Chemcrete ESD

High-strength, self-smoothing, electrostatic dissipative, hybrid polyurethane flooring system

Product Description

Chemcrete ESD is a 4-part, hybrid polyurethane concrete Resinous flooring system with a smooth and seamless matt surface finish, providing an electrostatically dissipative floor. It is especially designed to withstand chemical attack and high-impact loads. It offers an aesthetically pleasing, textured surface providing good slip resistance and is specifically installed at a 3 to 6 mm thickness.
Chemcrete floors are known for their high chemical, abrasion, and impact resistance.

Storage Conditions/Shelf Life

12 months from the manufacturing date if stored properly in undamaged seal packaging at a temperature between 5°C and- 30°C. It should be kept in a cool, well-ventilated area, away from heat, direct sunlight, sparks, and children.

Salient Features

- Excellent chemical resistance to a wide range of organic and inorganic acids, alkalis, amines, salts, and solvents.
- Good conductivity. Fulfils the conductivity requirements of ASTM F150
- -Excellent bond strength

- Low odour, VOC-free.
- Hygienic. Resists the growth of a wide array of pathogens, bacteria, and fungi.
- High mechanical impact resistance. It has a plastic nature due to which it will deform but will not crack or debond even under heavy impact.
- Good slip resistance.
- High abrasion resistance due to scientifically selected aggregates.
- Easy to clean and sterilise. It can resist cleaning temperature of 80°C @ 6mm and 60°C @ 3mm
- Fast one-step application.
- Can be applied to substrates with high moisture content (5-day-old concrete)

Chemical Resistance

- Outstanding chemical resistance is observed against a wide range of materials, like;
- Strong inorganic acids like sulphuric acid (<35%), Hydrochloric acid (<35%), and phosphoric acid (<50%).
- Strong organic acids commonly encountered in food processing industries like Acetic acid (<30%), citric acid, Formic acid, Uric acid, oleic acid, and actic acid.
- Strong alkali solutions like Potassium hydroxide (<50%), sodium hydroxide (<50%), etc.
- Diesel, Petrol (gasoline), Mineral oils, etc.
- Vegetable oils, Hydrogenated vegetable oils, Fats, Glucose, Sucrose, etc.
- Sanitization chemicals like sodium hypochlorite solution, detergent solutions, etc.
- Commonly used solvents like ethyl alcohol, IPA, xylene, and various Amines.
- A detailed but non-exhaustive list of chemicals to which Chemcrete is resistant is available upon request.

Product Data

Appearance / colour:	Chemcrete ESD[R] Resin: Chemcrete ESD[H]Hardener: Chemcrete Aggregates Chemcrete pigment	Black liquid Brownish liquid Whitish Powder Coloured paste

Uses

- Generally used in dry/wet areas such as food or pharmaceutical processing plants.
- Chemical and fertilizer plants, laboratories, and clean rooms.
- Heavy engineering and automobile workshops, warehouses.
- Beverage bottling plants
- Thermal shock areas, explosive dust environment
- Chemical and explosive storage and handling areas

Technical Profile

Property	Test Method	Value and Unit
Mixing Ratio	NA	Pre weighed kit to cover: 1) 3.5 sq.m area @ 3mm 2) 2.65 sq.m area @ 4mm 3) 1.75 sq.m area @ 6mm
Finish	CPI* 1001	Non porous, matt
Pot Life		
@ 10 °C	CPI 1002	~35 min
@ 20 °C	CPI 1002	~24 min
@ 35 °C		~14 min
Curing time		
Surface Dry @ 35 deg °c	CPI 1002	~12 hours
Hard Dry [Open for foot traffic]@ 35 °C		~18 hours
Full Cure [Vehicular Movement] @ 35 °C		~3-4 day
service temperature	CPI 1010	15-80°C @3mm
Surface spread of flame	BS476 Part 7	>Class 2
Coefficient of thermal expansion	(ASTM C531)	3.6×10-5 °C
Electrostatic behavior	ASTM F150	Resistance to ground 10 6-109 Ohm

