

# TRANSPORTATION AND INSTALLATION

## INTRODUCTION

This bulletin addresses the transportation and on-site fabrication and installation of DuPont™ Corian® brand solid surface products.

## OVERVIEW

Proper fabrication is only the first step in providing a high quality installation of DuPont™ Corian® solid surface products. The fabricated parts need to be properly packaged for transport and delivered without incurring damage. Installation is also a key component of a successful installation. This bulletin is for both fabricators and installers.

It provides the basic information needed for on-site fabrication and installation. For more detailed information on any topic please read the relevant *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals* bulletins.

## A. PACKING FOR TRANSPORT

Proper packing is the first step to successfully transporting fabricated DuPont™ Corian® solid surfaces articles.

Steps to completion:

1. Corian® solid surface articles that have been fabricated but do not yet have their full support structure are can be heavy and susceptible to damage, so consideration must be given to portability and site access when planning packing for transport.
2. Wrap the parts in bubble sheet, corrugated cardboard or furniture blankets.
3. Brace any cutouts to avoid flexing of the seams and corners.
4. Cushion the floor of your transportation vehicle.

### HELPFUL HINTS:

*Parts are best transported on edge.*

*Do not transport any Corian® products with parts touching face to face. Use protection (bubble sheet, cardboard, etc.) between each part being transported.*

*Do not allow any part to slide around during transportation.*

*Do not allow Corian® parts to become overheated in the sun on hot days. Bring all pieces indoors as soon as possible.*

*Special transport jigs for transporting parts with installed sinks are commonly used. These act like a cage around the underside of the sink, as well as bracing the entire top.*

## B. RACKING FOR TRANSPORT

Proper racking in the transport vehicle will help ensure that the products are secure during transport.

Steps to completion:

1. Many designs have been made for transportation, but typically carpet-covered vertical piping makes good racking.
2. Some prefer to have a removable “A” frame that they can hoist off the delivery vehicle. This looks like the method used for transporting glass.
3. The racks also should have securing straps.
4. Take two people in the delivery vehicle to get the product onto site safely and in good condition.

### HELPFUL HINTS:

*Do not transport Corian® parts horizontally on roof racks. This causes stress, and because of the weight it may bounce and cause breakage.*

## C. INSTALLATION

On-site installation is equally, if not more, crucial to attain satisfactory results in terms of the final performance of a Corian® solid surface installation. It is also important to understand and follow all rules of the site.

### C.1. Basic Procedures and cross-check

1. Upon arrival at the site, recheck site access and power availability. This should have been done during the templating visit.
2. Ensure that support structures, cabinets and/or casework are complete and satisfactorily installed. If not, contact customer and installer. If necessary, install perimeter support.
3. When satisfied with Steps 1 and 2, unload all parts and check that all materials and tools required are present.
4. If necessary, seal off the installation area to prevent the spread of dust to other areas of the house or job site. Also, it may be necessary to shut down the HVAC to prevent the spread of dust.
5. Unwrap all parts and check for transportation damage.
6. Lay the complete countertop on the support structures, cabinets and/or casework and trial-fit all parts; double-checking that all parts are fit correctly.

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7. Double-check that expansion gaps of  $\frac{1}{16}$ " (1.5 mm) are left against all walls.
8. Make sure that all cutouts are sized properly. Trial fit the inserted equipment to make sure.
9. Check surrounding conditions for anything that could contaminate your work (e.g., dust, other trades).
10. Consider the sequence of on-site seams that will allow for the best clamping procedure.
11. Before applying DuPont™ Joint Adhesive, make sure that the seams are thoroughly cleaned with denatured alcohol<sup>1</sup>.

**Be careful with the denatured alcohol. It can ruin some wood finishes.**

12. One at a time, complete the on-site seams, making sure the parts fit perfectly and create an inconspicuous seam—this may be how the entire job will be judged.
13. When seams are completely set, remove excess glue and sand seams to the desired finish. If possible, use a sander equipped with vacuum dust collection.
14. Upon completion, protect finished surfaces from other trades by sticking protective sheeting over the surfaces and/or a warning to avoid setting items on finished product.

