

FINISHING AND POLISHING

INTRODUCTION

This fabrication bulletin addresses finishing and polishing of DuPont™ Corian® solid surface products.

OVERVIEW

The finish quality is one of the most visible aspects of overall fabrication quality and one of the first places customers will notice errors. This bulletin provides a variety of tools and procedures for creating three gloss levels: matte, semi-gloss, and gloss.

A. TOOLS REQUIRED

Tools required for effective finishing include:

- Random orbital sander
- Microfinishing disks: 100 μ, 60 μ, 30 μ, 15 μ (μ = micron). P grade sandpaper: P150, P240, P320 and P600; may be used as an alternative to microfinishing disks.
- 3M™ Clean Sanding Discs - Scotch-Brite™ 7447 (maroon) and Scotch-Brite™ 7448 (gray)

To effectively check for a uniform finish during sanding, install low-angle lighting behind the workstation.

HELPFUL HINTS:

Plan for dust control at the installation site.

Several sanders are equipped for dust control that should be used on-site.

Several brands of large and/or multiple head sanders are available. They make sanding easier, faster and can help to keep the surfaces flat

B. MATTE FINISH

The vast majority of countertops should be finished in a matte finish to provide easy maintenance.

Steps to completion:

If surface is free from scratches or defects caused during transportation, handling or fabrication, start with step 4.

1. Load the sander with a 100-micron abrasive disk.
2. Sand the entire top to a uniform finish. Be sure to overlap sanding strokes by at least half the pad diameter and cover the entire surface. See Figure B-1. Care must be taken not to concentrate too heavily over the seam area, as this may develop a different look in this area (especially with particulate colors).

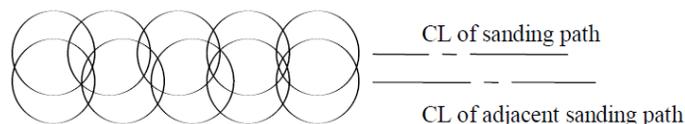


Figure B-1

The pattern shown in Figure B-1 should be followed across the sheet in a “North - South, East -West” pattern as shown in Figure B-2.

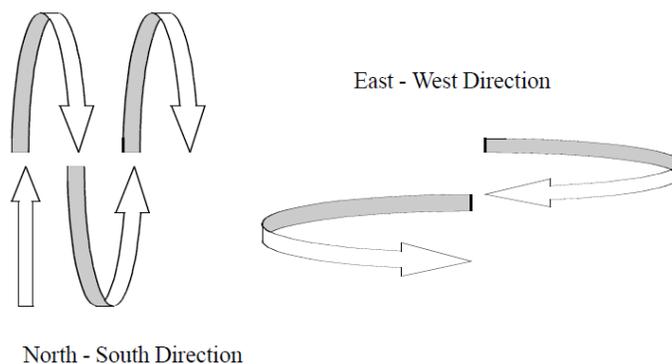


Figure B-2

3. When this is finished, wipe the top and inspect for leftover scratches and uniform finish.
4. Resand the top as in Step 2 with a 60-micron disk and repeat the cleanup procedure. Inspect top once again.
5. Wipe the top down with a wet cloth, then buff with a Scotch-Brite™ 7447 (maroon) disc. This will give a matte finish.

As an alternative, use P150 paper to remove scratches or defects caused during transportation, handling or fabrication, followed by P240 paper followed by Scotch-Brite™ 7447 (maroon).

HELPFUL HINTS:

Mask off the work area using plastic sheeting if site dust control is crucial.

Controlling dust while finishing will reduce cleanup time.

Use water to wipe down the top in between steps.

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Some installations will have large light sources such as windows that are seen as a reflection on the horizontal surface. This lighting will highlight imperfections in the finish, including the pattern left by the sander. This is particularly noticeable at higher glosses and with darker colors. To minimize these patterns, after every sanding step produce random motions such as circles and figure-eights to break up any patterns from sanding. These motions are conducted at a 45 degree angle and will crisscross for every level of abrasive used. Only two passes are usually required, one pass at + 45 degrees and one pass at - 45 degrees.

Random orbital sanders lose their effectiveness if too much pressure is applied and the pads stops spinning. To assure that the pad is spinning, mark each sanding pad with four black lines at 0, 90, 180, and 270 degrees (See Figure B-3). These marks will point out if even pressure is applied during sanding. If adequate pressure is applied during sanding, the pad markings will spin freely with a relative blur or “strobe effect”. If too much pressure is applied, the pad will stop spinning, preventing the pad and paper from performing as designed.

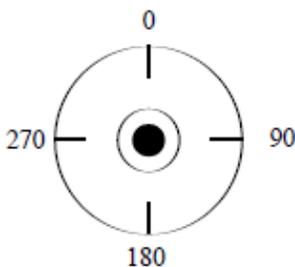


Figure B-3

C. SEMI-GLOSS FINISH

Steps to completion:

1. Complete steps 1–4 from Section B above, which describes how to create a matte finish for DuPont™ Corian® solid surface. Stop before the step using the Scotch-Brite™ 7447 (maroon) disc
2. Resand with a 30-micron disk (P320).
3. Wipe top clean with a damp cloth.
4. Buff entire top with a Scotch-Brite™ 7448 (gray) disc until uniform semi-gloss appearance is achieved.

