PAGEL®

PAGEL®-SPCC SPRAY MORTAR

SP40

SP20

PROPERTIES

- Cementitious, hydraulic setting SPCC SPRAY MORTAR for **wet** and **dry** application, suitable for use with a range of **spraying systems** and **hoses** of various lengths
- Certified to **TL/TP-BE SPCC** of **ZTV-ING**
- **Polymer-modified** and **ready for use,** only requires the addition of **water**, since the polymer component has already been added to the mortar in the form of a powder
- **Silica dust controlled**
- Also suitable for **reinforcement back injection moulding**
- Can be used in **multiple layers** of different thicknesses
- Extremely stable on both **vertical** and **ceiling surfaces**
- **Low rebound**
- **Vapour permeable,** frost and road salt resistant and reduces CO2 penetration
- Has proven extremely reliable as a replacement for concrete over many years
- **Easy to apply,** creates smooth surface and can be smoothened retrospectively
- The PAGEL SPCC SPRAY MORTAR series comprises:

  SP20 Particle size: 0–2 mm in accordance with ZTV-ING / Rili SIB of the DAfStb wet and dry application

  SP40 Particle size: 0–4 mm in accordance with ZTV-ING / Rili SIB of the DAfStb dry application

Exposition category according to:
DIN 1045-2 / EN 206-1 / ZTV-LB 219 (SA-4)
PAGEL – SPRAY MORTAR (SPCC)

	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
SP20	•	• • • •	• • •	• • •	• • • •	• •	• •
SP40	•	• • • •	• • •	• • •	• • • •	• •	• •

FIELDS OF APPLICATION

- For **coating** and **repairing** bridges, tunnels and concrete structures
- **Wall and ceiling surfaces**
- **Filling in** cavities, edges and uneven areas
- Approved for:

  SP20 Wet and dry spray application
  SP40 Dry spray application

CE

0921

PAGEL® Spezial-Beton GmbH & Co. KG
D-45355 Essen

find the printed batch number

SP20 **0921–BPR–2023 /** SP40 **0921–BPR–2034**

EN 1504-3

SP20 u. SP40 PAGEL®-SPCC SPRAY MORTAR
SPCC-mortar for structural repairs
(hydraulic cement)

Compressive strength	Category R4
Chloride ion content	≤ 0.05 %
Adhesiveness	≥ 2.0 MPa
Shrinkage/moisture expansion limit	≥ 2.0 MPa
Carbonation resistance	Pass
Modulus of elasticity	SP20 NPD SP40 ≥ 20 GPa
Resistance to temperature changes	NPD
Adhesion	NPD
Thermal expansion coefficient	NPD
Capillary water absorption	NPD
Fire behaviour	Category E
Hazardous substances	In accordance with EN 1504-3, 5.4

NPD: „No Performance Determined"

Having a concrete repairing according EN 1504-3, a carbonatisation protection-system has to be applied according EN 1504-2.

Pagel Spezial-Beton GmbH & Co. KG
Werk: I
P2255/00-91
Polymer Institut

CE
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0921-BPR-2023
EN 1504-3

PAGEL®-SPCC SPRAY MORTAR

SP40

SP20

SPRAY MORTAR

TYPE				SP20	SP40
Particle size			mm	0–2	0–4
Thickness of coating	Wet application (multiple layers)		mm	up to 50	up to 100
	Dry application (multiple layers)		mm	up to 80	up to 150
Density of freshly mixed mortar			kg/dm³	2.13	2.2
Dry mortar bulk density			kg/dm³	2.1	2.1
Yield	per 25-kg bag		l	app. 13	12.5
Consumption	per 10 mm thick layer/m³		kg	20	20
Spraying method				wet & dry	dry
Amount of water			%	12	12
Compressive strength*		24 h	N/mm²	≥ 20	≥ 20
		7 d	N/mm²	≥ 40	≥ 45
		28 d	N/mm²	≥ 50	≥ 60
Bending strength		24 h	N/mm²	≥ 4	≥ 4
		7 d	N/mm²	≥ 6	≥ 6
		28 d	N/mm²	≥ 8	≥ 8
Adhesive tensile strength		7d	N/mm²	≥ 2	≥ 2

