

Flowchem VE ESD GL

Product description

Flowchem VE ESD GL is a conductive, anti-static, modified and shrinkage compensated vinyl ester resin based reinforced lining system. Is used with Flowchem VE Chopped strand mat M2 and Flowchem VE Surface tissue.

Features and Key Benefits

- Fulfilling the ESD requirements according to EN IEC 61340-4-1 and 61340-4-5 when applied in a system.
- Fast curing
- Excellent temperature resistance. In service up to 145.
- Very high chemical resistance to a wide range of acids, alkalis, bleaches and many organic compounds.
- Shrinkage compensated

Product Information

Applications

Flowchem VE ESD GL is used with Flowchem VE Chopped strand mat M2 and Flowchem VE Surface tissue as part of the Flowchem VE ESD GL system.

Ideal for use for waste storage, chemical storage areas, walls, secondary containment areas, ducts, vessels, etc ... where a conductive or ESD system is required.

Certificates/approvals

CE according EN 13813 (when used as part of complete system)

Environment and Health

Follow the appropriate Occupational Health and Safety Guidelines applicable to the location where the application is undertaken.

For more information, please refer to the safety datasheets for the individual components.

Technical Information

Technical Characteristics (liquid state)

Appearance	A: Flowchem VE ESD GL - black liquid B: Flowchem VE Accelerator – purple liquid C: Flowchem VE Curing Agent – transparent liquid D: Flowchem VE Topcoat Additive – transparent liquid
Mixing ratio (A/B/C/D*)	100 / 0.3 / 2 / 1.5 by weight
Pot life at 10 / 20 °C	90 / 45 min
Density at +23°C (EN ISO 1183)	1.12 kg/dm ³ (mixed A/B/C)
Min. overcoat time at +20°C	2 hours
Foot traffic at + 20°C	6 hours
Curing time at +20 °C:	Full cure: after 24 hours

* Part D is only used in the final layer.

Technical Characteristics (cured state)

Volume shrinkage at 20°C – Rili4 2.5.3.2.1	< 0.004%
Tensile Strength (EN ISO 527)	165 MPa
Tensile Modulus (EN ISO 527)	8600 MPa
Flexural Strength (EN ISO 178)	125 MPa
Flexural Modulus (EN ISO 178)	11400 MPa
Barcol Hardness (EN ISO 59)	>50 (model GYZJ 934-1)
Temperature Resistance (HDT – EN ISO 75)	145°C

Colour

Carbon black, satin gloss

Packaging

The Flowchem VE ESD GL components are supplied in the following pack sizes:

- Flowchem VE ESD GL resin: in lacquered metal drums of 25 kg
- Flowchem VE Accelerator: in metal cans of 1 kg
- Flowchem VE Curing Agent: in plastic bottles of 1 kg
- Flowchem VE Topcoat Additive: in metal cans of 1 kg

Storage

Store in dry area, in unopened, original containers in temperatures +5 °C to +25 °C. Protected from freezing, out of direct sunlight, moisture or contaminant ingress.

Shelf-life

Flowchem VE ESD GL-resin: 6 months from manufacture day when stored correctly in the original, unopened packaging as supplied.

Flowchem VE Accelerator, Curing agent and Topcoat Additive: 9 months from manufacture day when stored correctly in the original, unopened packaging as supplied.

Usage Guidelines

Application conditions

Ambient temperature range:	+5°C - +30°C
Substrate temperature range:	+5°C - +30°C
Ambient relative humidity:	< 95 %
Substrate relative humidity	<4.5 % (Tramex scale or 75% RH BS8203)

- To ensure best application behaviour of material it is recommended to condition the containers for at least 24 hours in +15 °C - +25 °C prior to application.
- The recommended substrate temperature is 15 - 25°C, but not less than 5°C and more than 30°C.
- **During application and initial curing of product, substrate temperature needs to be at least 3°C higher than dew point temperature.**
- To assess possibility of application outside of these conditions or application temperatures, please consult our Technical Department.
- The styrene in the resin component can be smelt at very low concentrations (from 2 ppm onwards). Follow the appropriate national guidelines.

Surface Preparation

Substrates must be mechanically prepared to be free of cement laitance, dust, oil and any other contamination, any surface defects and blowholes must be prefilled and levelled.

The substrate pull-off value must be tested to be at least 1.5 MPa and the surface profile / roughness of the concrete must be at least 0.5 mm.

For further details see our "General Preparation and application guidelines for Flowchem VE floor protection systems".

Mixing

Mix the whole drum of Flowchem VE ESD GL Resin with an electric drill and paddle to disperse any possible settlement.

Weigh out the required quantity and add 0.3% (b/w) of Flowchem VE Accelerator and mix well for 2 mins (Note: the % of the accelerator required can increase at lower temperatures please consult our Technical Department for specific advice).

Add 2% (b/w) of Flowchem VE Curing Agent and continue to mix thoroughly for 2-3 mins and then the resin is ready for application.

Note: Never mix the Accelerator directly with the Curing Agent.

Application

Priming the surface

The prepared concrete surface must first be sealed with Flowchem VE Primer (non-conductive) and then the appropriate copper tape grid (64 m²) is installed before the conductive Flowchem VE ESD Primer is applied. The copper grid must also be correctly connected to earth by an authorized person.

Priming the surface with Flowchem VE ESD primer

The Flowchem VE ESD Primer must be prepared and applied fully in accordance with the respective Technical Data Sheet. Allow to cure for ± 2 hours (at 20°C), at least until it gets 'tacky' before overcoating with the next layer of the ESD System build-up.

Application of Flowchem VE ESD GL

A 1st coat of the mixed Flowchem VE ESD GL is applied with a laminating roller, paint brush or spray equipment onto the with Flowchem VE ESD Primer primed substrate.

A 1st layer of pre-cut Chopped Strand Glass Fibre Matt (300 or 450 g/m² as required) is then applied into the 'wet' Flowchem VE ESD GL layer.

Apply a 2nd coat of the Flowchem VE ESD GL onto the Glass Fibre Matt until saturated and then de-aerate the resin layer using a Teflon de-aerating roller.

Repeat this process with a 2nd layer of the selected Chopped Strand Glass Fibre Matt and then apply a Surface Tissue (30 g/m²) that also needs to be de-aerated with the Teflon de-aerating roller.

Apply an additional coat of the Flowchem VE ESD GL on top of the Surface Tissue and allow to harden.

Finely abrade the surface (as necessary) to remove any protrusions or roughness and apply a final topcoat of the Flowchem VE ESD GL that is mixed with 1.5% (b/w) of Flowchem VE Topcoat Additive.

Coverage

The total Flowchem VE ESD GL consumption for this system is 3-4 kg/m², depending on the grade of the Glass Fibre Matt used.

Note: Dependent on the site conditions including, temperature, surface profile, slope and geometry of the structure, the quantity of resin per coat and the number of coats applied can be varied to suit



the project requirements. The overall consumption remains the same and is according to the grade (weight and thickness: 300 or 450 g/m²) of the Glass Fibre Matt reinforcement used.

Cleaning

Clean using Flowchem VE Equipment Cleaner. **Acetone should be used during the application** to clean the Teflon or Metal deaeration rollers! Not styrene (it will make everything sticky).

Technical Service

Contact Tremco CPG “Country”

Guarantee

Tremco CPG “Country” warrants all goods to be free from defects and will replace materials proven to be defective but makes no warranty as to appearance of colour. The information and recommendations herein are believed by Tremco CPG “Country” to be accurate and reliable.