CHEM1000 PG™

HIGH PERFORMANCE POLYASPARTIC COATING

Technical Data Sheet

DCC Master Format™ 09 67 00

COMMERCIAL INDUSTRIAL INSTITUTIONAL RESIDENTIAL

PRODUCT DESCRIPTION

CHEM1000 PG™ is a two-component (2:1) Polyaspartic coating system. The **CHEM1000 PG™** is used as a clear topcoat using the lates in technological advancement. It provides a quick turnaround with extended working time and rapid curing time allowing the installation of a flooring system in a single day. This product offers superior mechanical and chemical properties and is low maintenance. It also displays a superior aesthetic finish and complete UV stability. If needed, we recommend the utilization of the CHEMTEC vinyl chips/Quartz/Aggregates in combination with **CHEM100™, CHEM1000™, CHEM1000™ HD,** and **CHEM1000 PREMIUM™** products.
(Ask a CHEMTEC™ representative for additional details).

ADVANTAGES:

- ☑ Indistinct odor
- ☑ VOC Compliant
- ☑ High Sheen
- ☑ Potential for LEED eligibility
- ☑ Low maintenance
- ☑ High Solids
- ☑ Excellent elongation and abrasion resistance
- ☑ Superior mechanical and chemical properties
- ☑ WT version offers extended working time.
- ☑ Self-Priming
- ☑ High Color stability
- ☑ Chemical resistance
- ☑ Seamless Coating
- ☑ Completely Aliphatic
- ☑ Multi-Coat application in one single day.
- ☑ 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 CHEM1000 WT™ provide excellent results for several applications.

- Pharmaceuticals
- Garage floors
- Kitchens
- Corridors
- Showrooms
- Laboratories
- Commercial Centers
- Office buildings
- Other Residential applications
- Food processing
- Washrooms & Showers
- Manufactures/Fabrication
- Public facilities
- Schools
- Hospitals
- Retail Stores
- Warehouses
- Other commercial applications

COLORS

Clear
(Pigments sold separately. See the CHEMTEC™ color chart)
Endless color and texture combinations can be achieved by dispersing colorful flakes, colored quartz, or silica sand.

PACKAGING

The **CHEM1000 PG™** 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 units 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 85%.

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.

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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)	**ASTM D 4541**
	Concrete fails at this point	
Flammability	Self-extinguisher	**ASTM D 635**
Hardness (Shore D): Water Absorption:	> 53 < 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)	58 mg loss	**ASTM D 4060**

PRODUCT DATA

Volumetric Ratio:	2A:1B
Solids Content:	80%
*Coverage (Wet Mils):	160 SQ. FT./Gallon @ 10mils
Viscosity (cP) Part A	971-1571
Viscosity (cP) Part B	115-145
**Application Temperature:	Min 50°F (10°C) Max 90°F (32°C)
Min Substrate Temperature:	33°F (1°C)
Thinner:	Not required
Pot Life @ 21°C (69.8°F):	10 minutes
**Drying / Curing Time :	
Working Time:	30 mins @ 69.8°F (21°C) 31% Rh 16 mins @ 75°F (24°C) 61% Rh
Gel Time:	36-55 min
Tack Free:	1h45 hrs @ 69.8°F (21°C) 31% Rh 45 min @ 75°F (21°C) 31% Rh
Light Foot Traffic:	5-7 hours
Foot Traffic:	24 hours
Vehicular Traffic:	72 hours @ 69.8°F (21°C) 31% Rh
Max Curing Time 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 69.8-75°F (21-24°C) & 31-61% relative humidity.*
Higher temperatures and humidity will shorten pot-life and working time.

CHEMICAL RESISTANCE

REAGENT	RESULTS
ASTM 1308, Covered 7 days.	
Skydrol	Unaltered
Betadine	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

CONCRETE SURFACE PREPARATION

Before applying the coating system, the concrete must be:

- Dry – No wet zones (<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 (CSP 2 and above) Depending on System to be Installed and Condition of Concrete, and/or approved by a CHEMTEC™ Representative.
- Sound – All cracks and chipped areas should be repaired with CHEM-FILLER™, or CHEM3000™.
- Concrete preparation must be carried out by mechanical means such as shot blasting, grinding, sandblasting, or any other method approved by CHEMTEC™.

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PATCHING & REPAIRS

Cavities, cracks, and imperfections will be visible in the coating if the concrete is not repaired properly. Level and fill the concrete cavities with CHEM-3000™, 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 mixing ratio for the **CHEM1000 PG™** is 2 for 1 (by volume). In other words, two parts A (resin) for one part B (hardener).
Mix the CHEM1000 PG™ using a drill and a mixing paddle.
Note: If using a drill mixer, use a low speed (not to exceed 300 RPM) to avoid air entrapment.

