



Online Version

Instructions for Applying Dyna-Tek's Anti-Adhesive Build-up Coating System on Dies, Blades, Rollers, and any other Parts Where Adhesive Build-up Impacts

Before starting, please be sure to not only read our product SDS "safety data sheets", but also our "Storage and Handling Instructions". ALWAYS use our products in well-ventilated areas, with the recommended PPE Protection.

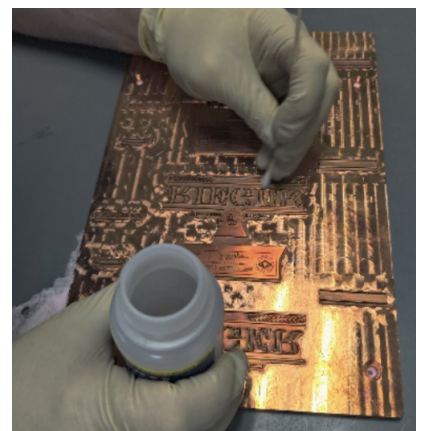
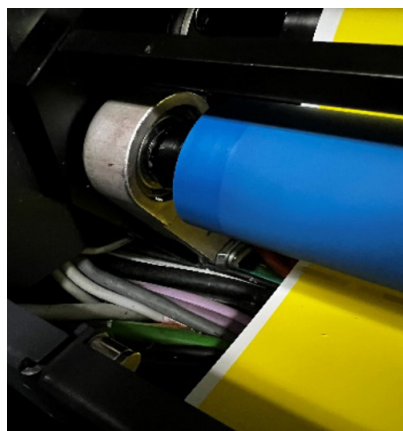
STEP 1: Inspect the Surface before Cleaning

Surface prep/cleaning is the key to coating durability. Contaminants such as previously applied lubricants and other silicone or petroleum-based lubricants that are not cleaned from the surface and porosity will reduce the performance of Dyna-Tek coatings.

- **DO NOT** use petroleum-based solvents such as lacquer thinners or mineral spirits. These solvents will deposit oil-based residues in the pores of your dies which will interfere with Dyna-Tek's coatings being able to adhere to the surface/substrate.
- You can use acetone, denatured alcohol or isopropyl alcohol 99% (IPA) solvents, however because these solvents tend to flash-off quickly, they are not as effective for cleaning any impurities in the porosity of the substrate.
- Cleaning solvents we have found to be very effective are either Tert-Butyl Acetate aka Dyna-Prep. We lean towards TBAC for a couple reasons:
 - o TBAC is VOC-exempt by the EPA.
 - o Slower flash-off (evaporation time), which enables for a deeper cleaning of the substrate.
 - o For more information, you can reference the U.S. Army Research Laboratory in 2010. Army Report
 - o TBAC - Safety data documentation – Dyna-Prep SDS

STEP 2: Cleaning the Surface – Tert-Butyl Acetate (Dyna-Prep)

- Apply Dyna-Prep to the tip of an applicator. Using the applicator, apply Dyna-Prep on a small surface area to test the reaction with substrate. Particularly if there is an existing "finish" on the substrate already.
- Barring no negative impacts to the surface, continue using Dyna-Prep to clean the entire area that will be coated with Dyna-SlickShield™, Dyna-SlickShield™ Plus and Dyna-Slick™ Plus.S



NOTE! As is the case with a non-stick pan, do not use sharp objects or abrasive media to clean adhesives off your components. For example: 3M®'s Scotch-Brite pads are excellent products, just don't use the wrong one or it will leave scratches on, and in the surface that are deeper than the coatings being applied over them. The chart below provides a GRIT to Scotch-Brite pad conversion:

3M Scotch-Brite™ Hand Pads					
Number	Color	Abrasive	Grit Equiv.	Steel Wool Equiv.	Description
7445 Light Duty Cleansing	White	Flint, super fine grade	1200-1500	NA	Excellent for fine finishes, light cleaning. One of the least aggressive hand pads.
7448 Ultra Fine					
6448 Light Duty	Light Gray	Silicon Carbide, ultra fine grade	800-1000	#0000	Finest silicon carbide hand pad available. Excellent for final finishing and light cleaning.
7447 General Purpose	Dark Gray	Silicon Carbide, ultra fine grade		NA	Designed to clean, finish and buff.
8447 Production	Maroon	Aluminum Oxide, very fine grade	360-400	#00 - #000	Excellent starting point to clean, finish, grain, denib or defuzz.
6444 Extra Duty					
7446 Blending	Brown	Aluminum Oxide, fine grade	320	NA	Excellent for conformability in cleaning, finishing and graining. Also may be used to denib or defuzz.
7440 Heavy Duty	Gray	Aluminum Oxide, medium grade	120	#1 - #2	Excellent to grain, clean, denib, defuzz and finish. Resistant to loading.
5440 Ultra Heavy Duty	Tan	Aluminum Oxide, medium grade	150	150-180	The most aggressive and durable web. Excellent for heavy cleaning, deburring, and finishing.
	Brown	Aluminum Oxide, coarse grade	80	80-150	Resistant to loading. Does not contaminate. Excellent for cleaning scale or corrosion.

