



INSTRUCTIONS ver 2.2 9/16

READ INSTRUCTIONS CAREFULLY BEFORE MIXING AND APPLYING

Note: ArmorClad should be applied between 50-90 deg. F and when relative humidity is 80% or less. If cooler, add portable heaters to area to keep air temperatures higher. It should be stored in a dry area at temperatures between 60-80 deg. F. Material must be above 60 deg. F for installation. Install in areas with proper ventilation. Wear safety glasses, protective clothing and rubber gloves for the duration of preparation and application of ArmorClad.

Floors with high moisture levels (damp) must be either pre-treated or covered with special coatings. To test for moisture purchase a Moisture Test Kit, or tape down a sheet of 4' x 4' clear plastic sheeting on all four sides with duct tape. Wait 24 hours. If moisture builds up under the plastic, or if the floor is noticeably darker/damp, the next step would be to use the Moisture Test Kit to determine the actual level of moisture coming up through the floor, then contact for next steps. Moisture levels in excess of 3.5 lbs/1000 sq ft/24 hours are excessive and may need moisture treatment, or should not be coated with a coating but covered with one of our garage tile products.

Please note that some concrete may exhibit inconsistent absorption rates that could cause an uneven appearance or dullness. This problem is due to variations in the concrete when poured and is not a product failure. Floors that exhibit this condition may need to be primed, or may require an additional coat of epoxy. If your floor has an uneven appearance, or water soaks in inconsistently, then it may need to be primed. Previously coated or sealed floors should also be primed after removal of the prior coating. Remember, any coating can only stick to what is under it, so if you do not remove an existing coating and it peels up so will the Armorclad on top of it.

BEFORE YOU START: Not included in the kit you need to supply the following: standard 9" roller frame and extension pole.

NOTE: ARMORCLAD ETCH IS A MILD, BUFFERED ACID BUT ALWAYS WEAR PROTECTIVE EYEWEAR, RUBBER GLOVES AND KEEP SKIN COVERED.

Surface Prep- THE MOST CRITICAL STEP to assure the performance of the ArmorClad system is to apply the product to a clean, well-prepared surface. The surface must be free of debris, loose or flaking concrete, dirt, oil, curing compounds, sealers and loose paint. Even new concrete must be cleaned to remove dirt, dust, and salts that form as the concrete cures. DO NOT SKIP THE PREP STEP OR A FAILURE COULD OCCUR.

Step One- Remove foreign substances. Scrape off any surface debris such as putty, paint or oil dirt so that the surface is smooth and even. Use running water from hose with nozzle, or a pressure washer to flush the entire area to remove any loose dirt and debris from the surface. Degrease with cleaner/degreaser any oil, grease, etc. If residual petroleum products remain in the floor, prime with our Oil Stop Primer.

Hint. If you do not have a pressure washer, renting one at a local home center or paint/hardware store makes this job much easier and faster, and will get the floor cleaner.

Step Two- Clean and Etch. Add the ArmorClad Etch to three gallons of hot water in a pail and mix. Wash the floor down first. While wet, spread the mixed etching solution over the area to be coated with the aid of a broom or mop and allow it to soak in for approximately 10 minutes. You may notice some slight foaming which is normal.

While the solution is soaking, scrub the floor with a bristle-type broom or scrub brush on a stick. Rinse well the entire surface with plenty of fresh, clean water to remove all of the spent solution and to remove emulsified oils and grease and any loose dirt or debris.

HINT: WET DOWN YOUR DRIVEWAY OR PLANTINGS WITH A HOSE FIRST BEFORE RINSING OUT THE ETCH SOLUTION. THIS HELPS TO PROTECT ANY MINOR ETCHING FROM OCCURRING TO AN AREA THAT YOU DON'T WANT IT TO OCCUR.

Hint—ALLOW FLOOR TO DRY Broom off any puddles of water with a clean broom prior to beginning the installation. After removing the standing water the floor should be clean. If it does not appear to be clean or appears to be saturated with oils, then you must repeat the surface prep instructions above. A wire brush may be needed for extreme areas. Begin installation when the concrete surface is clean and dry to the touch and has 'whitened' back, normally overnight but can take longer based on temperature and humidity.

