

CHEM-DESIGN™

PREMIUM HIGH PERFORMANCE INDUSTRIAL EPOXY COATING
The Ultimate Clear Topcoat Designed for Metallic Systems

Technical Data Sheet

DCC Master Format™ 09 67 00

COMMERCIAL INDUSTRIAL INSTITUTIONAL RESIDENTIAL



CHEMTEC

EPOXY COATINGS

PRODUCT DESCRIPTION

CHEM-DESIGN™ for metallic floors is a premium, two-component (2:1), 0 VOC epoxy coating made from 100% solids, offering an exceptionally clear finish and remarkable self-leveling properties.

It delivers a sleek, flawless surface with outstanding chemical and abrasion resistance, setting the bar for high-performance coatings.

Engineered for demanding projects, **CHEM-DESIGN™** boasts outstanding working time, providing greater flow, effective air release, and a longer application window. Whether working on intricate designs or large-scale surfaces, this premium epoxy coating helps create a smooth, even finish with ease.

With its advanced formulation, **CHEM-DESIGN™** enables effortless application, producing luxury-grade results in a wide range of environments.

Its enhanced defoaming capabilities ensure a consistent and uniform surface, making it the ideal choice for high-end installations.

CHEM-DESIGN™ not only meets, but exceeds, the strict standards set by both the Canadian Food Inspection Agency (C.F.I.A.) and the FDA, ensuring it's well-suited for a variety of professional applications.

CHEM-DESIGN™ can also be used in combination with CHEM100™ SERIES, CHEM-PROOF™ MVB SERIES, CHEM OIL-PRIME™, CHEM-WATER, and CHEM WB2K™.

For detailed technical specifications or application-specific guidance, please consult with a Chemtec Coatings representative.

BENEFITS:

- ☑ Virtually odorless
- ☑ VOC Compliant
- ☑ Enhanced UV Blockers for prolonged protection.
- ☑ High Sheen
- ☑ Potential for LEED eligibility
- ☑ Low maintenance
- ☑ Superior mechanical and chemical properties
- ☑ Extended working time
- ☑ Flawless finish
- ☑ Enhanced Defoaming Properties
- ☑ Superior Color Stability
- ☑ Seamless Finish
- ☑ Amazing Flow
- ☑ Excellent chemical resistance
- ☑ Impermeability / Mold resistant
- ☑ VOC and EPA Compliant in all States and Canadian Provinces
- ☑ CIFA, USDA, FDA, Food Safety Compliant

APPLICATIONS

The chemical and mechanical properties of the **Pro Epoxy™** provide excellent results for several applications.

- Pharmaceuticals
- Garage floors
- Kitchens
- Corridors
- Showrooms
- Commercial Centers
- Office buildings
- Other Residential applications
- Or any other areas where delivering luxury-grade result is required.
- Laboratories
- Washrooms & Showers
- Manufactures/Fabrication
- Public facilities
- Schools
- Hospitals
- Retail Stores
- Other commercial applications

COLOURS

Clear

(Pigments sold separately. See chart for available colors)

Endless color and texture combinations can be achieved by dispersing colorful flakes, colored quartz, silica sand, or pigmented micas...

PACKAGING

The **CHEM-DESIGN™** kit consists of Resin Part A and Part B Hardener.

	Part A	Part B
3 Gallon Kit	2 Gallons	1 Gallon
15 Gallon Kit	10 Gallons	5 Gallons

Larger bulk units are available upon request.

TESTING

All surfaces are not the same. It is recommended to create a sample area before starting the project. The test should be performed on site, using the method offered by your CHEMTEC™ representative to ensure good adhesion and color. A sampling area should also be performed on existing coatings to determine if there are any contaminants or if delamination will occur.

CHECK CONCRETE MOISTURE

Concrete must be dry before application of this floor coating material. Concrete moisture tests are required, either ASTM F1869 (calcium chloride) or ASTM F2170 (in situ RH probe) or any other methods approved by CHEMTEC™ COATINGS INC.



CHECK TEMPERATURE AND HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet requirements. Dew point must be 5°F (3°C) or more below the surface temperature. Do not apply if humidity is at or above 80%.

SURFACE PREPARATION

Surface preparation in accordance with: ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair. The pH of the concrete substrate should be at 9 or above. All bond-breaking material must be removed.