Applying our Coatings

Why Dyna-SLICKSHIELD™ and Dyna-SLICKSHIELD™ PLUS is applied **BEFORE** Dyna-SLICK™ PLUS?

- Dyna-SlickShield™ and Dyna-SlickShield™ Plus, as its name implies, creates a sealer basecoat that "Shields" the surface of your parts. Dyna-SlickShield™ and Dyna-SlickShield™ Plus are hydrophobic and create a very good corrosion resistant bond and seals the porosity of the substrate.
- Dyna-Slick™ Plus is an outstanding anti-adhesive coating. Dyna-Slick™ Plus forms a covalent (chemical) bond to Dyna-SlickShield™ or Dyna-SlickShield™ Plus, creating a molecular bond to each other.

When needed, another coat of Dyna-Slick™ Plus can be applied over the previous coat to refresh the non-stick properties again.

If you apply a good coat of Dyna-SlickShield™ or Dyna-SlickShield™ Plus before applying Dyna-Slick™ Plus, this is the best way to control adhesive buildup.

Common applications that use Dyna-SlickShield™ and Dyna-SlickShield™ Plus:

PRODUCT:

Dyna-SlickShield™

APPLICATION:

Machined Flatbed, Rotary and Flexible Dies

Dyna-SlickShield™ Plus

All Rollers; Steel Rule Dies

Class "A", Male/Female, Matched-Metal Tooling

Slitting Blades, Sheeting Knives, Guillotine-Style Shearing Knives, and Plotter Knife Blades

Hot or Cold Cutting Perforation Tools

Embossing Dies and Extrusion Dies

STEP 3: Application of Dyna-SlickShield™, Dyna-SlickShield™ Plus and Dyna-Slick™ Plus

Rollers:

If the roller provides resistance functionality, only coat the areas where the adhesive build up is occurring. Typically, this would be the end of the rollers and anvils where the adhesive is pressed out of the material.

Metal Rollers:

- Clean roller using Dyna-Prep
- Dispense enough Dyna-SlickShield™ Plus through the twist-cap nozzle on to the application tool of your choice to soak without dripping.
- Apply Dyna-SlickShield™ Plus to the entire length of the roller by spinning the roller while you are using the desired applicator. Apply with medium pressure.
- Allow Dyna-SlickShield™ Plus to cure for 60-90 minutes
- Once cured, apply Dyna-Slick™ Plus using a NEW applicator. Using the same application method as you did for Dyna-SlickShield™.

Rubber Rollers:

- Clean roller using Dyna-Prep
- Dispense enough Dyna-SlickShield™ Plus through the twist-cap nozzle on to the application tool of your choice to soak without dripping.
- Apply Dyna-SlickShield™ Plus to the last 3" of the roller by spinning the roller while you are using the desired applicator. Apply with medium pressure.
- Allow Dyna-SlickShield™ Plus to cure for 60-90 minutes
- Once cured, apply Dyna-Slick™ Plus using a NEW applicator. Using the same application method as you did for Dyna-SlickShield™ Plus.

Metal Dies:

To apply Dyna-SlickShield™ or Dyna-SlickShield™ Plus to dies we recommend using the same application tools used to clean the surface; cotton swabs, mini-sponge tips, lint-free cotton cloth or wipes.

- Dispense enough Dyna-SlickShield™ Plus through the twist-cap nozzle on to the application tool of your choice to soak without dripping. Apply it to the blade first. Because of the tiny serrations in the blades be sure to work to applicator moving it along the blade in different directions and with enough pressure to feel a little resistance created by those serrations in the blade. As the Dyna-SlickShield™ Plus consistently works into those serrations, you will begin to feel less resistance as you lightly move the applicator along the blades.
- Next, coat the rest of the die's surface. Because this surface is typically very smooth, the application technique is more about smooth, parallel passes across the surface to leave a consistent finish.
- Lightly apply one more pass over the blades to ensure consistency of the coating on the blade areas.
- Allow Dyna-SlickShield™ Plus to cure for 60-90 minutes
- Once cured, apply Dyna-Slick™ Plus using a NEW applicator. Using the same application method as you did for Dyna-SlickShield™ Plus.

Depending on the geometric intricacies of the tool, we recommend applying Dyna-SlickShield™ Plus with an airbrush to ensure a consistent coverage. If an airbrush is not available, hand application is acceptable if consistently applied. **Be sure to cover or protect areas where you don't want the treatment to be applied.** This can be done with masking tape and aluminum foil.

When coating, be vigilant about not allowing excess coating to accumulate in deeper geometries of the tool faces. If it happens, you will still be able to remove it, but it will not perform as well in the meantime.

For Extrusion Dies: Once coated, position the dies in a manner that allows any areas that may be too thick to flow out with gravity.

STEP 4: Cure Time.

Dyna-SlickShield™, Dyna-SlickShield™ Plus and Dyna-Slick™ Plus all require a minimum of 60-90 minutes (Ambient Air) each to cure. Variables that can slow down the cure time are:

- Temperature. If the room temperatures are below 60° F, this can slow down the cure.
- Humidity in the air. The curing catalysts for Dyna-Tek coatings are oxygen molecules and the moisture in those molecules. So, drier air can influence the final cure time. For example, you might see your same application methods that work great during warmer summer months but need a little more time in the drier winter months.