

CORIAN® ENDURA™ DESIGN

Introduction

This fabrication bulletin addresses the basic design principles for horizontal countertops manufactured with Corian® Endura™ high performance porcelain.

Overview

Cutouts, edge design and support are all essential elements for a proper design. This bulletin focuses on design parameters for the top and installation. Support is covered in *Corian® Endura™ Support* (K-30201).

A. Layout

A.1. ACCOUNTING FOR PATTERN

With the exception of solid colors and aesthetics with a book-matched option, there will be a break in the pattern at any seams. Even for book match aesthetics there may be a slight shift in the pattern at the seam.

In addition to prominent features such as veins, the background may have variation ranging from subtle to strong that will have a change in appearance across seams. This variation is similar to that seen in natural stone or quartz with large scale aesthetics. Use of photo layout software to visualize and obtain customer approval of the pattern that will be fabricated is strongly recommended.

A.2. L- AND U-SHAPED DESIGNS

L- and U-shaped designs bring consideration of managing the pattern as well as transportation and support considerations. The pattern will also influence how L- and U- shaped tops will be designed, whether an offset butt seam, miter, or euro/stepped miter is required for the best appearance. Again, photo layout software will be useful in design and obtaining customer acceptance of the layout.

Whether the edge is mitered or not will also impact design. A mitered edge will prevent cutting the top as a single piece. The sharp inside corner will require a seam.

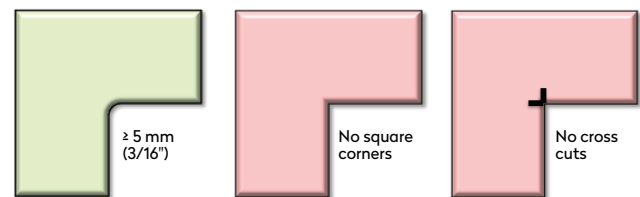
L- and U-shaped designs require additional care during transportation and installation. Consider cutting and transporting each section individually and assembling on site.

If cutting from a single slab, increase the radius of the inside corner to 20 mm ($3/4"$) to increase durability. This should only be done for designs with shorter legs. The requirement for an inside corner radius will preclude the use of mitered edges in this case.

B. Inside Corners and Cutouts

All inside corners must have a minimum radius of 5 mm ($3/16"$). A greater radius imparts greater structural strength to the material, while any non-radiused angle will create a stress point on the top. Do not use square corners or cross cuts.

Figure B-1: Inside Corners and Cutouts



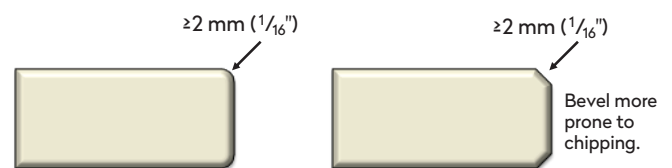
A larger radius reduces the stress concentration at the corners. The largest radius that a sink or appliance can accommodate should be used.

When creating an L-shaped monolithic top from a single slab a larger radius of 20 mm ($3/4"$) should be used.

C. Edges and Outside Corners

Endura™/Porcelain/Ceramic products are susceptible to chipping at sharp edges. A bevel or radius greatly improves the durability. Edges and outside corners must be rounded to a minimum 2 mm ($1/16"$) radius or chamfer for all edges. The radius method is preferred. A 3 mm ($1/8"$) minimum radius or bevel should be used for edges exposed when installed.

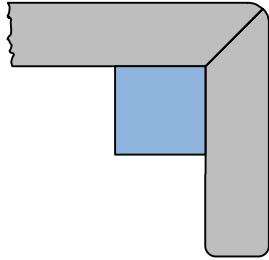
Figure C-1: Minimum Radius or Chamfer for Impact Resistance.



This radius or bevel also applies to mitered edges. There will be a gap in pattern at the radius or bevel where the color-coordinated core will be visible.

