

Application Guide

Sealing, Fairing, Priming and Surfacing

Application: *Plugs, Patterns and Models*



Use these Duratec® products to seal, fair, prime and surface plugs, patterns, models:

Duratec Polyester Sealer (823)

Duratec Polyester Base Primer (707-051 Tan)

Duratec Polyester Surfacing Primer (702-003 Black, 707-002 Gray, 714-002 White)

Duratec Polyester Clear Hi-Gloss Additive (904-001)

Duratec Polyester EZ Sanding Primer (702-060 Black, 707-060 Gray, 714-060 White)

Duratec Polyester Hi-Gloss Coating (904-040 Clear, 602-021 Black, 604-041 Tint Base)

Duratec Vinyl Ester Hi-Gloss Topcoat (1902-045 Black, 1904-045 Clear, 1908-045 Orange)

Duratec Thinner (39LAC-1)

Together, the products comprise the Duratec Surfacing System.

Note: Depending on the mold surface quality required, several of the Duratec pattern surfacing components may not be necessary. For example, if the pattern substrate is not porous, the 823 Sealer is not required. If a less than perfect "Class A" mold surface is acceptable, the Hi-Gloss Coatings are not required.

Application Conditions

The surface should be clean, dry and free from oil, grease, wax or other contaminants.



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Ambient temperatures should be in excess of 60°F, 16°C to ensure a rapid and complete cure. Time calculations are based on temperatures of 77°F, 25°C.

Duratec Polyester Sealer Application

Duratec Polyester Sealer allows primers and topcoats to bond to the substrate.

Surface and Product Preparation

Sand the surface with 120- or 150-grit sandpaper and wipe clean prior to applying the sealer.

Thoroughly stir Duratec Polyester Sealer in the can prior to catalyzing. Mix only the amount that can be applied within 15-18 minutes. (Higher temperatures yield a shorter pot life and gel time, while lower temperatures yield a longer pot life and gel time.) Catalyze at 2 percent with full strength mekP catalyst (20 cc per quart).

Application Procedures

Spray, roll or brush the sealer onto the substrate. Do not build any thickness, as the sealer will penetrate the surface. The sealer will be ready to topcoat within 1-2 hours.

Note: Do not sand the sealer prior to topcoating.

Duratec Polyester Base Primer Application

For rapidly fairing and shaping the plug, pattern or model, Duratec Base Primer air cures to an easily sandable surface, which provides a stable base for other coatings. The primer acts as an insulator, protecting substrate materials (putties, MDF, wood, etc.) from the heat of the exotherm created during the mold-making process. This reduces the risk of surface print through of substrate materials.

Surface and Product Preparation

If Duratec Sealer was first applied to the substrate no sanding is required. If Duratec Sealer was not first applied to the substrate sand the substrate with 80- or 120-grit sandpaper and wipe clean prior to applying the Base Primer.

Thoroughly mix Duratec Polyester Base Primer in the can.



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Note: A machine mixer must be used to completely mix the primer. The low-density fillers will rise to the top of the container and form a crust. Do not discard the crust; it must be completely mixed back into the primer solution.

Pour out the quantity of material required. Due to the primer's rapid gel time, mix only what can be sprayed in 15-18 minutes. Catalyze at 2 percent with full strength mekP catalyst (20 cc per quart). Thin 10-20 percent if necessary to a desired spray viscosity with Duratec Thinner (39 LAC-1) or mek solvent; if (and only if) application temperatures are below 77°F, 25°C, the base primer should be thinned with acetone.

Application Procedures

Equipment Notes: For spraying, gravity, siphon or pressure pot spray systems can be used. Gravity and siphon guns require 35-50 psi line pressure and 2.5-3.5 millimeter nozzle. Pressure pot systems require 12-15 psi pot pressure and 35-50 psi line pressure.

Apply a "tack coat" to the entire surface and allow it to flash for 2 minutes (minimum). Follow the tack coat with wet passes, slowly building to the desired thickness. Time between wet-on-wet passes should be 1 minute (minimum) to 30 minutes (maximum).

Note: *It is possible to apply up to 3 mm wet-on-wet; if further buildup is required, a 10-20 minute solvent "flash-off" period is recommended. Although the primer will build continuously wet-on-wet, there is a relationship between thickness and cure time. Curing will take longer; and with extremely thick coats, there is a possible risk of solvent entrapment.*

After shaping and sanding with 120- or 220-grit sandpaper, follow with Duratec Polyester Surfacing Primer (702-003 Black, 707-002 Gray, 714-002 White), or Duratec Polyester EZ Sanding Primer (707-060 Gray, 702-060 Black, 714-060 White).

