# Application Guide

## In Mold Application: *Post Painted Parts*

Use these Duratec® products in-mold, as a gel coat alternative, for post-painted composite parts.

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

Duratec Polyester Fast-Cure Surfacing Primer (707-109 Gray)

Duratec Polyester Fire-Resistant Primer (707-062 Gray)

Duratec Vinyl Ester Primer (1794-005 White, 1799-005, Gray)

Duratec Vinyl Ester Hi-Gloss Topcoat (1904-045 Clear)

Duratec Vinyl Ester In-Mold Primer (1794-034 White, 1799-034 Gray)

| Application | Products |
|---|---|
| I. Open molding for polyester and vinyl ester laminated parts. | Duratec Polyester Surfacing Primer |
| II. Open molding for fire-resistant parts. | Duratec Polyester Fire Resistant Primer |
| III. Open molding for epoxy resin laminated parts. | Duratec Polyester Fast-Cure Surfacing Primer |
| IV. Vacuum infusion molding for poly ester, vinyl ester and epoxy laminated parts | A. Duratec Vinyl Ester Primer<br>Or<br>B. Duratec Vinyl Ester Hi-Gloss Top coat |
| V. RTM and pre-preg molding | Duratec Vinyl Ester In-Mold Primer |

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# In Mold Application: *Post Painted Parts*

Application Conditions

Mold surfaces should be prepared with the proper release agents. Ambient temperatures should be in excess of 60ºF, 16ºC to ensure a rapid and complete cure. Time calculations are based on temperatures of 77ºF, 25ºC.

## I. Open Molding for Polyester and Vinyl Ester Resin Lamination

Use Duratec Polyester Surfacing Primer for polyester and vinyl ester resin lamination.

Product Preparation

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 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).

Note about drums: *With relatively low viscosity, Duratec Polyester Surfacing Primer requires constant agitation in the drum with a variable-speed, air-driven mixer equipped with 12-inch diameter mixing blades.*

Application Procedure

On a properly prepared mold, spray Duratec Polyester Surfacing Primer using the same spray equipment used to spray gel coat or siphon or pressure pot spray system. Spray from 8-12 mils, 200-300 microns, thickness and wait 30-45 minutes prior to laminating. After demolding, sand the primed surface only with the final required grit sandpaper.

## II. Open Molding for Polyester, Vinyl Ester and (Most) Epoxy Resin Sytems When Fire Resistant Properties Are Desired

Use Duratec Polyester Fire-Resistant Primer for polyester, vinyl ester and (most) epoxy resin systems when fire resistant properties are desired.

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# In Mold Application: *Post Painted Parts*

Product Preparation

Thoroughly stir Duratec Polyester Fire-Resistant Primer in the can prior to catalyzing. 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).

Product Application—Polyester and Vinyl Ester Resin Lamination

On a properly prepared mold, spray Duratec Polyester Fire-Resistant Primer using the same spray equipment used to spray gel coat. Spray 20 mils, 500 microns thickness, and wait 30-45 minutes (68˚F, 20˚C or warmer) prior to laminating. After demolding, sand the primed surface only with the final required grit sandpaper.

Product Application—Epoxy Resin Lamination

On a properly prepared mold, spray Duratec Polyester Fire-Resistant Primer using the same spray equipment used to spray gel coat. Spray 20 mils, 500 microns thickness, and wait 2-4 hours (68˚F, 20˚C or warmer) for until the primer is dry to the touch prior to laminating. After demolding, sand the primed surface only with the final required grit sandpaper.

## III. Epoxy Resin Lamination

Use Duratec Polyester Fast-Cure Surfacing Primer for epoxy resin lamination.

Product Preparation

Thoroughly stir Duratec Polyester Fast-Cure 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 6-8 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).

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# In Mold Application: *Post Painted Parts*

Note about drums: *With relatively low viscosity, Duratec Polyester Fast-Cure Surfacing Primer requires constant agitation in the drum with a variable-speed, air-driven mixer equipped with 12-inch diameter mixing blades.*

Product Application

On a properly prepared mold, spray Duratec Polyester Fast-Cure Surfacing Primer using the same spray equipment used to spray gel coat, or siphon or pressure-pot spray system. Spray from 8-12 mils, 200-300 microns, thickness and wait 2-4 hours, depending on temperature and thickness, until the primer is dry to the touch (60ºF, 16ºC or warmer) before laminating. After demolding, sand the primed surface only with the final required grit sand paper.

**Note:** *Duratec Polyester Fast-Cure Surfacing Primer is an especially rapid gelling primer (6-8 minutes at 77°F, 25°C) and will become dry to the touch within 2-4 hours.*

## IV. Vacuum Infusion Molding for Polyester, Vinyl Ester and Epoxy Laminated Parts and Open Molding for Marine Parts

Use Duratec Vinyl Ester Primer for vacuum infusion molding for polyester, vinyl ester and epoxy laminated parts and open molding for marine parts.