When reinforcing the mitered edge, the reinforcement should have a similar coefficient of thermal expansion as the porcelain slab. This includes foam tile substrates, granite or strips of porcelain. Wood, quartz composite, and solid surface should not be used as a reinforcement or substrate as the polymer content of these materials creates a mismatch in thermal expansion. The need for reinforcement varies with slab thickness and height of the mitered edge. Consider reinforcement when the height of the mitered edge exceeds double the slab thickness.

Figure C-2: Mitered Edge with Support



D. Seam Placement

Locate seams over an existing structural support member (i.e. cabinet wall) so it is vertically supported. If there is not an existing vertical support member one should be installed (See *Corian® Endura™ Support* for guidelines (K-EN002)). Do not place a seam through cutouts unless the design is such that there would be narrow strips in the front and back connecting two large sections. In this case there should be seams on both sides, with separate strips front and back assembled on site.

Put a flexible seam between two countertop sections that are independently supported (e.g. countertop supported by cabinets extending into windowsill supported by wall structure).

For farm sinks, the countertop strip behind the sink should be a separate section seamed to the countertop sections on either side.

E. Seam Design

It is important for a fabricator to understand and communicate to customers their seam design and appearance. There are two aspects to choosing a seam design. One is removing any fine chipping created during cutting. The second is the risk of chipping from the time of cutting to installation. A straight cut edge is susceptible to chipping from minor impact. If a field seam is required, the fabricator will have to be able to protect the edge until final installation.

Bevels (2 mm, $3/32$ ") remove microchips from cutting and provide a more durable edge for handling. This will create a slightly wider seam. It will also help avoid "catching" on the seam if not perfectly aligned.

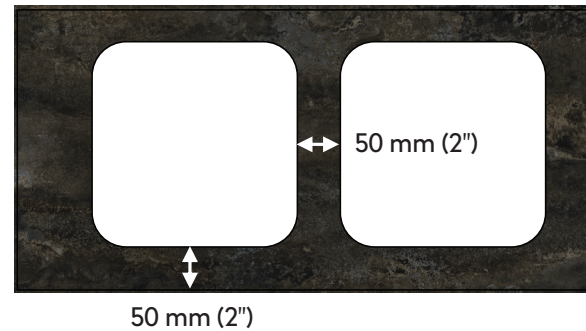
Straight edges may require polishing to remove micro-chips. The straight edge is more susceptible to damage during transport and installation. The seam appearance will be tighter.

It is important to have physical samples to demonstrate to and gain acceptance from the customer.

F. Minimum Distance Between Edge and Cutout

The minimum recommended distance between a cutout and the outer edge of the workpiece is 50 mm (2"). This should be increased to 75 mm (3") or more at the rear of a cutout for a gas cooking appliance to provide more space to the backsplash. The required distance will be indicated by the appliance manufacturer as it is specific to the burner output.

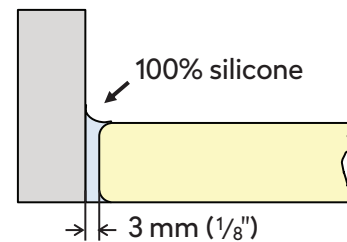
Figure F-1: Minimum Distance from Cutout to Edge



G. Minimum Distance Between Corian® Endura™ and Wall

The recommended minimum distance between the Corian® Endura™ top and the wall is 3 mm ($1/8$ ").

Figure G-1: Minimum Distance to Wall



H. Minimum Distance Between Corian® Endura™ and Sinks

The recommended minimum distance between the Corian® Endura™ top and a sink is 2 mm ($3/32$ "). 100% silicone adhesive/sealant is recommended to seal between the sink and the countertop.

When you apply silicone to seal the sink it is necessary to temporarily protect the Corian® Endura™ surface using an adhesive tape.

