Duragard VE98

CEMKRETE

Modified high build epoxy vinyl ester resin for high temperature, solvent and chemical resistance coating or FRP lining system

Innovative products for your success

Uses

Duragard VE98 provides exceptional mechanical properties at higher temperature resistance and resistance to solvent and chemical. It is ideally suited for use in tank coating or lining where a high degree of resistance to chemicals, oils and grease is required such as:

- Waste water treatment tank lining
- Chemical manufacturing plants area
- Chemical drainage gutter or pipe
- Transportation tank lining

Advantages

- Durable and low maintenance costs.
- Proven against a wide range of industrial chemicals
- Liquid applied providing complete protection
- Specially formulated for use in hot climate area
- Built up system can be easily achieve

Description

Duragard VE98 is a solvent build-up system based on epoxy vinyl ester resins and curing agents specially selected for their ability to withstand chemical attack. The system consists of pre-weighed base & hardener components.

A slip resistant texture can be provided by the use of one of a range of Anti-slip Grains which have been carefully graded to ensure an even surface.

Specification

The epoxy vinyl ester resin coating and lining shall be of the minimum dry film thickness system shall be 1000 microns with fiberglass lining (~300 - ~600 gsm) and shall have a Tensile strength more than 13 N/mm^2 or above a Flexural strength of 17 N/mm^2 or above a Compressive strength of 80 N/mm^2 or above.

Technical Support

Cemkrete offers a comprehensive technical support service to specifiers, end users and contractors. It offers on-site technical and dedicated specification.

Design Criteria

Duragard VE98 is applied as a wall coating build-up system or multi-layer system (In case of thicker layer needed) comprising of two top coats (depending on the substrate conditions a primer might be required) each top coat to be a minimum of 200 microns thick. To provide a slip resistant texture, the first top coat can be dressed with Anti-slip Grains.

Properties :

The following values were obtained when tested at 25°C.

Styrene content

Duragard VE98	:	40%
Specific gravity	:	1.08
Viscosity	:	350 cps
Gel time at 25°C.	:	10-60 minutes
Physical properties		
Compressive strength	:	>80 N/mm^2
Flexural strength	:	>17 N/mm^2
Tensile strength	:	>13 N/mm^2
Bond strength to concrete concrete	:	> Cohesive strength of -
Average coefficient of linear Thermal expansion from 25°C-100°C X 10^{-6}cm cm^{-1}°C^{-1}	:	70

Chemical resistance

Fully cured **Duragard VE98** samples have been tested in a wide range of aggressive chemicals commonly found in industrial environments. Tests were performed by constant immersion over a set period, followed by visual inspection.

Acids		Resistance
Sulphuric acid 98%	:	Excellent
Hydrogen peroxide 50%	:	Excellent
Hydrochloric acid 50%	:	Excellent
Acetic acid 50%	:	Excellent
Lactic acid 50%	:	Excellent
Citric acid 50%	:	Excellent

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Alkalis

Sodium hydroxide 50%	:	Excellent
Ammonia (0.880) 10%	:	Excellent

Solvents

Petrol	:	Excellent
Oil	:	Excellent
Kerosene	:	Excellent
Butanol	:	Good

Others

Saturated sugar solution	:	Excellent
Urea (saturated)	:	Excellent
Bleach 5%	:	Excellent

All the above properties have been determined by laboratory controlled tests and are in excess of those expected in practice.

Nevertheless, success in use will be determined by the implementation of good housekeeping practices.

Instructions for use

Surface preparation

The long term durability of any resin floor system is determined by the adhesive bond achieved between the flooring material and the substrate. It is most important therefore that substrates are correctly prepared prior to application.

New concrete floors

These should normally have been placed for at least 28 days. Wall should be sound and free from contamination such as oil and grease, mortar and paint splashes or curing compound residues. Excessive laitance can be removed by light mechanical scrabbling, grinding or grit blasting. Light laitance can be removed by acid etching followed by thorough washing with clean water, vacuum cleaning and then allowing the surface to dry.

Old concrete floors

Where deep seated contamination has occurred, mechanical methods such as blasting, grinding or scrabbling should be used to provide a suitable clean surface.