### HELPFUL HINTS:

*Make sure that all work is planned in advance and that all the tools required are brought to the job site. Tool bins on casters make this easier and faster.*

*Never lift any DuPont™ Corian® piece that cannot be handled comfortably; when in doubt, seek assistance.*

### C.2. Detailed steps of completion

#### 1. Safety

- When manually handling Corian® products, always use enough people to lift heavy sections using a safe method of lifting (see *DuPont™ Corian® Fabrication/Installation Fundamentals – Safe Handling and Storage* (K-25285)).
- After unpacking the Corian® products, care must be taken to ensure that all nails and screws are removed from any wooden crating, and any packaging material is disposed of safely before proceeding with the installation.
- Approved safety shoes and eye protection should be worn and clothing should be suitable for working with machinery (i.e., no loose-fitting cuffs or shirts that are not tucked in, etc.). Wear gloves when handling sheet or adhesives.
- Be sure the working area is well ventilated when using adhesives and denatured alcohol.

**Caution: Denatured alcohol is flammable. Keep away from sparks and open flames.**

- Check that all electrical tools are safe to use, and only use sharp router bits and hand tools.

#### 2. Inspection of products fabricated from Corian® solid surface

- Check that all the pieces to be installed are as per site drawing, the right color, thickness and edge detail.
- Inspect all edges for imperfections and observe for excessive warp or any other obvious defects.
- If the part was fabricated by another party, contact the fabricator if you find any major defect before you proceed.

#### 3. Tools and Materials

Below is a list of items that may be needed in various installations of Corian® products:

- safety goggles, leather gloves, and steel-toed safety shoes
- sawhorses and support rails
- straightedges
- various clamps
- extension cord
- various routers
- router bits, sharp and correct size
- random orbital sander
- shop vacuum system
- electric plane (if desired)
- electric jigsaw (only for other materials NOT to be used on Corian® products)
- microfinishing films: 100, 60, 30, 15 $\mu$  (micron) or P-grade sandpapers: P150, P240, P320, P600
- 3M™ Scotch-Brite™ Clean Sanding Discs 7447 (maroon) and 7448 (gray)
- caulk gun
- silicone sealant for gluing and caulking
- hot-melt glue with glue sticks having 45- to 60-second open life
- DuPont™ Joint Adhesive
- DuPont™ Surfaces Sealant
- carpenter tools (i.e., block plane, chisels, hammer, screwdrivers, knife, tape measure)
- polyethylene sheeting
- drop cloths
- clean cotton cloths
- denatured alcohol (or acetone in areas with VOC restrictions)
- aluminum heat reflective tape (D11920096 from an authorized distributor of DuPont™ Corian® products)
- laminate shims
- plastic release tape
- masking tape

<sup>1</sup>Denatured alcohol is the preferred solvent for cleaning DuPont™ Corian® solid surface products. Acetone is approved for cleaning DuPont™ Corian® solid surface 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. General Care of DuPont™ Corian® Solid Surface

- Do not flex sheets when lifting or carrying Corian® sheet.
- If Corian® products are exposed to extreme temperatures, then they must be allowed to reach room temperature, approximately 65–70°F (18–20°C), before commencing work with the materials.

### 5. Preparing Job Site for Installation

- Survey site and determine best working options.
- Any alteration work may best be done away from the actual installation site.
- The cutting and sanding of Corian® products creates dust that should be contained as much as feasible.
- All sanders should allow for extraction into a vacuum system.
- Use polyethylene sheeting and drop cloths to protect all areas where appropriate.
- Use a fan to exhaust dust and fumes to outside. Turn off HVAC system or cover vents and cover any unnecessary light fixtures.

### 6. Preparing Structural Support/Base Units/Cabinets

- When replacing old tops, care must be taken in removing them. All screws, nails and any sharp edges should be removed from the tops and be disposed of in a safe manner.
- The existing support structure should be checked for strength and stability. If any remedial work is required to bring them up to standard, it should be carried out at this stage.
- All electrical, gas and water appliances should be disconnected/connected by licensed and qualified persons when applicable.
- When installing new structural support/base units/cabinets, etc., prepare as follows:
  - They should be leveled and plumbed, fixed to each other and then secured to the back wall. The tops of all the cabinets must be within 1/8" (3 mm) of a flat surface over a 10' (3 m) run and must be flush with each other.
  - Corner base units may require wood strips fastened against the back wall to support the Corian® top. Some corner cabinets with revolving shelves require additional support in front. See *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Structural Support* (K-25291).
  - All cutouts must have 1" x 4" (25 mm x 102 mm) front-to-back support no closer than 1" (25 mm) and no further than 3" (76 mm) from each side of the cutout. Be sure to use the High Strength Corner Block method for all cook top and heat generating appliance cutouts. More detail on High Strength cutouts can be found in *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Cutting and Cutouts* (K-25289).

