



Congratulations on your decision to use the same high quality floor protection system that's the choice of demanding professionals everywhere! From dealership showrooms to repair facilities to extreme environments to your garage, **WOLVERINE COATINGS 100% Solids** epoxies are the ideal choice for easy to apply premium, high performance floor coatings. And YES...

YOU CAN DO-IT-YOURSELF!

Wolverine Coatings Corporation's 100% Solids epoxy floor coatings are self-leveling and easy to apply, making them the ideal DIY project. If you can paint your bedroom, you can coat your garage floor. In both cases proper preparation, following directions, and using the best materials are the keys to success.

Although you can go it alone, it's a good idea to have a friend help you. But consider yourself forewarned... You'll soon be helping *them* with *their* **AlphaGarage.com** project after they marvel at your showroom quality floor!

If you do not desire to do it yourself, we can help find a reputable contractor who can professionally install your floor.

All set? Let's get started!

NOTE: This information and the instructions in this manual are for Wolverine Coatings BondTite 1101, LiquaTile 1184, and EnduraShield 2254 only. Please contact us for information and application instructions for other Wolverine Coatings products.

Warning:

- Avoid contact with skin and eyes. Some people may be allergic to some of the chemicals in our products, symptoms may include skin rash. Latex gloves may also cause an allergic reaction for some people.
- Keep out of reach of children.
- Do not take internally.

First Aid:

- For skin contact: wash affected area with soap and water and rinse well.
- In case of contact with eyes: flush with cold water for 15 minutes.
- If swallowed: ***do not*** induce vomiting. Drink 1-2 glasses of water or milk.
- CONTACT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY.

Lead Warning:

WARNING! If you sand or remove old coatings, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

It's important that everyone involved in the application process read these instructions thoroughly before beginning. Each person should also read Wolverine Coatings Corporation's Technical Information Bulletin, "Safe Handling of Epoxy Resin Systems" as well as the "Product Data Sheet" and "Material Safety Data Sheets" for each product. These can be found at www.wolverinecoatings.com

Support:

For any questions or comments, call **408.692.5742, Mon – Fri 9am – 5pm PST**

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Epoxy Flooring Basics

Wolverine Coatings Corporation's "100% Solids" epoxy products are the ideal protective coating for your garage, shop, manufacturing facility, or warehouse. They cure to a durable, attractive, glossy surface with outstanding chemical, corrosion, abrasion, and impact resistance. Plain gray concrete, whether brand new or old and worn, is transformed into a beautifully finished, seamless floor that's easy to clean and maintain!

A quick note here – There are many "epoxy floor coatings," but they are not equal! The Wolverine Coatings' system is a premium epoxy product. Originally formulated for the most extreme industrial and commercial environments and applications, it is now being made available to the general public.

"100% Solids" means that Wolverine epoxy coatings are environmentally friendly, having no solvents, no water, and very little or no Volatile Organic Compounds. That assures you of an easy to apply, safe, low odor, nonflammable application with a quick cure, and virtually no shrinkage. The amount you purchase and apply will be the amount that remains after the epoxy cures.

Other inferior epoxies contain water and solvents. As those coatings cure, the water or solvent molecules leave "trails" as they migrate through the epoxy to the surface, where they eventually dissipate. Most of these 'trails' are formed when the coating is solidifying and can not refill itself, so they are permanent. Compare it to a block of wood that's had hundreds of small holes drilled through it. Those trails weaken the epoxy and leave a path for intrusive fluids and contaminants. Contrast that to Wolverine 100% solid epoxies - Since there are no volatile compounds to evaporate, there are no residual trails to undermine the epoxy's integrity. This leaves a more dense superior coating that will provide years of service, protection, and enjoyment.

Even before you start to coat, you want a solid floor. If your floor has cracks and/or expansion or contraction joints, you can easily fill them before you epoxy, that will give you a smooth floor, which looks great and is easier to clean and maintain. To fill those cracks use Wolverine's **IntegraFlex 1921**, a 2 part 100% solids epoxy that will remain flexible to expand and contract with minor movements of the substrate.

From the bottom layer to the clear coat, here's how the Wolverine system stacks up:

Any successful project begins with a strong foundation. Our primer, **BondTite 1101**, provides solid and firm adhesion to properly prepared concrete. It physically hooks into the concrete pores while also chemically bonding with the substrate, providing a perfect platform for the next component, **LiquaTile 1184**.

LiquaTile 1184 is the body of our system. Based on Advanced Hybrid Cycloaliphatic technology, combined with proprietary ceramic content, **LiquaTile 1184** is extremely hard - yet flexible. Its flexibility allows it to absorb impact shocks and to expand and contract with the underlying concrete, minimizing stress and reducing the possibility of concrete cracks, while its hardness enables it to resist abrasion for long term durability. It's the ideal combination of application ease, durability, longevity, and great looks. **LiquaTile 1184** is available in 18 color shades.

DecoFlakes 130, if desired, are applied next. If applied thick enough, these vinyl flakes will add surface texture. Available in various colors, they can be easily mixed for that custom look. Choose **DecoFlake 130** and **LiquaTile 1184** colors to compliment your house colors, vehicles, or even your tool chest!

Finally, a protective clear coat is applied to protect the **DecoFlakes 130** and pigmented **LiquaTile 1184**.

