



ROLL ON ROCK® INSTALLATION GUIDE

SYSTEM 2 with 1/8” to 1/32” Mini Flakes

(See Roll on Rock® System 2 Install Guide when using larger size Flakes)

PRODUCT DESCRIPTION

The ROLL ON ROCK® system with Mini Flakes is a simple broadcast flake system designed to provide the look of quartz to flooring surfaces while providing substrate protection from abrasion, wear, vapor emissions and chemical attack. This Mini Flake option is a much more economical system to apply than a typical quartz system while providing much of the same benefits of the epoxy quartz system. System 2 uses a direct to concrete epoxy that wicks into the concrete and creates an incredible bond that will be able to withstand more than 8 lbs of MVE. System 2 can be done in 2 applications over two days in most circumstances (or in 1 day if accelerators are used). A typical 2 car garage will take about 2 hours to apply the first day and 2 hours to apply the second day. If you use the 5073 topcoat you should be able to walk on it in 2-4 hours and park on it in 24 hours (based on 70 degree weather). Test the hardness with a fingernail test (it won't leave a dent) if you are unsure about parking on it. If you want a completely low odor easy to apply system then consider using our 100% solids 5100 Polyaspartic system for ultimate build and gloss or try our water-based 5400 topcoat, it is every bit as chemical and hot tire resistant as the solvent based products. For extra high build looks, consider using our 5197 Ultra High Solids Polyaspartic which contains 97% solids or consider our 5205 topcoat sealer option, just roll it as the first sealer coat over the flakes and then apply the final topcoat over it in about 30 minutes. This only adds about 20-30 minutes to the application process for a 2 car garage and it allows you to tell your customer that you are applying two clear topcoats which will provide a higher build finish.

PRODUCT COMPOSITION

The ROLL ON ROCK™ system 2 is a multi-layered application made up of the following components:

- 1) 4195 EPOXY – a pigmented primer and flake basecoat applied to concrete substrates.
- 2) BROADCAST FLAKES – decorative flakes available in a variety of color blends.
- 3) 5205 FLAKE SEALER COAT- a clear fast drying sealer that seals the flake and dries fast so the 5073, 5108, 5100 or 5197 can be applied over it in 20-60 minutes to create a two topcoat system.
- 4) TOPCOAT OPTIONS:
 - Non Flammable low VOC and low odor topcoat
 - A. 5100 100% Solids Polyaspartic – a two component water clear fast drying high build topcoat that allows the build of a normal 2 coat system in only one coat. 5100 also has very little odor and is does not contain flammable solvents.
 - B. 5400 Water-based 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. *(Be sure to use 5400 in thin layers. It is designed to be a thin coating. Do not attempt to use 5400 rolled on thick. A 1.5 gal kit covers 400 sq ft)*
 - Other 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.
 - C. 5197 Polyaspartic – an ultra-high solids water clear Polyaspartic fast drying topcoat that allows the build of a normal 2 coat system in only one coat.
 - D.

COVERAGE RATES AND PACKAGING

4195 PRIMER	225 ft ² /Kit/Gal	Sold as 1 -Gallon Kit
FLAKES	8 ft ² /lb	Sold in 50lb boxes - 400 sq ft Box
5205 Flake Sealer Coat (Soaks into the flake and seals it)	225-250 ft ² /Kit 150-166 ft ² /Gal	Sold as 1.5 & 15 Gallon Kit
<u>TOPCOAT OPTIONS:</u>		
5073 POLYUREA	500 ft ² /Kit 250 ft ² /Gal	Sold in 2.0 & 10 Gallon Kit
5100 POLYASPARTIC (roll it tighter since the coating does not shrink as it dries)	500 ft ² /Kit 250 ft ² /Gal	Sold in 2.0 & 10 Gallon Kit
5197 POLYASPARTIC (roll it tighter since the coating does not shrink much as it dries)	500 ft ² /Kit 250 ft ² /Gal	Sold in 2.0 & 10 Gallon Kit
5108 POLYASPARTIC	500 ft ² /Kit 250 ft ² /Gal	Sold in 2.0 & 10 Gallon Kit
5400 WATERBORNE URETHANE TOPCOAT	400 ft ² /Kit 266 ft ² /Gal	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 8lb per 1000 ft² 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

Pour water onto the concrete surface. Inspect area to see if water penetrates concrete (concrete will darken). If the concrete allows water to penetrate then proceed to clean the surface using V-100 concrete cleaner degreaser or do a light diamond grind to achieve a dry cleaning. Use liberal amounts of V-100 on oils stains and scrub until the water no longer beads on stain (if water still beads on oil then burn it off using a small torch and then prime entire area with 4100 epoxy primer as listed in the 4100 install guide). If water beads when doing the penetration test then the following additional preparation will be needed. 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.