ALTERNATE: You can also prep your floor by using a 'diamond floor grinder' or sanders which are available at local tool rental stores. This method also works very well to remove existing paints, coatings or sealer. Make sure that you vacuum any grinded areas well as grinding and sanding creates a lot of dust.

Step Three- Mask off with standard masking tape any areas that you don't want to coat such as perimeter edges and the area extending beyond where the garage door comes down (Armorclad is not designed for continuous outdoor exposure).

OLDER, STAINED, FIBER REINFORCED OR HIGHLY POLISHED CONCRETE

Concrete that has been in service for extended periods of time, particularly garage floors, becomes polished from the repeated traffic in the common areas. Also, impurities and chemicals from tires become trapped in the porous surface. The use of tire shine products like 'Armorall' also resist all coatings. These conditions may require additional treatment to create a strong bond for ArmorClad.

Step One- Before cleaning and degreasing as noted in the instructions, these areas should be sanded and brushed to remove the impurities and to create a rougher surface on which to apply the ArmorClad. This sanding can be done with an electric sander/buffer with a medium abrasive pad or it can be accomplished by hand sanding the areas with medium grit sandpaper. You can also re-etch these areas with muriatic acid at a higher concentration to achieve desired results.

Hint-When sanding by hand, use a drywall sanding pad and extension pole to simplify the process.

Step Two-After sanding and brushing with a wire brush, rinse the areas involved to remove all dust and foreign materials and then proceed with cleaning and degreasing above. See FAQ's for more info.

NOTE: Test all stained, polished or sealed areas by dribbling water droplets on those areas. If it still beads up, then repeat as necessary until water beading stops.

Occasionally when concrete is poured fiberglass fibers are added for strength. These fibers are often hard to see unless you check carefully in advance. If you coat over these fibers without pre-treatment a 'hair gel' effect will occur making the surface rather rough. These fibers can be treated by priming with Armorclad Epoxy Primer and then once dry sanding the fibers down smooth, and then applying the Armorclad per our regular instructions.

FLOOR REPAIRS

No liquid coating will 'fix' a floor so any cracks, divots, spalling, roughness, leveling or other repairs must be done prior to applying the coating. For more information contact our office and request the Surface Prep Memo and/or Corroded Floor Bulletin. We offer a variety of floor repair products including Crack Repair Epoxy Putty and Epoxy Mortars. Do not use silicone type products for repairs.

PRIMING

Priming of your floor will generally always give a better, thicker, and more uniform result. While not required in most instances the wide variations of surface types, concrete mixes, concrete age/damage can affect the color and sheen and appearance of your project. Some surfaces if not primed may/can absorb epoxy inconsistently causing the epoxy to soak in at different rates, causing differences in sheen and appearance. Priming with the Armorclad Primer greatly reduces the possibility that these problems could occur. Priming is strongly recommended or required for highly pigmented or light colors such as beige, white, red, yellow, and off white. If you are in doubt, there is no downside to priming other than the cost of the material ,but since primer is much less expensive than epoxy it can end up saving money by not requiring an additional coat of epoxy which may be required under certain conditions.

Floors that have been grinded, shot blasted, or were previously coated should always be primed with Armorclad Primer, please contact us for info, priming or technical assistance.

If you purchased the optional primer you would apply this as the first step. The primer comes packaged as a 4:1 mix ratio with dark blue labels that say Armorpoxy II Low Voc Primer.

Mix the primer in a bucket by combining all of the large Part A with the Small Part B (4:1 mix ratio). Mix thoroughly with the included mixer attached to a drill for 4 minutes, making sure that there is no unmixed material remaining in the container. Pour onto the floor in beads and roll out a nice even thin coat. It is normal to have some un-evenness or blotchiness for this step once applied which will be corrected once the epoxy is used. Allow the primer to cure overnight. The primer should feel completely dry the following day before going on to the next step. No other prep such as sanding or cleaning is needed to apply the epoxy layer.

