APPLICATION GUIDE

Two-Part Epoxy Coating & Sealant Systems

1. GENERAL

Dynesic epoxy sealants and coating systems are two-part products: Part A (resin) cross-links with the co-reactant Part B (hardener). Each system is formulated for the performance requirements of the cured product — properly catalyzed and applied, Dynesic systems produce a high-strength, chemical- and solvent-resistant finish. They're typically used on metal, steel, and concrete surfaces to repair leaks and protect against corrosion, harsh environments, and chemical attack.

The specific combination of resin and hardener components determines the final characteristics and suitability of the coating for a given environment.

2. WHICH COATING TO USE

All Dynesic 2-part products share the same core properties: zero VOCs, very minimal odor, a complete chemical resistance profile, self-leveling application, and use on vertical surfaces. They can be applied by brush, roller, or sprayer (see individual tech data) — PANSEAL Paste is the exception, applied with a trowel or similar tool.

PANSEAL — 2000PG — All-Purpose Adhesive & Coating with Abrasion Resistance

PANSEAL has some flexibility (8% elongation) but is designed as an abrasion-proof barrier, best suited to solid, well-supported surfaces. It has the viscosity of honey but cures to a hard finish, with adhesion strength up to 2,700 PSI.

Coverage: 160 sq ft at 10 mils (recommended minimum thickness) · 80 sq ft at 20 mils

Ideal uses: cooling tower basins, condenser pans, general leak repair, tank linings, flooring, pipeline coating, secondary containment lining, clarifiers, collection systems, digesters, lift stations, manholes, general corrosion protection, acid-resistant linings, abrasion-resistant linings, exterior finishes.

ELASTASEAL — 2100EG — All-Purpose Flexible Coating

Where a surface isn't well supported underneath and may flex underfoot (a “trampoline” effect), ELASTASEAL's high flexibility — greater than 300% elongation — makes it the better choice, ideal for unsteady foundations, heavy vibration, or expansion and contraction. Adhesion strength: 1,600 PSI.

Coverage: 160 sq ft at 10 mils (recommended minimum thickness) · 80 sq ft at 20 mils

Ideal uses: cooling tower repair, condenser pans, leak repair, tank linings, concrete base coats, large stress cracks, concrete and metal topcoats, secondary containment structures, expansion joints, waterproofing.

PANSEAL Paste — 2500PG — All-Purpose Trowelable Repair Compound

A thick, trowelable version of PANSEAL suited to vertical repairs, ceiling repairs, and rebuilding damaged surfaces. It can be formed, is ideal for filling voids with enhanced structural strength, and can be sanded or machined once cured. Adhesion strength: 2,700 PSI.

Coverage: 2 sq ft at 800 mils

Ideal uses: wastewater and storage tanks, cooling tower repair, structural metal/concrete repair, balconies, bridges, structural adhesive for metal bonding, resurfacing damaged areas.

DX-1100 — Primer for Concrete

Dynesic coatings are self-priming on most surfaces, but DX-1100 is recommended as a primer for concrete. Its thin viscosity lets it penetrate the pores of the concrete and block hydrostatic pressure from damaging the coating, while its chemistry — linked to Dynesic top-coat products — enhances top-coat adhesion.

Coverage: 330–530 sq ft at 3–5 mils

Ideal use: primer/sealer for concrete surfaces.

3. MIXING INSTRUCTIONS

1. Power-mix Part A (Resin) by itself first. It's 100% solids and can settle over time — pay close attention to the sides and bottom of the container.
2. Add Part B (Hardener) and power-mix together until the color is uniform, again working the sides and bottom of the container. There's no strict time limit, but mixing is straightforward and typically takes no more than about 3 minutes with a mechanical mixer (a mixing stick also works, just more slowly). The goal is to fully distribute the hardener through the resin — any resin left un-infused with hardener can remain uncured.
3. Have everything in place and ready before you start mixing — once combined, the working clock is running.
4. Keep product near 80°F prior to mixing for ideal application viscosity. Warmer product speeds cure time and thins viscosity; colder product slows cure time and thickens it.
5. Partial kits can be mixed successfully, but must be measured accurately to the resin-to-hardener mix ratio.

4. SURFACE PREPARATION

General Rule of Thumb

A cleaner, more profiled/etched surface bonds better. Epoxies have a hard time adhering to slick surfaces like stainless steel, so the goal is an etched profile — though Dynesic products can still perform well with less-than-ideal prep. Always remove oils and greases, pressure wash or clean the surface before coating, and make sure no cleanser residue is left behind, since it can interfere with adhesion.

Implements for Abrading

Common options include sandblasting, wire brush, grinder, emery cloth, and sandpaper. An abrasive preparation that creates an etched profile is recommended where the surface allows — a lighter touch can simply polish the surface, making it slicker and harder to bond to. If using a grinder, use a heavy-duty unit rather than a light-duty one.

