



WATERPROOFING & CONCRETE OVERLAY

APC SYSTEMS

installation guide



SAFETY

Review current Safety Data Sheet(s) and all relevant KRETUS® documentation. Safety conditions and personal protective equipment must be considered before mixing or installing any KRETUS® product.

TESTING AND WARRANTY

Before you begin installation

- Review Pre- and Post-Job Checklists available at kretus.com/project-planning.
- Test for and repair any defects in the substrate and fix any potential problems on site.
- Complete samples and onsite mockups to ensure desired finish and results are achieved.

MAINTENANCE AND CLEANING

Clean and inspect the system regularly to keep it performing at its best. For routine cleaning, use KRETUS® Coating Cleaner or a similar pH-neutral cleaning agent. For more details, see the Maintenance and Cleaning Guide at kretus.com/project-planning.

PRODUCT GUIDE

Before selecting product, consider application temperature, concrete moisture levels, applicator skill level, and time available for installation. APC = Acrylic Polymer Concrete

	BONDER RESIN	
	SINGLE COMPONENT	WITH APC BASECOAT (2 COMPONENT)
Application Temperature	45-100°F, <80% RH	45-100°F, 5-80% RH
Working Time	20-25 min	25-30 min
Recoat Time	2-6 hrs	2-24 hrs
Return to Service	n/a	24 hrs
Full Cure	24 hrs	28 days

	APC/ACRYLIC POLYMER CONCRETE (2 COMPONENT)		
	BASECOAT	TEXTURE 2.0	TEXTURE 3.0
Application Temperature	45-100°F, 5-85% RH	45-100°F, 5-85% RH	40-100°F, 5-85% RH
Working Time	25-30 min	20-25 min	20-25 min
Recoat Time	2-24 hrs	2-24 hrs	2-24 hrs
Return to Service	24 hrs	24 hrs	24 hrs
Full Cure	28 days	28 days	28 days

	ACRYLIC SEALER		
	SB (1 COMPONENT)	WB (1 COMPONENT)	WB BASE (2 COMPONENT)
Application Temperature	35-85°F, <80% RH	35-100°F, <80% RH	35-100°F, <80% RH
Working Time	10 min	20-25 min	20-25 min
Recoat Time	1-24 hrs	2-48 hrs	2-48 hrs
Return to Service	18-48 hrs	24-48 hrs	24-48 hrs
Full Cure	7 days	7 days	7 days

All times recorded using 1-qt. sample at ambient temperature of 70°F and 50% humidity.

STORAGE, HANDLING & DISPOSAL

- **Storage:** Store materials in a cool (60-80°F), dry place out of direct sunlight. DO NOT allow water into materials unless instructed to do so.
- **Handling:** Safety Data Sheets must be always adhered to. No personnel may touch, relocate, or use materials without proper training. All materials are to be treated as dangerous substances without firsthand knowledge.
Congregating, eating, smoking, or drinking of any kind is not allowed on or near materials.
- **Disposal:** Follow federal, local, and building requirements for waste disposal.

LIMITATIONS

- To protect exposed metal lath and staples corrosion, apply the first coat of the Waterproofing and Concrete Overlay System immediately after installing the metal lath. This is especially important in saline environments.
- DO NOT let material puddle—this will cause white spots to appear when coating cures.
- DO NOT apply materials when temperatures are below 40°F or above 100°F. DO NOT let materials freeze.
- If applying outdoors, DO NOT apply within 24 hours of inclement weather.
- DO NOT apply water-based coatings over solvent-based coatings.
- DO NOT apply over chemically treated lumber, high-moisture content lumber, or OSB (oriented strand board).

SUBSTRATE AND RELATED MATERIALS

Contact a KRETUS® Technical Representative if the substrate you're covering is not listed in this document.