Any necessary repairs should be carried out using Cemkrete repair mortar (see separate data sheets)

Priming

Priming is not normally required provided the substrate is sound, untreated and good quality nonporous concrete. If any doubts exist of the quality of the concrete, or if it is porous it should be primed and treated with Primer 500 as primer coat. The primer should be left to achieve a tack-free condition before applying the top coat. A second coat of primer may be required if the substrate is excessively porous.

Mixing the top coat

In a separate mixing vessel, use a slow speed drill and mixing paddle to mix the base, hardener and colour pot for 3 minutes. Mix these components in the quantities supplied taking care to ensure all containers are scraped clean. DO NOT add solvent thinners at any time.

Limitations

Duragard VE98 should not be applied on to surfaces known to or likely to suffer from rising damp conditions or have a relative humidity greater than 75% as measured in accordance with BS8203 Appendix A, or by a Hammond concrete / mortar moisture tester type COCO.

Standard application

The first coat of **Duragard VE98** should be applied using a good quality medium haired pile roller, suitable for epoxy application to achieve a continuous coating. Ensure that loose hairs on the roller are removed before use. A minimum film thickness of 750 microns should be applied then install fiber glass weight of ranging from 300-600 gsm and roll it until smooth impregnated surface. This can be increased with number of layers where specifications demand.

Standard coverage

Primer 500	:	8-10 m^2/kg
Duragard VE98 (1st coat)	:	1.5 m^2/kg
Fiberglass 300-600gsm	:	1.0 m^2/ m^2
Duragard VE98 (2nd coat)	:	1.5 m^2/kg
Fiberglass 300-600gsm	:	1.0 m^2/ m^2
Duragard VE98 top coat	:	2.5 m^2/ kg
Estimated system thickness	:	~2.5 mm.

Cleaning

Tools and equipment should be cleaned with solvent immediately after use. Spillages should be absorbed with sand or saw dust and disposed of in accordance with local regulations.

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Storage

Shelf life

Duragard VE98 has shelf life of 4 months when stored in warehouse conditions below 35°C in the original, unopened packs.

Storage conditions

Store under warehouse conditions, below 35°C in the original, unopened packs.

Estimating

Supply

Primer 500	:	10 kg. Packs
Duragard VE98	:	20 kg. Packs

Note : Coverage figures given are theoretical and due to wastage factors and the variety of nature of substrates, practical coverage figures may be vary, this will also vary with site and application conditions. The maximum of thickness is not limited, it could be build-up to achieve desired requirement.

Fire

Primer 500 is flammable. Do not expose to naked flames or other source of ignition. No smoke during application. Containers should be tightly sealed when not in use. In the event of a fire, extinguish with CO_2 or foam.

Flash points

Primer 500	:	39 °C

Precautions

Health and safety

Duragard VE98 and Primer 500 should not come in contact with skin and eyes or be swallowed. Avoid prolonged in halation of solvent vapors.
Some people are sensitive to epoxy resins, hardeners and solvents. Gloves, goggles and a barrier cream such as Kerodex Antisolvent or Rozalex Antipaint should be used. Ensure adequate ventilation and if working in enclosed areas, use suitable breathing apparatus.
If mixed resin comes into contact with the skin, it must be removed before it hardens with a resin removing cream such as Kerocleanse Standard Grade Skin Cleanser or Rozaklens industrial Skin Cleanser, followed by washing with soap.
Should accidental eye contamination occur, wash well with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately. DO NOT induce vomiting.

Cleaning and disposal

Spillages of component products should be absorbed on to earth, sand or other inert material and transferred to a suitable vessel. Disposal of such spillages or empty packing should be in accordance with local waste disposal regulations.

Additional Information

Cemkrete manufactures and supplies a wide range of those complementary products which include:

- Waterproofing membranes & waterstops
- Joint sealants & filler boards
- Cementitious & epoxy grouts
- Specialized flooring materials
- Fireproof coating and systems
- Concrete admixture
- Repairing material

For further information on any of the above, please consult your local Cemkrete office - as below.

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