



## ROLL ON ROCK™ INSTALLATION GUIDE SYSTEM 3

### PRODUCT DESCRIPTION

The ROLL ON ROCK™ system is a simple broadcast flake system designed to provide the look of granite to flooring surfaces while providing substrate protection from abrasion, wear, and chemical attack. SYSTEM 3 uses a direct to concrete epoxy that wicks into the concrete and creates an incredible bond that will be able to withstand 16lbs of MVE.

### PRODUCT COMPOSITION

The ROLL ON ROCK™ SYSTEM 3 is a multi-layered application made up of the following components:

- 1) 4100 VAPOR-STOP PRIMER – a clear primer applied to porous concrete substrates.
- 2) 4150 VAPOR-STOP – a pigmented primer and flake basecoat applied to concrete substrates.
- 3) BROADCAST FLAKES – decorative flakes available in a variety of color blends.
- 4) TOPCOAT OPTIONS:
  - Non Flammable (5000 & 5400), low VOC and low odor topcoats
  - A. 5000 POLYUREA – a general use 100% solids clear Polyurea topcoat that exhibits good chemical and excellent wear resistance while providing a deep high gloss surface.
  - B. 5400 Waterbased Urethane Clear Topcoat – a two-component breathable waterbased chemical resistant polyurethane sealer used to seal the floor and provide a finished surface that resists abrasion, chemical attack, and UV degradation.Flammable Topcoats (use flammable safety precautions when working with these products)
  - A. 5300 Clear Topcoat – a two-component polyurethane sealer used to seal the floor and provide a finished surface that resists abrasion, chemical attack, and UV degradation.
  - B. 5073 POLYUREA – a general use high solids clear Polyurea topcoat that exhibits great chemical and excellent wear resistance while providing a deep high gloss surface that can be walked on in as little as 2 hours.

### COVERAGE RATES AND PACKAGING

4100 PRIMER	250-450 ft <sup>2</sup> /Kit 166-300 ft/Gal	Sold in 1.5-Gallon Unitized Kit and 5 Gal Pails
4150 VAPOR STOP EPOXY	300-400 ft/kit 200-266 ft/Gal	Sold as 1.5 - gallon kit
FLAKES	~8-10 ft/lb	Sold in 50lb boxes
5300 CHEMICAL RESISTANT TOPCOAT	400-500 ft/Kit 200-250 ft/Gal	Sold as 2.0 -Gallon Kit
<b>OTHER OPTIONAL TOPCOATS:</b>		
5300 CHEMICAL RESISTANT TOPCOAT	400-500 ft/Kit 200-250 ft/Gal	Sold as 2.0 -Gallon Kit
<b>OTHER OPTIONAL TOPCOATS:</b>		
5000 or 5073 POLYUREA	400 ft/Kit 200 ft/Gal	Sold in 2.0- Gallon Kit
5400 WATERBORNE URETHANE TOPCOAT	250 ft/Gal 375 ft/Kit	Sold in 1.5- Gallon Kit

### SUBSTRATE REQUIREMENTS

#### **Concrete**

Concrete shall be structurally sound and stable. Concrete shall be free of dust, dirt, grease, contamination, surface laitance, and other potential bond-breaking substances that could impair adhesion. All cracks, gouges, and other surface defects need to be addressed prior to coating installation. Substrate and ambient temperatures must be above 50°F (10°C) during installation of coating. Relative humidity should not exceed 80% during installation of the coating. Environmental conditions must not be near the dew point during installation of the coating. Moisture Vapor Transmission of the substrate must not exceed 5lb per 1000 ft<sup>2</sup> per 24 hours. For high MVT substrates, consult with a Versatile Building Products representative for recommendations.

#### **Other Substrates**

Versatile Building Products only recommends its 2 component products for use over concrete. All other substrates are done at the users own risk.

### STEP 1) SURFACE PREPARATION

(There are many methods of surface preparation for various substrates, many of which are adequate for this application. Consult a Versatile Building Products Representative for alternatives to the procedure outlined below, and methods of correcting problematic and contaminated substrates.)

