

## Flowchem VE HDV

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### Product description

Flowchem VE HDV is a shrinkage compensated and modified vinyl ester resin based mortar for vertical application with excellent chemical and mechanical resistance..

### Features and Key Benefits

- Fast curing.
- Excellent temperature resistance. In service up to 160°C.
- Highly resistant to impact and abrasion.
- Very high chemical resistance to a wide range of acids, alkalis and solvents.
- Shrinkage compensated.

## Product Information

### Applications

Flowchem VE HDV is used for protection of vertical and sloped concrete walls and upstands in primary and secondary containment tanks and bunds including sumps and drainage channels against a wide range of aggressive chemicals, abrasion and thermal attack in heavy 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 HDV resin- resin pigmented liquid B: Flowchem VE Accelerator – purple liquid C: Flowchem VE Curing Agent – transparent liquid D: Flowchem VE MVG filler E: Flowchem VE V-filler additive
Mixing ratio at 20°C (A/B/C/D/E)	100 / 0.3 / 2 / x / y by weight*
Density at +23°C (EN ISO1183)	~2.0 kg/dm <sup>3</sup>
Pot life at +10 / 20 °C	90 / 45 min
Curing time at +20 °C:	Full cure: after 3 days

\* See mixing

### 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

See system build-up, satin gloss

### Packaging

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

- Flowchem VE HDV 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
- Flowchem VE V-filler additive: in bags of 250 g

## 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 HDV-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 + V filler additive: 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.

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 HDV 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 min (Note: the % of the accelerator required can increase at lower temperatures please consult our Technical Department for specific advice).

Decant 3.5 kg of resin and add 2% (b/w) of Flowchem VE Curing Agent and continue to mix thoroughly for 2-3 min until homogeneous..

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

Immediately add half a bag of Flowchem VE V-filler additive (125g) and mix until homogeneous then add 25 kg of Flowchem VE MVG filler and mix with forced mixer for 3 mins until homogeneous.

Note: V Filler Additive that can be used in the mix decreases at lower temperatures, please refer for specific advice.

## Application

### Priming the surface

The prepared concrete surface must first be sealed with Flowchem VE Primer

### Application of Flowchem VE HDV

Pour the mixed screed out immediately and trowel 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 Flowchem VE HDV is applied at nominal 5 mm thickness using a trowel. Deeper, rough, or uneven sections may be pre-filled with the same material, applied and built up in layers

## Coverage

Flowchem VE HDV will be applied  
@ 10 kg/m<sup>2</sup> for 5 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.