

# REPAIR

## INTRODUCTION

This bulletin addresses the repair of damaged DuPont™ Corian® solid surface installations.

## OVERVIEW

Occasionally, surfaces may be damaged during fabrication, transport, installation or in use. Most of the time damage can be repaired by the procedures in this bulletin. Always discuss your repair technique with the customer prior to starting the process. Ensure that the customer agrees with your recommendation. This will avoid any issues the customer may have concerning repair over replacement.

### A. MINOR REPAIRS

Minor repairs may be required for damage such as:

- deep scratches
- chemical stains
- scorches or burns
- general stains
- minor impact marks

All minor damage should be repaired with a light abrasive cleaner and a 3M™ Clean Sanding Disc - Scotch-Brite™ 7447 (maroon), or fine P-grade paper for heavier damage.

Steps to Completion:

1. Identify the extent of the damage and determine whether a minor repair will rectify the problem.
2. Begin repair by attempting to remove damage with an abrasive cleaner or a Scotch-Brite™ 7447 (maroon) disc.
3. If Step 2 is unsuccessful, it may be necessary to hand-sand with P240 wet or dry paper. Use only air powered tools when wet sanding.
4. If Step 3 is unsuccessful, use heavier-grades of paper. Always make provisions to control dust.
5. If Step 4 is unsuccessful, it may be necessary to consider other repair options.

### B. PLUG REPAIRS

Plug repairs are a simple and effective way to replace a small section in a countertop which may have been damaged and cannot be refurbished using a minor repair technique. The plug repair removes a small circular section which is

replaced with a color-matched piece of Corian® solid surface using similar techniques to an inlay. This piece is then adhered with DuPont™ Joint Adhesive to form a smooth repair.

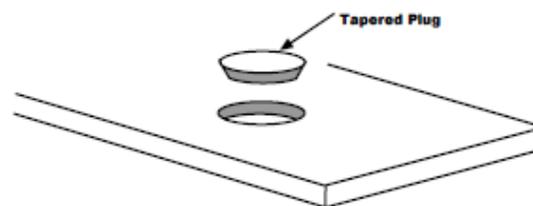


Figure B-1

### The Round Plug System

Steps to completion:

**System will only work with a plunge router.**

**For safety purposes, it is best to fasten router to an oversized base plate made of plywood or 1/4" (6 mm) Corian® sheet.**

For best results, use a color-matched piece of Corian® sheet to make repair plug.

Steps to completion:

1. Determine which router bit pair is needed to remove the damage.
2. Insert plug cutter bit into plunge router. Set router to plunge to within about 1/32" (0.8 mm) of the entire thickness of a color-matched Corian® sheet. Fasten router onto the backside of the piece. Plunge router slowly until router reaches full depth. Remove router.
3. Remove plug from rest of sheet and carefully sand off the flash around the top of the plug.

**The flash around the top of the plug is very sharp and will cut fingers easily. Wear proper gloves.**

**Clean plug with denatured alcohol<sup>1</sup>.**

<sup>1</sup>Denatured alcohol is the preferred solvent for cleaning DuPont™ Corian® solid surface products. Acetone is approved for cleaning in regions where denatured alcohol is prohibited. Please see *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Approved Cleaning Solvents (K-25701)* for more details.

4. Insert bevel bit into plunge router and set plunge depth to about  $\frac{7}{16}$ " (11 mm). Fasten router securely over damaged area. If clamps cannot be utilized, place hot melt glue around the outer perimeter of the router base plate and allow to cool completely. Do not put hot melt glue under the router as this can cause the router to tilt slightly. Plunge router slowly until all damage is removed and router reaches full depth. Do not remove router at this time. Trial fit the plug in the hole. Set router deeper if necessary, and rerout opening until plug sits about  $\frac{1}{32}$ " (0.8 mm) above deck. Remove router. Clean hole with denatured alcohol.
5. Seal underside of deck with aluminum tape. Prepare the DuPont™ Joint Adhesive, and apply adhesive into opening and coat edges of plug. Insert plug into opening, press down firmly and secure.
6. After the adhesive cures, use a router on skis or a direct drive random orbital sander to remove excess plug and adhesive. A router on skis is preferable as sanding will tend to remove material from outside the repair area. Do not overheat the repair area through excessive sanding. Complete the repair with standard finishing and polishing techniques as described in *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Finishing and Polishing* (K-25298).

## C. PIE-CUT REPAIRS

This insert repair method is a quick, inexpensive alternative to replacing an entire DuPont™ Corian® countertop. Use the following procedure to fabricate and install pie-shaped inserts of Corian® sheet for repairing cracks in cutout corners and edges. There are templates available commercially for making pie repairs, or the fabricator can make templates as described below.