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

Application temperature: min. +5°C, max. + 35°C
Modulus of elasticity (static)**:** 31.800 N/mm² after 28 days
Modulus of elasticity (dynamic)**:** 27.000 N/mm² for SP40

Packaging: 25-kg bags, 1000-kg Big Bags
Storage life: Up to 9 months in a closed container
Hazard class: Non-hazardous material.
Please read the Safety Data Sheet.
GISCODE: ZP1

PROCESSING

SUBSURFACE: Remove or blast off damaged concrete down to solid substrate, remove cement slurries and unstable layers of material. The substrate must be sufficiently rough (such that the embedded grains are visible). Expose reinforcements and remove rust (to purity Sa 2 1/2), by blasting (e.g. high-pressure water/sand mixture) in accordance with ZTV-ING, section 2.6.2, check concrete substrate surface tensile strength (min. 1.5 N/mm²), carbonation depth and chloride penetration. Thoroughly wet substrate until saturation approx. 24 h prior to coating, apply when surface is no more than slightly damp.

REINFORCEMENTS: Thoroughly protect all exposed and blasted steel against corrosion using MSO2 (cementitious) as specified in the directions for use.

BONDING LAYER: No bonding layer required.

COATING:
WET SPRAY METHOD: SPCC can be applied using conventional spraying systems. SP20 has been tested for application with the following systems: **Putzknecht S30/Estromat 404; P.F.T. (HM2/N2); MAI M 200/Stator MP2L.**

When using one of these systems, can be applied at a delivery rate of approx. 400 l per hour. Max. hose length: 50 m. The water supply (50-60 l/h or 3 l per 25-kg bag) and delivery pressure (22-25 bar) are regulated through a solenoid valve or manometer. The impact velocity and, consequently, the surface's roughness, are adjusted at the nozzle by regulating the air flow.

DRY SPRAY METHOD: SP20 has been tested for application with the following systems: **ALIVA 246; MADER WM-05/2; MEYCO-PICCOLA.** SP40 has been tested for application with **MADER WM-05/2.**

Always use a small rotor (0.7l). Can be applied at a delivery rate of 400 l per hour. The material was applied using 40 and 100 m hoses, although it is also possible to use longer ones.

MIXING: If mixed individually, use a **compulsory mixer** and mix for 5 minutes.

NOZZLES: Wet spray application: MAWO nozzle; dry spray application: ALIVA-VULCOLAN hose nozzle, flexible.

Hold the nozzle at a right angle to and 50 cm (wet) to 100 cm (dry) from the area to be coated.

COMPRESSOR: Min. 5 m³ air per minute.

CAUTION: The spray mortar can be applied in single or multiple layers depending on the layer thickness. Only apply the next layer once the last layer has been allowed sufficient time to set.

A **water pressure booster pump** is required when using dry spray application.

Please consult our application engineer when planning spray applications and observe the general building-authority test certificate specifications. Please get in touch with our customer service department if the area to be sprayed is affect by frost, as low temperatures will prolong strength development and reduce flowability, while high temperatures speed it up. Cold mixing water will impede flowability.

SMOOTHING: The level of unevenness resulting from spray application is so low that this mortar does not require any subsequent smoothing. If required, the spray mortar can be smoothed lightly and using low pressure. The spray mortar will be ready for smoothing: When using wet application, after approx. 1-3 hours, depending on temperature.
When using dry application, after approx. 15-30 minutes, depending on temperature. Always make sure that the underlying structural substrate does not come loose and that the spray mortar does not come off the underlying base when smoothing.

AFTERCARE: Keep treated areas damp to protect them from premature water evaporation using, e.g. mist spraying and by covering them with a windproof sheet or wet jute sheet (ZTV-ING, section 6.6.5, 5 days). The next-level surface coating can be protected with 02C PAGEL CONCRETE PROTECTION SYSTEM.

SURFACE PROTECTION: If the surface is to be provided with an additional protective layer, the surface must be such as to enable the application of an even and uniform coating and, where necessary, must be levelled using a PCC fine putty (e. g. MS05 PAGEL PUTTY).

This final protective layer can be created using, e g. 02C PAGEL CONCRETE PROTECTION SYSTEM (can be applied to damp surfaces and simultaneously acts as a finish).

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