

# TOOLS AND ACCESSORIES

## Introduction

This bulletin addresses the tools and accessories necessary for the fabrication of Corian® Solid Surface.

## Overview

Corian® Solid Surface is fabricated with much of the same type of equipment used for woodworking. While woodworking tools can be used to fabricate Solid Surface there are tools that have been optimised for Solid Surface and will provide better results. Corian® Solid Surface is made of natural minerals and acrylic and cuts differently than wood. Tools with sufficient power and proper cutting design will provide better results and tool life time. This document provides a list of basic tools and accessories used in fabricating Corian® Solid Surface.

## A. Routers

Routers should have sufficient power for the intended task. The following routers are useful for general Solid Surface fabrication.

- 900 W router
- 1400 W router
- 2200 W plunge base router

Refer to Table A-1 below for a guideline of approximate router power recommendations for common tasks:

**TABLE A-1**

TASK	MINIMUM POWER (W)
General-Purpose Work: e.g. edge and seam trimming, cut-outs	1400 W
Heavy-Duty Work: e.g. bulk cut-outs, mirror cuts, coving	2200 W
Detail Work: e.g. edge treatment	900 W

**Router power output will vary depending on the brand of machinery.**

### HELPFUL HINTS

*Selecting the right router for a specific task will provide a higher quality cut and extend the life of the router.*

## B. Router cutters

Router cutters should at a minimum be tipped with tungsten carbide. Polycrystalline diamond cutters may be suitable in certain applications using CNC machinery.

For day-to-day fabrication, you should have the following cutters provided in Table B-1.

**TABLE B-1**

TASK	TOOL/CUTTER
General-Purpose Work: e.g. edge and seam trimming, cut-outs	10 mm carbide-tipped single flute with 1/2" or 12 mm shank, 12 mm carbide-tipped double flute with 1/2" or 12 mm shank
Heavy-Duty Work: e.g. bulk cut-outs, mirror cuts	12 mm carbide-tipped single flute with 1/2" or 12 mm shank, Polycrystalline diamond cutter (CNC use only)
Detail Work: e.g. coving, edge treatment	Carbide-tipped decorative cutter with 1/2" or 12mm shank

### HELPFUL HINTS

*Only use quality tungsten carbide-tipped cutters. Make sure they are kept sharp, clean and stored in a way that protects them from damage. Regularly check cutter bearings for any slackness or play. Lubricate bearings regularly.*

## C. Saws and blades

Any type of circular saw may be used for ripping and sizing Corian® Solid Surface. Most acceptable common varieties include:

- Stationary table saw with sliding tray
- Vertical panel saw
- Chop saw with 45-degree angle option
- Heavy-duty portable circular saw
- Radial arm saw
- Beam saw

Regardless of the type of circular saw, all saws must:

- Be heavy-duty.
- Have triple-chip blades of tungsten carbide which should be used only for cutting Corian® Solid Surface.
- Have blades with hook angle of -5 degrees to +10 degrees and be described as “for cutting hard plastics”.
- Have a quiet blade; small gullets, brass plugs and heavier blade stock.
- All safety guides must comply with the local safety standards.

Blades should be sharpened regularly with a 400 to 600 grit grinding wheel.

Blades should have at least six teeth per 25 mm diameter. Refer to Table C-1 for the most successful saw blades for cutting Corian® Solid Surface.

TABLE C-1

BLADE SIZE (MM)	NUMBER OF TEETH
200	64
250	80
300	96
400	120

### HELPFUL HINTS

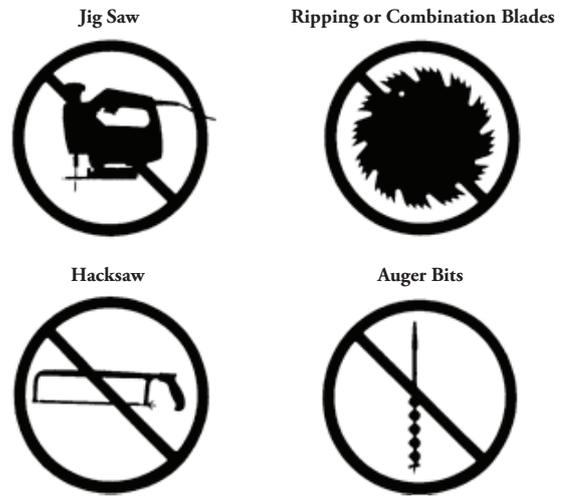
*For high volume work diamond saw blades suitable for cutting Corian® Solid Surface can be more economical.*

*Heavy-duty, handbeld circular saws may be used if necessary. Use tungsten carbide blades with correct blade configurations, referring to Table C-1.*

