

CHEMCRETE

MD (G)

High-strength, self-smoothing hybrid polyurethane flooring system

Product Description

Chemcrete MD is a 4-part, hybrid polyurethane concrete Resinous flooring system with a smooth and seamless matt surface finish. 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.

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
- Restaurant kitchens

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 Lactic 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 MD [R] Resin	Milky white liquid
	Chemcrete MD [H] Hardener	Brownish liquid
	Chemcrete Aggregates	Whitish Powder
	Chemcrete pigment	Coloured paste

Storage Conditions/Shelf Life

12 months from the manufacturing date if stored properly in undamaged seal packaging at a temperature between 5°C-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.
- Excellent bond strength.
- Low odour, VOC-free.
- Hygienic. Resists 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 materials. aggregates.
- Easy to clean and sterilise. It can resist cleaning temperatures of 80°C @ 6mm and 60°C @ 3mm.
- Fast one-step application.
- It can be applied to substrates with high moisture content (5-day-old concrete).

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	CPI 1002	~14 min
Curing time		
Surface Dry @ 35 °C	CPI 1002	~12 hours
Hard Dry [Open for foot traffic]@ 35 °C		~18 hours
-Full Cure [Vehicular Movement] @ 35 °C		~3-4 days
Coverage	CPI 1010	1.9Kg / (m2) / mm

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 the original unopened Container when stored between 5-40°C
Surface spread of flame	Bs476 Part 7	Class 2
Coefficient of thermal expansion	(ASTM C531)	3.6×10-5/°C
Service temperature	CPI1984	-15 to 60 °c @ 2mm -20 to 80 °c @ 6mm

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, goggles, etc

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.

Substrate Quality

Ensure that the concrete substrate has a minimum compressive strength of 250kg/cm². 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, and 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 MD. 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. Identify and treat the expansion joints properly. Refer the method statement for doing the same.

Mixing

Pour Chemcrete MD [R] into a 20 lit bucket and add chemcrete pigment paste to it. Stir with a Cowl blade mixer for 1min, now add chemcrete MD [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 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 desired thickness. Use a spike roller immediately (in less than 2min after laying) to deareate the coating. Adhere to the following curing schedule before bringing the floor to service:

Curing Schedule

Temp.(deg C)	Foot traffic	Full cure
10°C	24 hours	7 Days
20°C	24 hours	5 Days
35°C	16 hours	4 Days

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 MD is available in pre pre-weighted kit of 20 kg consisting of Resin, Hardener, Aggregates, and pigment paste.

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 water. In case of persistent irritation, contact a physician.

Disclaimer: The Information provided is based on our experience, thorough investigations & sophisticated testing methods, but due to the vast number of applications and usage methods, Chemsol Polymer Industries cannot accept responsibility of any kind for any particular result. It is the responsibility of the user to verify the suitability of the product for their end use and in accordance with the rules and regulations of that country /territory. All information provided pertaining to our products should be treated only as a guidance tool without any guarantee or warranty of any sort.

* All CPI test methods are our scientifically designed internal test methods which can be shared upon request.

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