#### **Concrete**

Concrete must be mechanically profiled and prepared by shot-blasting, grinding, water-jetting, or other means of scarification to produce a Concrete Surface Profile (CSP) between #2 and #3, according to International Concrete Repair Institute (ICRI) Guideline No. 03732. Concrete must be porous and have a profile equal to a 90 grit sandpaper or lower.

**STEP 2) INSTALLATION OF 4100 PRIMER**

(Note: Cure time is effected by environmental conditions. Do not force dry. High humidity and/or low temperatures can cause haziness and blushing in the coating. Material has a pot-life of 90 minutes based on an insulated 200 gram mass at a starting temperature of 70°F. **Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**)

**Installation for Subsequent Epoxy Topcoats****Mixing**

Mix 2 parts by volume 4100 PRIMER A-Component with 1 part by volume 4100 PRIMER B-Component for 2-3 minutes using a jiffy-type mixing blade at no less than 400rpm. Transfer mixed material to a second mixing vessel and mix an additional 30 seconds to ensure that material along the sides of the first mixing vessel have been properly incorporated into the mixture.

**Application**

Apply mixture to the substrate using a brush, roller, or squeegee at a uniform coverage rate of 150-250 ft<sup>2</sup> per mixed gallon. Use spiked shoes when walking into wet material.

**Subsequent Coats**

Additional coats and techniques may be needed to obtain the desired results for MVT. 4100 may allow MVT bubbling during the drying process due to high MVT in substrate. If mild out-gassing bubbles are found in the dry material, sand bubbles down and fill the bubbled areas with more 4100 that has been accelerated using the 41 accelerator. If unsure consult with a Versatile Building Products representative for recommendations to achieve specific results.

**Thinning**

4100 may be thinned so it can penetrate dense or tight troweled concrete surfaces. Add up to 40% xylene (use Acetone when applying in strict AQMD Districts like the SCAQMD). Apply the thinned material at the same coverage rate as un-thinned 4100.

**Drying and Screening**

4100 usually is dry within 24 hours at 75 degrees. When temperatures are below 75 degrees an accelerator maybe used to speed up the dry time. Be sure to lightly screen or black pad the dry 4100 before proceeding to the next step.

**STEP 3) INSTALLATION OF 4150 VAPOR-STOP AND FLAKE**

(Note: Material has a pot-life of 60 minutes based on an insulated 200 gram mass at a starting temperature of 77°F. **Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**)

**Mixing**

Using a jiffy-type mixing blade at a minimum of 700 rpm, mix according to ratio listed on label of the 4150 Vapor Stop A-Component with 4150 Vapor Stop B-Component for two minutes. Mix for two minutes and transfer mix to a second mixing vessel and mix for an additional minute (transferring to a second mixing vessel prevents unmixed components clinging to the sides of the first mixing container from being poured onto the floor.)

**Application**

Working only as much wet edge as can be properly handled, begin by cutting-in the concrete footings and edges with a brush. Do not work edges more than 15-20 minutes ahead of the main body of the floor. Pour a band of the mixed material out onto the floor and begin rolling with a 3/8"-1/2" nap roller. Work the material evenly to a wet film thickness of 5-8 mils (200-300 ft<sup>2</sup>/gallon).

FLAKES should be broadcast into the wet 4150 VAPOR-STOP while the coating still has a high degree of tackiness (typically 1-2 hours at 70°F). Avoid broadcasting the chips immediately after application, this causes the epoxy to wick up into the chip and bind more than 1 layer of chip together. Broadcast evenly across the floor such that the coating is no longer visible. Scoop the flakes up with your hand and spread onto the surface by throwing the flakes, releasing them from your hand (like feeding chickens or throwing grass seed). Throwing to rejection typically means that you will not be able to see the color beneath it.

Allow the 4150 PRIMER to cure a minimum of 10-16 hours before proceeding to the next step.