ARMORCLAD EPOXY MIXING

ArmorClad is a two component 100% solids-type epoxy resin. It requires the thorough mixing of the Part 'A' and Part 'B' components for the material to properly harden. Mixing can be done by attaching the metal mixer provided in the kit to a hand held drill and mixing on medium speed for 3 minutes. Please note that very occasionally epoxy resin ingredients we purchase can 'crystallize' or thicken during cold weather transport to us resulting in a thick cap on the part A portion after we formulate and package. In the unlikely event that this has occurred do not mix and contact us for a replacement.

REQUIRED: *If you purchased more than 1 kit (for example a Master kit and an Add On Kit) you MUST mix the A portions together FIRST to assure color even-ness. The reason for this is the special 100% solids epoxy formulations cannot hold color tolerances between batches like interior latex-type paints so if you don't do this, color variations could occur and this*

is not covered under our warranty. It is ok to expose the A to the air, as hardening does not occur until the part B hardener is added. Keep lid on any unused Part A prior to mixing.

HINT: If you desire to 'cut in' corners or paint along walls and such before doing your floor, you can mix up smaller quantities of the ArmorClad by simply pouring out what you want into a smaller container and holding the 2:1 mix ratio (2 parts of A with 1 part of B).

HINT: If possible, if you are applying during the warmer months, keep the Armorclad inside in a cool environment the night before.

Step One-Open the part A & B cans and stir each individually.

IF YOU PURCHASED A MASTER KIT WE DO NOT RECOMMEND MIXING ALL OF THE 2 GALLONS OF THE PART A & 1 GALLON OF PART B TOGETHER AT THE SAME TIME SINCE WHEN THIS MUCH IS MIXED TOGETHER IT STARTS AN EXOTHERMIC (HEATING) REACTION WHICH IF TOO MUCH IS MIXED TOGETHER AT A TIME CAN CAUSE PRE-HARDENING IN THE BUCKET BEFORE COMPLETE APPLICATION. GENERALLY MIXING HALF OF THE PART A AND HALF OF THE PART B IS RECOMMENDED AT THE MAXIMUM. REMEMBER YOU CAN ALWAYS MIX LESS, BUT SHOULD NOT MIX MORE THAN 1.5 GALLONS AT A TIME (1 GALLON A AND 1/2 GALLON B) OF COURSE ALWAYS HOLD THE 2:1 MIX RATIO FOR ANY QUANTITIES MIXED.

After the components are measured and mixed together you have approximately 20 MINUTES of working time to apply at 70 deg F. HIGHER TEMPERATURES WILL SHORTEN WORKING TIME. Work diligently and quickly to avoid premature hardening and product failure. Premature hardening is not covered under warranty. DO NOT MIX IN DIRECT SUNLIGHT, and keep mixture out of sunlight. You can mix as much or as little of the material as you like, as long as you hold the mix ratio (2:1) constant. HIGHER AMBIENT TEMPERATURES CAN CAUSE HARDENING PREMATURELY. GETTING THE MATERIAL ONTO THE COOLER FLOOR ONCE MIXED WILL ALSO HELP SLOW DOWN CURING AND EXTEND WORKING TIMES.

NOTE: ARMORCLAD IS A 100% SOLIDS RESIN AND IS A 'THICK' COATING. IF YOU FIND THAT IT IS TOO THICK TO APPLY DUE TO TEMPERATURE OR OTHER CONDITIONS, YOU CAN THIN IT A BIT BY ADDING UP TO 1/2 CUP OF XYLENE (ALSO KNOW AS XYLLOL) TO EACH GALLON. THINNING WILL ENHANCE WORKABILITY AND WORKING TIME. DO NOT OVER-THIN.