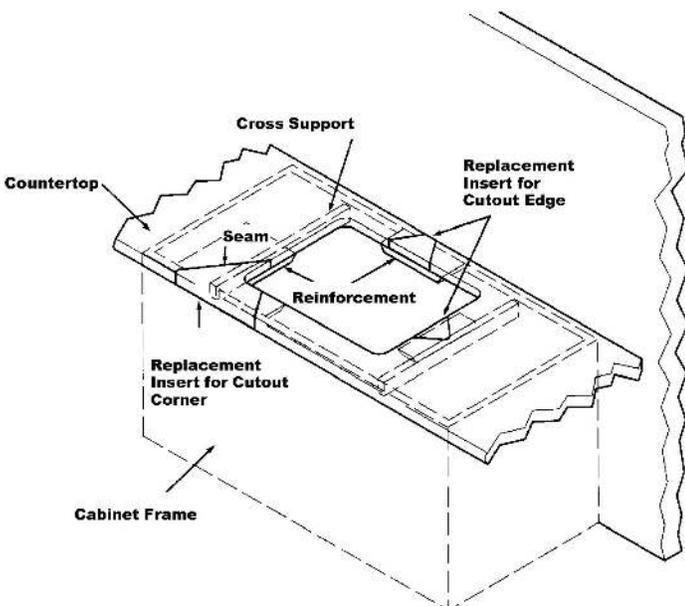


Figure C-1

Steps to completion:

1. Make the template
  - Make a pie-shaped template, matching the size to the piece to be repaired.

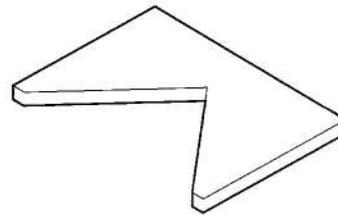


Figure C-2

2. Remove the damaged cutout area
  - Clamp the template on the countertop over the area to be removed.

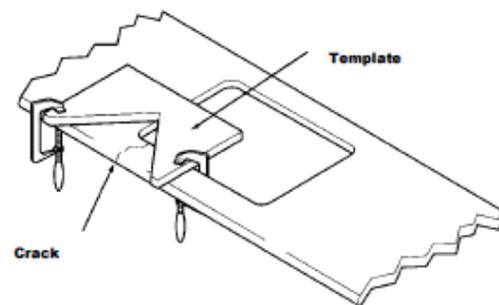


Figure C-3

- Use a router to cut out the damaged area.
- Make sure the cuts are at least 4" (102 mm) away from the cutout corner.

**Buildup edges:** It is not necessary to remove the buildup edge if it is not damaged. Set your cut of depth so the router cuts only through the deck material and not through the buildup edge. You will need to run the router back and forth over the edge buildup to remove the existing deck material.

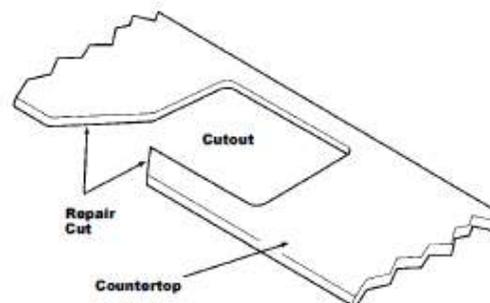


Figure C-4

### 3. Make the insert

- Choose a piece of DuPont™ Corian® solid surface that is the same color and thickness as the countertop.
- Use the same router and template to make a pie-shaped insert of Corian® solid surface.
- Make the insert  $\frac{1}{16}$ " (1.5 mm) to  $\frac{1}{8}$ " (3 mm) wider than the repair cut in the countertop.

**Buildup edges:** For a countertop with a damaged buildup edge, fabricate a buildup section and glue it to the front edge of the replacement insert before routing it to a pie shape. Keep in mind that the buildup edge on the repair piece must align with the buildup of the countertop when positioning the template onto the repair piece.

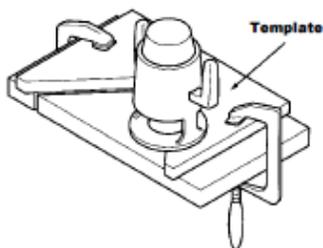


Figure C-5

### 4. Trial fit the insert until there are no visible gaps

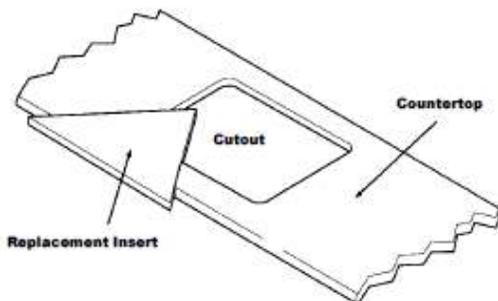


Figure C-6

### 5. Reinforce the insert and the seams according to the following procedures

#### A. Cut the reinforcement block

- Cut a reinforcement block from Corian® solid surface, making it at least 2" (51 mm) wider than the repair insert.

#### B. Trial-fit the reinforcement block and the insert

- Slide the reinforcement block against the cabinet frame and clamp it to the countertop.
- Slide the insert against the repair cut.
- Make four small blocks from Corian® solid surface and use hot-melt glue to attach them to both sides of each repair cut.
- Use clamps to draw each pair of blocks together.
- Clamp the insert to the reinforcement block.