Elevated Concrete Substrate Must Be

- structurally sound, clean, and dry.
- sloped for proper drainage with minimum slope: 1/4" vertical to 12" horizontal (2%).
- Allow new concrete to dry a minimum of 30 days.
- Test concrete moisture levels. If moisture vapor emission rate (MVER) is greater than 3 pounds or relative humidity is greater than 90%, a moisture vapor barrier may be required.

Plywood Substrate Must Be

- structurally sound, clean, and dry.
- minimum 5/8"-thick exterior grade.
- sloped for proper drainage with minimum slope: 1/4" vertical to 12" horizontal (2%).

Metal Flashing Must Be

- solidly backed by plywood substrate or rigid enough to avoid ponding or deflection.
- ≥No. 26 gauge, clean, corrosion-resistant galvanized metal (comply with IBC Section 1503.2 or IRC Section R903.2).

Metal Lath Must Be

- hot-dipped galvanized metal and weigh a minimum 2.5 lbs./sq. yard (comply with ASTM C847).

Staples Must Be

- corrosion resistant.
- No. 16 gauge, 5/8" long, with a 7/8–1" crown (comply with ASTM F1667).

Fiberglass Chopped-strand Mat Must Be

- alkali-resistant and weigh 0.75 oz/SF.

Fiberglass Lath Must Be

- alkali-resistant and weigh 4.5 oz/SF.

Caulking

- KRETUS® high-grade polyurethane sealant, single component.

Prime Coat

In general, a prime coat is recommended when applying the system directly over concrete or an existing system.

- KRETUS® Top Shelf® or WB Epoxy at 300 SF/gal with a sand broadcast

MVR Coat

An MVR System may be required when concrete has an MVER greater than 3 lbs. or RH above 90%.

- Epoxy MVR (kretus.com/epoxy-mvr)

Sloping/Crickets

Any sloping or crickets must be done before you apply the Waterproofing and Concrete Overlay System.

- KRETUS® Acrylic Polymer Concrete Acrylic Admix + Basecoat applied at desired thickness.

SURFACE PREPARATION FOR WPD 2.1 OR APC 4.1: PLYWOOD SUBSTRATE

Plywood

- Clean, sweep, and remove any dirt or particles that would prevent adhesion of the coating. Plywood must be clean and dry and installed in accordance with the applicable code.
- **Joints and seams:** Joints should be tongue-and-groove or blocked with 2"-by-4" lumber boards. All non-tongue-and-groove joints must be gapped 1/8". Apply to all plywood seams a 1/4"-high bead of caulk and tool to flatten.
- **Terminations:** All valleys, openings, parapets, walls, sliders, door thresholds, jambs, posts, scuppers, penetrations, fascia, and adjuncts must be flashed and caulked.
- **Drainage:** Adequate drainage must be provided in accordance with the applicable code.

Metal Flashing

- Follow manufacturer's instructions to secure metal flashing to plywood and caulk terminations. Apply according to appropriate building codes.
- **Terminations:** All valleys, openings, parapets, walls, sliders, door thresholds, jambs, posts, scuppers, penetrations, fascia, and adjuncts must be flashed and caulked.

Metal Lath and Staples

- Install metal lath with edges parallel to plywood.
- **Overlap:** Lath must cover the entire substrate and overlap metal flashing by 1.5" inches or more. At joints, lath must overlap by at least 3/4".
- **Staples:** Lath must be secured with at least 12 staples per square foot. Staples must be no more than 1 inch apart where metal lath overlaps and no more than 2 inches apart anywhere the lath overlaps plywood seams. Staples must be perpendicular to joints and should bridge across caulking.

System Installation

- Any sloping or crickets must be done before you apply the waterproofing system.
- Based on specification, apply KRETUS® System WPD 2.1 (page 9) or APC 4.1 (page 10).