HINT: YOU MUST MIX THOROUGHLY. MAKE SURE TO MOVE THE METAL MIXER ATTACHED TO A DRILL UP & DOWN THROUGHOUT THE MIXTURE. MAKE SURE TO MIX ALONG THE SIDES AND BOTTOM. AFTER COMPLETING MECHANICAL MIXING, USE MIXING STICKS TO ASSURE NO RESIDUAL UN-MIXED PRODUCT REMAINS ON SIDES OR BOTTOM. UNMIXED MATERIAL WILL NOT HARDEN AND COULD RESULT IN REPAIRS AFTER APPLICATION.

Step Two- Pour 2 parts from Part A and 1 part of part B into a larger container that can hold at least the total you are mixing. We STRONGLY recommend mixing up no more than 1/2 of the contents of each A and B bucket, and then applying to the floor, and then repeating to avoid pre-hardening and having to rush through the project. Note, our packaging always is pre-measured at the proper mix ratio, but you may not want to mix up all of the Armorclad epoxy at a time. Mix the two components together for 2-3 minutes but not any longer. Move the mechanical mixer up and down through the contents while spinning so that you get ALL of the material mixed, not just the material at the bottom of the pail. NOTE: When mixing the A and B together you will notice 'veins' appear. These veins should be 100% gone which is another indication of complete mixing. Be sure to scrape the sides and bottom of the containers to assure that all the material is properly mixed. Improperly mixed resins will not harden properly or show color variations when applied. DO NOT MIX AT HIGH SPEEDS AS THIS CAN CAUSE AIR BUBBLES. IMPROPER MIXING MAY CAUSE THE PRODUCT TO NOT HARDEN PROPERLY, SO MAKE SURE THE PRODUCT IS PROPERLY MIXED. IF IN DOUBT, MIX A LITTLE LONGER. ALL ARMORCLAD PRODUCTS ARE TESTED PRIOR TO SHIPPING FOR HARDENING. IMPROPER HARDENING IS NOT COVERED UNDER THE WARRANTY AS THE ONLY THING THAT CAN CAUSE THIS IS IMPROPER MIXING OR VERY HIGH MOISTURE LEVELS IN YOUR FLOOR.

APPLICATION OPTION ONE-SINGLE COLOR

ArmorClad may be installed as a solid color or with the decorative flakes to provide an attractive, terrazzo-like finish. The clear coat provides significant additional durability and shine.

Option One, Solid Color Application-Appropriate tools to reduce effort and help produce a professional finish. A small, disposable paintbrush should be used to coat edges, corners and any hard to reach areas. Larger areas should be coated using supplied squeegee and/or a 1/4" non-shedding roller cover on a heavy duty 9" roller frame along with a sturdy extension pole. If you use the squeegee, then you must 'backroll' with the roller to smooth out any squeegee lines. Pour the ArmorClad epoxy onto the floor in a left-to-right pattern in a 'bead', then roll or squeegee out. Applying to the floor onto the cool concrete slows down the curing process and allows longer working time. DO NOT LEAVE IN BUCKET FOR EXTENDED PERIODS. DO NOT USE A ROLLER PAN. APPLY DIRECTLY TO FLOOR AS FLOOR IS ALWAYS COOLER THAN THE AIR AND WILL EXTEND WORKING TIMES AND MAKE THE PROJECT EASIER.

Hard to reach areas should be coated first using the small paintbrush. Before mixing the entire contents of the cans together, you may wish to mix small quantities of A & B in a coffee-type can and use a brush for corners, edges, etc. Larger areas should be done with the roller or squeegee, whichever you find easier to use. HINT: THE SQUEEGEE IS HELPFUL FOR EDGES AND FOR SPREADING OUT THE EPOXY, BUT A ROLLER SHOULD BE USED TO MAKE IT EVEN AND SMOOTH OUT THE EPOXY, SINCE NO FLOOR IS PERFECTLY LEVEL. Apply ArmorClad evenly and consistently to the entire area being coated. Be careful to cover all areas and do not leave light streaks or heavy areas.

Apply smoothly and evenly. Upon completion the surface should look uniform in color without streaks or heavy accumulations.