STEP 2) INSTALLATION OF 4195 AND FLAKE

(Note: Material has a pot-life of 180 minutes based on an insulated 200 gram mass at a starting temperature of 77°F. ***Expect a 60 minute potlife when working with a 2 gal mas at normal temperature. Warning: Large masses of mixed and/or heated material will have a shorter pot-life.***)

Thinning

Advantages of thinning the 4195 are a lower viscosity which makes it easier to roll and an extended potlife. 4195 can be thinned with up to a ½ pint of Xylene. CAUTION this increases the VOC of 4195 by 55 g/l which makes it non compliant for residential use in the SCAQMD district, check your local district rules before thinning. Solvents are extremely flammable, be sure that all containers are metal and all sources of ignition have been turned off.

Mixing

Using a jiffy-type mixing blade at a minimum of 700 rpm, mix according to ratio listed on label of the 4195 A-Component with 4195 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 **5-6 mils (225-250 ft²/gallon).**

Right after laying about 2 kits of 4195 and using the same roller used to apply the 4195, go out onto the wet floor (be sure to wear spikes) and dry roll the 4195 (which should not take any longer than 10 minutes for a 2 kit area). This will cause the 4195 to tack up in areas that it may be drying and make the flaking look more uniform. The chips will stick more evenly to the 4195 when using this method. FLAKES should be broadcast into the wet 4195 while the coating still has a high degree of tackiness. Scoop the 1/8" to 1/32" 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 means that you will not be able to see the color beneath it. Allow the 4195 PRIMER to cure a minimum of 10-16 hours before proceeding to the next step (does not apply to 1 day install, see that guide for those options).

Tip: Wait at least 20 minutes (from the first application) before throwing the flake. If you throw the flake too soon you risk the chance of the 4195 Epoxy wicking up into the chip as well as the concrete. If this occurs then the edges of the flake may have a transparent look. Your goal should be to throw the flakes within 45 minutes of the first application of 4195 to the area. For the mini flake it is extremely important that you get 100% coverage and cannot see any of the 4195 beneath it.

Flake Recovery

Once the 4195 has dried sufficiently, sweep, blow, and/or vacuum excess FLAKES from the surface. **Lightly scrape protruding flakes and remove all loose flake debris from the surface. Note: Do not scrape the 1/32" flakes too hard, as scraping lines could appear.** Recovered FLAKES may be used on a subsequent job, but should be sifted to remove small broken flake dust. Flaked surface must then be lightly sanded so it does not require too much of the 5205 sealer to fill in an aggressive profile.

Flaking Tips

Do the curb/cove base first and then vacuum up the remaining chips from the floor before doing the field. This is a trick that when done properly will save time and back breaking energy.

STEP 3) INSTALLATION OF 5205 FIRST SEAL COAT

Note: Material has a pot-life of 120 minutes based on an insulated 1.5 gal mass at a starting temperature of 75°F. Unlike epoxy, the 5205 will have a longer potlife if the material is left in the pail so pour out what will be needed only as needed **Warning: Unlike Epoxy, this Polyurea material has a long potlife in the container than on the floor (it dries quick when in a thin film).**

The Mini Flake (1/8"-1/32") is a very fine flake that sucks up a lot of the sealer coat. This install guide shows you how you can use the easy to apply 5205 as the seal coat and the coverage rates we list are based on real world installation information that we have received by installers. ***NOTE:** 5205 should be applied at least 150 sq ft per gallon so it soaks into the flake which will provide a "wet look". If you put it on too thin, then you may have dry spots later because not enough sealer was applied. If this occurs then you will have to go back when it is dry and try to blend it in with more 5205 and flake (a tricky procedure that should be discussed with our technical staff before attempting) before applying the final topcoat so please apply enough the first time and avoid the headache.

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.

Mixing

Use 3 bucket mixing: Using a jiffy-type mixing blade at a minimum of 700 rpm, mix according to ratio listed on label of the 5205 A-Component with 5205 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

Begin by cutting-in the concrete footings and edges with a brush. Pour a band of the mixed 5205 material out onto the floor and begin rolling a coat with a 1/4-3/8" nap roller. Spread at a rate of 150 sq ft per gallon to seal the flake; this will prevent the next coat of 5073 from sinking into the flake so there will be more of it on the surface to provide a very high build appearance. Work the material evenly and maintain a wet edge. Try and work within the control or expansion joints usually found on concrete floors. Allow the 5205 to dry to a slightly tacky state before proceeding to the next step (no more than 30 minutes). It is ok to walk on the tacky 5205 with spikes, any slight scratching will blend in when top coated. If the floor goes beyond tacky and is hard then it will need to be sanded to scuff it up so the topcoat will stick to it. You can also use a fingernail test; if it is fairly difficult to leave a fingernail imprint then you must sand or screen the surface before applying the topcoat.

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

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 a 2 gal mass at a starting temperature of 75°F. **Expect a 40 minute pot-life when working with a 2 gal mas at warmer temperatures. Warning: Unlike Epoxy, this Polyurea material has a long potlife in the container than on the floor (it dries quick when in a thin film).**

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. **50 Retarder can be used to lengthen the pot life in hot humid 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 pot life 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 pot life 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.