This clear coat can be another layer of **BondTite 1101**. Note, however, that most all epoxies, including **BondTite 1101**, may yellow when exposed to UV or sun light. Although this does not affect the durability of the epoxy system, it may affect its appearance. So for outdoor applications and floor areas with high UV or sun light exposure we offer **EnduraShield 2254**. A 90% solids urethane hybrid, **EnduraShield 2254** cures to a crystal clear, UV resistant, extremely hard, high gloss finish. **EnduraShield 2254** itself is "outdoor durable," meaning it will not yellow in full sun light, however any underlying epoxy may still color shift slightly.

NOTE: This information and these instructions are primarily for Wolverine Coatings' **BondTite 1101** and **LiquaTile 1184**. Please inquire for information about other Wolverine products.

Concrete

A coating is only as good as the surface on which it's applied. So before breaking out the paint brush you must determine if your concrete is ready to be coated. Here are six main concrete conditions to consider and look for:

1. Moisture in the Concrete

To see if this condition affects your floor apply a 4 foot by 4 foot sheet of plastic (such as heavy-duty polyethylene) to areas of the garage floor. Tape down all the edges with duct tape and leave it alone for 24 hours. If water droplets appear on the inside of the plastic, or if concrete appears wet (darker in color), moisture is trapped in the concrete floor. If the concrete fails moisture test, please contact us regarding further options before coating.

2. Oil, Grease, Existing Coatings, Stains, Sealers

Conduct this "water droplet" test to determine if there is a sealer present: Simply pour a small amount of water on the surface of the concrete. It should soak into the concrete in a few minutes. Water beading on concrete, or slow water absorption, indicates a surface contaminated with sealers, curing compounds, oil, grease, pre-existing coatings or other incompatible contaminants. See "Concrete Preparation" section.

3. New Concrete

New concrete must cure for 28 days prior to the application of coatings, and should be prepared by shot-blasting, grinding, or chemical etching to provide a 5 mil to 10 mil surface texture (feels like 80 – 120 grit sandpaper).

4. Soft or Spalled Concrete

If the concrete surface has loose flakes, spalls, or is crumbly or soft with dust and flakes, no covering will hold firmly - those problems must be fixed before coating. Wolverine's *TrowelEase 1161* is durable filler designed to easily patch pits and spalls. See "Concrete Preparation" section.

5. Cracks and Expansion Joints

Cracks and expansion joints don't really affect application or durability, but they do affect the final appearance of your epoxy floor. It's best to fill them in before applying an epoxy system. Wolverine Coatings' *IntegraFlex 1921* is the ideal filling solution where a long lasting, flexible filler compound is required. See "Concrete Preparation" section.

6. Outside Areas

Although epoxy coatings will continue to perform and protect, epoxy polymers may chalk and yellow when exposed to sunlight or other high UV exposure sources. This does not affect the strength or durability, but may affect appearance. If your floor is exposed to UV or sun light our *EnduraShield 2254* is UV resistant and remains crystal clear.

CONCRETE PREPARATION

We cannot stress enough that proper preparation of the concrete substrate is key to a successful coating application with positive long term results.

*-Oil and grease can be removed from the surface with a good cleaner/degreaser such as Wolverine Coatings' **OrganiClean 935**.*

*-Sealers, other contaminants, existing coatings, including epoxies, should be removed by mechanical means or by using Wolverine Coatings' **OrganiStrip 901**.*

*-It is possible to epoxy over a pre-existing coating - but only if it is firmly adhered to the concrete. We can not guaranty our products' adherence or compatibility to existing coatings. When in doubt, remove all previous coatings mechanically or with **OrganiStrip 901, 902, or 903** (please contact us for specific recommendations).*

Thorough preparation maximizes adhesion and adds to the life of the coatings. This requires that the floor be properly prepared by mechanical and/or wet chemical methods. The surface should be clean and the surface texture should be between 5 mils and 10 mils, which means it should feel about as rough as 80 grit sandpaper.

CLEANING FOR OIL OR GREASE SPOTS:

Mechanical preparation methods might push contamination deeper into the porous concrete surface, so it's important to remove any oil or grease spots on your floor before acid etching, grinding, or shot blasting.

Use a scrub brush and a cleaner/degreaser such as a Wolverine's **OrganiClean 935**. Wet the area, apply cleaner, and scrub the spot thoroughly. For best results, the fouled rinse water should be pushed out of the area with a foam squeegee or sucked up by a wet/dry vacuum. Keep entire section wet until the whole area has been cleaned and rinsed. Do not leave pooled water on the floor. Stubborn or heavy residue areas may require repeated cleaning applications. Thoroughly rinse with fresh water and let dry.

STRIPPING / SCRAPING:

A stripper solution can be applied to previously coated concrete surfaces, and the old coatings may be scraped off using a paint scraper. Wolverine's **OrganiStrip** products are easy-to-use water-based strippers that can help remove old coatings. Depending on the properties of previous coatings, numerous stripper applications may be required. The stripper and scraper alone may not adequately remove certain coatings, in which case mechanical methods, like grinding or shot blasting, might be the best option.