Duratec Polyester Surfacing Primer Application

Duratec Polyester Surfacing Primer is used as a surface primer.

Surface and Product Preparation



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If no other Duratec product was first applied to the substrate sand the entire surface with 80- or 120-grit sandpaper and wipe clean. **Do not use a tack rag.**

If applying Duratec Polyester Surfacing Primer over Duratec Polyester Sealer no sanding is required. If applying the primer over Duratec Polyester Base Primer, shape and sand the surface with 120- or 220-grit sandpaper and wipe clean. **Do not use a tack rag.**

Thoroughly stir Duratec Polyester Surfacing Primer in the can prior to catalyzing—any fillers must be mixed completely into the liquid. Due to the rapid gel time of the primer, mix only the amount that can be applied within 15-20 minutes. (Higher temperatures yield a shorter pot life and gel time, while lower temperatures yield a longer pot life and gel time.) Catalyze at 2 percent with full strength mekP catalyst (20 cc per quart). Thin 5-15 percent if necessary to a desired spray viscosity with Duratec Thinner (39LAC-1) or mek solvent after catalyzation.

Application Procedures

Equipment Notes: *For spraying, gravity, siphon or pressure pot spray systems can be used. Gravity and siphon guns require 35-50 psi line pressure and 1.5-2.5 millimeter nozzle. Pressure pot systems require 12-15 psi pot pressure and 35-50 psi line pressure.*

Apply a "tack coat" to the entire surface and allow it to flash for 2 minutes. Follow with wet passes, slowly building to the desired thickness (10-40 mils, 250-1000 microns). Heavier thickness can be achieved by repeating the process immediately after gel has occurred. The primer will be dry to the touch in 2-4 hours, depending on thickness and temperature, and ready to sand within 2-4 hours.

Dry sand the entire surface with 120-grit sandpaper. Wipe the surface with a clean white cloth or paper towel. **Do not use a tack rag.** Repeat the process if more Surfacing Primer is necessary. If the Surfacing Primer is to be the final gloss surface sand with up to 800-grit sandpaper and allow the sanded surface to sit overnight at 25° C, 77° F or warmer prior to compounding, polishing and prepping the surface.

Note: *If more than 8 hours pass during sanding, the overnight waiting period is not necessary.*



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Duratec Polyester Clear Hi-Gloss Additive Application

If a higher gloss is desired, blend the surfacing primer one-to-one with Duratec Polyester Clear Hi-Gloss Additive, thin with Duratec Thinner and spray to the desired thickness following the equipment directions. Sand to a 800- or higher grit finish.

Note: *If Duratec Polyester Clear Hi-Gloss Additive is not available use Duratec Polyester Hi-Gloss Coating (904-040) as a replacement additive to the primer to increase the gloss.*

Duratec Polyester EZ Sanding Primer Application

Duratec Polyester EZ Sanding Primer is an alternative to Duratec Polyester Surfacing Primer. The product air cures quicker and sands easier.

Surface and Product Preparation

If no other Duratec product was first applied to the substrate, sand the entire surface with 80- or 120-grit sandpaper and wipe clean. **Do not use a tack rag.**

If applying Duratec Polyester EZ Sanding Primer over Duratec Polyester Sealer, no sanding is required. If applying the primer over Duratec Polyester Base Primer, shape

and sand the surface with 120- or 220-grit sandpaper and wipe clean. **Do not use a tack rag.**

Thoroughly stir Duratec Polyester EZ Sanding Primer in the can prior to catalyzing—any fillers must be mixed completely into the liquid. Due to the rapid gel time of the primer, mix only the amount that can be applied within 16-18 minutes. (Higher temperatures yield a shorter pot life and gel time, while lower temperatures yield a longer pot life and gel time.) Catalyze at 2 percent with full strength mekP catalyst (20 cc per quart). Thin 10-20 percent if necessary to a desired spray viscosity with Duratec Thinner (39LAC-1) or mek solvent after catalyzation.



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Application Procedures

Equipment Notes: *For spraying, gravity, siphon or pressure pot spray systems can be used. Gravity and siphon guns require 35-50 psi line pressure and 1.5-2.5 millimeter nozzle. Pressure pot systems require 12-15 psi pot pressure and 35-50 psi line pressure.*

Apply a "tack coat" to the entire surface and allow it to flash for 2 minutes. Follow with wet passes, slowly building to the desired thickness (10-40 mils, 250-1000 microns). Heavier thickness can be achieved by repeating the process immediately after gel has occurred. The primer will be dry to the touch in 1-4 hours, depending on thickness and temperature, and ready to sand within 2-4 hours.