### A. Duratec Vinyl Ester Primer

Product Preparation

Thoroughly stir Duratec Vinyl Ester 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 18-22 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).

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# In Mold Application: *Post Painted Parts*

Application Procedures—Polyester and Vinyl Ester Laminated Parts

On a properly prepared mold, spray Duratec Vinyl Ester Primer using the same spray equipment used to spray gel coats, or siphon or pressure pot spray system. Spray from 15-20 mils, 325-500 microns, thickness and wait 30-45 minutes (60ºF, 16ºC or warmer) prior to the laminating process.

Application Procedures—Epoxy Laminated Parts

On a properly prepared mold, spray Duratec Vinyl Ester Primer using the same spray equipment used to spray gel coat or siphon or pressure pot spray system. Spray from 15-20 mils, 325-500 microns, thickness and wait 3-4 hours, depending on temperature and thickness, until the primer is dry to the touch (60ºF, 16ºC or warmer) before laminating. After demolding, sand the primed surface only with the final required grit sand paper.

Application Procedure—Open molding for marine parts

> Equipment Note: *The material can be sprayed with plural component equipment catalyzed at the spray tip.*

On a properly prepared mold, spray Duratec Vinyl Ester Primer using the same spray equipment used to spray gel coat or siphon or pressure pot spray systems. Spray from 15-20 mils, 325-500 microns, thickness and wait 30-45 minutes (60ºF, 16ºC or warmer) prior to laminating. With elevated temperature tooling, laminating can begin within 6-8 minutes.

After demolding, sand the primed surface only with the final required grit sandpaper.

B. Duratec Vinyl Ester Clear Hi-Gloss Topcoat

Use Duratec Vinyl Ester Clear Hi-Gloss Topcoat with vacuum infusion molding in place of Duratec Vinyl Ester Primer when a clear gloss finish and additional surface hardness are desired.

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# In Mold Application: *Post Painted Parts*

Product Preparation

Thoroughly mix Duratec Vinyl Ester Hi-Gloss Topcoat in the can prior to catalyzing. Catalyze at 2 percent with mekP catalyst (20 cc per quart) for a 16-18 minute gel time at 77ºF, 25ºC.

Application Procedures—Polyester and Vinyl Ester Laminated Parts

On a properly prepared mold, spray Duratec Vinyl Ester Hi Gloss Topcoat using the same spray equipment used to spray gel coats, or siphon or pressure pot spray system. Spray from 15-20 mils, 325-500 microns, thickness and wait at least 30-45 minutes (60°F, 16° C) or warmer) prior to the laminating process.

Application Procedures—Vacuum Infusion for Epoxy Laminated Parts

On a properly prepared mold, spray Duratec Vinyl Ester Hi-Gloss Topcoat using the same spray equipment used to spray gel coat or siphon or pressure pot spray system. Spray from 15-20 mils, 325-500 microns, thickness and wait 3-4 hours, depending on temperature and thickness, until the topcoat is dry to the touch (60ºF, 16ºC or warmer) before laminating. After demolding, sand the topcoated surface only with the final required grit sand paper.

## V. For Epoxy Pre-Preg Molding and RTM

Use Duratec Vinyl Ester In-Mold Primer for epoxy pre-preg molding and RTM.

Product Preparation

Thoroughly stir Duratec Vinyl Ester In-Mold 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 by volume with full strength mekP catalyst (20 cc per quart) for a 14-16 minute pot life.

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# In Mold Application: *Post Painted Parts*

Note about drums: *With relatively low viscosity, Duratec Vinyl Ester In-Mold Primer requires constant agitation in the drum with a variable-speed, air-driven mixer with 12" diameter mixing blades.*

Application Procedures--Epoxy Pre-preg Molding

On a properly prepared mold, spray catalyzed Duratec Vinyl Ester In-Mold Primer using the same spray equipment used to spray gel coats, or siphon or pressure-pot spray system. Spray from 15-20 mils, 325-500 microns thickness and wait 1-3 hours until the primer is dry to the touch (60°F, 16°C or warmer) prior to laying down the pre-preg. (If spraying on elevated temperature molds, the waiting time is shorter.) After demolding, sand the primed surface only with the final required grit sandpaper.

Application Procedures—RTM

On a properly prepared mold, spray catalyzed Duratec Vinyl Ester In-Mold Primer using the same spray equipment used to spray gel coats, or siphon or pressure pot spray system. Spray from 15-20 mils, 325-500 microns thickness and after 3 minutes lay in the reinforcement, close the mold and inject the resin. After demolding, sand the primed surface in preparation for the topcoat paint system.

**SAFETY PRECAUTIONS:** Duratec Polyester Surfacing Primer, Polyester Fire-Resistant Primer, Polyester Fast-Cure Surfacing Primer, Vinyl Ester Primer, Vinyl Ester Hi-Gloss Topcoat and Vinyl Ester In-Mold Primer 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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