D. GLOSS FINISH

A gloss finish in the appropriate end-use application is an aesthetically pleasing finish for Corian® solid surface. However, scratches are more visible with this type of finish and it requires more care and attention to maintain its

appearance. It is not recommended to install a top with a high-gloss finish in a high-traffic/high-use area. If requested to do so, you should clearly advise the consumer of the special care needed to prevent unrealistic expectations.

Steps to completion:

1. Complete the steps from Section C, which describes how to create a semi-gloss finish for Corian® solid surface, but do not use the Scotch-Brite™ disc.
2. Resand the top with a 15-micron disk (P600). Change disks often, as finer grades tend to clog quickly. Repeat cleanup step.
3. Using a low-speed polisher and compounding pad, apply an automotive rubbing compound. Do small areas, overlapping to ensure a uniform appearance.
4. If desired, repeat step 3, using a white car polish compound.
5. Be sure to wash away any residual polish compounds.

Any polishing compounds must be thoroughly washed away, as they may not be food safe.

E. 3M™ TRIZACT™ FILM DISCS

A high gloss can also be achieved by using 3M™ Trizact™ Film Discs. In order to be effective Trizact™ Film Discs must be used wet.

Due to the possibility of electrical hazards when using water with electric power tools, DuPont strongly recommends against wet sanding with electric powered sanders. Wet sanding is only to be done with air powered tools.

Tool Requirements:

- air-powered random orbital sander
- 100-micron abrasive film
- Trizact™ Film Discs: 268XA A35, 268XA A10, 268XA A5, and 568XA CeO
- water and spray bottle to “mist” surface

To sand most effectively, use “pattern sanding.” This involves sanding side to side, overlapping each successive pass by about one-third of the pad. When this step is complete, sand front to back, also overlapping each pass by about one-third of the pad. Repeat this process before changing to the next finer abrasive film.

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Steps to completion:

1. Remove surface blemishes, fabrication scratches, etc., using the 100-micron film abrasive on an orbital sander. This step is done dry. Wipe surface of the countertop completely clean and inspect for defects and scratches.

Resand if needed. Clean surface again and re-inspect. Clean entire top before proceeding.

2. Install the 268XA A35 Trizact™ film disc on an air-powered random orbital sander. Use spray bottle to lightly mist surface. Pattern sand process the entire countertop as described above.

It is imperative to keep the surface misted during the entire sanding process. The Trizact™ film discs are only effective when used wet. Be sure to sand the countertop twice. Wipe the surface clean and inspect for defects and scratches. Resand if needed. Wipe entire surface clean before proceeding.

3. Install the 268XA A10 Trizact™ film disc on the air-powered random orbital sander. Use spray bottle to lightly mist surface. Repeat the pattern sanding process on the entire countertop. Be sure to sand the countertop twice. Clean entire countertop and inspect for defects and scratches. Resand if needed. Clean entire top before proceeding.

4. Install the 268XA A5 Trizact™ film disc on the air-powered random orbital sander. Use spray bottle to lightly mist surface. Repeat the pattern sanding process on the entire countertop. Be sure to sand the countertop twice. Clean entire countertop and inspect for defects and scratches. Resand if needed. Clean entire top before proceeding.

5. Install the 568XA CeO Trizact™ film disc on the air-powered random orbital sander. Use spray bottle to lightly mist surface. Repeat the pattern sanding process on the entire countertop. Be sure to sand the countertop twice. Clean entire countertop and inspect for defects and scratches. Resand if needed. Use clean water to clean off all mist and sanding residue from countertop. Wipe top dry and inspect. If any defects, splotches or scratches are present, go back to the preceding step and resand top. If scratches persist, keep going back to the step needed to remove the scratch or get rid of the splotches.

HELPFUL HINTS:

When cleaning the surface between sanding steps, do not use a spray bottle to wet the surface. It's best to use a bucket of water. Change the water when it looks milky.

A squeegee works very well to begin cleaning the surface when using Trizact™ film disc and water. Wipe the squeegee clean after each pass.

F. LEVELING UNEVEN SEAMS

There may be times that a seam is not quite level. This may be addressed by creating a rigid sanding pad that is used with a gear driven orbital sander with a hook & loop pad.

To create the rigid pad:

- Cut a piece of thin aluminum (~0.03 - 0.06" [0.08 – 0.15 mm] thick) to fit the size of the sanding pad used (5" or 6" [130-150 mm]).
- Include holes to match the sanding pad dust holes. The aluminum surface must be smooth and flat.
- Apply pressure sensitive hook & loop tape (use the loop half) to about 50% of one side of the disc. Do not completely cover the disc as it will make it very difficult to remove from the sander. Make sure you do not block the dust holes.
- Apply a 100 μ (P150) pressure sensitive sanding disc to the other side, lining up the holes for dust removal.

Leveling the seam:

- Put the disc on the sander and use a normal pattern to level the area needed.
- Be careful to keep the sanding disc flat on the sheet to avoid gouging the Corian® solid surface.
- Keep the sander moving as this is an aggressive type of sanding. Typically thirty seconds to a minute per square foot (0.1 m²) is enough to level the surface at a deck seam.
- After leveling, use the sanding sequences provided above to obtain the desired finish.

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