**Buildup edges:** For an insert with a buildup edge, trim the front edge of the insert flush with the countertop. Be sure the back side of the buildup edge on the insert aligns with the back side of the buildup edge on the countertop. Remove the insert and finish the end section with a decorative matching pattern.

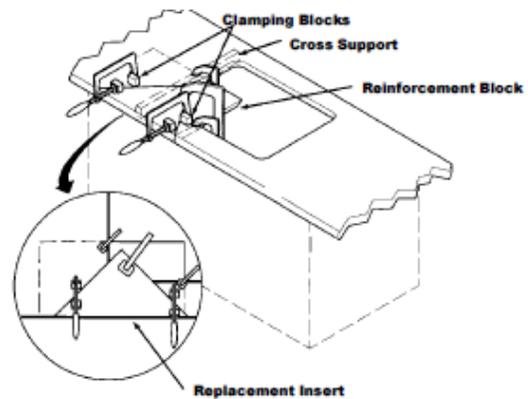


Figure C-7

#### C. Prepare the seam

- Clean the seam areas of both the insert and the reinforcement block with clear, denatured alcohol and a clean, white cloth.

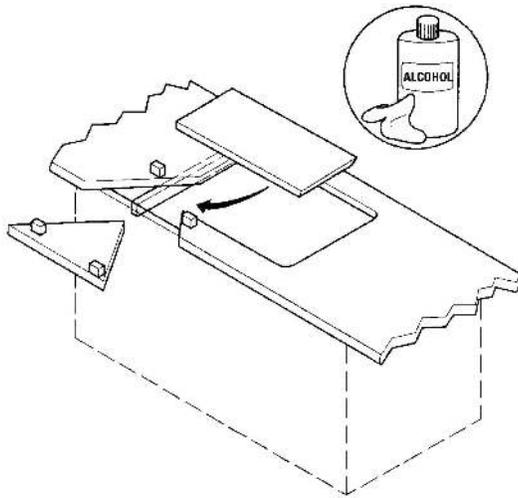


Figure C-8

#### D. Glue the pieces

- Apply a thick layer of the joint adhesive to the entire surface of the reinforcement block, avoiding any gaps.
- Clamp the reinforcement block to the underside of the repair cut.
- Apply joint adhesive to the edges of the insert.
- Slide the insert against the repair cut and clamp it on both sides of each cut.
- Clamp the insert to the reinforcement block.

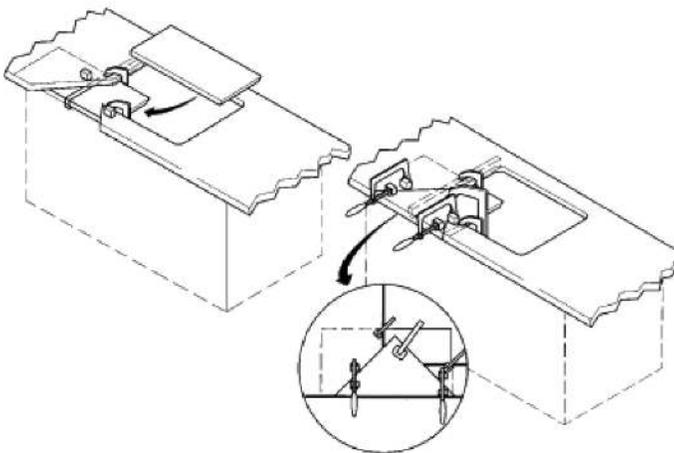


Figure C-9

- Allow the adhesive to cure.
- Remove the four blocks and hot-melt glue using denatured alcohol and a 1" (25 mm) chisel or rigid putty knife with rounded corners.

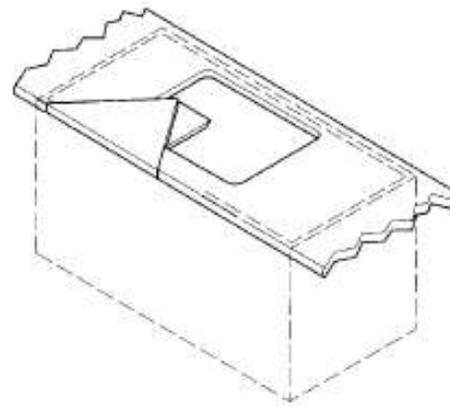


Figure C-10

#### 6. Finishing the insert

- Trim the repair section along the cutout edge with a router, using a template as a guide.
- Remove all tool marks and sand all edges smooth in the cutout using 100μ/P150 or finer paper.
- Sand the countertop with 60μ/P240 abrasive or finer to match the existing gloss.

