

## Flowchem VE ESD HD

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### Product description

Flowchem VE ESD HD is a conductive, anti-static, shrinkage compensated and modified vinyl ester based, horizontal or slightly sloping floor screed with excellent chemical, mechanical and temperature resistance..

### 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 185°C..
- Highly resistant to impact and abrasion and industrial traffic loadings.
- Very high chemical resistance to a wide range of acids, alkalis and solvents.
- Shrinkage compensated.

## Product Information

### Applications

Flowchem VE ESD HD is used for protection of concrete floors and containment bunds against a wide range of aggressive chemicals, abrasion/mechanical damage and thermal attack in heavy duty and potentially heavy exposure areas.

### 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 HD resin- black liquid<br>B: Flowchem VE Accelerator – purple liquid<br>C: Flowchem VE Curing Agent – transparent liquid<br>D: Flowchem VE MVG filler |
| Mixing ratio (A/B/C/D)        | 100 / 0.3 / 2 / 694.4 by weight  |
| Density at +23°C (EN ISO1183) | ~2.0 kg/dm <sup>3</sup>  |
| Pot life at 10 / 20 °C        | 90 / 45 min  |
| Foot traffic at + 20°C        | 6 hours  |
| Curing time at +20 °C:        | Full cure: after 24 hours  |

### Technical Characteristics (cured state)

|  |                         |
|--|-------------------------|
| Volume shrinkage at 20°C – Rili4 2.5.3.2.1 | < 0.003%                |
| Tensile Strength (ASTM-D638)               | 23 MPa                  |
| Flexural Strength (ASTM-D790)              | 42 MPa                  |
| Compressive strength (EN ISO 604)          | 120 MPa                 |
| Impact resistance (EN ISO 6272-1)          | ≥ 20 Nm                 |
| Barcol Hardness (ASTM-D2583)               | > 40 (model GYZJ 934-1) |

### Colour

Carbon black, satin gloss

### Packaging

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

- Flowchem VE HD 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 MVG filler: in paper bags of 25 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 and Curing agent: 9 months from manufacture day when stored correctly in the original, unopened packaging as supplied.

Flowchem VE MVG filler: at least 24 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 HD 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).

Decant 3.6 kg of resin and add 2% (b/w) of Flowchem VE Curing Agent and continue to mix thoroughly for 2-3 mins until homogeneous..

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

Immediately add 25 kg of Flowchem VE MVG filler and mix min. 3 minutes with forced mixer until homogeneous.

## 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 m<sup>2</sup>) 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 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 HD

Pour the mixed screed out immediately onto the primed substrate (Note: This reduces the rate of the exothermic reaction in the mixing pan and prevents this shortening the working time).

The mixed screed should be spread out and laid width-wise, working in strips of maximum 4 metres wide.

The Flowchem VE HD mortar is applied at nominal 10 mm thickness using a steel float, trowel, pin-rake or screed-box. Deeper, rough, or uneven sections may be pre-filled with the same material, applied and built up in layers to maximum total 100mm.

## Coverage

Flowchem VE ESD HD will be applied @ 20 kg/m<sup>2</sup> for 10 mm thickness.



## 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.