**Flaking Tips**

Do the curb walls first and then vacuum up the remaining chips from the floor before doing the field. This is an trick that when done properly will save time and back breaking energy. Also flaking to appearance will require less chip and topcoat but this is a learned skill and should not be done by an inexperienced applicator. Using large flake also reduces the amount of topcoat need since there is less surface area due to the flatness of the chip and less layering of the chip.

**Flake Recovery**

Once the 4150 VAPOR-STOP has dried sufficiently, sweep, blow, and/or vacuum excess FLAKES from the surface. Scrape protruding flakes and remove all loose flake debris from the surface. Recovered FLAKES may be used on a subsequent job, but should be sifted to remove small broken flake dust. Chipped surface can be lightly sanded if a smoother finished surface is desired.

**STEP 4) INSTALLATION OF 5300 SERIES CHEMICAL RESISTANT URETHANE TOPCOAT**

Note: Keep material cool for 24 hours before the installation, the ideal temperature is 70° F. Material has a pot-life of 60 minutes based on an insulated 200 gram mass at a starting temperature of 77°F. **Expect a 40 minute potlife when working with a 2 gal mas at normal temperatures.** **Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**

**Preparation**

- Shut off all sources of ignition prior to work and ground all equipment throughout the sealing process.
- Supply auxiliary ventilation as necessary to produce a safe working environment.
- This material causes light headedness, use a NIOSH approved carbon filter respirator capable of filtering organic vapors.
- Be sure the VOC of product is within the AQMD rules of district it is being applied in.

**Mixing**

Using a jiffy-type mixing blade at a minimum of 700 rpm, mix according to ratio listed on label of the 5300 series Clear Topcoat A-Component with 5300 Clear Topcoat B-Component for two minutes. Transfer mix to a second mixing vessel and mix for an additional minute (transferring to a second mixing vessel prevents unmixed components clinging to the sides of the first mixing container from being poured onto the floor.)

**Application**

Working only as much wet edge as can be properly handled. Begin by cutting-in the concrete footings and edges with a brush. Do not work edges more than 15-30 minutes ahead of the main body of the floor. Pour a band of the mixed material out onto the floor and begin rolling with a 3/8" nap roller.

Work the material evenly to a wet film thickness of no thicker than 5-8 mils (200-250 ft<sup>2</sup>/gallon). **Warning: Overworking the material with a roller could entrain air into the mixture.**

Allow Topcoat 4-8 hours to dry before recoating, if necessary. Recoating after 16 hours may require de-glossing of the surface by use of a floor buffer. Area may be opened to light foot traffic in 12-24 hours depending on environmental conditions. Area may be opened to light vehicular traffic in 48-72 hours depending on environmental conditions. Chemical resistance will not fully develop for 5-7 days. Protect floor from spills during cure.

Pilot lights, and surrounding sources of ignition may be put back into service once solvent vapors have dissipated to a level below the lower explosion limit. Typically, this will take 8-16 hours after floor installation with adequate ventilation.

**5300 SERIES CLEANUP**

Immediately cleanup splatter marks and tools with lacquer thinner. Clean hands and exposed skin with mild soap and water, and/or citrus based hand-cleaner.

**OPTIONAL STEP 4) INSTALLATION OF 5073 POLYUREA TOPCOAT**

Note: material cool for 24 hours before the installation, the ideal temperature is 70° F. Cure time is effected by environmental conditions. Do not force dry. High humidity and/or low temperatures can cause haziness and blushing in the coating. Material has a pot-life of 60 minutes based on an insulated 200 gram mass at a starting temperature of 73°F. **Expect a 40 minute potlife when working with a 2 gal mas at normal temperatures. Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**

**Preparation**

- Shut off all sources of ignition prior to work and ground all equipment throughout the sealing process.
- Supply auxiliary ventilation as necessary to produce a safe working environment.
- This material causes light headedness, use a NIOSH approved carbon filter respirator capable of filtering organic vapors.

**Hot Weather Tips**

5073 has a shorter pot life in very hot conditions. Keep core temperature to 80 degrees whenever possible; if it is above 80° F bring core temperature down by icing (do this hours before doing job so the core temperature is lowered) or placing in a cool environment the day before application. If instructions are not followed excessive heat may cause a shorter pot life.

