# Rodin Sculpture Crown and Bridge Fabrication Guide

## 1.0 Design

1.1 A minimum thickness of 1mm is highly recommended on posterior occlusal and axial wall areas for all crown, bridge, onlay, and inlay designs to maximize fracture resistance.

1.2 All anterior designed crowns and bridges are recommended to have a minimum buccal wall thickness of 0.5mm and the incisal area at designed at 1mm.

1.3 Ideal to design posterior bridges with connector areas of < 27mm (H=3mm x D=3mm). Ideal to design Anterior bridges with connector areas of < 12mm (H=3mm x D=2mm).

Note - Anterior, posterior, or a combination of both posterior and anterior bridges should not exceed 3 units.

## 2.0 Orientation & Supporting

2.1 Orientate designed restorations with the occlusal side facing the build plate. The supports should contact the occlusal and incisal edge surfaces.

Note – Placing supports in the abutment cavity should be avoided to prevent internal adaption fit issues.

2.2 The recommended minimum support diameter is 0.27mm at the point of contact where the support meets the restoration.

2.3 The recommended minimum support height is 2mm to prevent breakage during removal of restoration(s).

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## 3.0 Post-processing Instructions

8.1 After completion of the print job, remove the build platform from the 3D printer.

8.2 Using low pressurized air, blow away excess uncured resin from the printed model and build plate. Do not reuse excess resin if the build plate is made of aluminum. Contamination may occur and change color properties of the resin.

8.3 Using a blade, carefully remove the model from the build platform by sliding the blade under the base of the print closest to the build plate and work around the base until the print is removed.

8.4 DO NOT submerge restorations in isopropyl alcohol (IPA) for any amount of time.
To remove excess resin, wet paper towel or cloth with 99% IPA (optimal concentration) and wipe restoration clean. Clean between the embrasures, anatomical grooves and internal cavities of the restoration using a regular or electric tooth brush. Repeatedly dip the head of the toothbrush in IPA and scour the restoration as needed. A white chalky surface will appear if the printed restoration has incurred excessive exposure to IPA upon drying.

8.5 Use compressed air to remove excess uncured resin.

8.6 Repeat steps 4 and 5 until the restoration is thoroughly clean leaving a chalk-free, matte finish.

8.7 Post-cure all shades in a validated light curing unit, following recommended time and temperature schedules (see Rodin IFU) if not applying a UV stain and/or glaze product.

8.8 Once print has been post-cured, the restoration can be finished and polished using traditional dental tools and techniques.

Note- A thoroughly cleaned restoration should have a matte finish. If there are any areas with a shiny appearance, wash the area with fresh IPA and dry with compressed air. Rinse and repeat as needed prior to light curing.

## 3.0 Pre-finishing

3.1 Verify that the restoration fits properly and marginal adaptation is sealed at the interface of the prep(s) on both the working and solid models if applicable.

3.2 Grind away all remaining support tips on the restoration with a carbide bur.

3.3 Contour, reshape, and make occlusal adjustments to printed restorations as needed.

3.4 Remove deep build lines with a white polishing bristle brush wheel and polishing compound such as “Wow”.

3.5 Steam off all remaining polishing compound debris.

3.6 High shine with an impregnated high shine wheel or buffing rag wheel with acrylic buffing compound at this point if not applying UV stain and/or glaze resins.

Note – Due to the increased strength of the material after light curing, it is recommended to make the majority of contour adjustments and support removal prior to post curing to prevent chipping and/or micro fracturing.

## 4.0 Applying UV Curing Stain & Glaze

4.1 Fully seat the restoration prior to applying UV stains or glaze resins.

4.2 Optionally characterize the restoration by applying a thin coat of UV stain on the axial wall and anatomical groove surfaces. Remove all excess stain that may have contacted internal surfaces of the restoration as this may alter the overall fit. Light cure as recommended by the manufactures instructions prior to glazing.

4.3 Optionally apply a thin coat of UV glaze resin to axial wall and occlusal surfaces. Remove all excess glaze that may have contacted internal surfaces of the restoration as this may alter the adaption. Light cure as recommended by the manufactures instructions.

## 5.0 Post Curing

5.1 Ensure that your post curing box is equipped with either an inert gas hookup or can pull vacuum while emitting ultraviolet light if applying a UV glaze. This will allow the oxygen inhibition layer to fully cure, this eliminates typical tacky surfacing and prevents the glaze from hazing.

## 6.0 Quality Control

6.1 Sandblast all surfaces on the restoration that will contact prepped surfaces using 100micron aluminum oxide particles at no more than 30 psi. It is important to avoid contact with margin areas to prevent margins from opening.

6.2 Recheck fit and occlusion and make adjustments as needed to contacts and occlusion after light curing applied UV stains and glazes. Reapply glaze resin and post cure per manufacturer's instructions to adjusted areas where needed.