Dry sand the entire surface with 180- or 220-grit sandpaper. Wipe the surface with a clean white cloth or paper towel. **Do not use a tack rag.** Repeat the process if more EZ Sanding Primer is necessary. If the primer is to be the final gloss surface sand with 220- or up to 800-grit sandpaper and allow the sanded surface to sit overnight at 25° C, 77° F or warmer prior to compounding, polishing and prepping the surface.

Note: If more than 12 hours pass during sanding, the overnight waiting period is not necessary.

Duratec Polyester Hi-Gloss Coating Application

To achieve a high gloss finish apply a topcoat of Duratec Polyester Black Hi-Gloss Coating or Duratec Polyester Clear Hi-Gloss Coating or Duratec Polyester Hi-Gloss Tint Base.

Surface and Product Preparation

Sand the surface to a 180-grit finish to ensure proper mechanical adhesion. Wipe with a clean cloth. **Do not use a tack rag.**

Thoroughly stir Duratec Polyester Hi-Gloss Coating in the can prior to catalyzing. Due to the rapid gel time of the topcoat, catalyze only what can be applied within 15-17 minutes. (Higher temperatures yield a shorter pot life and gel time, while lower temperatures will yield a longer pot life and gel time.) Catalyze at 2 percent



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with mekP catalyst (20 cc per quart). Thin 5-15 percent if necessary to a desired spray viscosity with Duratec Thinner or mek solvent after catalyzation.

Application Procedures

Note: Spray pressures should be 35-50 psi. If a pressure pot is used, provide 10-15 psi pot pressure.

Spray the coating with a fine mist coat and wait 2 minutes for the solvents to flash off. Follow with multiple wet coats up to a total thickness of 10-15 mils, 250-375 microns. After curing, dry sand up to a 800- or higher grit finish, then allow to cure overnight prior to further sanding, compounding and polishing.

Note: If more than 12 hours pass during sanding, the overnight waiting period is not necessary.

Duratec Vinyl Ester Hi-Gloss Topcoat Application

For the ultimate gloss finish use Duratec Vinyl Ester Hi-Gloss Topcoat.

Product Preparation

Thoroughly stir Duratec Vinyl Ester Hi-Gloss Topcoat in the can prior to catalyzing. Due to the rapid gel time of the topcoat, mix only the amount that can be applied within 16-18 minutes @77°F, 25°C. Higher temperatures yield a shorter pot life and gel time while lower temperatures yield a longer pot life and gel time. Catalyze at 2 percent with mekP catalyst (20 cc per quart).

Product Application

Equipment Note: Use air aspirated or pressure pot spray equipment. The recommended line air pressure is 35-50 psi and pot pressure is 10-15 psi. Airless, air-assisted airless and air aspirated gelcoat plural-component spray systems can also be used.

Spray the entire surface with a fine mist coat and wait 2 minutes for the solvents



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to flash off. Follow with multiple wet coats building to 15-20 mils, 375-500 microns, thickness.

Note: *Do not inhibit cure by adding wax surfacing agents. The topcoat will cure to a hard, glossy finish in approximately 4-6 hours.*

When cured, dry sand the surface to remove entrapped dirt and dust beginning with 320-400-grit sandpaper. Finish with 800-or higher-grit wet/dry sandpaper. Wait a minimum of 8 hours (@77°F, 25°C) for the solvent to release prior to compounding and polishing.

Compounding and Polishing the Surface

Remove scratches with Aqua-Buff 1000-F Fast-Cut Compound or Aqua-Buff 1000-W Fast-Cut Compound and polish with Aqua-Buff 2000 Compound/Polish for a glossy, swirl mark-free finish. No surface cleaning is necessary prior to the application of release materials.

SAFETY PRECAUTIONS: Duratec Polyester Sealer, Polyester Base Primer, Polyester Surfacing Primer, Polyester Clear Hi-Gloss Additive, Polyester EZ Sanding Primer, Polyester Hi-Gloss Coating, Vinyl Ester Hi-Gloss Topcoat, and Thinner are extremely flammable. Do not apply near sparks, open flame or heat. Keep area ventilated. Do not smoke. Avoid continuous breathing of vapor. Do not take internally.



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