*The correct tools are essential for cutting Corian® Solid Surface to ensure that no chipping occurs and that all cuts are neat and clean.*

*Any small cuts or fractures in a cut may lead to cracking when the sheet is subject to stresses. As with glass, any nicks or fractures create potential weaknesses in the sheet. The best way to eliminate stress from saw cuts is to trim all sawn edges with a spindle moulder or router with a sharp straight cutting tool.*

The following tools must not be used, in any circumstances to cut Corian® Solid Surface:



## D. Sanding and finishing

In day-to-day fabrication, you need to be well equipped and have the following:

- Orbital sander
- Palm sander
- Random orbital sander of varying sizes
- Stationary belt sander
- Portable belt sander

Microfinishing film abrasives are used for day to day finishing. Open-coat silicon carbide sandpaper is recommended for quick sizing. Other abrasive systems are available that will work well on Corian® Surfaces. Using sanding systems with vacuum dust extraction will speed work, lessen clean up and save wear and tear on the sander.

**HELPFUL HINTS**

*Use machines for which spare parts and service are readily available, as sanders are subject to extreme wear and tear while working with Corian® Solid Surface.*

## E. Templates

Templates can be made from:

- Wood products (MDF, plywood)
- Corian® Solid Surface

Store all templates in a way that keeps them in good condition and the leading edge true (such as in a vertical rack). Templates are essential in ensuring that cut-outs are clean and smooth, which means perfect seams for sink or basin installation.

## F. Straightedges

Straightedges are critical for truing edges prior to finishing and for preparing edges to be seamed. There are a number of commercially available straightedges, or you can make them yourself.

## G. Clamping systems

Several types of clamps are suitable for use with Corian® Solid Surface. Among these are:

- Spring clamps
- G-clamps
- Small bar clamps
- Vacuum-clamping systems
- PVC ring clamps
- Wood bar clamps

Table G-1 shows which clamping systems are recommended for different applications.

**TABLE G-1**

TASK	TYPE OF CLAMP
Attach edge build-up strips	PVC ring clamps, spring clamps, G-clamps, small bar clamps or wood bar clamps
Hold templates or straightedges in place	G-clamps or bar clamps, vacuum clamping systems
Hold bowls during seaming	Bowl clamping jigs, vacuum systems, locking pliers with long jaws

**HELPFUL HINTS**

*Keep clamps clean and in a readily accessible position in the work area.*

## H. Dust extraction

Corian® Solid Surface is non-toxic to humans. A potential risk associated with this product is accumulated or airborne dust produced during fabrication operations such as sawing, routing, drilling and sanding. As with many materials, certain machining processes may produce particles of dust that are fine enough to form combustible dust clouds which in turn may pose a flash-fire or explosion hazard. Dust explosion behaviour is highly dependent on the particle size distribution and not necessarily the material being handled. More information is available in *Corian® Solid Surface Fabrication/Installation Fundamentals – Combustible Dust (K-26832)*.

Do not inhale dust. High concentrations of any dust can irritate eyes, nose and respiratory system and cause coughing and sneezing. Corian® Solid Surfacing does not emit gas at room temperature. Additives in this product do not present a respiration hazard unless the product is ground to a powder of respirable size and the dust is inhaled. All dusts are potentially injurious to the respiratory tract if respirable particles are generated and inhaled. Wash hands before breaks and at the end of workday.

Dust generation and accumulation should be minimised. Dust should be removed at the point of generation where possible by the use of ducted extraction systems for example. Hand sanders should be fitted with portable dust extractors and if possible to vacuum extractors. Equipment such as exhaust ducts, dust collectors, and processing equipment should be designed and maintained to prevent escape of dust into the work area. Routine housekeeping should be performed to minimise dust accumulation on surfaces.

## HELPFUL HINTS

*Keep filters regularly maintained to ensure effective operation. Several tool manufacturers make sanding systems with vacuum dust extractors which switch on when the sander is activated.*

## I. Advanced tooling

Some companies seeking higher productivity have made further equipment investments. Examples include:

- CNC router
- Shaper/Spindle moulder
- Panel saw
- V-groover
- Water-cooled diamond-tipped saw

## J. Referenced documents

*Corian® Solid Surface Fabrication/Installation Fundamentals – Combustible Dust (K-26832).*

**PLEASE VISIT OUR WEB SITE: [WWW.CORIAN.UK](http://WWW.CORIAN.UK) OR CONTACT YOUR CORIAN® REPRESENTATIVE FOR MORE INFORMATION ABOUT CORIAN® SOLID SURFACE.**

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