SURFACE PREPARATION FOR APC 4.2: ELEVATED CONCRETE

Elevated Concrete

- Remove all release agents, curing compounds, salts, efflorescence, grease, oil, dust, and other contaminants or particles that would hinder material's adhesion to substrate.
- Mechanically prepare concrete to ICRI CSP 3. Adhere to ICRI (International Concrete Repair Institute) current standards.
- Clean and treat all moving and nonmoving joints and cracks.
- **Joints and terminations:** Coatings tend to pull away from termination points (anywhere concrete ends), joints, cracks, gutters, drains. Anchor joints may need to be added 6" from termination points. Joints and cracks may need to be expanded to 2x the width and 1x the depth.
- **High moisture readings:** An MVR System may be required if concrete moisture readings are greater than 3 lbs. MVER or 80% RH.
- **Prime coat:** A prime coat may be required if outgassing is suspected or prevalent, or if concrete is very porous or in poor condition.

System Installation

- All concrete repairs must be completed and any sloping or crickets must be done before you apply the waterproofing system.
- Apply KRETUS® System APC 4.2 (page 11).

SURFACE PREPARATION FOR APC 4.2: PLYWOOD

Plywood

- Clean, sweep, and remove any dirt or particles that would prevent adhesion of the coating. Plywood must be clean and dry and installed in accordance with the applicable code.
- **Joints and seams:** Joints should be tongue-and-groove or blocked with 2"-by-4" lumber boards. All non-tongue-and-groove joints must be gapped 1/8". Apply to all plywood seams a 1/4"-high bead of caulk and tool to flatten.

- **Terminations:** All valleys, openings, parapets, walls, sliders, door thresholds, jambs, posts, scuppers, penetrations, fascia, and adjuncts must be flashed and caulked.
- **Drainage:** Adequate drainage must be provided in accordance with the applicable code

Metal Flashing

- Follow manufacturer's instructions to secure metal flashing to plywood and caulk terminations. Apply according to appropriate building codes.
- **Terminations:** All valleys, openings, parapets, walls, sliders, door thresholds, jambs, posts, scuppers, penetrations, fascia, and adjuncts must be flashed and caulked.

System Installation

- Any sloping or crickets must be done before you apply the waterproofing system.
- Apply KRETUS® System APC 4.2 (page 11).

MIXING GUIDELINES

Select a well-ventilated area outside of application zone and out of direct sunlight. Ideal mixing station is 4-by-4-foot or larger level surface protected by cardboard or plastic liner. For mixing station examples, review KRETUS® Mixing Station photo gallery available at kretus.com/project-planning.

Mixing Precautions

- DO NOT mix more material than can be applied in the working time allotted.
- DO NOT leave mixed material in mass. As soon as components are combined, the coating begins to cure and its temperature rises. If product is left in mass, the heat created may cause material to smoke or catch fire. Mixing large batches will create more heat and can shorten the product's working time.
- DO NOT mix materials by hand.
- DO NOT mix or install material in confined space without proper ventilation.

Prepare Materials for Application

Organize and inspect products, equipment, and tools to minimize delays during installation.

Group together the components and tools needed for each application:

- APC Part A (Acrylic Admix) and Part B (Base Coat, Texture 2.0, Texture 3.0)
- Anti-Slip
- Acrylic Sealer
- Bonder Resin
- WB Colorant

Examine the components for each application individually:

- **APC Acrylic Admix (Part A), Bonder Resin, and Sealers:** Make sure that product has no gelation or crystallization. If this occurs, contact KRETUS® distributor.
- **Cement (APC Part B) or Aggregates:** Make sure material is dry and undamaged. Moisture will cause material to clump. Clumps should be discarded or sifted prior to mixing or broadcasting.
- **Colorant:** Check to see that color is correct and that batch numbers are the same. If different batch numbers, box (or mix) batches to keep color consistent throughout application.

Pre-Mix Liquid Components

- Before combining any components, use a low-RPM, low-torque drill and a Jiffler double-bladed mixer to pre-mix each liquid component separately until the texture, color, and consistency is uniform.
- Use a separate mixer for each product to avoid cross-contamination.
- DO NOT pre-mix dry materials.