CONCRETE PATCHING FOR LOOSE OR DAMAGED CONCRETE:

If the concrete is loose, chipping (spalled) or has concrete dust present, the coating will not perform properly. All loose material and dust must be removed and damaged areas repaired. Hairline cracks may be filled-in with epoxy coatings and might not require special attention. Divots and pits will not affect adhesion, but you may wish to repair them for a smoother and better looking finished coating. Divots, pits can be repaired with Wolverine's **TrowelEase 1161 Patch Kit**, while cracks can be filled with **IntegraFlex 1921**, both patching compounds are formulated to work with the entire family of Wolverine Coatings epoxies.

When using **TrowelEase 1161** or **InteraFlex 1921** clean the areas then patch or fill. After fillers are tack free, you can apply the next coat.

GRINDING / SURFACING:

Grinding may be used to remove existing coatings, and level out high spots. This method uses horizontal rotating disks to leave a smooth surface texture; so smooth you may need to rough it up a bit with high pressure water or a chemical etch. For the Do-It-Yourselfer this might be the best method.

Grinders are available for rent at many “big box” stores and construction equipment rental yards. A good model to look for is the EDCO disc grinder with their Dyma-Serts (avoid “stones,” they don’t work). See equipment supplier for applications, use instructions, and precautions.

SHOT BLASTING:

Shot blasting removes thin coatings, cleans the concrete surface, and gives your floor a rough profile. A degreaser may be necessary prior to shot-blasting if floor has an accumulation of grease and oil. Shot blasting can be aggressive and care must be taken to not over blast. Equipment can be hard to find, prices vary widely and are generally costlier than floor grinders.

CUTTING / KEYING:

A masonry saw, a diamond blade on either a circular saw or angle grinder, can be used to cut small ¼ inch deep grooves around drains, doors and transitions. This process, known as “keying”, will provide anchor points for the epoxy system to adhere to, reducing the potential for failure.

WATER PRESSURE CLEANING:

Water is sprayed at high pressure (5,000-40,000 psi) with enough force to remove contamination and loose concrete, and texture the concrete surface. No dust is generated. This method can be used in tight spaces and eliminates the need for harsh chemicals. Time must be allowed for the surface to thoroughly dry.

ETCHING TO IMPROVE FLOOR TEXTURE AND REMOVE LAITENANCE:

Acid etching alone *will not* profile surfaces that have been treated with sealers or still have previous coatings.

When there are no more contaminants, sealants, or pre-existing coatings, chemical etching can create the correct sandpaper-like profile. We strongly recommend Wolverine Coatings **OrganiPrep 921** to safely and easily etch your floor and remove any “laitenance,” a thin, hard, skin that can form as concrete is finished.

Acid etching with muriatic acid is not as safe but acceptable. Muriatic acid is an aggressive acid and extreme care must be taken due to its caustic nature, hazardous vapors, and the difficulty in removing all traces of the acid from the floor. ***If you need to dilute the acid do not pour the water into the acid, always add the acid to the water!*** See product label for complete instructions and warnings. The floor must be neutralized to a pH of 7.0 to 8.5 after acid etching and thoroughly rinsed and completely dried. Muriatic acid is far less user and environmentally friendly than Wolverine Coatings’ **OrganiPrep** products, which are biodegradable. Some floors may require more than one etching.

FILLING IN EXPANSION JOINTS:

It is extremely difficult to completely hide an expansion joint; therefore it is recommended to fill it in as much possible with a self-leveling, flexible sealant. The expansion joints allow the concrete to move without cracking it. Use a self-leveling sealant (flexible coating) such as a Wolverine Coatings’ **IntegraFlex 1921** if you wish to fill in expansion joints. Be sure to “V” notch the cracks before filling.

Climate Conditions

Your concrete substrate is the first variable, and most concrete issues can be dealt with. The second variable that affects application is a bit more difficult to control –

The Weather!

1. Air Temperature

You can coat when the temperatures are between 40°F and 110°F during both application and curing. Concrete floors are slow to warm; the day prior to coating the temperature should be a minimum of 40°F.

Do not apply if extreme temperature increases are expected during the epoxy curing period.

Concrete can “out gas” during the day as temperature rise, which may cause small air bubbles to form in the cured epoxy, so only apply primer coat in mid-afternoon or early evenings as air and slab temperatures are decreasing.

2. Humidity / Dew Point

Do not coat if the relative humidity will be above 80% during application and curing timeframe. Moisture condenses on surfaces that are colder than the dew point of the surrounding air, so surface temperature should be >5°F above the dew point.

3. Rain, Snow, Sleet...

Your epoxy coating should not be applied when there's a chance that the surface may become wet during application or cure.

Amine Blush

Amine blush (or epoxy blush) is caused by the adsorption of moisture and Co₂ during the curing phase. This can cause an oily, waxy, or white film to be formed on the cured layer. Although this frequently occurs with other epoxies it rarely happens with Wolverine epoxies, however you should check for it before applying subsequent recoats. If it is present, simply wipe down the surface with denatured alcohol and then it dry with clean lint free towels, when the surface is dry you can continue with the coating process.

Here are a few scenarios you want to avoid because they may cause Amine Blush:

- The air temperature during the curing process is less than 5°f above the dew point
- The air temperature is less than 40f and dropping
- The air temperature is cold and you have high humidity
- Using a direct burn heater that emits water vapor and Co₂

Sizing up the Task

If you're getting ready to place your order, you'll need to know how many square feet you need to cover. If you've already received your order, you'll want to double check to make certain you received enough material to complete your floor.

