Hawkeye Industries

Wood & MDF Pattern Making with Duratec

APPLICATION GUIDE

Duratec provides a range of products for preparing a wood or MDF surface for pattern and mold-making.These products include fast-reacting coatings that allow for same-day sanding and topcoating. Duratec products produce the highest quality pattern surfaces, with reduced time and labor.

PRODUCTS

Duratec Sealer - 823, 5604-002
Duratec Base Primer - 707-051
Duratec Polyester Surface Primer - Black - 702-003, Gray - 707-002, White - 714-002
Duratec EZ Sanding Primer - Grey - 707-061, White - 714-061, Black - 702-061
Duratec Vinyl Ester Primer - Grey - 1799-006, Black - 1702-006, Untinted - 1704-006
Duratec Polyester Hi-Gloss Coating - Clear - 904-040, Black - 602-021, White - 614-021
Duratec Vinyl Ester Hi-Gloss Topcoat - Black - 1902-045, Clear - 1904-045
Duratec Thinner - 39UCE
Aqua Buff 2000 Polish - AB2000

Application Conditions

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

Thoroughly stir products before use. A paint shaker or drill-mounted mixer is necessary - a stir stick is not enough.

Catalyze at 2% with full strength MEKP catalyst. We recommend Norox 925 for Polyester and 925H for Vinyl Esters.

Ambient temperatures should be in excess of 64°F, 18°C to ensure a rapid & complete cure. Time calculations are based on temps of 77°F

Note: The exception to this is the ambient temperature for Duratec Vinyl Ester Topcoat, which should be 68°F, 20°C.

Applying Sealer # 823 or # 5604-002

Duratec Polyester Sealer allows primers and topcoats to bond to the MDF or wood. The purpose of sealing is to prevent the resin and solvent in a primer from diving into the porous surface, leaving a layer of pigment on the surface. Using a sealer reduces the need for primers and provides a smoother, primed surface with a strong bond to the wood/mdf/putty below.

Duratec 823 is recommended for sealing MDF patterns and patterns made with combinations of plywood, wood, MDF and putty. Duratec 5604-002 is recommended for sealing oily tropical hardwoods like mahogany.

Wipe the surface clean with a rag dampened with acetone. Catalyze as outlined above.

Your Duratec sealer of choice can be wiped onto the surface, or applied by spray. Apply enough to wet-out the surface, but do not build a film on the surface.

Move on immediately to applying the primer. Apply the primer while the sealer still has some tack. If the sealer has cured tack-free, sand and apply a light second coat and immediately apply the primer.

Applying High Build Primer OPTIONAL # 707-051 or #707-061 # 714-061, # 702-061

Is a High Build Primer Needed?

Use a High Build Primer if your pattern would benefit from the following:

- Insulation from the pattern material such as putty, MDF, or fiberglass laminate to prevent mold marking.
- Insulation from glue line or MDF board edge marking.
- Being easier to sand and fair, such as a pattern that requires long-board sanding.
- If you are machining parts, we recommend the Base Primer, and if manually sanding the part - we recommend the EZ Sand Primer to reduce labor.

These primers have microballons that float and pigments/solvents that sink so when opened, it can appear solid due to the separation. It must be mixed mechanically.

Catalyze as outlined on page 1 of this document.

A 3.0 mm tip is recommended, do not use a tip size smaller than 2.4 mm.

Build multiple coats to desired thickness as needed, based on the condition of your part.

Primer can be sanded as soon as the dust does not plug the sandpaper. Wipe down the pattern with a rag dampened with acetone.

Note: Base primer provides a rough surface with a great grip. It is not recommended as a surface for building a mold or for a topcoat.

Priming The Pattern # 702-003, # 707-002, # 714-002 or # 707-061 # 714-061, # 702-061 or # 1799-006, # 1702-006, # 1704-006

Which Duratec Primer is right for you?

Duratec Surface Primer provides a strong polyester primer than can be polished or topcoated.

Duratec EZ Sanding Primer is unmatched in smooth initial surface and fast sanding, but not recommended for patters that will be transported over-the-road. 180°F HDT.

Duratec Vinyl Ester Primer is unmatched in strength. Strong, tough primer that can be polished to a good gloss but is more difficult to sand. 285° HDT for great high-temperature capability.

Stir and catalyze your primer of choice as outlined above.

Note: If you used the EZ Sanding Primer as your High Build Primer, follow with Duratec Surface Primer.

Due to the rapid gel time of these products, only catalyze what can be used in 15-20 minutes. Remember that higher temperatures yield a shorter pot life and gel time, while lower temperatures yield a longer pot life and gel time.

Priming The Pattern CONTINUED

Spray the pattern with multiple build coats. Allow at least 2 minutes between applications but less than 30 minutes to assure each coat fuses with the previous coat. Build 4-5 mils per wet pass. Build up 15-20 mils in total, to allow for sanding.

Allow to cure. Sand with a fine grit if possible (220 is a good starting place). If polishing the pattern sand up to 1000 grit sandpaper and then compound and polish. If topcoating, sand with 220 grit and topcoat.

Applying Duratec Hi-Gloss Topcoat

 # 904-040 # 602-021, # 614-021, # 902-046, OR # 1902-045, # 1904-045

Which topcoat is right for you?

Duratec Polyester Hi-Gloss Coating offers a HDT of 180°F, and faster sanding and polishing.

Duratec Vinyl Ester Hi-Gloss Topcoat provides a hard, heat resistant surface, free of porosity with great off-the-gun characteristics and 285°F HDT. It is ideal for pattern surfacing, mold resurfacing, or mold construction. It is also a great choice for avoiding fish-eyes or surface defects.

Sand the primed surface to a 180-220 grit finish. Prior to catalyzing, thoroughly stir and catalyze as outlined on page one. Due to the rapid gel time of the coating, mix only the amount that can be applied within 15-18 minutes. If thinning is needed, thin with Duratec Reducer.

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 3 to 4 wet passes of 5-7 mils of Duratec Topcoat, building to a total of about 20 mils.

Compound and Polish with Aqua-Buff **# AB2000**

Polish with Aqua-Buff 2000 for a glossy, swirl mark-free finish. No surface cleaning is necessary prior to the application of release materials.

Check the material safety data sheet of your product for recommendations on protective equipment. The Duratec products are extremely flammable. Each product has a corrosponding Technical Data Sheet available on our website, which includes a troubleshooting guide, general use instructions and other helpful information.

Limited/ warranty statement: Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.