- Check the position for any dishwashers. Be sure there is support for the top front and back across the opening. Supports must pass the Span Test *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Structural Support* (K-25291).
- Notch out support strips to allow for seam reinforcement strip as necessary.
- With base units that have solid tops (dust covers), the central portion should be removed, leaving a perimeter of approximately 2"–3" (51–76 mm). This will allow heat to dissipate but not weaken the base unit construction. This is strongly recommended. It is acceptable if the client will not agree to the removal.

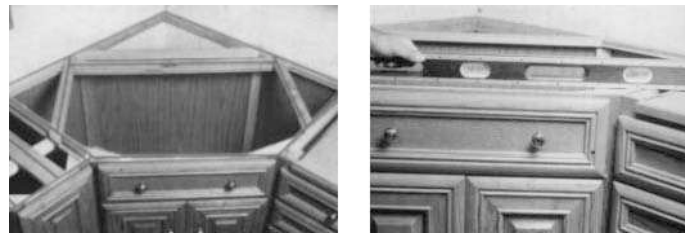


Figure C-1

- If Corian® sheet overhangs any structure without support see *DuPont™ Corian® Fabrication/Installation Fundamentals – Structural Support* (K-25291) for overhang allowances.
- Determine on the support structure/base/cabinet units where the field seams are to be made in the countertops. Protect the inside of cabinets from joint adhesive that may drip inside during seaming.
- If countertop perimeter support is not built into the countertop, it must be installed now. See *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Structural Support* (K-25291) for details. If the perimeter support is built into the countertop, shim between support strips and cabinets as needed. Then fasten strips to cabinets.

**If the support structure does not provide proper support for the top, then support strips must provide all the necessary support. If there is any doubt, perform the Span Test as outlined in the *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Structural Support* (K-25291).**

### 7. Preparing horizontal tops and seams

The Corian® solid surface top can now be trial-fitted onto the prepared structural support. All parts may not fit, as some fabricators purposely oversize the tops for on-site adjustment. Space should always be allowed, as Corian® products need room to expand. Each top requires at least 1/16" (1.5 mm) at each wall, i.e. left, right and back wall. However, do not leave gaps larger than necessary. Larger gaps are unsightly and very difficult to fill with silicone or hide with backsplashes.

### 8. Scribing (tops without covered backsplashes)

Before preparing seams in the top, check to see if any scribing to the back or side walls is required. To scribe the top, follow the instructions below.

Steps to completion:

1. Mark the back edge of the Corian® solid surface top to the wall using the pattern template made on the job.
2. To remove excess material, an electric plane, a router with a straight cutter or a belt sander can be used, whichever is preferable.
3. Always sand off any chatter marks, nicks and chips from the back edge nearest the wall and ease any sharp edges. Round over upper and lower edges of top behind cutouts to a  $\frac{1}{16}$ " (1.5 mm) radius.
4. Once the scribe is complete, place laminate shims between the wall and the reverse side of the Corian® top. Make the shims long enough so that they can be removed easily. This will give a gap of  $\frac{1}{16}$ " (1.5 mm), which may be caulked with silicone sealant later if needed.

### 9. Preparing Seams

For seams with front edges not exceeding 2" (51 mm), there are two most commonly used methods as follows.

#### A. Single-Edge Preparation

Steps to completion:

1. Use a router, minimum 2-hp, fitted with a sharp, double-fluted tungsten carbide straight cutter.
2. Clamp a true straightedge to both sides of the countertop to be adjusted. Measure the base plate of the router to the leading edge of the router bit and adjust to suit the cut accordingly.
3. Working from left to right, firmly press the base plate of the router against the straightedge and proceed to remove the excess material.
4. This method of preparing the edge will give a straight, square and parallel cut. A second pass should be made to reduce chatter marks.

#### B. Mirror Cut Method

This term is used when both edges of the seam are cut simultaneously. The technique is similar to that described in method A. *Single Edge Preparation*, the only change is that both sides of the pieces to be seamed are cut together.

Steps to completion:

1. Bring both parts of the countertop parallel to each other, allowing a gap  $\frac{1}{8}$ " (3 mm) smaller than the router bit to be used. Rout the seam by moving from left to right; each edge will be routed simultaneously. This should give a perfect seam every time. Before routing, make sure the sheets are flat and level to ensure best fit.
2. When preparing seams with high coved backsplashes or front edges exceeding 2" (51 mm), the routing may need to be done from the back side of the countertop.

### 10. Full-height backsplashes

If a full-height backsplash will be installed behind the countertop (i.e. the backsplash goes below the level of the deck and is between the deck and the wall), this should be done prior to seaming. A full-height backsplash is a small example of wall cladding and the same installation instructions apply.

