



**ARMORTECH** PROUDLY MADE IN THE USA  
**PREMIUM COATINGS INC.**

*Superior Formulations for Lasting Results*

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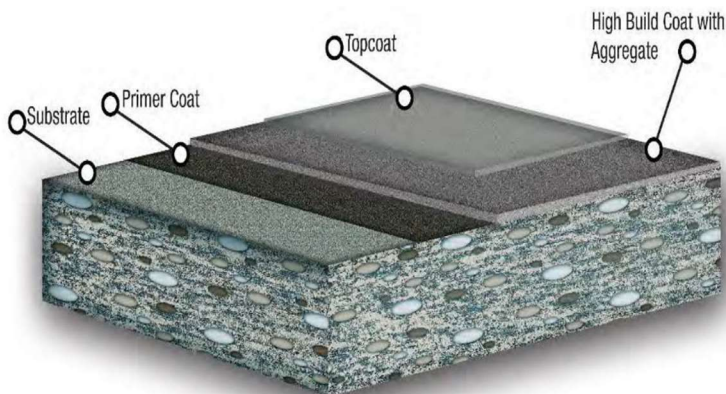
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## Industrial Shop Floor Installation Instructions

(Please read instructions carefully before mixing and applying products)

**INDUSTIAL SHOP FLOOR SYSTEM:** Our industrial shop floor system is an extremely durable, high build (18-36 mil), full broadcast (silica sand), solid color epoxy coating system with a tinted polyurethane topcoat. This system is typically installed as a three-layer system and is designed for industrial floor applications where the floor is subject to moderate traffic and chemical exposure and may be installed as a full or double broadcast system. It is used for environments requiring an attractive, slip-resistant, high-performance floor over surfaces that have sustained minor damage requiring a moderately thick surface to hide track marks, spalls, and other concrete imperfections.



### System Benefits:

- Easy to clean & maintain.
- High compressive strength and impact resistance
- Excellent wear characteristics
- Suitable for intermittent chemical exposure
- Excellent Light Reflectivity
- Good color availability
- Economical product selections

Our flooring epoxy can be applied at temperatures between 50-90 degrees F (with the optimal temperatures being 65-75 degrees F) and when relative humidity is 80% or less. If it's cooler, add portable heaters to the area to keep air temperatures higher. Prior to use, products 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 process.

Floors with high moisture levels (damp) must be either pre-treated or covered with special coatings. To test for moisture, 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 a moisture test kit to determine the actual level of moisture coming up through the floor, then contact our office to purchase one of our moisture vapor barriers. Our Moisture Vapor Barrier (NEXTECH PRO™ APC 510 MOISURE VAPOR BARRIER) is two-component 100% solids epoxy MVB that can help control moisture vapor emission rates up to 20 lbs./24hr/1000 square feet.

It is considered that if the moisture levels are consistently more than 3.5 lbs./1000 sq. ft./24 hours, that the floor should not be coated with an epoxy coating and that an alternative flooring type should be considered.

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 or uneven curing and is not a product issue. 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 so will the new coating.

**BEFORE YOU START:** Read all instructions and gather all required tools and needed supplies.

Spiked shoes

Power Drill

Mixing Paddle

Buckets and/or Graduated containers

Mixing Sticks/Paint Sticks

Smooth and/ or V-Notched Squeegee

3", 9", 18" Paint Roller Frames with extension poles

3", 9", 18" Roller Sleeves

Disposable Nitrile Gloves

18" Roller Tray for Topcoat

Masking Tape

Isopropyl alcohol

Lint free shop rags

**SURFACE PREP:** THE MOST CRITICAL STEP to assure the performance of the Armortech system is to apply the product to a clean, well-prepared surface. The surface must be free of debris, loose or flaking concrete, dirt, dust, 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 COATING FAILURE COULD OCCUR.