1. Add the contents of the pre-measured CHEM1000 PG™ and mix for 2 minutes.
2. **CHEM1000 PG™** is designed to be immediately poured onto the floor. Leaving the mixed product in the container will greatly reduce the working time.

APPLICATION INSTRUCTIONS

The application of the CHEM1000™ PG for a solid color coating system is applied in two coats or in a single pass as a topcoat. For estimation purposes, estimate between 75-200ft^2 per gallon in both cases.

1. 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.
2. The optimum ambient temperature should be between 18 and 32°C (65 & 90°F) during application.
3. Mix the gallons of resin using the mixing instructions above.
4. Apply approximately 75-100 ft^2 per gallon while immediately pouring on the surface in a ribbon pattern, while walking and pouring at the same time until the bucket is empty.
5. Using a squeegee on an extension, pull the CHEM1000™ PG over the surface. As the first coat over bare concrete, pull the resin as thinly as possible while wetting the concrete and evenly covering the surface. This allows the trapped air to escape more easily. To apply in a single coat over a CHEM1000™ WT or CHEM1000 HD™ pull at approximately 75-100ft^2 per gallon.

APPLICATION INSTRUCTIONS (CONTINUED)

6. Using a 10mm microfiber roller, roll evenly forward and backward.
7. Finally, back up in the opposite direction in step 6.
8. Clean & sweep the floor and sand any high points or imperfections.
9. Apply topcoat at approximately 100 sq. ft. per gallon.
   Use the same procedure as in step 4.
10. If additional chemical, abrasion, and/or anti-slip protection is required, contact your CHEMTEC ™ representative for recommendations.

Decorative Colored Flakes Diffusion System Instructions

1. **Decorative Flakes Diffusion:** After following the basecoat application in steps 1-4, then diffuse the color flakes (120-200ft^2 per 25 lb box) by tossing them in the air and allowing them to rain gently in the wet resin.
2. For random / partial broadcast, use 1 lb of flakes per 100ft^2.
3. Leave to dry. Then scrape the basecoat with a drywall scraper in all directions. Or lightly sand the chips using a ground holding machine. (sanding will give a smoother finish) Vacuum small pieces and dust well.
   (Not enough vacuuming can lead to poor adhesion of the coating).

Decorative Colored Quartz & Silica Sand Diffusion System Instructions

1. **Quartz & Silica Sand Diffusion:** Following step 6 above, gently toss the aggregates into the air, allowing it to fall without clumping in one place or moving the resin. Do this until the resin is completely saturated with silica sand/Quartz and the resin can no longer be filled. This usually requires 1/2 to 3/4 lb. by square feet.
   Let dry for 4-6 hours.
2. Clean and sweep the floor and sand any high points.
3. **Finishing:** Apply the topcoat CHEM1000™ PG following steps 1-6.
4. If additional chemical, abrasion, and/or anti-slip protection is required, contact your CHEMTEC™ 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. / 1000ft^2 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.

System recommended for cases of humidity above acceptable levels; CHEM-PROOF™, CHEM-PROOF™ RAPID, OR CHEM-PROOF™ SLOW-CURE. The CHEM-PROOF™, CHEM-PROOF™ RAPID, OR CHEM-PROOF™ SLOW-CURE Vapor Barriers passes the F3010 specification based on E96 test results. Please contact a 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 **CHEMFILLER™** or **CHEMFILLER FC™, or CHEM3000™.** Construction / cold joints (two slabs that meet and therefore move) must be treated. Once the coating has been applied and cured, saw off the coating over the construction joints and apply elastomeric joint filler.

- 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.

WARRANTY

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

DISPOSAL

- Excess material (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 **CHEM1000™ HD** 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 –

The information presented is, we believe, accurate and compliant; however, it is presented without reservation and without warranty on the part of **CHEMTEC COATINGS™**. It is therefore the responsibility of the user to verify this data and to validate this information and the relevance of this product in the desired use. **CHEMTEC™ COATINGS** will not be held responsible for the use of this product in any systems.

The Information, and in particular, the recommendations relating to the application and end-use of CHEMTEC™ COATINGS products, are given in good faith based on CHEMTEC's™ current knowledge and experience of the products when properly stored, handled, and applied under normal conditions, within their shelf-life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local product Technical Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.epoxychemtec.com

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