For the record: One gallon of liquid (any liquid – milk, water, cola, epoxy) will cover a surface area of 1,604 square feet to a depth of 1 mil. So, if your garage floor was exactly 1,604 sq ft it would need 5 gallons of **BondTite 1101** to coat it to the recommended minimum depth of 5 mils. And if the floor area is 320 sq ft, just 1 gallon would provide the same depth of coverage. If that liquid has a solvent (which Wolverine Coatings epoxies do not, they are 100% Solids epoxy) the cured coverage depth will be proportionally thinner. An epoxy with 50% solids will cure to only half of its wet thickness, with the other half dissipating into the air.

Use the following table to figure out how much material you'll need:

Product	Coat Type	Minimum Depth*	Sq Ft per Gallon**
BondTite 1101	Primer	5 – 8 mils	320
LiquaTile 1184	Body Coat	12 – 20 mils	133
BondTite 1101	Clear Coat	5 – 8 mils	320
EnduraShield 2254	UV Resistant Clear Coat	4 mils (wet) 3.2 mil (cured)	400
*recommended minimum depth ~ total thickness of 20 mils is equal to about 6 sheets of copy paper ~			
**average coverage, results will vary			

The chart above shows the coverage at our minimum recommended thickness. Some epoxy manufacturers base their coverage claims on depths less than a half of our recommendations, and their results suffer. If you want to go that route to lower your costs, that's your decision. We've found that our minimums provide the best performance and protection, which is why we recommend them.

Keep in mind that there will be some epoxy that will be tough to get out of the bucket, there will be some more left in the paint brush or roller, and there might be some spillage and waste, figure about 10%– 15%. Also, depending on the concrete profile, cracks, and expansion joints, you might need a bit more **BondTite 1101** primer. Additionally, if you have a heavy coating of **DecoFlakes 130**, you will need a bit more **BondTite 110** or **EnduraShield 2254** for the clear coat.

NOTE: In order to get at as much epoxy as possible you might be tempted to scrape every last drop out of the mixture container, or even turn it upside down to drain the last drop, **DO NOT DO THAT!** The danger is that some material which is not completely mixed will be applied to the floor, and it will not fully cure, remaining soft.

All epoxies and following coats must be applied within certain time limits. **MAKE SURE YOU HAVE ENOUGH MATERIAL TO FINISH!**

A quick example: Bert has a 2 car garage that is 25 feet wide by 28 feet deep, he'll need to cover 700 square feet (25 x 28).

This will require a minimum of 2.18 gallons ($700 \div 320$) of **BondTite 1101** for the primer coat, 5.75 gallons ($700 \div 133$) of **LiquaTile 1184** for the body, and another 2.18 gallons of **BondTite 1101** as the clear coat. Bert should order a minimum 4.5 gallons of the **BondTite 1101** and 6 gallons of **LiquaTile 1184**.

Flakes & Support Materials

Yes, the chips are fun to apply, they add to the durability and strength of your finished floor, and they really add a lot to the final look, but before we deal with them we need to consider a few other items that you might want to include in your order.

Optional Wolverine Coatings Materials	
PRODUCT	NOTES
Wolverine OrganiClean 935	A non-toxic general purpose cleaner that's very effective in dealing with oil residue and other concrete stains.
Wolverine OrganiStrip 901, 902, 903	An easy to use water-based paint remover that will lift epoxies, urethanes, lacquers, latexes, alkyds, elastomerics, and varnish.
Wolverine OrganiPrep 921	A concrete etch formulated to provide a surface profile on green and mature concrete.
IntegraFlex 1921	A flexible self-leveling sealant ideal for filling expansion joints.
Wolverine TrowelEase 1161 Kit	A three component 100% solids epoxy mortar binder perfect for patching concrete.
Wolverine SuperGrip 300, 850	Coated floors may be slippery when wet, SuperGrip adds texture, reducing slip potential.

Wolverine *DecoFlakes 130* chips can help hide slight concrete defects, while adding color and personality. Density can be from very light coverage, which adds visual accents and helps mask imperfections and dirt, to full coverage, which can provide additional texture and unique look.

How much *DecoFlakes 130* chips should you order? It all depends on the square footage that needs to be covered, and the final appearance you want. Here's a good guide:

DecoFlake 130 Coverage*				
Full Coverage	Heavy Coverage	Medium Coverage	Light Coverage	Very Light Coverage
0.15 Lbs./Sq Ft	0.10 Lbs./Sq Ft	0.075 Lbs./Sq Ft	0.05 Lbs./Sq Ft	0.005 Lbs./Sq Ft
Little or no body coat shows	Little body coat shows	Equal amount of body coat and DecoFlakes showing	A sprinkle of DecoFlakes accent the floor	A very light sprinkle of DecoFlakes
*these are recommendations, actual results will vary				

The DecoFlakes are broadcast on top of (not mixed in to) the *LiquaTile 1184* body layer and must be covered with a clear coat of either *BondTite 1101* or *EnduraShield 2254*.

Once you start applying coatings, there are time limits on the durations between coatings; you do not want to be short on materials.

It is definitely better to have too much material on hand rather than not enough!