PHYSICAL PROPERTIES

PROPERTIES	VALUES	REFERENCES
Compressive Strength	14,000 psi – 96MPa	ASTM C 579
Flexural Strength:	3,700 psi – 25.5MPa	ASTM D 790
Tensile Strength:	8,000 psi – 55.2MPa	ASTM D 638
Bond Strength (concrete):	350psi – (2.4) Concrete fails at this point	ASTM D 4541
Flammability	Self-extinguisher	ASTM D 635
Hardness (Shore D):	> 80 (24hrs)	ASTM D 2240
Water Absorption:	< 0.1% < 0.1%	ASTM D 570 MIL D 3134
Impact Resistance	No chipping, cracking, or delaminating	ASTM D 2240
Flash Point:	>200°F - >93°C	
Abrasion Resistance:	58 mg loss	ASTM D 4060
Volumetric Ratio:	2A:1B	
Solids Content by Volume:	100%	
VOC's:	<50g/L.	
Viscosity (cP):	Part A 127Ku/760gm/3509cP	Part B 51.5Ku/67gm/199cP
Density f:	Part A 1,15g / cm ³	Part B 1,00g / cm ³

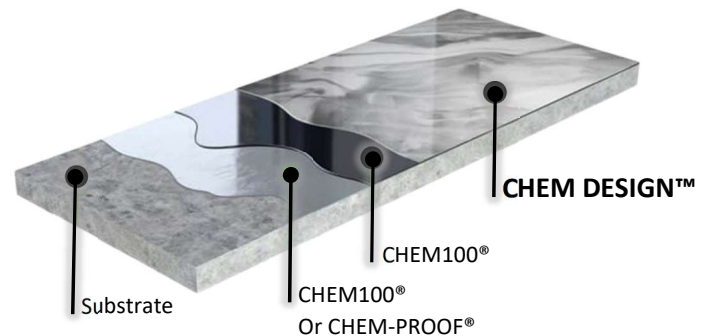
PRODUCT DATA

*Coverage (Wet Mil):	160.27 SQ. FT./Gallon @ 10mils
**Application Temperature:	Min 50°F (10°C) Max 90°F (32°C)
**Min Substrate Temperature:	Min 50°F (10°C) Max 95°F (35°C)
Thinner:	Not required
Pot Life @ 21°C (69.8°F):	20 minutes
**Drying / Curing Time :	
Working Time:	80 mins @ 77°F (25°C) 50% Rh
Tack Free:	16hrs @ 77°F (25°C) 50% Rh
Light Foot Traffic:	5-7 hours
Foot Traffic:	36 hours Light foot traffic 72 hours Heavy foot traffic
Vehicular Traffic:	72 hours @ 69.8°F (21°C) 31% Rh
Maximum Recoat Time:	24 hours
Shelf Life:	12 months (in original sealed packaging)
Storage:	Shelved at a min 15°C (59°F)
Transport:	Temp controlled at a min 15°C (59°F)

USDA Food & Beverage & CFIA: Meets the requirements

*Coverage will differ depending on the quality, porosity, of the substrate, thickness, and application methods.

** Higher and lower temperatures and humidity levels will affect the pot-life, working time, and curing time.



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CONCRETE SURFACE PREPARATION

> **Before applying the coating system, the concrete must be:**

- Dry – No wet zones/stagnant water (<4%)
- Clean – Eliminate all contaminants, dust, grease, delaminated coating, laitance, or any other contaminants that may prevent proper adhesion.
- Profiled – Mechanically profiled Surface (Surface Preparation ICRI Guideline No. 310.2R Concrete Surface Profile (CSP2 and above) Depending on System to be Installed and Condition of Concrete, and/or approved by a CHEMTEC™ COATINGS Representative.
- Sound – All cracks and chipped areas should be repaired with CHEM-FILLER™, CHEM-FILLER™FC, or any other methods approved by CHEMTEC™ COATINGS.
- Concrete preparation must be carried out by mechanical means such as shot blasting, grinding, sandblasting, or any other method approved by CHEMTEC™ COATINGS.

PATCHING & REPAIRS

Cavities, cracks, joints, and imperfections will be visible in the coating if the concrete is not repaired properly. Level and fill the concrete cavities with **CHEM-FILLER™** or **CHEM-FILLER FC™**. Once the material is cured, correct any imperfections by diamond sanding. If a repair material other than **CHEMTEC™** is used, contact a **CHEMTEC™** technical representative for approval of a compatible alternative.

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MIXING

The mixing ratio for the **CHEM-DESIGN™** is 2 to 1 (by volume). In other words, two parts A (resin) for one part B (hardener).

Mix the **CHEM-DESIGN™** using a drill and a mixing paddle.

case

1. Add the contents of the pre-measured **CHEM-DESIGN™** and mix thoroughly for 3 minutes.
2. **CHEM-DESIGN™** is designed to be immediately poured onto the floor. Leaving the mixed product in the container will greatly reduce the working time.
3. Do not leave the container dripping onto the floor.

APPLICATION INSTRUCTIONS

Always apply at decreasing temperatures. Concrete is porous and traps air. At rising temperatures (usually in the morning), the air expands and can cause gas to escape in the coating. It is safer to apply the coatings in the late afternoon, especially for exterior applications.

The optimum ambient temperature should be between 65-77°F (18-25°C) during application.

