CHEM100™

REGULAR SETTING EPOXY COATING

DCC Master Format™ 09 67 00

COMMERCIAL INDUSTRIAL INSTITUTIONAL RESIDENTIAL

PRODUCT DESCRIPTION

CHEM100™ is a two-component epoxy coating containing 100% solids (solvent-free), no VOCs and virtually odorless materials. The product has excellent resistance to UV rays and the tendency to yellowing over time is one of the slowest in the industry. In addition, **CHEM100™** has superior mechanical and chemical properties, making it an ideal choice for residential and commercial applications. The product provides a very long working time and pot life, which facilitates its application. It was formulated to be used as a topcoat but can also be used as a basecoat. The **CHEM100™** is self-prime thus, no need for an additional primer. The formulation of **CHEM100™** is based on the most recent technological advances in cycloaliphatic polyamines providing excellent properties and an impeccable aesthetic finish.

ADVANTAGES:

- ☑ Essentially odorless
- ☑ VOC Compliant
- ☑ High Sheen
- ☑ Potential for LEED eligibility
- ☑ Self-Priming
- ☑ High Color stability
- ☑ Chemical resistance
- ☑ Seamless Coating
- ☑ Withstands average traffic at a minimum thickness of 8Mils
- ☑ System offering the best UV resistance in the industry
- ☑ Environmentally friendly, 100% solids, VOC and solvent free
- ☑ Ease of application with long pot life and long working time
- ☑ Excellent elongation and abrasion resistance
- ☑ High resistance to the phenomenon of rising amine and contaminants (fish eyes).
- ☑ Superior mechanical and chemical properties
- ☑ Impermeability / Mold resistant
- ☑ High density of the product preventing the penetration of dirt and facilitating maintenance

APPLICATIONS

- Pharmaceuticals
- Food processing
- Garage floors
- Kitchens
- Corridors
- Showrooms
- Laboratories
- Commercial Centers
- Office buildings
- Washrooms & Showers
- Manufactures/Fabrication
- White Rooms
- Schools
- Hospitals
- Retail Stores
- Warehouses

COLORS

CHEM100™ is available in several standard colors, custom colors, liquid pigments, metallic pigments, and clear. (See the CHEMTEC ™ color chart)

By diffusing colored flakes, colored quartz or silica sand, endless combinations of colors and textures can be created.
(* additional charges may apply)

Available colors:

- Standard Colors
- Metallic Pigments
- Red Tile*
- Blue Security*
- Green Security *
- Liquid Pigments
- Red Security*
- Yellow Security*

PACKAGING

The **CHEM100™** kit consists of Resin Part A and Part B Hardener.

	Part A	Part B
Unit of 1 gallon	Pre-Mesured	Pre-Mesured
3 Gallon Kit	2 Gallons	1 Gallon
15 Gallon Kit	10 Gallons	5 Gallons
Barrel Kit	104 Gallons	52 Gallons

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.

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:	3,900 psi – 26.9MPa	**ASTM D 638**
Bond Strength (concrete):	350psi – (2.4)	**ASTM D 4541**
	Concrete fails at this point	
Taber Abrasion:	75-80 Mgs	**ASTM D 4060**
Flammability	Self-extinguisher	**ASTM D 635**
Hardness (Shore D): Water Absorption:	85 < 0.1% < 0.1%	**ASTM D 2240** **ASTM D 570** **MIL D 3134**
Impact Resistance	No chipping, cracking, or delaminating	**ASTM D 2240**
Flash Point:	>200°F - >93°C	
Abrasion Resistance (CS-17 Wheel, 1,000 g load, 1,000 cycles)	0.150 mg loss	**ASTM D 4060**

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PRODUCT DATA

Volumetric Ratio:	2:1
Solids Content:	100%
*Coverage:	75 - 600 P.C.
Application Temperature:	65-90°F (18-32°C)
Min Substrate Temperature:	50ºF (10ºC)
Max Substrate Temperature:	86ºF (30ºC)
Thinner:	Not required
Pot Life @ 21ºC:	15-20 minutes
**Drying / Curing Time :	
Working Time:	30-40 minutes
Tack Free:	12 hours
Pedestrian:	24 hours
Traffic:	48 hours
Curing Time @ 21ºC for resurfacing:	24 hours
Shelf Life:	12 months
USDA Food & Beverage & CFIA:	Meets the requirements

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

***Based at 71ºF (22ºC) & 55% relative humidity*

CHEMICAL RESISTANCE

REAGENT	RESULTS
ASTM 1308, Covered 7 days.	
Detergent solution (5% Ajax)	Unaltered
Sodium Chloride 20%,	Unaltered
Calcium Chloride 20%	Unaltered
Ammonia 20%	Unaltered
Trisodium phosphate 20%	Unaltered
Caustic Soda 20%	Unaltered
Javex 3%	Unaltered
Mineral spirits	Unaltered
Methanol	Unaltered
Toluene	Unaltered
Xylene	Unaltered
Hydrochloric acid 10%	Unaltered
Citric acid 10%	Unaltered
Lactic acid 5%	Unaltered
Unleaded petrol	Unaltered
Coffee	Unaltered
Tea	Unaltered
Beer	Unaltered
Skydrol	Unaltered
Nitric acid 10%	Some yellowing
Sulfuric acid 10%	Slightly discolored

PREPARATION OF CONCRETE

Before applying the coating, the concrete must be:

- ☑ Dry – No wet zones (<4%)
- ☑ Clean – Eliminate all contaminants, dust, grease, coatings, delaminated coatings, laitance, or any other contaminants that may affect and/or decrease or prevent a good adhesion.
- ☑ Profiled – Machanically profilled surface at a CSP2-6
- ☑ Sound – All cracks and shelled areas must be repaired.
- ☑ Concrete preparation must be done by mechanical means, or any other method approved by CHEMTEC™

Mechanical preparation is the preferred method of preparing concrete for coating application. Shot-blasting, diamond grinding, scarifying and scabbling are all acceptable methods. Contact your CHEMTEC™ Representative for suitable preparation method.