OPTIONAL STEP 4) INSTALLATION OF LOW ODOR 100% SOLIDS 5100 POLYASPARTIC TOPCOAT

(Note: keep material cool for 24 hours before the installation, the ideal temperature is 70° F. 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 30 minutes based on a 2 gallon mass at a starting temperature of 90°F. **Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**

Preparation

- Supply auxiliary ventilation as necessary to produce a safe working environment.

Hot Weather Tips

5100 has a shorter pot life in very hot conditions. Keep core temperature of 5100 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 outgassing, foaming and hazing of 5100 where it has been applied too thick or where material settles into joints, etc. as well as a shorter pot life. To reduce the effects of outgassing, install when the temperature is dropping from the highest temperature of the day.

Cold Weather Tips

Accelerator 50 may be used to speed the cure of 5100 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

Material should be at room temperature (70-75 degrees) or below if in extreme hot conditions. Mix 5100 POLYASPARTIC A-Component with 5100 POLYASPARTIC B-Component at ratios listed on container for 2-3 minutes using a jiffy-type mixing blade at no less than 400 rpm. 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: If you are not familiar with the product, Do Not Mix More than 2 Gallons at a Time. The more you mix the shorter your pot life will be. This is a 2-component product be sure to mix thoroughly.***

Application

Pour the 5100 from container as needed. Apply 5100 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. It is OK to spread at very thick rates since this is a 100% solid product, spread it as thick as 50 sq ft per gallon for ultra-high build applications. ***If you want to get 250 sq ft per gallon coverage then spread it out tight to the surface, it may feel like you are putting it on very thin however you need to know that it will not shrink like the other solvent based topcoats so the film build will look as thick as you leave it. For example when apply the 5100 at the same spread rate as 5073 you will find that the 5100 will have a dry film build that is 37% thicker.*** Use spiked shoes when walking into wet material. Because the Polyaspartic has such a high gloss be sure to remove dust from areas during application.

Cure Times

Coating can typically accept light foot traffic in 3-4 hours, vehicular traffic with pneumatic tires in 36 hours. Full cure occurs in 5-7 days.

Clean Up

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

OPTIONAL STEP 4) INSTALLATION OF ULTRA-HIGH SOLIDS 5197 POLYASPARTIC TOPCOAT

(Note: keep material cool for 24 hours before the installation, the ideal temperature is 70° F. 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 45 minutes based on a 2 gallon mass at a starting temperature of 90°F. **Warning: Large masses of mixed and/or heated material will have a shorter pot-life.**

Preparation

- Supply auxiliary ventilation as necessary to produce a safe working environment.
- Use a NIOSH approved respirator capable of filtering organic vapors.
- Shut off all sources of ignition prior to work, and throughout the sealing process

Hot Weather Tips

5197 has a shorter pot life in very hot conditions. Keep core temperature of 5197 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 outgassing, foaming and hazing of 5197 where it has been applied too thick or where material settles into joints, etc. as well as a shorter pot life. To reduce the effects of outgassing, install when the temperature is dropping from the highest temperature of the day.

Cold Weather Tips

Accelerator 50 may be used to speed the cure of 5197 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

Material should be at room temperature (70-75 degrees) or below if in extreme hot conditions. Mix 5197 POLYASPARTIC A-Component with 5197 POLYASPARTIC B-Component at ratios listed on container for 2-3 minutes using a jiffy-type mixing blade at no less than 400 rpm. 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: If you are not familiar with the product, Do Not Mix More than 2 Gallons at a Time. The more you mix the shorter your pot life will be. This is a 2-component product be sure to mix thoroughly.**

Application

Pour the 5197 from container as needed. Apply 5197 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. It is OK to spread at very thick rates since this is a 97% solid product, spread it as thick as 75 sq ft per gallon for ultra-high build applications. **If you want to get 250 sq ft per gallon coverage then spread it out tight to the surface, it may feel like you are putting it on very thin however you need to know that it will not shrink like the other solvent based topcoats so the film build will look as thick as you leave it. For example when apply the 5197 at the same spread rate as 5073 you will find that the 5197 will have a dry film build that is 36% thicker.** Use spiked shoes when walking into wet material. Because the Polyaspartic has such a high gloss, be sure to remove dust from areas during application.

Cure Times

Coating can typically accept light foot traffic in 3-4 hours, vehicular traffic with pneumatic tires in 36 hours. Full cure occurs in 5-7 days.

Clean Up

Immediately cleanup splatter marks and tools with MEK or 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: keep material cool for 24 hours before the installation, the ideal temperature is 70° F. Material has a pot-life of 75 minutes based on 1.5 gal mass at a starting temperature of 75°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 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.

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 4195 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.
- Epoxy may amber under exposure to ultraviolet light when it is installed to less than flake rejection (leaving large areas of epoxy exposed)
- Turn off all sources of ignition if working with 5073, 5108 or 5300 Series topcoats and follow safety guidelines listed in product sections.