

CORIAN® ENDURA™ SUPPORT

Introduction

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

Overview

The support structure is a key element in successful horizontal Corian® Endura™ installations. The structural support should provide level, rigid support. Corian® Endura™ is very rigid and improper support may lead to product failure. Often the support structure is not provided by the fabricator/installer, but it is the responsibility of the fabricator/installer to ensure that proper structural support is provided before installing the horizontal Corian® Endura™ surface.

A. Support Principles

There are two basic elements of support: Structural support is the primary structure and provides a rigid, flat structure that transfers the load from the slab, typically to the floor. With proper design structural support can extend load support horizontally; Spacers/Substructures such as underlayment or ladder structures are installed in-between the primary structural support and the countertop. These are secondary structures, not needed in all cases, that transfer load vertically to primary structure.

A.1. KEY FEATURES OF STRUCTURAL SUPPORT

Structural support bears the weight of the slab (generally transferring the load to the floor structure) and must be structurally sound. It must be rigid, so it does not bend under load (slab plus objects on slab). It must be level and in-plane., ceramics need very flat support. There should be no gaps in support. Structural support must meet the maximum span requirements.

A.2. STRUCTURAL SUPPORT MATERIALS

The most common structural support, particularly for residential applications are cabinets. Other structural support may be constructed from tube steel or angle iron. Wood or plywood may be part of a structural design, but only in a vertical orientation. Wood used in a horizontal orientation will not provide sufficient rigidity.

A.3. KEY FEATURES OF SPACERS/SUBSTRUCTURE

Spacers/Substructures are secondary structures such as underlayment or ladder structures are installed in-between the primary structural support and the countertop. They are insufficient in themselves to provide sufficient support for the ceramic slab.

Any corrections to flatness of the primary support must be done between the support structure and the spacer. Never shim in direct contact with the slab.

Some materials may provide additional rigidity, others primarily raise the counter to allow drawer clearance with a mitered front edge. Full underlayment does provide some sound dampening.

A.4. SPACERS/SUBSTRUCTURE MATERIALS

Examples of materials used to construct spacers/substructures include porcelain, granite, foam tile substrates and cement backer board. These may be rigidly bonded to the porcelain slab to provide more rigidity, particularly to reinforce cutouts.

Moisture resistant/marine grades only of plywood and MDF may also be used with proper consideration of the additional expansion/ contraction of wood-based products to build up height over the cabinet (e.g. allow mitered front edge to clear a drawer). Ladder structures should be used versus full underlayment for moisture resistant/marine grade plywood and MDF. 100% silicone should be used to bond these wood spacers to the slab. Untreated wood substrates should not be used as they expand/ contract more with temperature and humidity changes.

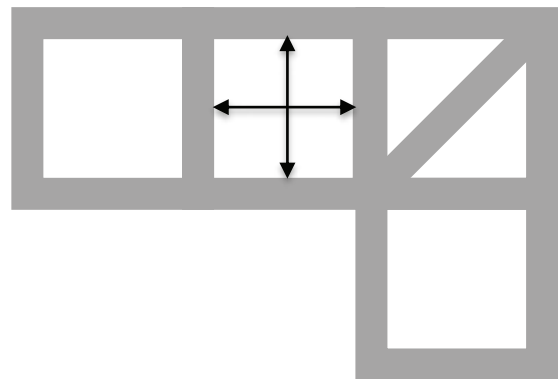
B. Maximum Spans

Maximum spans for 12- and 20-mm Corian® Endura are provided in Table B 1. If cabinets exceed these spans, additional support should be added. The additional support must be sufficiently rigid, i.e. metal or vertical wood/plywood to provide proper support.

TABLE B 1: MAXIMUM SPANS

Required support	12 mm (½")	20 mm (¾")
Maximum support distances	≤ 61 cm ≤ (24")	≤ 91 mm ≤ (36")
Maximum load 130 kg (286 lb.)		

Figure B-1: Structure Support Spans



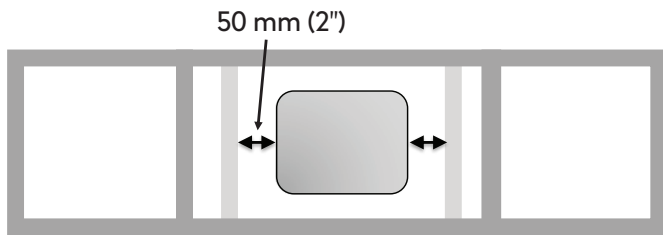
If the top has one or more cutouts, they must have additional support installed within 2" (50 mm) of the cutout.