APPLICATION OPTION TWO: DECORATIVE FLECKS

Option Two- Fleck application. When installing fleck chips, the mixed ArmorClad epoxy is applied in the same fashion for the solid color application, however, it is done in segments noted below.

Apply the ArmorClad solid color evenly with complete coverage to an area that you can easily reach across to disperse the deco chips, usually a width of about 2-3 feet. Remember, you can't walk on wet epoxy unless you have purchased our spiked 'epoxy walking shoes'.

Immediately after applying the epoxy to the segment, apply the deco chips by carefully sprinkling them from a height of approximately three feet and allowing them to randomly 'rain down' onto the wet surface. Do not 'throw' them down, it is better to throw them up and let them 'rain down'. Be careful to not over-apply the amount of chips in any one area. The chips should be applied so that the surface is uniform in the amount and random in color. Leave a wet edge of the ArmorClad where you can start coating your next area without disturbing the chips you already applied. Note: Don't worry if some of the chips get onto the unpainted part, or if you don't leave an overlap edge for the next section, you can just paint over any stray chips and they will become entrained in the epoxy. Continue this process until the area is completed with a uniform appearance. Make sure to note how many chips you have for the project and apportion them properly so you don't run short at the end of the project.

Hint-You can practice applying the chips by sprinkling some over a clean, dry area and then sweeping up for re-use.

Let dry for 12 to 24 hours, then sweep or vacuum up any loose flecks, or flecks that may have fallen onto each other.

CLEAR COAT APPLICATION

The clear standard included protective topcoat (Ultraglaze) is applied after the ArmorClad is fully dry enough to walk on (normally overnight, but can be sooner depending on temp or humidity conditions). Open can, mix well and apply. For enhanced safety, we recommend using the included anti-slip aggregate should be added to the clear coat to reduce the risk of slipping on finished floors that may be exposed to wet or oily/greasy conditions. Use 1 package per gallon. Slowly pour the contents of the non-skid additive into the topcoat and mix well to thoroughly suspend in the mixture. Ultraglaze coat will go on 'milky white' but clear up shortly to a high gloss shine. **THE TOPCOAT SHOULD BE APPLIED WITH A ROLLER ONLY. DO NOT USE A SQUEEGEE AT ALL FOR THIS APPLICATION**

Hint-The aggregate will settle while mixed in the glaze, so periodic stirring is required during the application process to assure uniform application of the anti-slip aggregate.

Please note that if you notice any uneven or problem areas with your application do not apply the topcoat until you have rectified those issues. Normally topcoat will not 'fix' issues with the epoxy application.

CLEAN UP

ArmorClad epoxy can be cleaned off hands and other surfaces with xylene (xylo) before the material begins to harden. Warm soap and water may also be used if the epoxy is still wet. Sticky resin on hands can be removed with mineral spirits or xylene. Fully cured ArmorClad can only be removed with industrial paint strippers available from us, or through mechanical methods such as grinding or sanding. Any leftover mixed ArmorClad, paintbrushes and roller covers will harden once the material cures and should be disposed of according to your local regulations.

RETURN TO SERVICE

At 75 def F, ArmorClad should cure for at least 24 hours before opening the area to foot traffic. 5 days cure time is recommended before driving across and parking a car on it. Extreme temperatures and humidity levels can dramatically impact curing times. If the ArmorClad is not 'rock hard' after 48 hours @ 75 degrees F, then do not drive on it and call for assistance.

Coverage- when applied to a smooth/dry surface coverage is approximately 600 square feet per kit Master Kit and 300 square feet per add on kit. Coverage calculated @ 8.3 mils. This is equivalent to 4 layers of standard floor paint. Top-coating adds an additional layer of protection.

MAINTENANCE

ArmorClad surfaces are easy to maintain through periodic mopping with a non-bleach household detergent solution and rinsing with clear water. Clear topcoat should be re-applied based on usage, salt/winter exposure and wear as part of a regular maintenance program.