Equipment Checklist



By now the concrete substrate is all prepped and cleaned, areas not to be coated are taped and covered, you have enough epoxy material to do the deed, your *DecoFlakes 130* are ready, and you're all set to begin putting down your primer coat, right?

Well... not quite yet.

When the two parts that make up a batch of epoxy are mixed the "pot life" countdown clock starts ticking. That's the amount of time you have to apply the mixed epoxy until it gets too hard to work with. That time can go pretty quickly, so you want to be sure you have all the tools you'll need handy and set to go. An extra set of hands is also helpful!

Here are the tools you might need:

✓	QUAN.	ITEM	NOTES
	1	9" – 18" Paint roller frame	<i>We recommend an extension handle also.</i>
	3 (min)	3/8" to 1/2" Nap roller covers	<i>Make sure they are LINT and SHED FREE!</i>
	3 (min)	Brushes (for trim work)	<i>Recommended – as needed.</i>
		Chip brush	<i>To coat hard to reach areas or tight borders.</i>
		Tape (for trim work)	<i>Optional – as needed. Use good quality duct tape.</i>
		Notched squeegee	<i>Notched to control the coating depth. Helpful with thicker coats, like LiquaTile 1184, usually not necessary for primer and clear coats.</i>
		Protection cloth or paper	<i>Use to mask off "no paint" areas & protect doors.</i>
		Buckets for mixing	<i>As needed.</i> <i>Note: With the 3 quart & 3 gallon kits the larger "part A" can is big enough to accommodate smaller "part B" can contents. But that will require you to mix a full 3 quart or 3 gallon batch. If you want to work with smaller batches you will need additional mixing containers. Use clean containers with measurement markings.</i>
		Graduated cups and measuring containers	<i>For measuring out correct portions if mixing less than full kits. Be certain container material is compatible with our liquid coatings.</i> <i>Use clear containers with measurements marked on the outside of container.</i>
		Shop Vac – wet & dry	<i>Optional – as needed</i>
		Stiff bristle broom	<i>To clean concrete and excess DecoFlakes 130</i>
		6" scraper (plastic blade preferred)	<i>Needed if applying DecoFlakes 130</i>

✓	QUAN.	ITEM	NOTES
		Spiked shoes 	<i>Extremely recommended. If you're coating a large area, or broadcasting DecoFlakes 130, you need spikes.</i>
		MEK or denatured alcohol, for cleaning	<i>Methyl Ethyl Ketone – available locally. Denatured alcohol is easier to work with, but not as strong.</i>
		Drill motor and mixing attachment	<p><i>You will need a drill with a mixing attachment. Hand mixing with a paddle will not work.</i></p> <p><i>Many attachments require the larger 1/2" chuck. Check to make certain that the mixing attachment fits your drill beforehand.</i></p> <p><i>Avoid light duty drill motors.</i></p> <p><i>Use a mixing attachment like this:</i></p>  <p><i>They're available for various sized mixing containers, use the right size for you container.</i></p> <p><i>Make sure the shank fits in your drill</i></p>
		Gloves & safety glasses	<i>Required – as needed</i>
		Cardboard or tarp	<p><i>Place next to floor so you have a working area that you can step onto without tracking epoxy.</i></p> <p><i>Use material that is impervious to liquids so that spills do not seep through and stain underlying surfaces.</i></p>
		Trowel or Bondo blade	<i>To apply and smooth IntegraFlex 1921.</i>

Guidelines for BondTite 1101 and LiquaTile 1184 Coatings

1. Make sure concrete is properly prepped with correct profile, cleaned, and dry.
 - Be sure there is no source of possible contamination. Silicon products can cause “fish eyes” in the final finish, so be sure that all sources of silicon lubricants or cleaners are removed. Silicon lubricants are sometimes used on garage door openers, air conditioning and heater systems, door locks, old rags, brooms, and other items. Clean any items that may come in contact with curing coatings.

Use masking tape and protective material to cover trim, drains, outlet covers, and other areas not to be coated. Cover walls 3 feet above floor to avoid roller splatter.

Predetermine how much area will be coated by your available epoxy. For example – if your floor is 360 square feet, and you’re applying 3 gallons of *LiquaTile 1184*, measure out 3 sections 120 square feet each, and then pour out 1 gallon of the mixed epoxy for each section, and back roll it out evenly to coat that section. Do not scrape sides of container or turn container upside down to drain out last drop of epoxy!
2. Measure temperatures and make sure they are within the allowable application range of between 40 -110 degrees F. Relative humidity must be below 80% with no forecast precipitation that might wet the coatings during application.
 - Once combined and mixed the pot life at 70 F is 30 minutes. If the temperature is hotter, you will have between 15-30 minutes pot life. If the temperature is cooler, you will have between 30-45 minutes pot life.
 - Do not attempt to extend pot life by adding solvents, water, or other materials!
 - Plan out the application so you have enough time to spread the mixed epoxy before the pot life ends and it becomes difficult to spread!
 - -Cooler temperatures will slow curing times while warmer temperatures will accelerate the curing time.
3. Using coverage formulas, determine how much area you can cover during pot life and plan out your pattern. If there are two of you, one can start the trim, or cut-in, while the other rolls on wider area. Don’t mix more than you can apply during pot life of mixture. And don’t paint yourself into a corner!
4. If this is your first time with epoxy coatings, you may want to start with a smaller mixture than 3 gallons to get a feel of the process. Be sure to measure the ingredients carefully before combining, and be sure you’re mixing the correct ingredients!