**DEGREASE:** First, remove oil and/or grease. Use our product NEXTECH PRO™ APC 026 heavy duty, 100% biodegradable and environmentally safe cleaner concentrate. For heavy duty cleaning and degreasing, we recommend 1 part APC 026 to 4 parts water by volume. Deviations from this ratio can employ differing concentrations suited to the cleaning strength needed. For

less soiled floors, dilute with more water and for heavily soiled floors, dilute with less water. Ratios varying from 1:1 to 50:1 (Water: APC 026) can be used for cleaning. Scrub the surface with a stiff bristled boat brush, and APC 026 mixed with warm water. Once complete vacuum up excess water using a shop vac with a squeegee attachment and allow to air dry. If residual petroleum products remain on the floor, prime with our Oil Stop Primer, NEXTECH PRO™ APC 931 OIL STOP EPOXY PRIMER COATING.

**PREFERRED CONCRETE PREP METHOD:** Next, prepare the floor by using a shot blaster, diamond floor grinder or handheld grinder with a diamond wheel, all of which are available at most local tool rental stores or your local box store. This method works best for removing existing paints, coatings and/or sealers as well as “opening the pores of the concrete” as well as removing concrete laitance. Concrete laitance is the fine, loose, powdery particles and non-durable cement that rises to the surface of a concrete slab when installed and curing. The removal of laitance is important to ensure that the materials being applied to the floor adhere adequately. There are several ways to remove laitance and the method chosen should depend on the working environment and purpose of the floor. Today most floor grinders and handheld grinders come equipped with dust shrouds and attachment points for a shop vac or vacuum and are remarkably effective at controlling dust. Grind the entire floor and edges. A small multi-tool with a triangle-shaped diamond head can be highly effective at reaching into corners and other tight spaces where the larger grinders will not reach; and are also available at your local box store. Once the area to be coated has been thoroughly ground, be sure to vacuum the entire floor, removing any dust and/or loose particles.

**ALTERNATE CONCRETE PREP METHOD:** Acid etching can be employed for previously unsealed concrete, concrete with only a thin layer of laitance, and non-porous or low porous surfaces. This method should only be used if other options have been ruled out, due to the caustic and hazardous nature of these products. The acid (typically a muriatic acid) in the acid etch product attacks and breaks down the laitance at the surface of the concrete. However, due to the varying degrees of hardness found across a typical concrete slab this method can produce inconsistent degrees of porosity. Because of this, the acid etching process may have to be repeated several times until a uniform porosity is achieved across the entirety of the slab. Acid etching can and is a highly effective method of prep, if done properly. A variety of concrete acid etch brands are readily available and be purchased at most local box stores at low cost. We encourage you to read the label and follow the directions of your chosen acid etch product. With that said, below we will outline the basic process as well as offer you some practical tips to make the process go as easy and as smoothly as possible.

Wash the floor down first. 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 you will get the floor cleaner. While the floor is still 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 as directed. You may notice some slight foaming, this is normal. While the solution is soaking, scrub the floor with a medium to heavy bristled boat brush, bristle-type broom, or scrub brush on a stick. Once the acid solution has soaked for the recommended time period, rinse the entire surface with plenty of fresh, clean water to remove all of the spent solution and to remove emulsified oils and grease as well as any loose dirt or debris.

Once the acid etch has been rinsed off, remove any standing water with a wet/dry shop vac with a squeegee attachment. After removing the standing water, the floor should be clean and free of oils. If it does not appear to be clean or appears to be saturated with oils, then you must repeat the acid etch process, until uniform porosity is achieved. You may need to re-etch problem areas with muriatic acid at a higher concentration to achieve the needed results. Do not begin applying new coatings until the entire concrete surface is clean and dry to the touch, normally overnight but it can take longer at lower temperatures or if humidity is high.

**PRO TIP:** Test all acid etched areas for adequate porosity by dribbling water droplets on the floor. If the water droplets absorb in the floor after a few minutes, you are good to go. However, if the water droplets bead up and do not absorb into the concrete the etch process will need to be repeated until water no longer beads on the surface.

**HELPFUL HINTS:** Wet down the driveway outside of your shop and nearby plantings with a hose first before rinsing out the etch solution from your shop. This will help to protect your exterior driveway from being accidentally etched as well as aiding to protect any nearby plantings. Using a shop vac with a squeegee attachment can also be quite effective at minimizing the volume etching compound that is rinsed down the driveway.