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.

MIXING

The ratio **CHEM100™** is 2 to 1. That is, two parts A (resin) to one part B (hardener). Generally, three mixed gallons of **CHEM100™** at a time is ideal for application. Mix the following with a drill and mixing paddle. Note: If using a drill mixer, use a low speed (not to exceed 300 rpm) to prevent air entrapment.

1. Add 1 gallon of CHEM100™ Part B into the premixed 2 gallons of Part A and mix for another 3 minutes.

2. CHEM100™ is designed to be immediately poured on the floor. Leaving mixed product in the container will greatly reduce working time. Once poured out on the floor, 30-40 minutes of working time can generally be expected.

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APPLICATION INSTRUCTIONS

Application of CHEM100™ for a solid color coat system is applied in two coats or in one pass as a topcoat over CHEM100™. For estimation purposes, use from 25 SF (colored) to 200 SF per gallon in either case.

1. Always apply in descending temperatures. Concrete is porous and traps air. In ascending temperatures (generally mornings) the air expands and can cause out gassing in the coating. It is safer to apply coatings in the late afternoon, especially for exterior applications.
2. Optimum ambient temperature should be between 65-90°F during application.
3. Mix three gallons of resin using above mixing instructions.
4. Apply approximately 25 SF (colored) to 200 SF per gallon by immediately pouring out on surface in a ribbon, while walking and pouring at the same time until bucket is empty.
5. Using a squeegee on a pole, pull **CHEM100™** over substrate. As a first coat over bare concrete, pull resin as thin as possible while still wetting out concrete and uniformly covering surface. This allows trapped air to escape more easily. To apply in a single coat over a **CHEM100™**, pull at about 150-200 SF per gallon.
6. Using a 10MM non-shedding roller, roll coating forwards and backwards.
7. Lastly, back roll in the opposite direction as step 6.8. Apply second coat by repeating steps 1-7 the next day.
8. Sweep floor and sand any high spots or defects.
9. Apply Top-Coat at approximately 125 S/F per gallon. Use the same procedure as in Step 4, but without broadcasting.
10. For a 100-125 mil double broadcast system, repeat above steps.

*If additional chemical and abrasion protection is required, contact your CHEMTEC representative for recommendations.

Chip/Silica Sand Broadcast Instructions

1. Chip Broadcast: After Following Steps 1-4 from Quartz broadcast, Next Broadcast Color Chips/Micro Chips (150-200 SF per 25 lb. box) by tossing them into the air and allowing them to gently rain down into the wet resin.
2. For a random broadcast, use 1 lb. of chips per 100 S/F.
3. Allow to cure. Then scrape the basecoat with a drywall scraper in all directions. Or lightly sand chips using a floor maintainer machine. (sanding will result in smoother finish) Vacuum small pieces and dust well. (Not vacuuming well enough can cause coating to not bond correctly.)
4. Silica Sand Broadcast: Following Step 6 above, gently throw the silica sand up into the air, allowing it to fall without lumping in one spot or moving the resin. Do this until the floor is totally saturated with the silica sand and the resin will not accept any more. This generally requires 1/2 to 3/4 lbs. per S/F. Allow to dry for 4-6 hours.
5. Sweep floor and sand any high spots.
6. Following either method, apply final topcoat **CHEM100™** SERIES, **CHEM1000™** & **CHEM1000 WT™** Polyaspartic, or **CHEM PU™** Polyurethane Coatings.

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PRODUCT LIMITATIONS

Concrete slabs at ground level emit invisible moisture vapor. The permissible moisture emissions for concrete are 3 lb. / 1000 CP over 24 hours (<4%) based on calcium chloride test. In addition, 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.

CHEM-PROOF™ System is the recommended system for humidity above acceptable levels. The **CHEM-PROOF™** vapor barrier system Passes the F3010 specification based on E96 test results. Please contact your **CHEMTEC™** representative for details.

Coating systems are susceptible to cracking if the concrete moves or separates under the coating. Therefore, the treatment of joints and cracks should be reviewed prior to coating application. As a general rule, control joints (saw cuts) and random cracks should first be sawn or chiseled and then filled with **CHEM-FILLER™** or **CHEM-FILLER FC™.** Construction / cold joints (two slabs that meet and therefore move) must be treated. After the coating has been applied and cured, saw off the coating over the construction joints and apply elastomeric caulk.

WARRANTY

CHEMTEC™ coatings products are guaranteed for one year from the date of application. Please refer to the CHEMTEC™ COATINGS Limited Warranty for additional information.

SAFETY DISCLAIMER

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

For more details, consult the CHEM-100™ “Material Safety Data Sheet”.

– KEEP OUT OF REACH OF CHILDREN –

- FOR INDUSTRIAL USE ONLY -

The information presented herein are believed to be accurate and reliable but are presented without guaranties or responsibility on the part of CHEMTEC COATINGS™. It is the responsibility of the end user to verify and validate this information and the suitability of this product in their own systems. CHEMTEC COATINGS™. decline all responsibility for the use of this product in any systems.

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