***BE EXTREMELY CAREFUL WITH YOUR MEASUREMENTS IF YOU’RE
MIXING LESS THAN FULL PRE-PACKAGED KITS!***

Do not leave the containers (mixed or unmixed) in direct sunlight. Doing so may heat mixture, decreasing pot life.

Only mix *LiquaTile 1184* part “A” with *LiquaTile 1184* part “B,” and only mix *BondTite 1101* part “A” with *BondTite 1101* part “B”! – Do not mix *LiquaTile 1184* material with any *BondTite 1101* materials.

Both *BondTite 1101* and *LiquaTile 1184* are packaged in pre-measured containers consisting of Resin part “A” and Hardener part “B” which must be mixed together before use.

Continued on next page...

...Mixing directions continued from previous page

To avoid combining the wrong materials, in your mixing area only keep the product that you need for that session and coat. Keep the other products to be used later in a separate area.

Give a quick mix to part “A” and part “B” separately; it will make it easier to mix the two parts when you combine them in the next step. Clean paddle between each use.

Mix Ratios - 2 parts “A” to 1 part “B” by volume. For example, mix 2 gallons part “A” resin with 1 gallon part “B” hardener.

Wolverine Coatings Corporation products other than **BondTite 1101** and **LiquaTile 1184** may have different measures and instructions. See labels or contact us for specific directions before use.

With the 3 quart & 3 gallon kits, the larger part “A” container is big enough to accommodate smaller part “B” can contents. If you’re not mixing full container contents, have mixing containers pre-measured with proper level indicators marked, or pre measure correct portions of the two parts before hand to be certain of the correct ratios.

5. Using a drill motor (1/2” or larger recommended) and mixing attachment, mix material for at least 3 minutes at a low to medium speed. Avoid over mixing or mixing too aggressively since that may create air bubbles in the coating material and possibly in the cured coating. Keep the mixing paddles beneath surface to avoid air bubbles.

It is critical that both components be thoroughly mixed together! As you’re mixing gently run the mixing paddle up and down the sides as well as along the bottom of the mixing container. Do not pour onto floor until you are certain the entire contents are completely and thoroughly mixed together!

DO NOT allow the epoxy to stay in the mixing container. As soon as it’s mixed pour mixture out onto the area to be coated. Mixed coatings left in the container will prematurely cure and become difficult, if not impossible, to spread smoothly.

DO NOT drain the last drops of mixture out of the cans by setting them upside down on the surface or scraping the sides of the mixing container. There’s a chance that unmixed material will settle on the surface and it will not cure properly!

Poorly mixed or unmixed material is one of the most common mistakes made by DIYers and even professionals. Not properly mixed components will result in soft spots, there is no easy fix, so be sure to properly mix all materials!

DO NOT pour epoxy that’s been previously combined and mixed into a “fresh” batch that’s just being combined.

DO NOT apply a new coat of material over an existing coat that is not yet tack free.

6. **DO NOT** mix the **DecoFlakes 130** into the **LiquaTile 1184**, **BondTite 1101**, or **EnduraShield 2254**! **DecoFlakes 130** are designed to be broadcast *on top* of the wet **LiquaTile 1184**.

BondTite 1101 Primer Coating

1. ***NOTE:** If you're using *BondTite1101* for both the primer coat and the clear coat – measure accordingly! You will use only half the total supplied *BondTite 1101* for each coat.

See *Guidelines for BondTite 1101 and LiquaTile 1184 Coatings* on page 10 for mixing instructions.

If you're going to cut in trim areas, mix a small batch first and use a good quality synthetic brush to coat trim areas.

As soon as you've properly combined and mixed the two parts (**it is critical that both components be thoroughly mixed together!**), pour the entire mixture directly from mixing container onto the floor. Pour epoxy ribbons in a grid pattern, then back roll with paint roller to evenly smooth epoxy at a uniform depth.

DO NOT allow the epoxy to stay in the mixing container. As soon as it's mixed pour mixture out onto the area to be coated. Epoxy left in the container will prematurely cure and become difficult, if not impossible, to spread.

DO NOT scrape the sides of container or turn container upside down to drain out last drop of epoxy!

2. Use a 3/8 to 1/2 inch nap core roller cover on a 9-18 inch roller frame to roll the *BondTite 1101* primer coat epoxy mixture and get an even coat on the surface.

Apply material at 5 mils thick, which equals approximately 320 sq. feet per gallon.

3. If working in sections try to keep the edges wet so that subsequent passes overlap wet edges.

4. Remember that the mixed epoxy has a limited pot life. If the epoxy on the roller cover gets sticky or too stiff, discard it and replace with a fresh cover.

5. Allow the primer to cure for 6 - 24 hours or until tack free. This coat will bond onto the concrete and create a solid foundation for the body coat.

As soon as you can walk on the coating without leaving an impression you can apply the next coat. Do not wait more than 24 hours before applying next coat.