Three-sided support, which is commonly for a dishwasher where a support can be added at the back wall, has a maximum span of 60 cm (2 feet) for both thicknesses.

Two-sided support is treated as double the guidance given for an overhang.

When possible, adding support attached to cabinets on either side is preferable to two or three sided support.

Figure B 2: Top with Cutout



C. Seam Support

Seams are ideally located over an existing structural support structure such as a cabinet wall. Seams at other locations should have additional structural support added.

D. Overhangs

Permissible dimensions for unsupported overhangs are provided in Table D 1. This is applicable for overhangs on one to four sides. The overhang should run the entire length of the side it is on. Do not truncate the overhang with an inside corner.

The permissible dimension is halved when there is a cutout within 15-60 cm (6-24") of the perimeter support. Do not put a cutout within 15 cm (6") of an overhang.

TABLE D-1: UNSUPPORTED OVERHANG DIMENSIONS

Thickness	12 mm (1/2")	20 mm (3/4")
Top with unsupported overhang	A < 6" A < 15 cm	A < 12" A < 30 cm
Top with cutout within 15-60 cm (6-24") of perimeter support and unsupported overhang	A < 3" A < 7.5 cm	A < 3" A < 15 cm

Larger overhangs may be created with added support such as corbels.

TABLE D-2: SUPPORTED OVERHANG

Thickness	12 mm (1/2")	20 mm (3/4")
Top with support (corbel) spacing X	A ≤ 30 cm (12") X ≤ 60 cm (24")	A ≤ 45 cm (18") X ≤ 90 cm (36")

Values for 12 mm are with mesh intact.

Figure D-1: Overhang All Edges

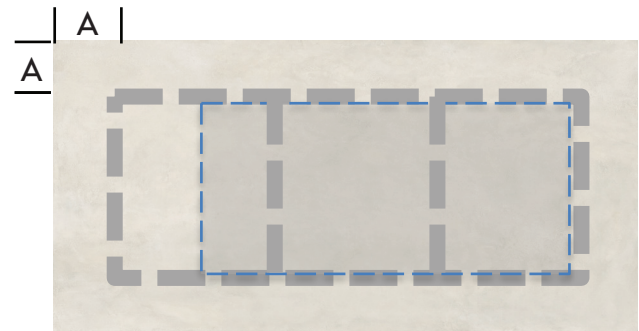
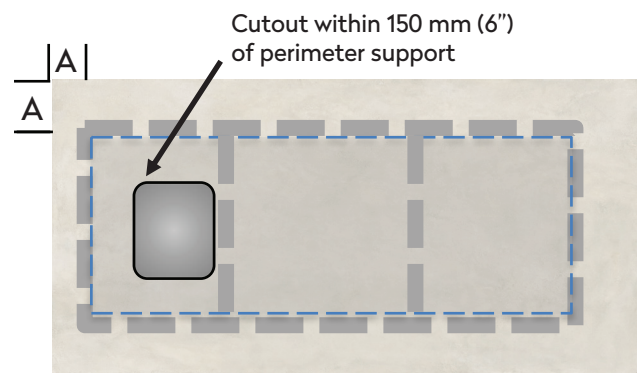


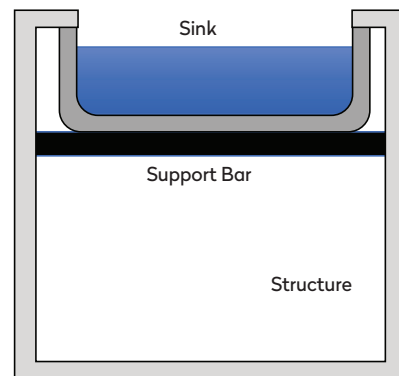
Figure D-2: Overhang with Cutout within 150 mm (6") of Perimeter Support



E. Large Sink Support

Large sinks require a cradle or support bars to transfer the weight of the sink and contents (water, dishes, etc.) to the cabinet structure.

Figure E-1: Large Sink Support



F. Appliance Support

Appliances should not be supported by the countertop. They should be independently supported with the support tied into the cabinet structure.

G. Heavy Equipment

Heavy equipment requires dedicated support directly underneath the equipment so the load is transferred directly down to the support structure.

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