Mixing Drill for Waterproofing & Concrete Overlay APC Systems

- When combining material with APC Part B: high-RPM, high-torque drill and Jiffler double-bladed mixer
- For all other coatings: low-RPM, low-torque drill and Jiffler double-bladed mixer

Mixing Instructions

- Mix carefully to avoid introducing bubbles into the mixture.
- All mixing vessels must be clean. Pour entire contents of Part A into vessel first before adding other components. Change mixing buckets every 2-5 batches.
- Make sure material is thoroughly mixed. Use a paint stick to scrape sides and bottom of mixing vessel. Buildup in the mixing vessel or transfer of buildup to a new batch affects the coating's overall appearance and may shorten a product's working time.

ACRYLIC POLYMER CONCRETE

- Slowly add Part B to Part A and mix until texture is uniform.
- **TOTAL MIX TIME:** 2 minutes or until texture is uniform

ACRYLIC SEALER WB BASE - ACCENT, MEDIUM, or DEEP

- Combine Colorant with Sealer and mix until color is uniform.
- **TOTAL MIX TIME:** 5 minutes or until color is uniform

DEW POINT CALCULATION

Adhere to the KRETUS® Dew Point Calculation Chart available at kretus.com/project-planning.

- To avoid blistering and delamination, the substrate and material must be a minimum of 5°F above the dew point. This temperature must be maintained throughout drying time.
- **EXAMPLE:** If the air temperature is 60°F and relative humidity is 60%, the Dew Point is 45°F. The temperature of the substrate must be $\geq 50^\circ\text{F}$ ($45 + 5$) before a coating can be applied.

APPLICATION GUIDELINES

- DO NOT apply under direct sunlight. DO NOT install if inclement weather is forecasted during time allotted for installation.
- After mixing, pour material in even rows along substrate. Spread material evenly using the appropriate tools to achieve the required thickness specified. Unless otherwise instructed, use a clean, non-shed 3/8" nap roller to back roll material so that application is uniform across the entire substrate.
- Keep a wet edge while applying products. Wear spiked shoes when walking on material.
- Coverage rates are for estimating purposes only. Factors such as waste, unusual/abnormal substrate conditions, and other unforeseen jobsite conditions may affect actual product yields and are the responsibility of the installer.

WATER-BASED APPLICATIONS (WB ACRYLIC SEALER, ACRYLIC POLYMER CONCRETE)

- higher temperature = faster working times
- lower temperature = slower working times
- higher humidity = slower working times
- lower humidity = faster working times

SOLVENT-BASED APPLICATIONS (SB ACRYLIC SEALER)

- higher temperature = faster working times
- lower temperature = slower working times

EQUIPMENT CHECKLIST

Safety

- KRETUS® Safety Data Sheets
- gloves
- hard hat
- knee pads
- respirator
- safety glasses
- _____
- _____
- _____

Mixing

- variable speed mixing drill
- mixing blades (Jiffler double-bladed mixer)
- paint mixing sticks
- measuring pails
- 1-, 2-, and 5-gallon pails (metal and/or plastic)
- masking/rosin paper
- cardboard, painter's plastic
- painter's tape
- duct tape
- cooler and ice
- _____
- _____

Clean-Up

- rags
- stiff-bristle broom(s)
- cordless electric leaf blower and extra batteries
- _____
- _____
- _____

Additional Tools/Products

- _____
- _____
- _____
- _____
- _____

Surface Preparation

- calcium chloride and pH test kit
- Wagner Rapid RH® test kit
- 10-gauge extension cords, 100'
- HEPA vacuum
- power source or generator
- Clarke 17" floor maintainer
- 17" sanding discs, 36 and 60 grit
- 17" sanding screens, 80 and 120 grit
- sanding/rubbing stones
- concrete grinding equipment
- diamond or shotblast tooling to achieve CSP 3
- _____
- _____

Application

- chip brushes
- paint accessories—extension rods, frames, & pans
- roll covers, 3/8" nap, non-shed (18", 9", 6")
- blades—flat rigid, flat flexible, and 8-12 and 15-20 WFT (wet film thickness) mil blades
- trowel
- gauge rake
- spike and loop rollers
- spiked shoes
- _____
- _____

