DYNESIC, EPOXY APPLICATION GUIDE

Dynesic Epoxy coating systems are comprised of two parts that are mixed prior to application. The two parts consist of Part A) an epoxy resin which is cross-linked with Part B) a co-reactant or hardener. Epoxy coatings are formulated based upon the performance requirements for the end product. When properly catalyzed and applied, Dynesic epoxy systems produce a high strength, chemical and solvent resistant finish. They are typically used on steel and concrete to repair and protect surfaces against corrosion, harsh environments and chemical attack.

It is the specific selection and combination of the epoxy component and the hardener component that determines the final characteristics and suitability of the epoxy coating for a given environment.

WHICH COATING TO USE

PANSEAL – 2000PG
PANSEAL is an all- purpose adhesive, coating and sealant for solid surfaces. PANSEAL is very hard, and it's designed for abrasion resistance. PANSEAL has a strong 2,750 PSI strength and an extensive list of chemical resistance properties and for these reasons, it is the best choice, all – purpose coating and sealant product.

Although PANSEAL has some flexibility (8% elongation), PANSEAL is not suited for areas of heavy vibration or expansion and contraction. If the surface is not solid underneath and there is the possibility of walking on the surface, the trampoline effect could crack the finished product and ELASTASEAL would be more ideal for this type of surface. However, if the surface is well supported, PANSEAL offers excellent, long term protection.

ELASTASEAL – 2100EG
ELASTASEAL has greater than 200% elongation and was designed for areas of heavy vibration or expansion and contraction. ELASTASEAL can be used as an all – purpose coating if abrasion resistance is not a factor. ELASTASEAL's adhesive strength and chemical resistance are a little less than PANSEAL, but 1,600 PSI adhesion strength is well above competing flexible coatings.

If both products are needed to coat the same surface (such as expansion joints) you can run the products up to meet each other.

PANSEAL Paste Grade – 2500PG
PANSEAL Paste Grade is a very thick, trowelable version of PANSEAL which works great for vertical repairs, ceiling repairs or for rebuilding majorly damaged surfaces. It can fill voids with high strength and once it sets up, it can be sanded, or machined.

DX-1100
Although Dynesic products are self-priming, DX-1100 is a primer that is recommended for concrete surfaces because it strengthens concrete's adhesion strength in regards to the coating and helps prevent hydrostatic pressure.

REASONS WHY YOUR EPOXY IS NOT CURING

Mixing
You can get a well-mixed product with a stick, but a mechanical mixer is easier and more effective. The key is to get to the areas on the side, bottom and corners of the bucket. Once mixed, the best way to prevent un-cured patches within the applied product is to pour the mixed product in another empty bucket or paint trough. The goal is to get all of the hardener distributed equally within the resin. Any resin without the infusion of hardener will remain uncured.

Low Temperatures
Dynesic epoxies are formulated for application at temperatures above 40ºF. Temperatures below 40ºF will stop the rate of the chemical reaction between the epoxy and the hardener. Once the temperature rises above 40ºF, the product will continue to cure, however the cure time is slower in cold temperatures.

High Humidity, Moisture Condensation, Stagnant Air
High humidity will also slow cure times, but will otherwise not affect the performance of Dynesic products.

Remaining Oils, Greases or Chemicals on the Surface
The surface must be free of oils, greases or chemicals for the product to perform. These areas can be cleaned with trichloroethylene, or any optimum degreasing agent then washed thoroughly.

Remaining Acids on the Surface
The surface must be free acids for the product to perform. These areas can be neutralized with baking soda.

FAQs

Can PANSEAL be applied on wet surfaces?
PANSEAL does not mix with water, so it can be applied on wet surfaces and even cure in standing water. It's easier to apply on a dry surface but if options are limited PANSEAL will seal leaks and cure underwater. For cooling tower applications, it would be best to fill the tower once PANSEAL is getting hard (6 to 8 hours). If you are applying vertically, some of the material could separate due to water pressure, however the base would be fine.

What is the coverage of PANSEAL and ELASTASEAL?

