

8100 CrownCote™ HP Aliphatic Polyester Polyurethane

TECHNICAL DATA SHEET Product Number: 8100

High-Performance Aliphatic Polyester Polyurethane Clear and Pigmented Finish Coat,
Available With Optional Aluminum Oxide 220 Mesh Aggregate for Enhanced Skid Resistance

DESCRIPTION

8100 CrownCote HP is a two-component, high solids, abrasion, chemical, and stain-resistant aliphatic polyester polyurethane finish coat, with optional Aluminum Oxide 220 Mesh aggregate for enhanced skid resistance. It is available in clear glass, which can be pigmented with Crown's solvent-borne polyurethane PigmentPacks™. It cures to an inert, tough, impact, abrasion, and chemical resistant finish coat. It is resistant to Skydrol, betadine, and conventional hot-tire staining. Excellent adhesion to Crown Polymers epoxy system. It requires a primer to bond directly to concrete, CrownSeal Polyurethane Hybrid 8105 Polyurethane-Acrylic Primer, and Concrete Sealer, when it is applied to properly prepared concrete and cementitious overlays. It is used as an upgraded finish coat on Crown Polymers epoxy products and systems used in aircraft hangars, industrial kitchens, automotive showrooms, and shop floors, commercial laboratories, and research facilities, hospital and health care, wine and spirit processing, and other facilities subject to heavy foot traffic, forklift traffic and chemical attack. It is VOC Compliant in all states and provinces in North America.

TYPICAL USES

- Aircraft Hangar and Maintenance Floors
- Automotive Show Room and Repair Floors
- Commercial Bakery and Kitchen Floors
- Hospital and Health Care Facility Floors
- Laboratory and Research Floors
- Manufacturing and Warehouse Floors
- Pharmaceutical Floors

BENEFITS

- Complies with USDA, FDA, Food Safety Modernization Act. **See Crown Polymers Technical Bulletin: 3 Food and Beverage Compliance.**
- Slip Resistance (ADA) **See Crown Polymers Technical Bulletin: 4 Coefficient of Friction.**
- LEED® and Green Seal® requirements. **See Crown Polymers Technical Bulletin: 5 LEED and Green Seal Information.**
- VOC and EPA Compliant all states and provinces in North America. Cures to an inert finish. **See Crown Polymers Technical Bulletin: 2 VOC Compliance.**
- Strong and Tough Floor.
- Excellent Chemical and Abrasion Resistance
- Designed for new floors and for resurfacing old floors

LIMITATIONS

- 8100 CrownCote High-Performance Aliphatic Polyester Polyurethane is best suited for applications when the temperature is between 60°F to 90°F (16°C to 32°C). Do not apply when Relative Humidity exceeds 85%. **See Crown Polymers Technical Bulletin: 7 Temperature, Relative Humidity, and Dew Point**

Guidelines.

- CrownCote High-Performance Aliphatic Polyester Polyurethane finish coat will not appear "satin" unless it is applied over CrownCote High-Performance Aliphatic Polyester Polyurethane Clear Gloss or CrownCote High-Performance Aliphatic Polyester Polyurethane Pigmented finish coat.
- Higher temperatures will result in shortened working time and drying time.
- CrownCote High-Performance Aliphatic Polyester Polyurethane requires primer when applied directly to concrete and cementitious overlays. **See Crown Polymers Technical Bulletin: 20 Selecting a Primer.**

COLORS

- Clear Gloss and Pigmented in 15 Standard Colors and Custom Colors. **See Crown Polymers Standard Color Guide Acrylics, Epoxies, Polyaspartics, Polyurethanes (PigmentPack).**

COVERAGE RATE PER GALLON

- Clear Gloss and Pigmented Finish Coat: 400 to 535 sq. ft. (37.2 to 49.7 sq. m) WFT 3 to 4 mils (0.08 to 0.10 mm).
- Add optional Aluminum Oxide 320 Mesh at 4 to 8 wt. oz. (0.11 to 0.22 kg) per gallon (3.79 lt.)

CONCRETE

Concrete must be structurally sound and free of curing agents, coatings, sealers, densifiers, and other bond breakers.