KRETUS® PRODUCT CHECKLIST

- APC (Acrylic Admix, Basecoat, Texture 2.0, Texture 3.0)
- Bonder Resin
- WB Acrylic Sealer Gloss or Low Gloss
- SB Acrylic Sealer Gloss or Low Gloss
- WB Base Acrylic Sealer Accent, Medium, or Deep
- WB Colorant
- Industrial Sand #30
- Solvent Cleaner
- Power Cleaner

This serves as a general guide and is not a comprehensive list.

DISCLAIMER: The information contained in this document is intended for use by KRETUS®-qualified and -trained professionals. This is not a legally binding document and does not release the specifier from their responsibility to apply materials correctly under the specific conditions of the construction site and the intended results of the construction process. The most current valid standards for testing and installation, acknowledged rules of technology, as well as KRETUS® technical guidelines must be adhered to at all times. The steps given in this document and other mentioned documents are critical to the success of your project.

SYSTEM ACTION GUIDELINE

WPD 2.1



This serves as a general installation guide. Before you begin, review all relevant documents.

NOTES AFTER BOND COAT: Any pinholes must be sealed with Bonder Resin spread at 100 SF/GAL. Surface must be clean and free from embedded foreign materials, blemishes, air pockets, and bubbles. Any affected areas should be cut out. Then reapply fiberglass mat and Bonder Resin to cover the openings.

	1 BASE COAT	2 BOND COAT		3 SCREED COAT	4 TEXTURE COAT	5 SEAL COAT
PRODUCT	A (Acrylic Admix) + BC (Basecoat)	Fiberglass chopped strand mat weighing 0.75 oz per SF	Bonder Resin	A (Acrylic Admix) + T (Texture 2.0 or 3.0) + optional W (water)	A (Acrylic Admix) + T (Texture 2.0 or 3.0) + optional W (water)	AS (Acrylic Sealer WB Base) + C (WB Colorant)
STANDARD MIX RATIO	A:BC = 1 gal:50 lbs	N/A	N/A	A:T:W = 1 gal:50 lbs:1 qt	A:T:W = 1 gal:50 lbs:1 qt	AS:C = 5 gal.:16 oz
MIXING INSTRUCTIONS	Combine & mix for 2 min or until consistency is uniform.	N/A	Mix for 1 min or until consistency is uniform.	Combine & mix for 2 min or until consistency is uniform.	Combine & mix for 2 min or until consistency is uniform.	Combine & mix for 5 min or until color is uniform.
METHOD/ TOOLS	1. Spread evenly using a pool trowel. 2. When application is dry, sand and smooth any imperfections. 3. Remove all debris.	Work in 50-300 sf increments: 1. Cut and lay fiberglass mat to cover Base Coat. Mat should extend to the furthest edges of the deck up to the metal flashing. Cut mat to fit around drains and posts. Any overlap must be between 1/4" and 1/2". 2. Saturate mat with coating using a flat flexible or flat rigid blade & 1/2" non-shed nap roller. If mat curls, use metal roller to flatten.		1. Spread evenly using a pool trowel. 2. When application is dry, sand and smooth any imperfections. 3. Remove all debris.	For knockdown texture, broadcast material with a hopper gun at 10 to 60 psi. Use a finishing trowel to flatten any high points.	Apply with non-shed 3/8" nap roller.
RECOAT TIME	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs
COVERAGE RATE	30 SF/KIT	1 SF = 1 SF	45 SF/GAL	100 SF/KIT	125-175 SF/KIT	200 SF/GAL

SYSTEM ACTION GUIDELINE APC 4.1



This serves as a general installation guide. Before you begin, review all relevant documents.

NOTES AFTER BOND COAT: Any pinholes must be sealed with Bonder Resin spread at 100 SF/GAL.

Surface must be clean and free from embedded foreign materials, blemishes, air pockets, and bubbles.