**Cold Weather Tips**

Accelerator 50 may be used to speed the cure of 5073 at lower temperatures. Also, allowing extra induction time of mixed material in the container will also help speed the cure, however this should only be done by experienced applicators.

**Mixing**

**DO NOT THIN 5073!** For ideal potlife material should be at a temperature of (70-75° F) or below. Mix the 5073 A-Component with 5073 B-Component at ratios listed on container for 2-3 minutes using a jiffy-type mixing blade at no less than 400rpm. Transfer mixed material to a second mixing vessel and mix an additional 30 seconds to ensure that material along the sides of the first mixing vessel have been properly incorporated into the mixture. **Caution, Do Not Mix More than 2 Gallons at a Time. The more you mix the shorter your pot life will be.**

**Application**

Pour the 5073 from container as needed while leaving the remaining material in the container until needed. Unlike epoxy, 5073 will have a longer potlife when left in the container as opposed to being spread out onto the floor. Apply 5073 mixture to the substrate using a brush, roller, or squeegee at a desired coverage rate. Be sure to cross roll areas to be sure the material is spread evenly. Do not apply at rates less than 175 sq. ft. per gallon or out gassing bubbles may occur. Use spiked shoes when walking into wet material. Because the Polyurea has such a high gloss be sure to remove dust from areas during application. When going over solid color surfaces be sure to back-roll immediately and keep back-rolling to a minimum which will help control micro bubbles.

**Cure Times**

Allow Topcoat 2-3 hours to dry before recoating, if necessary. Recoating after 16 hours may require de-glossing of the surface by use of a floor buffer. Area may be opened to light foot traffic in 2-3 hours depending on environmental conditions. Area may be opened to light vehicular traffic in 12-24 hours depending on environmental conditions. Chemical resistance will not fully develop for 5-7 days. Protect floor from spills during cure.

Pilot lights and surrounding sources of ignition may be put back into service once solvent vapors have dissipated to a level below the lower explosion limit. Typically, this will take 3-6 hours after floor installation with adequate ventilation.

**Clean Up**

Immediately cleanup splatter marks and tools with Acetone. Clean hands and exposed skin with mild soap and water, and/or citrus based hand-cleaner.

**OPTIONAL STEP 4) INSTALLATION OF LOW ODOR NON FLAMMABLE 5400 SEALER**

(Note: material cool for 24 hours before the installation, the ideal temperature is 70° F. Material has a pot-life of 240 minutes based on an insulated 200 gram mass at a starting temperature of 70°F. **Expect a 60 minute potlife when working with a 2 gal mas at normal temperatures. Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**)

**Mixing**

Using a jiffy-type mixing blade at a minimum of 700 rpm, mix 5400 A-Component and 5400 B-Component at ratios listed on container for two minutes. Transfer mix to a second mixing vessel and mix for an additional minute (transferring to a second mixing vessel prevents unmixed components clinging to the sides of the first mixing container from being poured onto the floor.)

**Application**

Working only as much wet edge as can be properly handled. Begin by cutting-in the concrete footings and edges with a brush. Do not work edges more than 10-15 minutes ahead of the main body of the floor. Pour a band of the mixed material out onto the floor and begin rolling with a 3/8" nap roller. Work the material evenly to a wet film thickness of no thicker than 8 mils (200 ft/gallon). **Warning: Applying material thicker than 8 wet mils may result in the formation of small foam bubbles or Foam. Do Not Let 5400 Puddle, be sure to check base of curb walls and expansion/control joints before leaving. This will prevent the formation of white foam in those areas which would be caused by the material pooling.**

Allow sealer 8-16 hours to dry before recoating, if necessary. Area may be opened to foot traffic in 16-24 hours depending on environmental conditions. Area may be opened to light vehicular traffic in 48-72 hours depending on environmental conditions. Chemical resistance will not fully develop for 5-7 days. Protect floor from spills during cure.

**5400 CLEANUP**

Immediately cleanup splatter marks and tools with water. Clean hands and exposed skin with mild soap and water, and/or citrus based hand-cleaner.