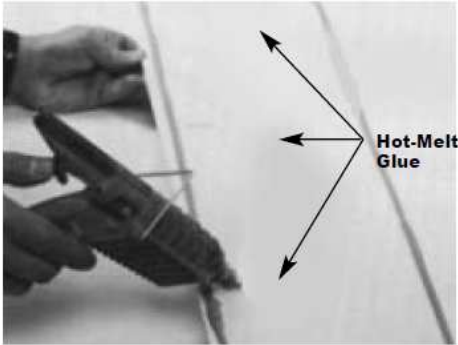
- Before applying the Corian® backsplash, the wall to be clad should be smooth and free from dirt and grime. Use denatured alcohol and a clean cotton cloth for this purpose.
- DuPont™ Corian® backsplashes can be applied directly against existing wall tiles as long as they are sound and well secured.
- All cutouts for electrical sockets, etc., MUST be made with a router.
- All edges should be sanded with 100-micron (P150) sandpaper to finish, including the back edge behind the cutouts as previously described.

**Do not fabricate a full-height coved backsplash ( $\frac{1}{4}$ " [6 mm] or  $\frac{1}{2}$ " [12 mm]). The chance of fracture at the cove due to building settling is too great.**

Steps to completion:

1. Cut all backsplash pieces and trial-fit. An expansion space of  $\frac{1}{16}$ " (1.5 mm) minimum must be allowed. Expansion space must be allowed at return walls and at upper and lower cabinets.
2. Clean the reverse side of the Corian® backsplash with denatured alcohol and a clean cloth.
3. Apply silicone to the reverse side of the Corian® sheet in the following manner.
  - Apply a continuous bead of adhesive around the sheet of Corian® approximately 1" (25 mm) from the outside edge.
  - Then run a bead in an "S" pattern, within the inside area. Any cutouts (e.g., electrical sockets) require a continuous bead of adhesive 1" (25 mm) in from the cutout.

- To eliminate the need for bracing the DuPont™ Corian® backsplash, hot-melt glue can be applied to the reverse side of the sheet shortly before adhering it to the wall.
- Press the Corian® backsplash firmly against the wall. Use a straightedge to check for any deviation.



Run a continuous bead of adhesive around perimeter of sheets and cutouts.

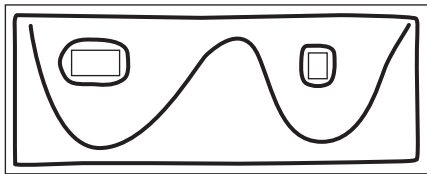


Figure C-2

### 11. Gluing Seams Using DuPont™ Joint Adhesive

Once the countertop is scribed and the wall cladding is installed behind the countertop, check that all seams are parallel, with no gaps showing when brought together. This is a brief overview, see *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Seaming* (K-25292) for complete details on seaming.

Decide upon the method to be used to bring the seam together. There are several ways to do this; for example:

- OEM vacuum clamping systems
- Wood blocks applied to either side of the seam using hot-melt glue and clamps to bring them together

Steps to completion:

- To fabricate a reinforced seam, move the countertop apart, exposing the full width of the Corian® reinforcement strip.
- Clean the seam and the reinforcement strip with a clean, white cloth and denatured alcohol.
- Apply and completely spread DuPont™ Joint Adhesive along the full length of the reinforcement strip.
- Push the two parts of the countertops together, leaving a 1/8" (3 mm) gap.
- Dam the front edge of the countertop with plastic release tape.

- Use DuPont™ Joint Adhesive to fill the seam area, making sure that sufficient adhesive is used so that when the sheets are brought together, a continuous bead of joint adhesive flows out of the seamed area.
- Apply pressure to the seam with the clamping method you've chosen, checking for alignment and surface flatness.
- Allow the joint adhesive to cure for about 45 minutes. To check if the adhesive has cured, press against the seam with a fingernail. If any indentation is apparent, then it should be left for an additional period of time.