**Buildup edges: Use a shaped router bit to finish a buildup edge.**

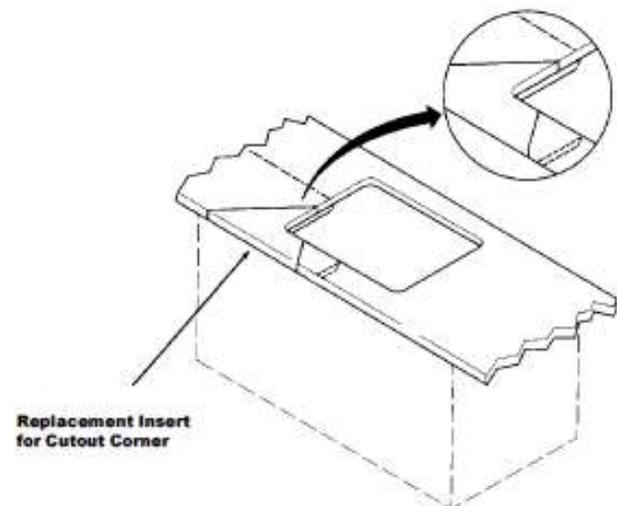


Figure C-11

#### D. SECTION REPLACEMENT

A section replacement may be required where no alternative repair technique, such as a plug repair or pie cut, will rectify the damaged section. It is important to ensure that color-matched material is used for the replacement. If color-matched material is not available, explain the options and end result to the customer before attempting the repair.

The section replacement removes a complete section of the DuPont™ Corian® countertop from buildup to wall.

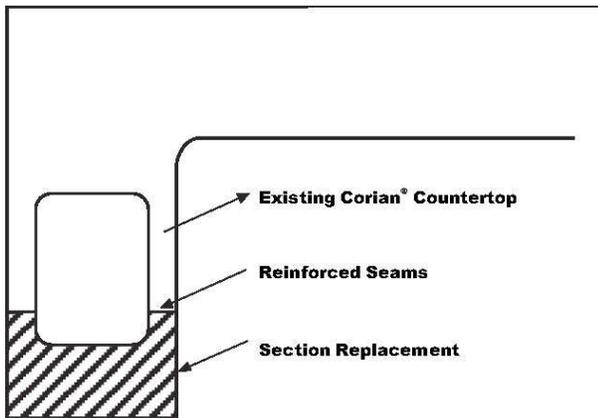


Figure D-1

Steps to completion:

1. Using a 3-hp router fitted with a special router bit to enable a cutaway underneath tiles or other impediments at the rear of the DuPont™ Corian® countertop, rout a straightedge line from front edge to rear.
2. Carefully remove silicone, adhesives or other attachments to the cabinets.
3. Remove the entire section to be replaced, including the frame.

**If it is possible to remove only the damaged Corian® sheet, leave the subframe intact.**

4. Fabricate the new section to be replaced to match the existing countertop. Duplicate all details to ensure uniformity of appearance.
5. Trial-fit the new section to the existing, ensuring good support and level are maintained and that close attention is paid to getting a fine fit at the seam.
6. Seam the new piece with DuPont™ Joint Adhesive and clamp with deck clamps or other methods that will obtain a first-class seam.
7. After the adhesive has set, use standard methods to remove the excess adhesive on the countertop and buildup seam. Install seam reinforcements where needed.
8. Finish the area, using standard procedures for finishing. Finish the entire top to remove stains and scratches, ensuring the repair achieves a “new” look.

## HELPFUL HINTS

*If you don't have the exact router bit to match the existing edge treatment, use a slightly bigger bit that will override the former profile.*

*If the color match cannot be exact, the position of the seam may be disguised by placing a “camouflage” over it such as inlaid heat bars, a tiled inlay or other creative techniques. In more difficult instances, it may be appropriate to suggest a color contrast in place of a poor color match.*

*In some cases, it is possible to use material from another physically isolated section of the installation, such as an island countertop, to get a color match, and use new material to replace the isolated section.*

## E. REPAIR CRACKED SEAMS WITH INSERTS

Steps to Completion:

1. Rout the seam area using a router, V-groove bit and straightedge.

**If the repair must be made close to the backsplash, use a rectangular slot and rectangular repair strip. Use a tilt-base laminate trim router to slot the cracked top near the backsplash. The repair strip can be any width needed to remove all damage. Sand the strip so the top width is larger than the bottom width to improve the fit.**

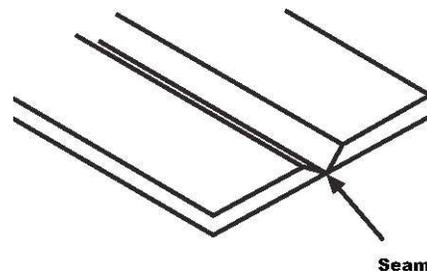


Figure E-1

2. Cut a color-matching strip of Corian® sheet and sand it to fit the V-groove snugly. When fitting strip ensure the bottom of the repair piece is facing upward and not in the seam line.
3. Clean all surfaces with clear, denatured alcohol and a clean, white cloth and allow to dry.