New Concrete:

- Place concrete per ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Floor Materials.
- Water Cement Ratio 0.4 to 0.5, and an approximate 4,000 psi (28 MPa) strength level.
- Requiring a positive side moisture barrier in direct contact with the concrete meeting ASTM E1745 Standard Specification for Plastic Water Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- The moisture barrier needs to be placed per ASTM

E1643 Standard Practice for Selection, Design, Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs, Class A 15 mils (0.38mm)

Existing Concrete:

If field tests or laboratory analysis reveals inferior concrete flooring slabs containing contaminants from previously applied unreacted silicate materials that will interfere with the bond, use 8201 CrownPrime WBC. See Crown Polymers Technical Bulletin: 20 Selecting a Primer.

Physical Properties at 77°F (25°C) 7 Day Cure (Unless stated otherwise)	
VOC (Volatile Organic Compounds), (VOC Calculated Per ASTM D3960)	<50 gr./lt.
Viscosity, Mixed	400 cps
Mix Density, Mixed	9.0 lb./gal
Pot Life, 1 gallon (3.79 liters) Mass, Pot Life is Reduced by Increases in Mass & Temperature	1.5 Hours, 50% RH
Mix Ratio, by Volume	3:1
Minimum Application Surface Temperature	50°F
Dry to Touch 50°F to 90°F (10°C to 32°F)	4 to 10 Hours
Recoat Time 50°F to 90°F (10°C to 32°F)	12 to 24 Hours
Light Traffic 50°F to 90°F (10°C to 32°F)	24 Hour Minimum
Full Cure 50°F to 90°F (10°C to 32°F)	7 to 14 Days
Shelf Life (shipped and stored) at 40°F to 100°F (4.4°C to 38°C)	1 Years
Packaging 1 gal (3.79 lt.)	

Mechanical Properties at 77°F (25°C) 7 Day Cure	
Surface Preparation ICRI Guideline No. 310.2R – Concrete Surface Profile (CSP 2 and above) Depending on System to be Installed and Condition of Concrete.	
Gloss Index, 60 Degrees Clear Gloss, ASTM D523	90 - 95
Gloss Index, 60 Degrees Pigmented, ASTM D523	80 - 90
Pencil Hardness, ASTM D3363	2H
Abrasion Resistance, ASTM D4060	0.02 gr.
500 cycles, Wheel No. CS17, 1000 gr. Load	Pass 1/8 Inch
Flexibility, Bend Mandrel Coating Test, ASTM D522	Class 1
Flame Test, ASTM E648	No Cracking or Disbonding
Impact Resistance, ASTM D2794, 160 in/lb.	Pass #1
Microbial (fungi) Resistance, ASTM G21 (Without the Anti-Microbial Agent)	>0.45 (inclines) >0.42 (level)
Moisture Vapor Emission Rate, ASTM F1869*	3 lbs.
Moisture Relative Humidity, ASTM F2170*	80% RH
*If moisture or relative humidity exceeds the limits consult the Crown Polymers representative and refer to Crown Polymers Technical Bulletin: 6 Moisture Mitigation Negative Side Moisture Barrier.	

Note: though testing is critical, it is not a guarantee against future problems. This is especially true if there is not a positive side vapor barrier or it is not functioning properly and/or concrete has contamination from oils, chemical spills, densifiers, excessive salts or other bond breakers.

- Contaminants include, but are not limited to organic hydrocarbon materials, calcium chlorides, and aluminum stearates.
- Concrete flooring slab can lose their structural strength over time, caused by conditions beyond the control of the flooring manufacturer or the installation contractor.
- If the concrete substrate deteriorates sufficiently, it will no longer support the bond of the remediation floor system.

Such conditions are detailed in ACI 201.2R “Guide to Durable Concrete” published by the American Concrete Institute. **See Crown Polymers Technical Bulletin: 1 Concrete Surface Preparation.**

CHEMICAL RESISTANCE DATA

See Crown Polymers Technical Bulletin: 9 Chemical Resistance Guidelines and Chart.

