

SewperCoat® PG25

1 General Description

Composed of 100% calcium aluminate (both cement binder and aggregate), SewperCoat® PG25 is a pre-packaged ready-to-use high performance mortar. It is designed for the protection of both new and existing municipal wastewater infrastructures from biogenic sulphuric acid corrosion caused by hydrogen sulphide (H₂S). The high performance of SewperCoat® PG25 results from its specially designed, unique chemical and mineralogical composition.

SewperCoat® PG25 is typically used for the protection and rehabilitation of sewer infrastructure including manholes, lift stations, main trunk sewers, wastewater treatment plant structures, and pipes.

SewperCoat® PG25 also provides excellent corrosion resistance to pure water, salt water, sulphated soils and several dilute acids.

SewperCoat® PG25 is specially designed for application by the low-pressure, wet-spray method, the spinning head method, and the centrifugation method.

SewperCoat® PG25 is the preferred solution for installation in confined spaces.

SewperCoat® PG25 is a very cohesive mortar that provides excellent thin-section toughness, high bond strength and high early compressive strength that enhances the structural integrity of wastewater structures when installed.

SewperCoat® PG25 provides high early compressive strength and allows for rapid return to service and cost saving associated with it. The return to service is typically 8 to 12 hours, and can be reduced further with the combined use of suitable accelerator.

SewperCoat® PG25 contains no chlorides, no metallic particles, no crystalline silica or other aggressive agents that might attack reinforcing steelwork.

2 Specifications

The specification limits are determined with an Acceptable Quality Level (AQL) of 2.5% as defined in the sampling standard ISO 3951.

The usual range represents typical values of the production.

Chemical composition

● Main constituents (%)

	Usual range
Al ₂ O ₃	40 - 46
CaO	34 - 40
SiO ₂	4 - 9
Fe ₂ O ₃	9 - 15

*Chemical analysis is determined according to the EN 196-2. The product (including aggregates and binder) is milled to powder prior to the analysis.

Granulometry

● Cumulative passing (%)

Sieve Size	Usual range	Specification limit
2.5 mm	99 - 100	≥ 95

Mechanical strength

● 24 hours strength (MPa)

	Specification limit
Compressive	> 38

* Water addition: 15% by weight of SewperCoat® PG25

* Test conducted on prism 40x40x160 mm, temperature 20°C, cured at > 90% relative humidity

3 Additional Physical Properties

This information is given for guidance only.

- Principal mineralogical phase*: CA
* C = CaO, A = Al₂O₃
- To produce 1 m³ of mortar, about 2200 kg of SewperCoat® PG25 is necessary
- Bulk density: 1500 -1600 kg/m³
- Wet density: 2200-2300 kg/m³
- SewperCoat® PG25 is subject to the conversion phenomenon. Only its strength after conversion measured according to the Annex A of EN14647 (about 40 MPa with 15% water addition) should be considered for design purposes.
- Typical mechanical strength (MPa)

	24 hours	28 days
Flexural	> 6	> 9
Compressive	> 40	> 50

* Water addition: 15% by weight of SewperCoat® PG25

* Test conducted on prism 40x40x160 mm, temperature 20°C, prisms cured for the first 24 hours at > 90% relative humidity, then, into water till 28 days.

4 Packaging and shelf life

SewperCoat® PG25 is packed in paper bag of 20 kg, and supplied in pallet with shrink film.

As typical with all cementitious materials, SewperCoat® PG25 must be stored in dry conditions, off the ground. In this case, and in its original packaging (pallet with shrink film), it will retain its properties for at least 12 months. In many instances, experience has demonstrated that properties are retained for more than one year.

5 Guidelines for application

General application guidelines are presented below. Please contact Kerneos Technical Assistance for more installation information for SewperCoat® PG25.

- SewperCoat® PG25 is designed for application

via the low-pressure, wet-spray method, using a progressive cavity type pump (eccentric worm pump). This low-velocity process produces little dust and minimal rebound/loss, making it ideal for confined space applications.

- SewperCoat® PG25 may also be applied by the spinning head method or centrifugation method.
- Substrate surface preparation should be in accordance with the generally accepted concrete practices.
- In general, the minimum thickness of SewperCoat® PG25 protective lining is of 15 mm for standard manholes and of 25 mm for large structures like wet wells.
- SewperCoat® PG25 should be mixed with nothing else other than potable water. No Portland cement nor aggregates should be added.
- SewperCoat® PG25 should be mixed with 14 to 16% water, i.e. 3.2 litres maximum of water per 20 kg bag. The water must be clean and potable.
- Equipment must be clean and free of Portland cement contamination to avoid accelerated set and poor corrosion resistance performance.
- To ensure a proper curing of SewperCoat® PG25, Kerneos recommends to apply systematically the curing compound SEWPER CURE as soon as the surface finishing is completed. In addition to SEWPER CURE, if the application takes place in a live sewer environment, replacing the structure cover as soon as the spraying and finishing is completed should ensure adequate moisture for good hydration and curing. However, for environments with lower humidity, or with exposure to direct sunlight and/or strong air movement, SEWPER CURE application should be complemented with water curing (sprinkler or water mist or water fog) as soon as practical, in addition to replacing the cover, in order to minimize rapid evaporation of moisture.
- For ultra-rapid return to service, suitable accelerator should be used. Please contact Kerneos Technical Assistance for more information.

Kerneos warrants that the product complies with the specifications stated herein to the exclusion of any other warranty, express or implied. Kerneos makes no representation or warranty of any kind, either expressed or implied, as to the suitability or fitness for a particular purpose or use of the product. The warranty shall be limited to the replacement of the non-conforming products or, at Kerneos option, the refund of the purchase price. Any technical advice, recommendations or information are given based on Kerneos current knowledge and experience of the products and are deemed to be accurate. However, Kerneos undertakes no liability or responsibility of any kind with respect thereof. Users are invited to check that they have the latest version of this document.