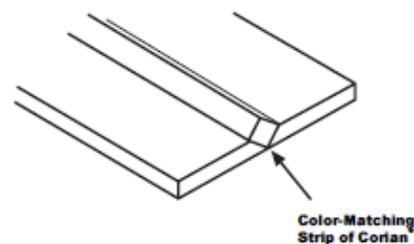


Figure E-2

4. Apply DuPont™ Joint Adhesive liberally into the V-groove. Install the repair strip. When installing the repair strip be sure the bottom side is facing upward and not in the glue line.

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5. Install a reinforcing strip under the seam to prevent re-cracking (see *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Seaming* (K-25292)). Be sure the reinforcement overlaps the repair at least 1" (25 mm) on each side.

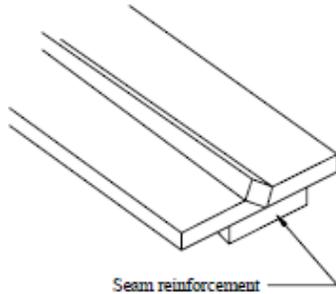


Figure E-3

6. Let the adhesive cure, then use a router on skis or a direct drive random orbital sander to remove excess repair strip and adhesive. A router on skis is preferable as sanding will tend to remove material from outside the repair area. Do not overheat the repair area through excessive sanding. Complete the repair with standard finishing and polishing techniques.

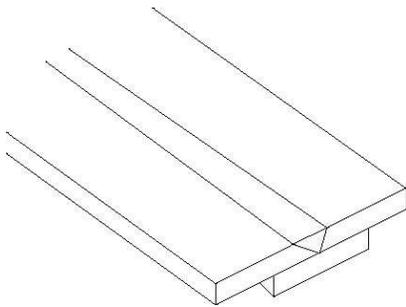


Figure E-4

### F. REPAIR LARGE AREAS WITH CORIAN® SOLID SURFACE INLAYS

Commercially made templates are available to make this repair. Alternatively, fabricator can make the templates as outlined here.

Steps to completion:

1. Rout a pattern out of plywood or MDF, making it  $\frac{3}{8}$ " (10 mm) smaller than the piece to be bevel-mounted.

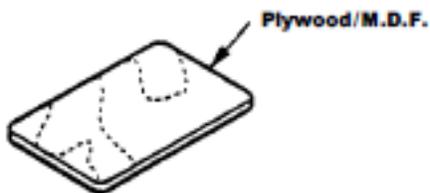


Figure F-1

2. Secure another plywood or MDF piece to the work station.
3. Screw the pattern to the plywood or MDF.

4. Rout (counterclockwise) a matching template set with a  $\frac{1}{4}$ " (6 mm) bit and 1" (25 mm) template guide.

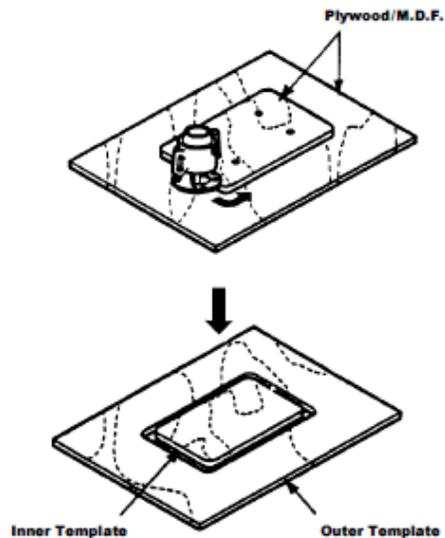


Figure F-2

5. Clamp the inner template to the Corian® solid surface sheet or use hot-melt glue.
6. Rout (counterclockwise) a repair piece to size with a  $\frac{3}{8}$ " (10 mm) bit and a 1" (25 mm) template guide.

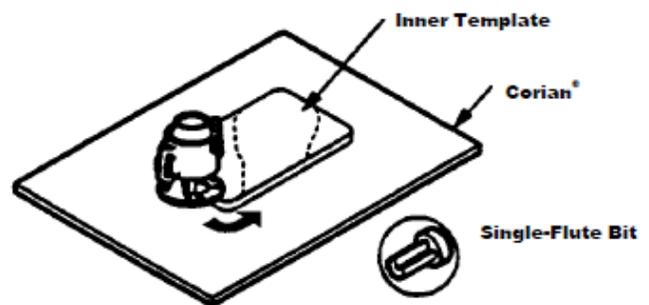


Figure F-3

7. Rout the bevel into the repair piece with a reverse-angle bit<sup>2</sup>. Set center of roller bearing to center of template edge.