Dynesic self levelling coating gallons will cover 160 square feet at 10 mils. thickness which is the recommended MINIMUM coverage. This minimum coverage ensures that the surface is protected from future corrosion. It is recommended, especially for 1st time applicators to spec jobs at 20 mils. thickness (80 square feet per gallon) because these coatings can go on thicker according to the amount of damage to the surface, temperature range and application method.
Damaged Surfaces – Will require more mil. thickness.
Temperature Range – Colder temperatures thicken the product.
Application Method – Use a brush, or course roller for best results (spray applications are noted in the product data sheets).

- You can thin the product with MEK, Acetone or Xylene.

Do you require a primer?
Dynesic products are self-priming and there is no need to primer the surface prior to installing the coating unless the surface is concrete. A primer (DX-1100) is recommended for concrete applications to prevent hydrostatic pressure. Once the primer is applied, the coating should be applied once the primer is tacky. This is the best scenario for the coating to bond to the primer. Once the primer cures, it will have a slick finish and would otherwise need to be sanded before the epoxy could be applied.

Can you apply Dynesic Products over another coating?
There are circumstances where a preexisting coating is remaining on the surface and it is not easy to remove. This may be due to the area where the coating exists is hard to reach in order to prepare the surface. Although Dynesic products are well suited to work on most surfaces and may perform well over another coating, the new coating is subject to the preexisting coating and in this situation cannot be considered under warranty. If the previous coating cannot be removed, or removed completely, the preexisting product must have a sanded or roughed profile in order for a second layer to adhere.

The preexisting coating will diminish the adhesion strength to the substrate, so the amount of time spent on preparing the surface is dependent on the situation. If the application is for a drain pan, adhesive strength is often less of an issue than surfaces that are impacted by harsh environments, heavy vibration, abrasion issues or chemical attack. In these situations, preparation is more crucial.

Do you require a 2nd coat?
In most applications, one coat is going to be sufficient. The minimum required thickness is no less than 10 mils which will prevent future corrosion in most environments. In more extreme situations such as harsh environments, heavy vibration, abrasion issues and chemical attack, a 2nd coat could be recommended.

If a 2nd coat is to be applied, the 1st coat should be tacky when the 2nd coat is applied. This will ensure that the coatings will bond to each other. Once cured, the first coat will be too slick for ideal bonding and will need to be profiled.

Can you spray Dynesic Epoxy?
Dynesic epoxy can be applied with a brush, roller or sprayer. Check the product data sheet for the recommended type of sprayer according to the coating product. You can thin epoxies with MEK or Xylene.

Can you apply on damp surfaces?
Dynesic epoxy products do not mix with water, so they can be applied on metal surfaces that are wet or damp. Many of Dynesic products can be applied and cure under standing water.

Can you thin Dynesic epoxy?
Thinning Dynesic epoxy products can make spraying applications more efficient and allow more self-levelling properties in cooler temperatures. Dynesic epoxies can be thinned with MEK, Acetone or Xylene. Add as needed, not to exceed 20%. Start by adding 5-10% to the resin first and then mix the thinner and resin. Add the hardener last and mix again. If you need additional thinning add more thinner up to 20%.

Can you add fillers or thicken Dynesic epoxy?
Thickening coating products can allow for better vertical installation. You can use cabosil for this purpose. You can also add sands and silica gels for different textures.

What is the shelf life?
Dynesic products don't have a shelf life, or at least it is unknown. Dynesic resins and hardeners can be stored for many years.

COLD WEATHER TIPS & RECOMMENDATIONS

Coatings will Thicken in Cold Temperatures

You can obtain a thinner viscosity by:

1- Keeping the products in a warm environment indoors or in a car prior to mixing and applying.

2- You can use a thinner such as Dynesic thinner, Xylene or Acetone up to 15 ounces per gallon. 1st mix the resin and hardener, then add in measured amounts of thinner to obtain the desired viscosity.

3- If the coating environment can be covered and heating, then an optimum viscosity and cure time will be achieved.