**MASKING:** Now that your surface is prepared you are ready to begin masking. Using standard masking tape or blue painters' tape, mask off any areas that you do not want to coat, such as perimeter walls and edges as well as the area extending beyond where the shop door comes down. Since most shop floor products are not designed for continuous outdoor exposure, we typically recommend stopping the new coating directly under the rubber shop door seal.

**PRO TIP:** With the shop door closed use a construction pencil to mark where the rubber seal contacts the floor on the inside. Once completed, raise the door, and measure  $\frac{1}{2}$ " to  $\frac{3}{4}$ " out from your previous mark (towards the outside). Then, using a straight edge, draw a line all the way across the door opening between the roller channels. When masking across the door opening, use green concrete tape, as it will adhere well to the clean concrete and prevent the coating material from going outside or in unwanted areas.

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 burning off with a torch or by priming with a suitable primer and then once dry sanding the fibers down smooth, and then applying the new coating as per our regular instructions.

**CHIP & CRACK REPAIRS:** No liquid coating will fill or 'fix' a floor that has open cracks, or deep spalls and flakes. Any cracks, divots, spalling, roughness, leveling or other repairs must be done prior to applying the coating. At Armortech we carry a variety of excellent floor repair products including joint and crack repair products. To learn more about these products please visit our website at the following link. [www.armortechepoxy.com/joint\\_crack\\_fillers](http://www.armortechepoxy.com/joint_crack_fillers)

**A WORD ABOUT MIXING, BEFORE YOU START MIXING:** Resinous coatings require a thorough mixing of the Part A and Part B components for the material to properly harden. Mixing can be done by using a drill and a jiffy mixer or paddle mixer. When mixing avoid mixing at high speeds, use a lower speed to avoid splashing and causing excessive air bubbles being captured in the mixture.

While our products are always pre-measured and packaged by weight, it is recommended that each component be measured out, individually (A & B), to the stated ratio by volume, prior to mixing.

Mix the two components together for 3-4 minutes. When mixing move the mechanical mixer up and down through the contents while spinning so that you get ALL the material mixed, not just the material at the bottom of the bucket. NOTE: When mixing the A and B together you will notice 'veins or streaks' appear. These streaks should be 100% gone, which is another indication of complete mixing. Be sure to scrape the sides and bottom of the containers, mid mix, to assure that all the material is properly mixed. Improperly mixed resins will not harden properly or can show color variations when applied. DO NOT MIX AT HIGH SPEEDS AS THIS CAN ENTRAP 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 OF OUR PRODUCTS ARE REGULARLY TESTED FOR HARDENING. IMPROPER HARDENING IS NOT COVERED UNDER THE WARRANTY AS THE ONLY THING THAT CAN CAUSE THIS IS IMPROPER MIXING RATIOS OR MIX TIMES.

**PRO TIP:** If you purchased more than 1 pre-tinted kit, you MUST mix the Part A (COLORED) portions together FIRST to assure color evenness across the application. The reason for this is that 100% solids epoxy formulations cannot hold color tolerances between batches like interior latex-type paint. If you do not 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 to keep it fresh, and dust out of it.

Remember, epoxy is easy to work with, just mix the products as directed on the label, mix well and apply.

After the components are measured and mixed you have approximately 20-35 MINUTES of working time to apply at 70 deg F., (Check label of each individual product for accurate working times). HIGHER TEMPERATURES WILL SHORTEN WORKING TIME. Work diligently and quickly to avoid premature hardening. 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 strictly adhere to the stated mix ratio on the product. HIGHER AMBIENT TEMPERATURES CAN CAUSE MIXED PRODUCTS TO HARDEN MORE QUICKLY. GETTING THE MATERIAL ONTO THE COOLER FLOOR WILL ALSO HELP SLOW DOWN CURING AND EXTEND WORKING TIMES.

**MOISTURE VAPOR BARRIER:** If you have purchased a moisture vapor (NEXTECH PRO™ APC 510 MOISURE VAPOR BARRIER) you will apply this as the first step. If not, the application of the

primer coat will be your first step.