### HELPFUL HINTS:

*For higher productivity, turn pieces face down on a flat surface covered with a release agent to make seam. With the top upside-down, the deck seam, front edges, the sink or lavatory, any reinforcement blocks and the seam reinforcement can be glued on at the same time.*

### 12. Finishing Seams

Steps to completion:

- Remove clamping device, or any other materials used to tighten the seam.
- Spray blocks with denatured alcohol to loosen hot-melt glue. If blocks were used, remove the hot-melt glue deposits with a wide, sharp chisel and clean off the surface.
- The fastest method to remove the excess joint adhesive is with a router on skis. Do NOT use a belt sander. To minimize dust on the job use a sharp, low-angle block plane. Remove the excess joint adhesive as close to the back wall as the block plane will allow. The remainder of the excess should be removed with a wide, sharp chisel, making sure not to damage the surface of the Corian® sheet.
- Clean off debris.
- Use a random orbital sander equipped with vacuum dust collection with a 100-micron (P150) sanding disk to take down the excess joint adhesive flush to the surface and remove fabrication scratches. Minimize dust generation.
- Clean the surface with a damp, clean cloth to remove any sanding residue. Change to 60-micron (P240) sanding disk and sand the seam area once again.
- Clean off any sanding debris with a damp, clean cloth. Avoid using compressed air as it scatters dust. Complete the finishing with 3M™ Scotch-Brite™ Clean Sanding Disc 7447 (maroon) to give a matte finish. Other gloss levels can be reached by following steps listed in the *DuPont™ Corian® Solid Surface Fabrication/Installation Fundamentals – Finishing and Polishing* (K-25298).
- If seam is out of alignment, it will take more time to sand it flat and level.

### HELPFUL HINT:

*Use a sanding system that features a vacuum dust collector to control dust.*

*To minimize finishing time, use the finest abrasive possible to start finishing.*

*Skip the rougher abrasives if they are not needed.*

### 13. Fixing Corian® horizontal tops to base/cabinet units

There are several ways to secure countertop to cabinets. The two most popular ways are silicone adhesive or screws to the wood support only. Do not screw directly into DuPont™ Corian® products. If the Corian® top is set directly onto perimeter support, use small dabs of 100% silicone sealant/adhesive, no closer than 12" (305 mm). If wood support is attached to underside of countertop with silicone, screws can be used as follows:

Steps to completion:

1. Drill holes in the back and front cabinet rail, using a high speed drill about 1/8" (3 mm) larger than the screw to be used to fix the top down to the base/cabinet units.
2. Select screws that will not pass through the supports, and screw into the support rails, taking care not to over tighten the screw.

**Screws should never be inserted directly into Corian® solid surface.**

### 14. Backsplash installation

If a square or full-height backsplash will be installed above the deck (i.e. the deck goes within 1/16" [1.5 mm] of the wall), now is the time to fit it. For a full-height backsplash, follow the previous instructions in this bulletin. (Section 10. Full-height backsplashes)

For square backsplashes:

Steps to completion:

1. Check and scribe for proper fit, allow for expansion.
2. Clean both the backsplash and countertop with denatured alcohol and a clean cloth.
3. Place a continuous bead of color-coordinated sealant the full length of the bottom edge of the backsplash.

4. Turn the backsplash over and press against the countertop and the back wall using a rolling action toward the wall. Any sealant which is smeared onto the backsplash should be removed with a sharp, wide chisel, followed by a clean, white cloth dampened with denatured alcohol.
5. Caulk inside corner between backsplash and countertop using "push" method if desired.

Do not adhere full-height backsplashes or wall cladding to countertops using DuPont™ Joint Adhesive. DuPont™ Surfaces Sealant should be used as it allows for movement due to building structure settling and possible future replacement of the countertop.

### 15. Faucet Holes

Faucet holes can now be made if previously not done in the fabrication shop. This can be achieved by using a router with a sharp, straight, carbide-tipped router bit and a template, or by using a hole cutter.

It is essential that the top and bottom edges be sanded or routed to a 1/16" (1.5 mm) radius to avoid creating stress risers.

### 16. Inspection and Cleanup

- If not done previously, sand entire top with a random orbital sander with a dust vacuum system using a 60-micron sanding disk.
- Wash the top to remove any sanding residue. Then buff the entire surface with the appropriate 3M™ Scotch-Brite™ Clean Sanding Disc to provide a uniform surface appearance.
- If there is excess sheet, leave some for future repairs with the customer if feasible. If the material installed is directional mark the sheet orientation on the bottom of the installed sheet and the spare material.
- Clean up the site thoroughly, removing all excess materials.

## TRANSPORTATION AND INSTALLATION

### D. REFERENCED DOCUMENTS

*DuPont™ Corian® Solid Surface Fabrication/Installation  
Fundamentals – Safe Handling and Storage (K-25285)*

*DuPont™ Corian® Solid Surface Fabrication/Installation  
Fundamentals – Structural Support (K-25291)*

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

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

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

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