6. If you used tape to define edges, carefully remove tape before the coating cures too much.

NOTE If the concrete "out gasses" during the cure period bubbles may form in the BondTite 1101. If they're large enough to "bubble up" over the surface you can smooth them out by waiting until the coating is tack free then using a sanding block with medium or coarse sand paper to sand down the bubble, wipe up any residue with denatured alcohol or MEK. Examine the bubble crater and be sure that there is some BondTite 1101 coating the concrete. If the concrete isn't coated, coat with BondTite 1101 before applying the LiquaTile 1184.

LiquaTile 1184 Body Coat

1. See *Guidelines for BondTite 1101 and LiquaTile 1184 Coatings* on page 10 for mixing instructions.

If you're going to cut in trim areas, mix a small batch first and use a good quality synthetic chip brush to coat trim areas.

As soon as you've properly combined and mixed the two parts (**It is critical that both components be thoroughly mixed together!**), pour the entire mixture directly from mixing container onto the floor. Pour epoxy ribbons in a grid pattern, then squeegee it out (if using notched squeegee), followed by back rolling with paint roller to evenly spread and smooth epoxy at a uniform depth.

DO NOT allow the epoxy to stay in the mixing container. As soon as it's mixed pour mixture out onto the area to be coated. Epoxy left in the container will prematurely cure and become difficult, if not impossible, to spread.

DO NOT scrape the sides of container or turn container upside down to drain out last drop of epoxy!
2. Using a 3/8 to 1/2 inch nap core roller cover on a 9-18 inch roller frame, coat the roller and roll out the remaining *LiquaTile 1184* body coat epoxy mixture and get an even coat over the *BondTite 1101* primer coat.

Apply material at 12 - 20 mils thick, which equals approximately 133 - 80 square feet per gallon.
3. While working in sections try to keep the edges wet so that subsequent passes overlap wet edges.
4. Remember that the mixed epoxy has a limited pot life.

If the epoxy on the roller cover gets sticky or too stiff, discard it and replace with a fresh cover.
5. If applying Wolverine *DecoFlakes 130* they will be sprinkled on top the wet *LiquaTile 1184* coating as soon as possible. See following detailed instructions

Allow body coat, with or without *DecoFlakes 130*, to cure 12-24 hours before applying a final clear coat.

As soon as you can walk on the coating without leaving an impression, remove excess *DecoFlakes 130* and apply the clear coat. Do not wait more than 24 hours before applying clear coat.
6. If you used tape to define edges, carefully remove tape before the coating cures too much.

DecoFlake 130 Application (optional)

1. DecoFlakes may have settled during shipping – mix them up before broadcasting to make certain that different sizes and colors are evenly distributed.

It may seem like tossing a few little flakes around is easy, and it is, but it can be challenging to toss them around so they're uniform in appearance. It is strongly recommended that you do a few "practice broadcasts" before you coat the floor. Spread out a large (at least 10' x 10') piece of clean plastic and toss a few handfuls of DecoFlakes until you can achieve a uniform spread consistently.

Immediately following application of the **LiquaTile 1184** coating **DecoFlakes 130** chips should be broadcast (sprinkled) into the wet material. The decorative vinyl **DecoFlakes 130** will not affect the performance of the coatings.

The **DecoFlakes 130** broadcast must be completed while the LiquaTile 1184 is still wet and **before** the **LiquaTile 1184** material becomes tack free (approximately 2 - 10 hours depending on the temperature).

2. Wear spiked shoes to gain access to the wet areas during the broadcast process.
Have a large piece of cardboard or a tarp adjacent to the coated area to step onto for clean up and to remove spike shoes.
3. Broadcast **DecoFlakes 130** by hand or by use of a sprinkling can.
What works for many people is to throw them up and out, with fingers cupped, so the **DecoFlakes 130** are dispersed through fingers as they're released. Only use one small hand full of **DecoFlakes 130**, do not grab a large fist full of **DecoFlakes 130**, it's easy to add more flakes if needed, but impossible to remove them if you applied them too thick! Toss them up and out, never throw them down towards the **LiquaTile 1184**.
4. Monitor the application carefully to ensure that uniform coverage is achieved over the entire area. Be careful not to run out of **DecoFlakes130** early!
5. Allow the **LiquaTile 1184** and **DecoFlakes 130** to become tack free and firm (usually between 6-12 hours) and then sweep the surface with a stiff bristle broom or leaf blower to detach loose or angled chips.
6. Using a scraper (preferably one with a plastic blade), scrape the surface carefully in one direction to remove loose and angled chips.

Repeat the scraping process in the reverse direction. The goal is to eliminate any **DecoFlakes 130** that are not lying flat and firmly embedded in **LiquaTile 1184** body coat.

Thoroughly sweep or use a leaf blower to clean floor of any remaining loose chips.
7. Apply a final clear coat of **BondTite 1101** or **EnduraShield 2254** within 24 hours of applying the LiquaTile 1184 coat.

BondTite 1101 Clear Coat

1. Wolverine's **SuperGrip 350** or **850**, or similar anti-slip aggregate, can be mixed in with this final coat if desired. Pour **SuperGrip 350** or **850** into the **BondTite 1101** resin part "A" before adding **BondTite 1101** hardener part "B."

See *Guidelines for BondTite 1101 and LiquaTile 1184 Coatings* on page 10 for mixing instructions.

If you're going to cut in trim areas, mix a small batch first and use a good quality synthetic chip brush to coat trim areas.