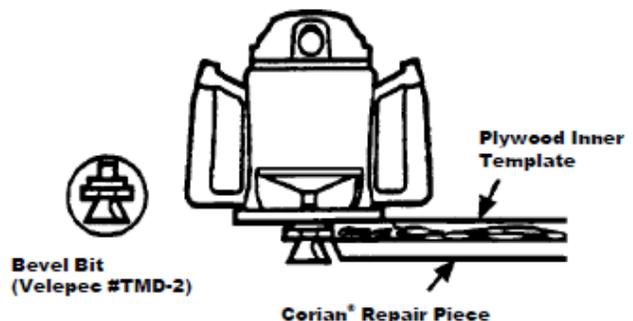


Figure F-4

<sup>2</sup>bit #TMD-2 is available from: Fred M. Velepec Co., Inc. 71-72 70th Street Glendale, NY 11385 Phone: 718-821-6636 Fax: 718-821-5874

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8. Rout the DuPont™ Corian® countertop using the outer template, <sup>3</sup>/<sub>8</sub>" (10 mm) bit and a 1" (25 mm) template guide.

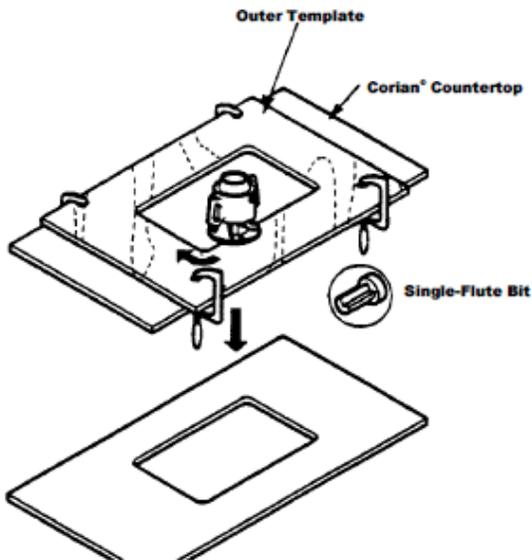


Figure F-5

9. Rout a bevel in the DuPont™ Corian® countertop using the matching bevel bit<sup>3</sup>. Start with roller bearing at upper edge of template.

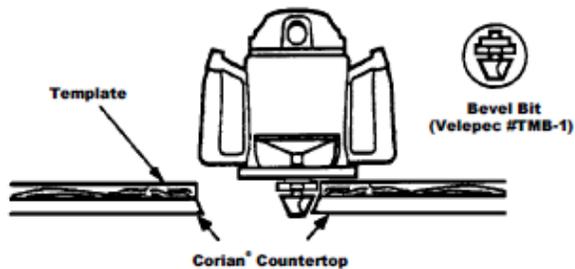


Figure F-6

10. Trial fit and adjust.

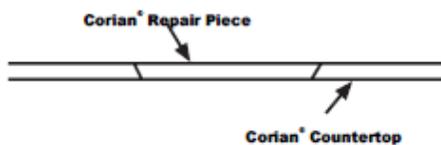


Figure F-7

11. Tape the underside of the countertop with plastic release tape.

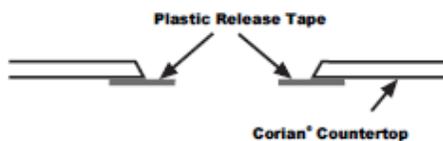


Figure F-8

12. Clean all edges with clear, denatured alcohol and a clean, white cloth.

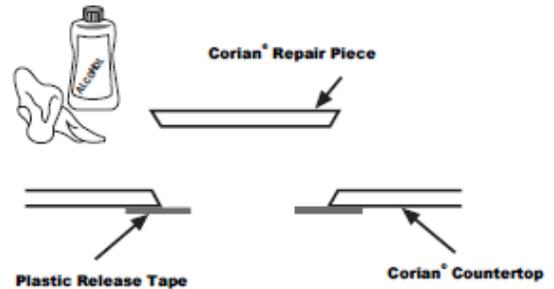


Figure F-9

13. Apply DuPont™ Joint Adhesive to all edges of cutout and repair piece. Install the repair piece.

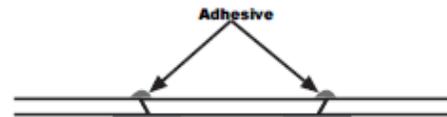


Figure F-10

14. Allow the adhesive to cure; then use a router on skis or a direct drive random orbital sander to remove excess plug and adhesive. A router on skis is preferable as sanding will tend to remove material from outside the repair area. Do not overheat the repair area through excessive sanding. Complete the repair as with standard finishing and polishing techniques.

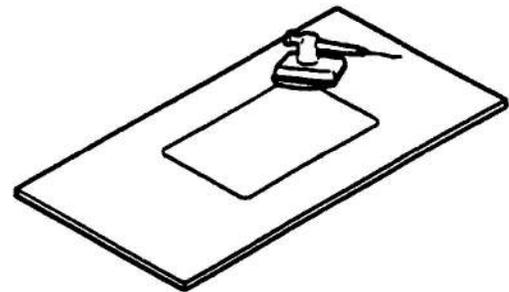


Figure F-11

## G. BOWL REPLACEMENT

### Removing “soft” seamed undermount bowls:

#### Steps to Completion

1. Remove plumbing hardware. In many cases only the drain hardware needs to be removed, but remove faucet hardware if necessary.
2. Loosen, but do not remove, the undermount hardware. Cut the silicone bead between the bowl and the sheet using a stiff putty knife, and remove the undermount hardware. Remove the bowl.