Coatings will take Longer to Cure in Cold Temperatures

You can enhance cure time by:

1- Adding Dynesic Accelerator up to 1 to 2 ounces per gallon to speed up the hardener and cure time.

2- If the coating environment can be covered and heating, then an optimum viscosity and cure time will be achieved.

Cold Weather Application Points to Consider

* Dynesic coatings and sealants start to cure at 40 degrees plus. They can be applied in colder temperatures, but will begin to cross-link as the ambient temperature climbs to 40 or above. At 40 degrees we estimate a 12 hour cure time. The cure time increases to 6 hours in 80 degree temperatures.

* If the weather is expected to climb, the coatings will cure and if the weather drops the leaks will still remain sealed and the curing process will continue as the ambient temperature climbs again.

* Dynesic products are not adversely affected by moisture and do not mix with water (can cure under water).

* If it's really cold, wear ear muffs!

APPLICATION ACCORDING TO SURFACE TYPE

General Rule of Thumb

The cleaner and more profiled the surface, the greater the adhesive strength. Epoxy products have a difficult time adhering to slick surfaces, so the goal is always to get a good profile to adhere to.

Implements for abrading - sandblaster, wire brush, emery cloth, and or glass paper. Metal surfaces (Use grade 80-150 abrasives for steel and materials resistant to scoring. Use 300-600 grade abrasives for light alloys and less resistant materials).

Dynesic Technologies products are designed to perform well even when surface preparation is less than ideal, but in order to get the best results, here are some recommendations. The following is best case scenario surface preparation:

Concrete

The concrete should be aged at least 28 days before coating and the surface should be clean, dry and free of form-release agents, silicone water proofers and/or curing agents. Sand blasting or scarification is recommended. Wash down old concrete to remove all residues and neutralize the pH before blasting for severe service, a second wash is recommended.

The sealer/ primer DX-1100 is recommended to avoid bubbling caused by out gassing and to increase overall adhesion. DX-1100 primer is required on concrete that is younger than 28 days. DX-1100 primer can be applied to concrete that has aged a minimum of 7 days.

Once the primer is applied, the top coating should be applied once the primer is tacky (5-12 hours). This is the best scenario for the coating to bond to the primer.

Metal
Remove all oil, grease, or scale from the surface, and then blast with sharp sand or grit to finish. Use a non-spherical blast medium to give a 2 - 3 mil (50 - 75 micron) profile and to achieve the following surface preparation standards or their equivalents:

Non-chemical Service - SSPC-SP 6 Commercial Blast (NACE 3)
Intermittent Splash or Wear - SSPC-SP 10 near White Metal Blast (NACE 2)
Immersion or Abrasive Service - SSPC-SP 5 White Metal Blast (NACE 1)

Copper, Brass and other Copper Alloy
Degrease with trichloroethylene if necessary, sand/score surface and clean.

Ferrous Alloys other than Stainless
Degrease with trichloroethylene if necessary, sandblast, sand (100 grit) or etch in 15% aqueous hydrochloric acid (equal parts concentrated muriatic acid and water) for 10 minutes. Etched surfaces should be rinsed immediately and dried with hot air. Freshly sandblasted or etched steel begins to rust immediately; therefore, adhesive should be applied as soon as the surface has been prepared.

Stainless Steel, Chromium
Degrease with trichloroethylene if necessary. Mechanically abrade surface with a grinder or similar tool and clean.

Wood
Sand until clean. Ensure wood is dry (moisture content not higher than 8-12%). Wipe surface with solvent. (Wood free of grease requires no pretreatment).

Plastic
Adhesion varies. If a plastic is impervious to solvents such as acetone, epoxy generally will not bond to it. Soft, flexible plastics such as polyethylene, polypropylene, nylon, Plexiglas and polycarbonate fall into this category.

Hard, rigid plastics such as PVC, ABS and styrene provide better adhesion with good surface preparation and adequate bonding area. Sand, clean and apply.

Downloadable Product Data Sheets and MSDS are available on the website. Please feel free to call us for further questions.

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