1. Mix the gallons of resin using the mixing instructions above.
2. Pour the content of the **CHEM-DESIGN™** onto the surface, in a ribbon pattern, while walking and pouring at the same time until the bucket is empty.
⚠ Do not leave the container upside down dripping onto the floor.
3. Using a squeegee on an extension, pull the **CHEM-DESIGN™** over the surface evenly covering the surface. Coverage will depend on the desired thickness and/or design patterns.
4. Using a 10mm microfiber roller, roll evenly forward and backward.
5. Finally, roll in the opposite direction as in step 4.
6. If an additional topcoat is required, ensure to have the surface cleaned of any debris and/or particles.
7. If any imperfections need corrections, sand any high points or imperfections, vacuum thoroughly, and ensure to have the surface cleaned of any debris and/or particles.
8. Apply topcoat.
9. If additional chemical, abrasion, and/or anti-slip protection is required, contact your CHEMTEC™ COATINGS representative for recommendations.

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PRODUCT LIMITATIONS

Concrete slabs at ground level emit invisible moisture vapor. The permissible moisture emissions for concrete are 3 lb. / 1000ft² over 24 hours (<4%) based on calcium chloride test. Additionally, a relative humidity (RH) test can be performed to test for moisture vapor. Relative humidity test results should be less than 85% per ASTM F2170. If humidity is above this level, blistering and delamination of the coating may occur. A calcium chloride or relative humidity test should be performed to determine the moisture levels of the concrete. If humidity levels exceed 85% for RH test or 3 lbs. for calcium chloride, a concrete moisture vapor control system should be used before applying the coating system.

Humidity Control System Recommendation: For cases where humidity levels exceed acceptable limits (<4%), it is recommended to use; **CHEM-PROOF™**, **CHEM-PROOF™SC**, or **CHEM-PROOF™ RAPID** Moisture Vapor Barriers. These MVB systems meet the F3010 specification as verified by E96 test results. For further information or guidance, please contact a **CHEMTEC™ COATINGS** representative for details.

Joint and Crack Treatment: To minimize the risk of cracking in the coating system caused by concrete movement or separation, proper treatment of joints and cracks is essential prior to application.

⚠ **Control Joints & Random Cracks:** These should be either sawn or chiseled before being filled with the **CHEM-FILLER™**, **CHEM-FILLER™ FC**, or **CHEM3000™** elastomeric epoxy or polyurea crack filler to ensure stability and smoothness.

⚠ **Construction/Cold Joints:** These joints, where two slabs meet and may experience movement, must be addressed before coating. After the coating has been applied and fully cured, saw off the coating over the construction joints and fill them with an elastomeric joint filler for flexibility and durability.

⚠ These procedures are critical for maintaining the integrity and longevity of the coating systems.

For further information or guidance, please contact a CHEMTEC™ COATINGS representative.

⚠ Higher temperatures and humidity levels may reduce working time

⚠ Lower temperatures levels may slow the drying and curing process.

⚠ Tire transfer may occur when products are subjected to excess heat and humidity levels. Appropriate ventilation is recommended to minimize the curing period and maximize proper evaporation.

DISPOSAL

- ⚠ Excess material of (A and B) should be mixed and allowed to cure. Cured product may be disposed without restriction.
- ⚠ Uncured materials should be stored in a suitable and sealed container and may be disposed in accordance with provincial, State, municipal, and /or Federal regulations.

⚠ SAFETY WARNING

Avoid contact with the skin. Some people may be allergic to epoxy resin. Protective gloves, eyewear, protective clothing, and adequate ventilation are recommended.

For additional information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent **CHEM-DESIGN™** Material Safety Data Sheet containing physical, ecological, toxicological, and other safety-related data.

– KEEP OUT OF REACH OF CHILDREN –

- FOR INDUSTRIAL USE ONLY -

– KEEP FROM FREEZING –

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WARRANTY



CHEMTEC™ COATINGS products are backed by a one-year guarantee from the date of application. For comprehensive details, please consult the CHEMTEC™ COATINGS Hardware Limited Warranty for additional details.

Disclaimer and Product Information

The recommendations and information regarding the application and end-use of CHEMTEC™ COATINGS products are provided in good faith, reflecting CHEMTEC™ COATINGS 's extensive knowledge and expertise. This guidance is based on the assumption that the products are stored, handled, and applied according to standard prescribed conditions and within their specified shelf life.

However, due to the wide range of variables, such as differing materials, substrate conditions, and environmental factors at actual project sites, the performance of these products may vary. As such, CHEMTEC™ COATINGS makes no warranty, either expressed or implied, regarding the merchantability, fitness for a particular purpose, or any other aspect of product performance under diverse conditions.

Users bear the responsibility of determining whether the products are suitable for their specific application needs and must conduct adequate testing to confirm compatibility and performance. Additionally, users are advised to observe all proprietary rights of third parties and adhere to applicable legal requirements during use.

Sales Conditions

All orders are accepted under CHEMTEC™ COATINGS 's current terms of sale and delivery, which can be provided upon request.

Accessing Product Details and Support

For the most accurate and up-to-date product information, users should refer to the latest version of the Technical Data Sheet for the specific product. These documents are readily available upon request, accessible online at www.epoxychemtec.com or by consulting CHEMTEC™ COATINGS 's technical representatives.

For further inquiries or assistance, users may also contact

CHEMTEC™ COATINGS. via email at info@epoxychemtec.com.