be necessary to protect the joints from water evaporation or excessive erosion.
The above must be performed correspondingly in compliance with the specifications detailed under DIN 1045-3:2008-08, section 8.7.



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