As soon as you've properly combined and mixed the two parts, pour the entire mixture directly from mixing container onto the floor. Pour epoxy ribbons in a grid pattern, and back roll with paint roller to evenly spread and smooth epoxy at a uniform depth.

2. Use a 3/8 to 1/2 inch nap core roller cover on a 9-18 inch roller frame to roll the **BondTite 1101** clear coat epoxy mixture and get an even coat on the surface. The roller cover should be lint and shed free!

Apply material at 5 mils thick, which equals approximately 320 sq. feet per gallon.

3. If you used tape to define edges, carefully remove tape before the clear coat cures too much.

4. For a full cure, allow 7 days to dry. With ideal temperature and humidity, tack should be gone and surface ready for light foot traffic in 12 -16 hours. For normal foot traffic, allow material to dry 24 - 48 hours. Allow at least 72 hours dry time before parking on the surface.

5. If minor coating "pick-up" occurs, touch up the affected area and allow an additional 48 hours cure time before parking a vehicle on it.

6. If you need to repair a spot, or want to add an additional coat beyond 24 hours of the previous application, you must prep the existing area. To do that scuff up the area with non-detergent ScotchBrite scouring pads, the heavy duty green ones. After scuffing the areas you want to recoat, clean up any loose material and then wipe down the scuffed area with a clean cloth wet with MEK or denatured alcohol. As soon as the floor is dry apply the additional **BondTite 1101**.

EnduraShield 2254 Clear Coat

1. **EnduraShield 2254** is completely different from most epoxies and many urethanes. Besides being 90% solids its application instructions are a bit different than **LiquaTile 1184** and **BondTite 1101**.

It also is supplied in different sized packaging - 0.625 gallon kits and 1.25 gallon kits.

2. Its mixing ratio is Resin, part “A” to Hardener, part “B,” 0.25:1 (or “1:4”). So for the 1.25 gallon kit you will use 1 quart of the Resin part “A” and mix it with 1 gallon of part “B” Hardener.

The largest container in the 1.25 gallon kit is only 1 gallon in size, so when mixing the full kit you will need to supply a locally sourced container that can hold at least 1.5 gallons. For the 0.625 gallon kit the largest container is only 0.5 gallons in size, so when mixing the full kit you will need to supply a locally sourced container that can hold at least 1 gallon.

Premix the two parts separately first, that's always a good idea, but more so with **EnduraShield 2254**.

Combine the two parts and mix thoroughly for 3 – 4 minutes. Be sure to thoroughly mix the entire contents, including material on the sides, bottoms, and corners of the mixing container! Avoid over mixing or mixing too aggressively since that may create air bubbles in the coating material and possibly in the cured coating. Keep the mixing paddles beneath surface to avoid air bubbles.

3. If you're using **SuperGrip**, add it to the mixture while combining parts A and B. It will be slightly visible on the coating surface after the full cure.

4. Unlike **BondTite 1101** and **LiquaTile 1184**, **EnduraShield 2254** is easier to apply by using the “dip and roll” method. Pour some of the mixed **EnduraShield 2254** into a roller pan, then dip in the roller and roll it out onto the floor.

Use a 3/8 to 1/2 inch nap core roller cover on a 9 to 18 inch roller frame to roll the **EnduraShield 2254** clear coat mixture and get an even coat on the surface.

Apply **EnduraShield 2254** at 4 - 5mils thick, which equals approximately 200 – 250 square feet per 0.625 gallon kit, and 400 - 500 square feet per 1.25 gallon kit.

~~DO NOT APPLY THICKER THAN 8 MILS WET!~~

If applied too thick small, permanent, bubbles may form in the final coat. Although they will not affect durability and performance, they will be visible. To eliminate them the clear coat will need to be sanded, wiped with a solvent, and then re-coated

NOTE: EnduraShield 2254 is crystal clear; in fact it's so clear that it can be difficult to see where it's been applied, and where it hasn't. So be very careful and methodical to be certain that you've coated the entire floor and haven't missed any spots! A bright light held close to floor level can help highlight what areas have been coated.

5. **EnduraShield 2254** should have a longer pot life than the other epoxies you've worked with. That also means it will take a bit longer to cure, approximately 8 - 12 hours to tack free, and ready to drive on in 48 hours, be sure to check for hardness before placing or moving items on cured surface. Maximum hardness takes about 7 days.

If you used tape to define edges, carefully remove tape before the clear coat cures too much.

6. Extra coats of **EnduraShield 2254** can be added for extra durability. Additional layers must be applied within 24 hours of the previous layer's application! Any additional **EnduraShield 2254** must **not** be applied at more than 8 mils wet.

If you need to repair a spot, or want to add an additional coat beyond 24 hours of the previous application, you must first prep the existing area. To do that scuff up the area with non-detergent ScotchBrite scouring pads, the heavy duty green ones. After scuffing the areas you want to recoat, clean up any loose material and then wipe down the scuffed area with a clean cloth wet with MEK or denatured alcohol. As soon as the solvent evaporates apply the additional **EnduraShield 2254**.

Cleaning Up

Wash all tools and equipment immediately with denatured alcohol or Methyl Ethyl Ketone (MEK) - available at your local hardware store.

Allow any unused product to harden in the container and discard according to local regulations.

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