<sup>3</sup>bit #TMB-1 is available from: Fred M. Velepec Co., Inc. 71-72 70th Street Glendale, NY 11385 Phone: 718-821-6636 Fax: 718-821-5874

## Removing “hard” seamed submounted bowls:

### Steps to Completion

1. Remove plumbing hardware. The drain hardware will need to be removed. In most cases the faucet hardware will also have to be removed to create clearance for the router.
2. Hang drop cloths to control dust.
3. Support the bowl to prevent movement.
4. Make a template by clamping  $\frac{1}{2}$ " (13 mm) plywood over the damaged bowl and routing to the shape of the bowl using a flush-cutting bit. Leave the template on the bowl.
5. Use a minimum 3-hp router and Velepec bit #CPC 187-8<sup>4</sup>. Adjust the bit to cut  $\frac{1}{32}$ " (0.8 mm) below the bottom surface of the sheet. Slowly cut through the bowl, moving the router around the bowl in a clockwise direction. Avoid tipping or rocking the router to ensure a clean, smooth cut. If the bowl is not completely loose, use a small hammer and stiff putty knife to cut away any remaining material. Remove the bowl.
6. Raise the bit  $\frac{1}{32}$ " (0.8 mm). Re-route counterclockwise, flush with the bottom of the sheet.

**Some installations require a router that can get close to the back wall. Several manufacturers sell routers specifically for this purpose.**

## Installing New Bowls:

### Steps to Completion

1. Preparations must be made to install a submount bowl. This may entail a partial replacement of the countertop.
2. When replacing a submount bowl, trim the flange to a  $\frac{7}{8}$ " (22 mm) width before installing the new bowl. Use aluminum tape around the top inside edge of the bowl to prevent joint adhesive from running down onto the inner surface of the bowl. This will save finishing time. The clamping technique shown in *DuPont™ Corian® Fabrication/Installation Fundamentals – Sinks and Lavatories* (K-25296), Figure B-4, is the best for submount sink replacement in the field.

## H. REPAIRS TO CORIAN® SHEET WITH VEINED PATTERN INSTALLATIONS

In many cases, Corian® sheet with veined pattern installations can be repaired successfully and in an inconspicuous manner by following the technique below.

The repair technique requires the construction of two wood templates from  $\frac{1}{2}$ " (13 mm) MDF or similar material or commercially purchased:

- plug template to make the Corian® insert plug
- cutout templates to make the cutout in the damaged Corian® countertop

The templates should be pear-shaped as shown in Figure H-1. This shape gives the best results to match the random veining in veined sheet materials. The template does not have to match the shape below exactly, but the irregular curvature will help minimize the visibility of the repair.

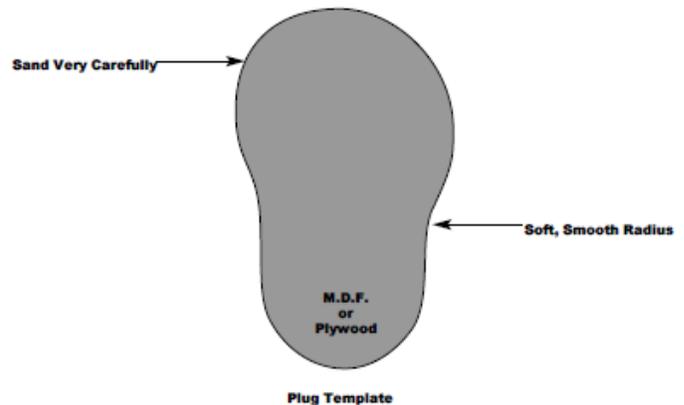


Figure H-1

Create an MDF Plug Template. It is very important to ensure the plug template is accurate and totally smooth, as any discrepancies could be copied from the plug template to the cutout template.

## Make an MDF Cutout Template from the Plug Template

### Steps to completion:

1. Using a plunge router (min. 3-hp) fitted with a 1" (25 mm) template guide and a double-fluted  $\frac{3}{8}$ " (10 mm) tungsten carbide bit, carefully follow the plug template as shown in Figure H-2.

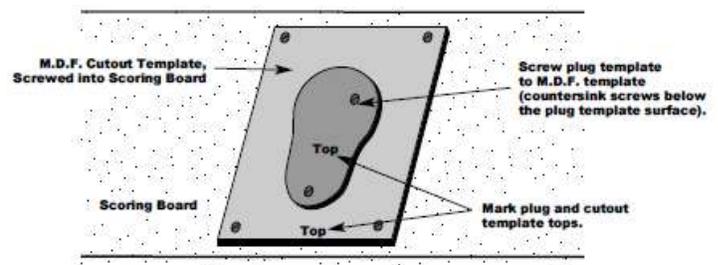


Figure H-2

2. Once everything is set up as shown, set the depth of the router bit so it passes through the full thickness of the template and into the scoring board, about  $\frac{1}{32}$ " (0.8 mm) deeper than the template thickness. The router base plate must be sitting on top of the plug template for this measurement.