FREQUENTLY ASKED QUESTIONS

-*My concrete is relatively new, do I still need to clean the floor before applying ArmorClad?* Yes, construction dust, dry wall paste, and paint splatters can affect the bond. Lime, which is an ingredient of concrete floats to the top while it cures and must be treated. Scrape foreign substances from the floor and then clean the floor with the etching solution. This is mandatory step. Skipping the prep step can cause failures.

-*My floor is newly-poured, how long do I have to wait?* Normally a slab needs 30 days to cure. It can be less or more depending on conditions. Do moisture test as indicated below.

-*Do I have to remove old coatings or paint before I apply ArmorClad?* Yes, it should be. The ArmorClad epoxy may form a bond on these surfaces that is stronger than the bond of the old coating on the concrete. This could cause the old coating to pull away from the concrete, leaving an uncoated area. Leaving old coatings on could cause failure due to entrapment of moisture. IncStores sells floor paint strippers for this use. If you are unable to remove the old coating, at the minimum power with a minimum 3000 psi power washer, and make sure to lightly sand the existing coating and vacuum well before using Armorclad.

-*I have stains on my concrete caused by tires of my car. Do these areas have to receive special treatment before coating?* Yes, tires contain chemicals that leach into the concrete over time. If too much of these substances are trapped in the concrete, then the Armor Fleck will not adhere to them and it won't stick. These dark areas should be sanded with a rough sanding pad, scrubbed with a wire brush and the apply the etch and then rinse well thoroughly.

-*I may have a clear sealer on my floor. How can I determine if I need extra surface prep?* The easiest way to determine this is to sprinkle water on the questionable areas of your floor. If the water beads, you have a foreign substance that must be removed. Sanding or etching can be used to remove this problem. Also diluted muriatic acid has been shown to help also. Test again with water to assure proper sealant removal. Repeat as necessary until no water beading occurs.

-*I think I may have a moisture problem, how do I determine that?* To test easily for moisture before you coat, duct tape down a sheet of 4' x 4' clear plastic. Tape all 4 sides completely. Wait 24 hours. Check for moisture buildup under the plastic. If significant amounts, then wait until dry, or consider another alternative such as garage tiles.

-*Can I apply multiple coats of ArmorClad over a period of time?* Yes, no special surface prep is required if the additional coats are applied within 3-5 days. If a longer period goes by, then the area should be sanded lightly to create a rougher surface to which the ArmorClad can adhere to.

-*Do I really need to add the anti-slip aggregate to the glaze coat?* Any coated surface, especially a high quality, smooth surface can be slippery when wet or exposed to oils and grease. **As a safety feature, we highly recommend that the anti-slip aggregate be added to the final coat.**

-*I have some cracks in my floor. Should I fill these in before applying the ArmorClad?* Filling the cracks may yield a smoother, more beautiful floor since any liquid coating will not fill in cracks 100%. If you have cracks, our epoxy crack filler kit works very well for hairline and smaller cracks. Urethane or epoxy caulks may be used. Another idea is to hide the cracks with the deco chips. Do not use silicone-type caulks or fillers, they resist ArmorClad. Do not use silicone-type crack fillers.

-*Can I apply ArmorClad to wood?* Yes you can, it will adhere to wood, although it was formulated for concrete application. The wood should be lightly sanded and then primed first with the Armorclad Epoxy Primer.

SAFETY

As with any chemical, avoid contact with skin, avoid inhalation and wear protective clothing, rubber gloves and eye protection. Apply only in well ventilated areas. Follow all local, state and federal regulations that may apply to your area. Contact us if MSDS sheets are needed.

CLEAN UP

Clean up with xylene (xylol) available at any paint or hardware store.

THINNING

AarmorClad may be thinned by adding up to 1/2 cup (4 oz) of xylene (xylol) per gallon.

FIRST AID

For skin contact, wash thoroughly with soap and warm water. In case of contact with eyes, flush with warm water and immediately contact a physician or go to the emergency room of your local medical center or hospital. If swallowed, do not induce vomiting. Contact a physician and the poison control center.