Figure H-1: Minimum Gaps at Sinks – Top Mount

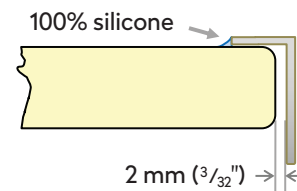
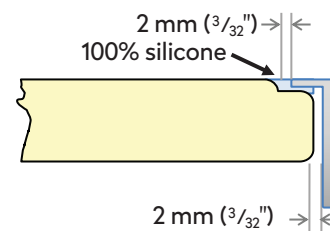


Figure H-2: Minimum Gaps at Sinks – Flush Mount



I. Minimum Distance Between Corian® Endura™ and Kitchen Appliances

The minimum distance between the cutout and the edge of the slab is 50 mm (2"). For gas appliances this should be 75 mm (3") or more. The appliance manufacturer will provide guidance based on heat output. The minimum recommended distance between the Corian® Endura™ top and a cooking appliance is 2 mm ($\frac{3}{32}$ "). Consult the cooktop manufacturer's technical manual to establish the minimum gap between the cooking appliance and the Corian® Endura™.

Figure I-1: Minimum Gap to Appliance – Surface Mount

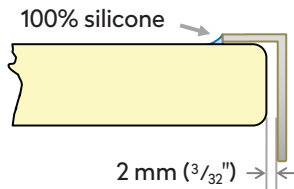
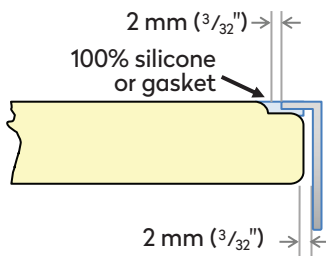


Figure I-2: Minimum Gap to Appliance – Flush Mount



100% silicone or gaskets supplied by the appliance manufacturer between the Corian® Endura™ top and the components mounted on the top. When you apply silicone to seal the kitchen appliance it is necessary to temporarily protect the Corian® Endura™ surface using an adhesive tape.

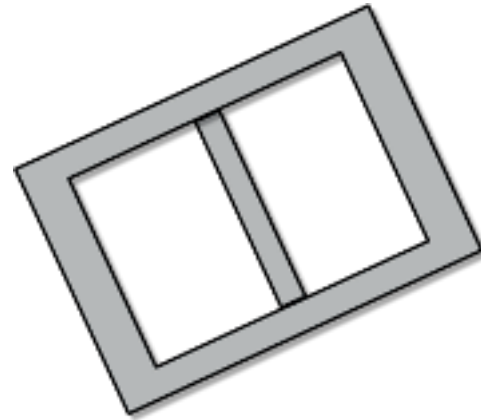
J. Design of Cutouts for Sink or Cooking Appliances

In addition to the guidance above regarding using as large a radius as possible for inside corners (minimum 5 mm ($\frac{3}{16}$ ")) and minimum distances to edges from the cutout of 50 mm (2"), designing for transportation is a consideration.

When the design has one or more large size cutouts or open cutouts, a strip of material in place to support the top. This strip, which can be partially cut, will be completely cut on site. This requires that proper crystalline silica safety measures can be followed at the installation site.

Alternatively, the cutout should be supported during transportation/installation by the use of "sink savers" reinforcement.

Figure J-1: Partial cut strip for transportation.



K. Holes for outlets/switches

A waterjet or CNC is the preferred method for cutting small holes for outlets and switches. If these are not available to cut holes for outlets/switches, the following methods may be used. Create holes for outlets by cutting overlapping circular holes or cutting holes at the four corners then cutting between the holes with a hand saw.

Figure K-1: Outlet/switch method 1

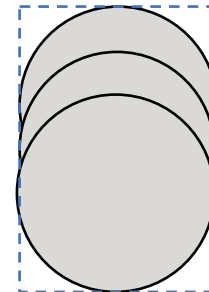
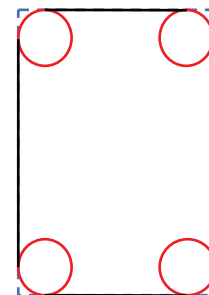


Figure K-2: Outlet/switch method 2



L. Referenced Documents

Corian® Endura™ Support (K-30201)

CORIAN® ENDURA™ DESIGN

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