Any affected areas should be cut out. Then reapply fiberglass mat and Bonder Resin to cover the openings.

	1 BASE COAT	2 BOND COAT	3 SCREED COAT	4 TEXTURE COAT	5 SEAL COAT
PRODUCT	A (Acrylic Admix) + BC (Base Coat)	Fiberglass lath BR (Bonder Resin) + T (Basecoat)	A (Acrylic Admix) + T (Texture 2.0 or 3.0) + optional W (water)	A (Acrylic Admix) + T (Texture 2.0 or 3.0) + optional W (water)	AS (Acrylic Sealer WB Base) + C (WB Colorant)
STANDARD KIT MIX RATIO	A:BC = 1 gal:50 lbs	N/A BR:T = 5 gal:50 lbs	A:T:W = 1 gal:50 lbs:1 qt	A:T:W = 1 gal:50 lbs:1 qt	AS:C = 5 gal.:16 oz
MIXING INSTRUCTIONS	Combine & mix for 2 min or until consistency is uniform.	N/A Combine & mix for 2 min.	Combine & mix for 2 min or until consistency is uniform.	Combine & mix for 2 min or until consistency is uniform.	Combine & mix for 5 min or until color is uniform.
METHOD/ TOOLS	1. Spread evenly using a pool trowel. 2. When application is dry, sand and smooth any imperfections. 3. Remove all debris.	Work in 50-300 sf increments: 1. Cut and lay fiberglass lath. Lath should lap 2" over flashing and 1" at seams. Cut mat to fit around drains and posts. Keep 1" from inside and outside edges. 2. Trowel material over fiberglass.	1. Spread evenly using a pool trowel. 2. When application is dry, sand and smooth any imperfections. 3. Remove all debris.	For knockdown texture, broadcast material with a hopper gun at 10 to 60 psi. Use a finishing trowel to flatten any high points.	Apply with non-shed 3/8" nap roller.
RECOAT TIME	72 hrs	72 hrs	72 hrs	72 hrs	72 hrs
COVERAGE RATE	30 SF/KIT	1 SF = 1 SF 240 SF/KIT	100 SF/KIT	125-175 SF/KIT	200 SF/GAL

SYSTEM ACTION GUIDELINE APC 4.2



This serves as a general installation guide. Before you begin, review all relevant documents.

NOTES AFTER BOND COAT: Any pinholes must be sealed with Bonder Resin spread at 100 SF/GAL.

Surface must be clean and free from embedded foreign materials, blemishes, air pockets, and bubbles.

Any affected areas should be cut out. Then reapply fiberglass mat and Bonder Resin to cover the openings.

	1 BASE COAT		2 SCREED COAT	3 TEXTURE COAT	4 SEAL COAT
PRODUCT	Fiberglass lath	BR (Bonder Resin) + T (Basecoat)	BR (Bonder Resin) + T (Basecoat)	A (Acrylic Admix) + T (Texture 2.0 or 3.0) + optional W (water)	AS (Acrylic Sealer WB Base) + C (WB Colorant)
STANDARD KIT MIX RATIO	N/A	BR:T = 5 gal:50 lbs	BR:T = 5 gal:50 lbs	A:T:W = 1 gal:50 lbs:1 qt	AS:C = 5 gal.:16 oz
MIXING INSTRUCTIONS	N/A	Combine & mix for 2 min.	Combine & mix for 2 min.	Combine & mix for 2 min or until consistency is uniform.	Combine & mix for 5 min or until color is uniform.
METHOD/ TOOLS	<p>Work in 50-300 sf increments:</p> <ol style="list-style-type: none"> Cut and lay fiberglass lath. Lath should lap 2" over flashing and 1" at seams. Cut mat to fit around drains and posts. Keep 1" from inside and outside edges. Trowel material over fiberglass. 				
RECOAT TIME	72 hrs				
COVERAGE RATE	1 SF = 1 SF	240 SF/KIT		125-175 SF/KIT	200 SF/GAL



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