<sup>4</sup>bit #CPC 187-8 is available from: Fred M. Velepec Co., Inc. 71-72 70th Street Glendale, NY 11385 Phone: 718-821-6636 Fax: 718-821-5874

3. Start the router and plunge through the thickness of the cutout template and slowly move it in a clockwise direction. It may be useful to use a silicone spray lubricant to reduce surface friction during this operation. Once the cut is completed, unscrew the plug and template for further use.

## Make the veined DuPont™ Corian® sheet plug

### Steps to Completion:

1. Take a piece of matching veined Corian® sheet the same thickness as the repair site. Place this facedown onto an MDF scoring board and fix it securely with hot-melt glue.
2. Use the same router with the same  $\frac{3}{8}$ " (10 mm) cutter, but change the template guide to a 30 mm dimension guide. Take the MDF plug template you have made and secure it with hot-melt glue, topside facing up, to the veined piece of Corian® solid surface.
3. With the base plate of the router firmly on the plug, set the depth of the cutter so it goes through the full thickness of the Corian® solid surface and about  $\frac{1}{32}$ " (0.8 mm) into the scoring board. Start the router and plunge carefully through the Corian® sheet. Cut the plug by moving the router in a clockwise direction.
4. Replace the  $\frac{3}{8}$ " (10 mm) straight cutter with the standard 15° angle cutter and set the depth of this cut about three-quarters of the thickness of the Corian® sheet. As shown in Figure H-3, rout the angle into the Corian® plug. Reset the cutter depth so it passes just through the sheet thickness and about  $\frac{3}{16}$ " (5 mm) into the scoring board. This trimming cut will ensure a good-quality edge.

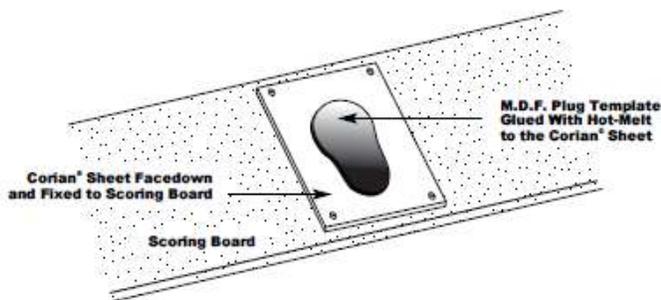


Figure H-3

## Cut the countertop repair site

### Steps to completion:

1. Securely clamp the cutout template created earlier over the area to be repaired.

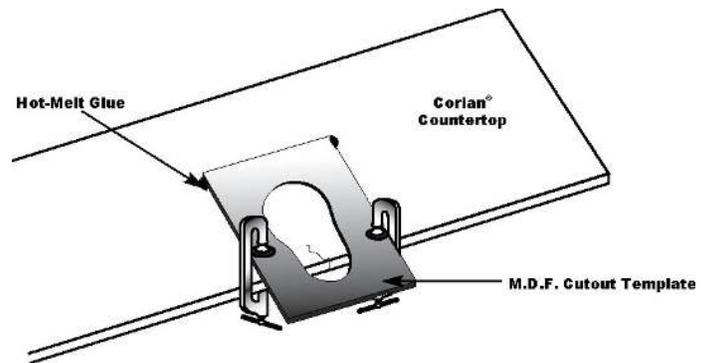


Figure H-4

2. With the plunge router fitted with the 30 mm template guide and the  $\frac{3}{8}$ " (10 mm) straight cutter used earlier, place the router base plate onto the template and set the depth of the cutter so it is the exact thickness of the sheet, unless the buildup edge itself is damaged. Support the piece to be removed and carefully cut out the damaged area.
3. Change the  $\frac{3}{8}$ " (10 mm) cutter for the 15° angle cutter and with the base plate on the template, set the depth of the cutter so it routs the angle onto the edge but only three-quarters of the way through the sheet thickness. This will ensure the plug will be large enough to fit the cutout area.
4. Take the Corian® plug and try it in the cutout. Assess the added depth of the cut to take the plug just above the countertop surface, then re-rout the cutout. It may require two or three passes to obtain the correct depth.
5. Once the depth is correct, dam the underside of the cutout, clean all areas with clear denatured alcohol and glue the plug into the repair site using color-coordinated DuPont™ Joint Adhesive. When the adhesive has fully set, sand flush the insert piece and finish the repair site to match the existing countertop.

## REPAIR

### I. REFERENCED DOCUMENTS

*DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Finishing and Polishing (K-25298)*

*DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Sinks and Lavatories (K-25296)*

*DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Seaming (K-25292)*

*DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Approved Cleaning Solvents (K-25701)*

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