When applying the vapor barrier, the mixed material may be applied by brush or roller. However, the product can also be applied with a notched squeegee and then back rolled as long as the appropriate thickness is maintained. Once applied, allow to cure.

**PRIMING:** Priming your floor will almost always achieve a better, thicker, smoother, and more uniform end result. While not required in most instances, the wide variations of surface types, concrete mixes, concrete age, and pre-existing damage can affect the color and sheen and ultimately the final appearance of your project. Some surfaces if not primed may and can absorb applied coatings inconsistently, causing the coating to soak in at different rates in different areas, and causing differences in sheen and appearance. Priming a floor greatly reduces the possibility that these problems could occur. Priming is strongly recommended or required for highly pigmented or light colors such as white, beige, red, yellow, and off whites. 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 decorative epoxy, priming can end up saving money by not requiring an additional coat of decorative epoxy. Typically, primer coats are installed at between 125-200 sq. ft. per gallon.

**Floors that have been ground, shot blasted, or were previously coated should always be primed with a suitable primer before applying decorative coats. Several of our pre-tinted products are designed for dual uses and are suitable as both the primer coat and/or the build, body, and/or broadcast coats.**

When applying the primer coat, mix the primer in a bucket at the proper ratio listed on the label based on which specific product you are using. Mix thoroughly with a drill and jiffy, making sure that there is no unmixed material remaining in the container by scraping the sides and bottom of the container with a wooden paint stick periodically throughout the mixing process. After mixing for the required time (check product label for specifics, typically 3-4 minutes), transfer the mixed material to another bucket (the transfer bucket) and again remix for (1-2 minutes). The material in the transfer bucket is now ready to be applied on the substrate.

At this point it is best to have the assistance of another person to aid in spreading and rolling the product out in a timely and efficient manner, within the allotted working time of the product being applied.

Pour the mixed product directly onto the floor in a long ribbon a few inches away from your starting wall. Using a notched rubber squeegee spread the material evenly over the entire floor. An appropriately sized notched squeegee will leave the appropriate mils of wet epoxy on the floor and allow you to achieve the proper thickness and coverage without guesswork. If working with a partner, this is a good time to begin cutting in around the perimeter of the room. In most open areas a 3" roller on an extension pole is perfect for pushing and rolling out the product applied with the notched squeegee pass. Use a 2 1/2" angled brush or quality chip brush for tighter areas such as around shop door rails, corners, and other immovable obstacles, or mountings.

Once the product has been spread out evenly with the notched squeegee the product should be quickly cross rolled in two directions. Cross rolling will aid in spreading the product out evenly across the floor and will eliminate the lines left by the notched squeegee pass.

**PRO TIP:** Once an area has been cut in along the edges and properly cross rolled, begin pulling your masking tape in that area. This will prevent you from having to retrieve the masking tape later and avoid the potential of slipping, marring, or otherwise disturbing the coating that is levelling out.

**BASE COAT APPLICATION:** REPEAT THE SAME PROCESS AS OUTLINED ABOVE FOR THE PRIMER COAT APPLICATION. The only variation that may change is the application rate of the product. Often the basecoat is applied thicker, or at a heavier application rate per sq. ft. than the initial primer coat. Please see the system application guide and/or product label for recommended coverage rates. Typically, basecoats depending on the desired thickness are installed at between 53-133 sq. ft. per gallon (36-18 mil).

A small, disposable paintbrush should be used to coat edges, corners, and any hard-to-reach areas. Larger areas should be coated using a notched squeegee and/or a 3/8"-1/4" non-shedding roller cover on a heavy duty 3", 9" or 18" roller frame along with a sturdy extension pole. If you use a squeegee, you must 'back roll and/or cross roll' with the roller to smooth out any squeegee lines. Pour the mixed epoxy onto the floor in a left-to-right pattern in a 'ribbon', then squeegeed and rolled out. Pouring the coating onto the cool concrete slows down the curing process and allows longer working time. DO NOT LEAVE MATERIAL IN THE BUCKET FOR EXTENDED PERIODS, AS THIS WILL ALLOW THE PRODUCT TO HEAT UP AND ACCELERATE THE CURING PROCESS. DO NOT USE A ROLLER PAN. APPLY PRODUCT DIRECTLY TO FLOOR AS THE 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. Apply epoxy 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, heavy pooling, or accumulations.