CHECK CONCRETE MOISTURE

The 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). **Refer to appropriate Technical Data Sheet limits and Crown Polymers Technical Bulletin: 6 Moisture Mitigation Negative Side Moisture Barrier.**

CHECK TEMPERATURE & HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet. Dew Point must be 5°F (3°F) or more below the surface temperature. Do not apply if humidity is at or above 85%. **See Crown Polymers Technical Bulletin: 7 Temperature, Relative Humidity, and Dew Point Guidelines.**

SURFACE PREPARATION

Surface preparation following: 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. **See Crown Polymers Technical Bulletin: 1 Concrete Surface Preparation.**

APPLICATION EQUIPMENT

Depending on system applied: Variable low-speed drill (450 rpm) with Jiffy® type impeller mixing paddle, disposable 3” brush for cutting in, 3/8 inch nap non-shedding phenolic core roller, and rubber squeegee for spreading 8100 CrownCote High-Performance Aliphatic Polyester Polyurethane. Pour, squeegee, and back-roll are suggested because Dip-n-Roll can be challenging for inexperienced installers resulting in unattractive lap lines.

OPTIONAL ANTIMICROBIAL

The antimicrobial additive is a non-heavy metal biocide that can be added during the manufacturing process. The antimicrobial agent can be added to the topcoat only for

an economical application or it can be added to each step of the application, primer, body coat, and topcoat, which is recommended for abusive environments. **See Crown Polymers Technical Bulletin: 11 Understanding the Optional Antimicrobial Additive.**

MIXING

For ease of mixing and placement, the temperature of the “A” and “B” components should be between 70°F to 80°F (20°C to 26°C). Pre-mix the “A” and “B” components to ensure all raw material and pigments are dispersed uniformly. **See Crown Polymers Technical Bulletin: 10 Mixing Guidelines.**

APPLICATION

After mixing all contents as instructed, immediately pour all liquid material onto the properly prepared concrete substrate or next lift in ribbons and squeegee the material out evenly. Back-roll and cross-rolling of material. Check for desired wet film thickness with a WFT Gauge. If broadcasting aggregate, such as 60 mesh or 90 mesh, broadcast a sprinkle (not full broadcast) into the wet material. Place all steps per Crown Polymer Installation Guidelines.

SKID-RESISTANCE

Skid-Resistance – Field (in situ) Wet Dynamic Coefficient of Friction (DCOF), ANSI A326.3. **See Crown Polymers Technical Bulletin: 4 Coefficient of Friction.**

SHIPPING and STORAGE

Ship and store material between 40°F to 90°F (4°C to 32°C). Store in a dry environment and out of direct sunlight.

SHELF LIFE

Shelf life is 1 year from the date of manufacturer, provide the containers are unopened.

CLEAN-UP

Clean-up mixing station, tools, and equipment as required. Use acetone, a VOC exempt solvent, for cleaning up. Observe all legal, and health, and safety precautions when handling or storing solvents and materials, particularly in confined spaces. Make sure the working areas are well ventilated at all times during placement and curing time.

DISPOSAL

Dispose of empty packaging and other waste following federal, state, province, and local regulations.

MAINTENANCE

Inspect the installed floor by spot cleaning and spot repairing the damaged or cracked areas. To prolong the life of the flooring system, a daily maintenance program is highly recommended to ensure the floor is safe for its intended purposes. **See Crown Polymers Technical Bulletin: 8 Care and Maintenance.**

TECHNICAL SUPPORT

For questions, contact a Crown Polymers Representative. Additional Support Documents are available from Crown Polymers, including brochures, application guidelines, videos and more. Visit Crownpolymers.com or contact Crown for additional resources.

DISCLAIMER

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LIMITED WARRANTY

Crown Polymers warrants its products to be free of manufacturing defects and meets all Crown Polymers current published physical properties. Crown Polymers' sole responsibility shall be to replace the portion of any product proved to be defective. There are no other warranties by Crown Polymers of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Crown Polymers shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Crown Polymers shall not be responsible for the use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee pertaining to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator will be issued. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Crown Polymers reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.



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