Mechanical Properties

Compressive Strength	ASTM C 579	>500 Kg/cm2
Flexural Strength	ASTM C 580	>200Kg/cm2
Tensile Strength	ASTM C 307	>90 Kg/cm2
Pull off Adhesion Test	ASTM D 4541	Concrete Failure @ 18 Kg/cm2
Abrasion Resistance [Taber]	ADTM D 4060	45 mg loss
Shore Hardness	ASTM D 2240	D 80
Shelf Life	-	12 months in original unopened Container when stored between 5- 40°c

Method of Application

All Chemsol Products are recommended to be applied only by Approved Applicators and should be handled after using proper PPEs like Gloves, mask, gogglesetc

Substrate Quality

Ensure that the concrete substrate has a minimum compressive strength of 250 kg/cm^2. The CDS (clean, dry, sound) test must be conducted before application of primer/scratch coat to the concrete substrate. The substrate must be free of all contaminants such as dirt, oil, grease, coatings, surface treatments, etc. Consider applying a test area if necessary.

Substrate Preparation

Mechanically prepare the concrete substrate to achieve a concrete surface profile between 4-6. This will also aid in removing weak concrete and cement laitance. Suitably established methods like scarification, grinding, abrasive shot blasting, etc., should be employed to achieve the same. Fully expose the blowholes and voids and repair them using appropriate products like Chemprime, Chemseal, etc. Remove oils, grease, wax, etc. by using detergent, low-pressure water, steam, or suitable chemicals, as they create a hindrance in developing a strong bond between the concrete and Chemcrete ESD. Prime the surface with a 1mm scratch coat of Chemcrete MD. Priming can also be done with Chemcrete LV primer or Chembase 150. Your Chemsol solutions expert will choose the suitable primer depending on the substrate condition. After that, apply one layer of Aquaprime (Black conductive primer) with a roller. Identify and treat the expansion joints properly. Refer to the method statement for doing the same.

Cleaning of Tools

Clean all tools and application equipment with thinner PT 36 immediately after use. Hardened and/or cured material can only be removed mechanically.

Packing

Chemcrete ESD is available in pre pre-weighed kit.

Application conditions

Substrate temperature: 10-40°C

Substrate moisture content: -Chemcrete can even be applied on substrates with high moisture content, like 6-day-old concrete, but ensure that the water is not ponded on the surface.

Relative humidity: 80%max

Note: The substrate temperature must be at least 3 °C above the prevalent dew point temperature to reduce chances of condensation on the floor.

Mixing and Application

Pour Chemcrete ESD [R] into a 20-liter bucket and add Chemcrete pigment paste to it. Stir with a helical paint mixer for 1 minute, now add Chemcrete ESD [H] and continue stirring for 1 more minute. After this, add chemcrete aggregates and thoroughly mix for 2min. Always mix complete packs, never split packs. Note that chemcrete

ESD aggregates are specially formulated reactive materials, and their quantity should not be altered to adjust the viscosity for workability. Visually ensure that the mixture has become homogeneous. Immediately lay the mixture on the floor and spread it with a notch trowel/ pin rake to the desired thickness. Use a spike roller immediately (in less than 2min after laying) to deaerate the coating. Adhere to the following curing schedule before bringing the floor to service:

Temp.(deg C)	Foot traffic	Full cure
10°C	24 hours	7 Days
20°C	24 hours	5 Days
35°C	24 hours	4 Days

Handling & Safety

Keep the containers tightly sealed when not in use. Avoid skin contact and inhalation of fumes (if any). While spraying, it is advised to wear a mask. If it comes in contact with the body, wash affected parts with plenty of soap and water. In case of persistent irritation, contact a physician.

Factory Address:
Plot No. C93, MIDC, Additional Jejuri, Tal: Purandar, District, Pune, Maharashtra, India. PIN: 412303

Correspondence Address:
Office No. 101, G wing, KK Market, Dhankawadi, Pune-411043.

Enquiry:
Mobile: +91-7720002824 | 020-24371247
For Sales: sales@chemsolpoly.com
For Materials: purchase@chemsolpoly.com