

PAGEL[®]

SPEZIAL-BETON



SPCC-SPRAY MORTAR



- frost and road salt resistant
- vapour permeable
- Microsilica modified
- plastic-coated
- ready for use

*Supplying quality mortars
.....across the globe!*

PAGEL-SPCC SPRAY MORTAR

PRODUCTS

- **SP20 PAGEL-SPCC SPRAY MORTAR** (0–2 mm)
- **SP40 PAGEL-SPCC SPRAY MORTAR** (0–4 mm)

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 and EN 1504-3
- Polymer-modified and ready for use
- with Microsilica modified
- 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
- Easy to apply, creates smooth surface and can be smoothened retrospectively

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



PROCESSING

SURFACE: 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 affected 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 **O2C 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. **O2C PAGEL CONCRETE PROTECTION SYSTEM** (can be applied to damp surfaces and simultaneously acts as a finish).

Please observe the instructions on application specified under abP.

PAGEL-SPCC SPRAY MORTAR

TECHNICAL DATA

TYPE			SP20	SP40
Grain 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/dm ³	app. 2.13	app. 2.2
Dry mortar bulk density		kg/dm ³	app. 2.1	app. 2.1
Yield	per 25-kg bag	l	app. 13	12,5
Consumption	per 10 mm thick layer/m ³	kg	app. 20	app. 20
Spraying method			wet & dry	dry
Amount of water		%	12	12
Compressive strength*	24 h	N/mm ²	≥ 20	≥ 20
	7 d	N/mm ²	≥ 40	≥ 45
	28 d	N/mm ²	≥ 50	≥ 60
Bending strength	24 h	N/mm ²	≥ 4	≥ 4
	7 d	N/mm ²	≥ 6	≥ 6
	28 d	N/mm ²	≥ 8	≥ 8
Adhesive tensile strength Class R4	7d	N/mm ²	≥ 2.0	≥ 2.0

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.

* 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: 9 months. Cool, dry, frost-free.
 In originally sealed containers.
Hazard class: Non-hazardous material.
 Please read the Safety Data Sheet.
GISCODE: ZP1

	
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 and 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 KNF / NPD SP40 ≥ 20 GPa
Resistance to temperature changes	KNF / NPD
Adhesion	KNF / NPD
Thermal expansion coefficient	KNF / NPD
Capillary water absorption	KNF / NPD
Fire behaviour	Category E
Hazardous substances	In accordance with EN 1504-3, 5.4

NPD: „No Performance Determined“

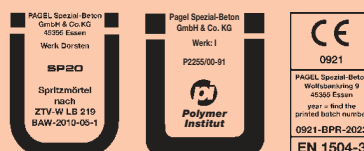
Having a concrete repairing according EN 1504-3, a carbonatisation protection-system has to be applied according EN 1504-2.

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	•	• • • • •	• • •	• • •	• • • • •	• •	• •

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
SP20/40	•	•	•	•

All of the aggregates used in PAGEL products are obtained from safe sources and correspond with the alkali sensitivity class E1 as specified under DIN EN 12620.





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The information provided in this leaflet, is supplied by our consulting service and is the end result of exhaustive research work and extensive experience.

They are, however, without liability on our part, in particular with regard to third parties proprietary rights, and do not relieve the user of the responsibility for verifying that the products and processes are suitable for the intended application.

The data presented was derived from tests under normal climate conditions according to DIN 50014 and mean average values and analysis.

Deviations are possible when delivery takes place.

Given that recommendations may differ from those shown in this leaflet written confirmation should be sought. It is the responsibility of the purchaser to ensure they have the latest leaflet issue and that its contents are current.

Our customer service staff will be glad to provide assistance at any time.

We appreciate the interest you have shown in our products.

This technical data sheet supercedes previously issued information.

Please find the latest leaflet issues at www.pagel.com.

Technical information sheet 0701 QS-Formblatt 07.12 Rev. 08