Metal Surfaces

Use 80–150 grit abrasives for steel and other scoring-resistant materials, or 300–600 grit for light alloys and less resistant materials. Remove all oil, grease, and scale; if sandblasting, finish with sharp sand or grit and a non-spherical blast medium to achieve a 2–3 mil (50–75 micron) profile, matching one of the following 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)

Many Dynesic products still perform well on metal with minimal prep — pressure washing and encapsulating remaining rust — though a profiled surface gives the strongest adhesion. The right approach depends on the surface's condition and the desired outcome.

Concrete

New concrete must cure a minimum of 7 days at 75°F (24°C) and 50% relative humidity (or equivalent) before coating. Prepare surfaces per ASTM D4258 (Surface Cleaning of Concrete) and ASTM D4259.

DX-1100 primer/sealer is recommended to prevent bubbling from hydrostatic pressure and to increase overall concrete strength. Apply the top coat within the recoat window (typically 5–24 hours — see product tech data); if that window passes, sand the surface before recoating.

Topcoats: all PANSEAL versions are suitable.

Voids: fortify with PANSEAL Paste; brush DX-1100 onto the void surface first for enhanced adhesion.

Copper, Brass, and Other Copper Alloys

Degrease with trichloroethylene or a suitable degreaser, sand or score the surface, then clean/pressure wash.

Ferrous Alloys Other Than Stainless

Degrease with trichloroethylene or a suitable degreaser, then sandblast, sand (100 grit), or etch in 15% aqueous hydrochloric acid (equal parts concentrated muriatic acid and water) for 10 minutes. Rinse and dry etched surfaces.

Stainless Steel, Chromium

Degrease with trichloroethylene or a suitable degreaser. Mechanically abrade with a grinder or similar tool and clean. Blasting with angular garnet to a 3+ mil profile gives a good anchor for bonding.

Wood

Sand until clean. Wood should be dry (moisture content no higher than 8–12%). If a degreaser is used, rinse it off before coating.

Plastic

Adhesion varies by plastic. Epoxy generally won't bond to plastics that resist solvents like acetone — soft, flexible types such as polyethylene, polypropylene, nylon, Plexiglas, and polycarbonate fall into this category. Hard, rigid plastics like PVC, ABS, and styrene bond better with good surface prep and adequate bonding area. Sand, clean, and apply.

Downloadable Tech Data Sheets and SDS documents are available at www.dynesic.com — email or call with further questions.

5. WHY EPOXY MAY NOT CURE

Mixing: The most common cause. Any resin that doesn't get infused with hardener during mixing can remain uncured — see Mixing Instructions above for the correct technique.

Low Ambient Temperature: Dynesic epoxies are formulated to cure above 40°F. Below that, the reaction rate between resin and hardener slows; the product can still be applied cold but will stay dormant until temperatures rise. See Cold Weather Application below for handling recommendations.

High Humidity, Moisture Condensation, Stagnant Air: High humidity can slow cure times but otherwise won't affect product performance.

Remaining Oils or Greases: The surface must be free of oils and greases for the product to adhere. Clean with trichloroethylene or another suitable degreaser, then wash thoroughly.

Remaining Cleansers: Leftover trichloroethylene, degreaser, or cleanser residue will reduce adhesion. Pressure wash to fully clear the surface.

Remaining Acids: The surface must be free of acids. Neutralize with baking soda.

6. PREVENTING THE BUBBLING EFFECT

Bubbling in epoxy coating systems is generally caused by ion or salt contamination on the surface. If contamination is suspected, neutralize with baking soda and pressure wash before proceeding.

Testing for Salt Contamination

Surfaces — particularly steel, and especially previously used tanks — should be tested for ion or salt contamination before application, since it can cause the coating to disbond.

Acidity: Use narrow-range pH indicator paper with distilled or deionized water. Establish the water's baseline pH, wet the surface with a minimum amount of that water, then press the pH paper to the wet surface and read the result.

- If the surface reading is more than 2 pH units lower than the water's baseline, or below pH 4.0, wash and neutralize the surface with high-pressure water and dilute tri-sodium phosphate or ammonium hydroxide.
- If the surface reading is more than 2 pH units higher than the baseline, consult Dynesic technical support.

Chlorides, sulfates, and nitrates: Use qualitative test paper or a quantitative test kit (available through K.A. Tator, S.G. Pinney, or Chlor-Rid, which offers a kit covering all three ions).

- Chloride above 2 µg/cm² (20 mg/m²): clean with high-pressure water and re-check. Chlor-Rid® or a dilute baking soda solution is effective at removing chloride contamination.
- Sulfate above 5 µg/cm² or nitrate above 2.5 µg/cm²: treat with a Chlor-Rid high-pressure wash.

Re-test after cleaning and repeat as needed. Once cleanliness is confirmed, proceed with surface preparation.

7. PRODUCT FAQs

Can PANSEAL Be Applied on Wet Surfaces?

Yes — PANSEAL doesn't mix with water, so it can be applied to wet surfaces and will even cure underwater, though a dry surface is easier to work with. Thicker products like DURAPATCH or PANSEAL Paste are especially well suited to underwater use because of their more solid viscosity; thinner products like PANSEAL and ELASTASEAL can be more vulnerable to separating in water currents or direct pressure.