**OPTIONAL STEP 4) INSTALLATION OF 5000 POLYUREA TOPCOAT**

Note: material cool for 24 hours before the installation, the ideal temperature is 70° F. Cure time is effected by environmental conditions. Do not force dry. High humidity and/or low temperatures can cause haziness and blushing in the coating. Material has a pot-life of 45 minutes based on an insulated 200 gram mass at a starting temperature of 73°F. **Expect a 25-30 minute potlife when working with a 2 gal mas at normal temperatures. Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**

**Hot Weather Tips**

5000 has a shorter pot life in very hot conditions. Keep core temperature of 5000 below 80 degrees whenever possible; if it is above 80 degrees bring core temperature down by icing (do this hours before doing job so the core temperature is lowered) or placing in a cool environment the day before application. If instructions are not followed excessive heat may cause out-gassing, foaming and hazing of 5000 where it has been applied too thick or where material settles into joints, etc. as well as a shorter pot life.

**Cold Weather Tips**

Accelerator 50 may be used to speed the cure of 5000 at lower temperatures. Also, allowing extra induction time of mixed material in the container will also help speed the cure, however this should only be done by experienced applicators.

**Thinning**

Advantages of thinning the 5000 are a lower viscosity which makes it easier to roll and an extended potlife. 5000 can be thinned with up to 1 pint of Acetone (Acetone is SCAQMD compliant) or MEK (MEK will add 100 VOC to a gallon and is not SCAQMD compliant) for each one gallon of material being used. If thinning be aware that the solids will be reduced to approximately 88% and if Acetone is used the VOC will not change. Solvents are extremely flammable, be sure that all containers are metal and all sources of ignition have been turned off. **Follow flammable precautions as outlined in 5073 and 5300 above if thinning the 5000.**

**Mixing**

Material should be at room temperature (70-75 degrees) or below if in extreme hot conditions. Mix the POLYUREA A-Component with POLY UREA B-Component at ratios listed on container for 2-3 minutes using a jiffy-type mixing blade at no less than 400rpm. Transfer mixed material to a second mixing vessel and mix an additional 30 seconds to ensure that material along the sides of the first mixing vessel have been properly incorporated into the mixture. **Caution: Do Not Mix More than 2 Gallons at a Time. The more you mix the shorter your pot life will be.**

**Application**

Apply mixture to the substrate using a brush, roller, or squeegee at a desired coverage rate. Do not apply at rates less than 175 sq. ft. per gallon or out gassing bubbles may occur. Use spiked shoes when walking into wet material. Because the Polyurea has such a high gloss be sure to remove dust from areas during application. When going over solid color surfaces be sure to back-roll immediately and keep back-rolling to a minimum which will help control micro bubbles.

**Cure Times**

Coating can typically accept light foot traffic in 12-16 hours, vehicular traffic with pneumatic tires in 96 hours. Full cure occurs in 5-7 days.

**Clean Up**

Immediately cleanup splatter marks and tools with Acetone. Clean hands and exposed skin with mild soap and water, and/or citrus based hand-cleaner.

**ADDITIONAL CAUTIONS AND RECOMENDATIONS**

- If concrete is extremely porous the 4150 may suck out and not hold the chip, use a primer coat on these types of concrete surfaces or if it is too late apply a clear coat to touch up the chip into.
- Do not force dry any components of the Roll On Rock™ system.
- Coverage rates may vary.
- Mask all areas that need protection.
- Always wear protective clothing and equipment as required by OSHA and as needed for good safety practices.
- Read Material Safety Data Sheets before commencing work.
- Use spiked shoes when walking into wet material while broadcasting the flakes.

- Use an 18-inch roller to help speed the application and uniformity of material.
- Be sure to cross-roll and back-roll the topcoats to ensure a uniform coat.
- Do not allow material to puddle.
- Use accelerators when installing in cold climates or the return to service time needs to be fast tracked.
- Turn off all sources of ignition if working with 5073 or 5300 Series topcoats and follow safety guidelines listed in product sections.