Be sure at this point in your project that any and all masking, or masking tape used has been pulled and removed. Failure to pull masking could result in the tape becoming embedded or stuck in the epoxy and require the need to cut it out after the epoxy hardens. Trust us, you don't want to have to cut blue masking tape out of your new white floor or any floor for that matter.

**BROADCAST APPLICATION:** While the applied material is still wet, broadcast the appropriate aggregate/sand by hand in an upward motion until the sand is applied to excess (APPROXIMATELY ½ LB. PER SQUARE FOOT). Do not throw the sand downward, as this might cause uneven ridges to form. If a double broadcast system is desired, after the floor has cured, vacuum up the excess sand from the first broadcast application and repeat.

**GROUT COAT/SEAL COAT APPLICATION:** Once the final broadcast coat has cured, vacuum up the excess sand from the last broadcast application, removing as much loose aggregate or sand as possible. The grout coat application is applied as a tinted coating and is meant to seal the broadcast aggregate or sand and is typically applied at 90-125 sq. ft per gallon. Apply in the same manner as described in the basecoat application section above.

**FINAL TOPCOAT APPLICATION:** Generally, shop floors will receive a tinted, polyurethane topcoat. Please refer to the product label for specific mixing instructions, working times, and recommended application rates. Our (NEXTECH PRO™ APC 433VOC Aliphatic Urethane) is typically applied at 320-450 sq. ft per gallon. Think “Thin to Win”!

**URETHANE TOPCOAT APPLICATION:** The standard urethane protective topcoat is applied after the final solid color coat has been completed and cured. The urethane topcoat is applied pigmented. Most professionals prefer a tinted or pigmented urethane topcoat the same color as the previous epoxy coat. This will aid in hiding any minor imperfections in the previous coating. Mix well and apply. THE POLYURETHANE TOPCOAT SHOULD BE APPLIED WITH A ROLLER. DO NOT ATTEMPT TO USE A SQUEEGEE AT ALL FOR THIS APPLICATION.

**PRO TIP:** Start on a far wall away from your exit. Use a 3” inch roller and/or a 2 ½” angled paint brush to cut in. Use a wide 21” paint tray to hold your topcoat material (DO NOT DUMP ON FLOOR AS WITH PREVIOUS COATS) using an 18” roller, roll out the urethane in a 4-6 foot swath, using a large W pattern to evenly spread the urethane, once rolled out, stop and do a final roll across the freshly applied urethane by starting at one end of the room and gently pulling the roller behind you across the floor until you reach the other side, repeat over the entire area that was wetted with the W pattern. Repeat this procedure from one side of the room to the other, always doing the final roll across the areas in the same direction and always maintaining a wet edge. (Be sure to not leave areas of thick or pooled urethane).

*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 a topcoat will not ‘fix’ issues with the previous layer of an application.*

**CLEAN UP:** Coating materials can be cleaned off hands and other surfaces before the material hardens with isopropyl alcohol, mineral spirits, or xylene (xylol). Warm soap and water may also be used if the epoxy is still wet. It is advised that when working with coatings materials that you make a small one- gallon size container filled with several lint free rags that have been soaked in either isopropyl alcohol or denatured alcohol. These alcohol-soaked rags will be handy in wiping up hands, tools, and any unwanted spills or splatters. Once fully cured most coatings can only be removed with either lacquer thinners, or through mechanical methods such as grinding or sanding. Any leftover mixed materials, containers, brushes, 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, the new coatings should cure for at least 24 hours before opening the area to light foot traffic and 5-7 days before parking or driving on it, dependent on ambient temperatures. Extreme variations in temperature and humidity levels can dramatically impact curing times.



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

**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. See our website at [www.armortechepoxy.com](http://www.armortechepoxy.com) for TDS and MSDS sheets.

**THINNING:** Some of our products may be thinned by using up to 1/2 cup (4 oz) of xylene (xylol) per gallon. Please call and consult with one of our company representatives before thinning any product.

**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.

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