Are Primers Required?

Dynesic products are self-priming on every surface except concrete, where DX-1100 is recommended — it sinks into the concrete's pores and helps prevent hydrostatic pressure from undermining the top coat. The recoat window runs from once the primer is tacky (4–8 hours) to a couple of days after application (see DX-1100 tech data). Past that window, the primer will have a slick finish and needs to be sanded before recoating.

Can Dynesic Products Be Applied Over Other Coatings?

Sometimes a pre-existing coating is difficult to fully remove — the area may be hard to reach, or the coating may be holding in some spots while failing in others. Dynesic products can perform well over another coating, but the new coating is still subject to the condition of what's underneath it, so this kind of application isn't covered under warranty. If the old coating can't be removed, sand or profile the surface to give the new coating something to grip. Grinding off as much of the old coating as accessible is the best approach — adhesion matters less for something like a drain pan, but more where the surface will face harsh environments, heavy vibration, abrasion, or chemical exposure.

Are 2nd Coats Required?

One coat is usually sufficient. A second coat may be worth adding in more demanding situations — harsh environments, heavy vibration, abrasion, or chemical exposure. Apply the second coat within the recoat window, from once the first coat is tacky (4–8 hours) to about 2 days after application; past that window, the surface will need sanding before recoating.

Can Dynesic Products Be Sprayed?

Yes, depending on the product's viscosity. Thin with acetone or xylene (up to 8 oz/gallon) to reach a sprayable consistency, and use a heavy-duty sprayer suited to the product's thickness (see individual tech data for spraying details and equipment recommendations).

Can Dynesic Products Be Thinned?

Yes — thin with acetone or xylene, up to 8 oz per gallon, for brush, roller, or spray application.

Can Dynesic Products Be Thickened?

Yes — cab-o-sil works well for vertical applications. Sand or silica gel can also be added for texture, such as an anti-slip finish.

8. COLD WEATHER APPLICATION & CURE TIMES

Coatings thicken in cold temperatures. To thin them back out, either store the product in a warm environment (indoors or in a vehicle) before mixing and applying, or add a thinner such as acetone or xylene (up to 8 oz/gallon).

To shorten cure time in cold weather: cover and heat the work area with a tarp and heater to bring viscosity and cure time back toward optimal, or add Dynesic Accelerator (1–2 oz/gallon) to speed up the hardener.

Cold-Weather Application Notes

- Dynesic coatings begin curing at 40°F and above — they can be applied colder, but won't start cross-linking until ambient temperature reaches 40°F. Estimated cure time is about 12 hours at 40°F versus about 6 hours at 80°F.
- If temperatures are expected to rise, the coating will resume curing; if they drop again, any seal already made will hold, and curing will pick back up once temperatures climb.

How Long Does It Take to Cure?

Cure time depends on the product and conditions like ambient temperature and humidity — tech data gives approximate figures per product. PANSEAL and ELASTASEAL typically cure in 6–8 hours at 80°F, and continue cross-linking for up to 72 hours before reaching full strength and chemical resistance. The surface can return to service as soon as it's coated, provided there's no water pressure or current — Dynesic's 2-part products don't mix with water, and their 100% solids content and weight let them settle, self-level, and cure even on a wet surface.

9. SHELF LIFE

Dynesic products have no known expiration — resins and hardeners can be stored for years. Always power-mix Part A alone first to redisperse any settled solids before adding Part B.

10. CLEANUP

Use MEK, xylene, or acetone. Absorb any spillage and dispose of it in accordance with local regulations.

11. APPLICATION TIP: POUR, DON'T DIP

Avoid dipping a brush or roller into the bucket — leaving mixed material sitting in bulk can trap heat and trigger exotherm, a rapid heat buildup that leads to premature curing. Instead, pour the product onto the surface and spread it where it needs to go; it will self-level and fully cover wherever it's applied.

12. WHY DYNESIC PRODUCTS?

- Unmatched adhesion strength — quick, easy application with industrial-strength performance

- Two-part formulation — unlike 1-part products, which deteriorate over time and hold up poorly to water, moisture, chemicals, weather, and adhesion demands
- Zero VOCs — no fumes, no vapors, no deterioration
- Very minimal odor — safe to apply in sensitive settings like hospitals and schools
- Coverage — approximately 100 sq ft per gallon
- Vertical application — no separate product needed for vertical repairs
- Doesn't diminish over time — a permanent repair
- Works on metal, stainless steel, concrete, wood, plastic, and fiberglass
- Eco-friendly — designed to strengthen and repair structures with less landfill impact
- Antimicrobial — wipes clean with water
- No fire hazard
- No shipping restrictions

13. DISCLAIMER

This Application Guide is a general reference intended to answer questions and inform customers and contractors. Product-specific details — tech data and SDS — are downloadable at www.dynesic.com and should be reviewed before applying any Dynesic product.

For further technical or application questions, call 972-692-0962.