

# CREATING A PORCELAIN OVERLAY ZIRCONIA BRIDGE

*By Luke S. Kahng, CDT, with special thanks to the case clinician, Thomas DeLacey, DDS*

**Anterior and posterior bridges fabricated with zirconia** seem to be gaining popularity with dentists and patients over their porcelain-fused-to-metal counterpart. My concern has been whether zirconia overlaid with porcelain will work for multiple units. Definitely, zirconia offers better translucency and color, especially when there is limited room.

My concern has been the path of insertion. Seating must be all the way down without rocking and with a solid fit. But questions remain: What about longevity? Is it 10 years? And how strong is zirconia overall? These questions can only be answered with time, but most reports thus far have been positive.

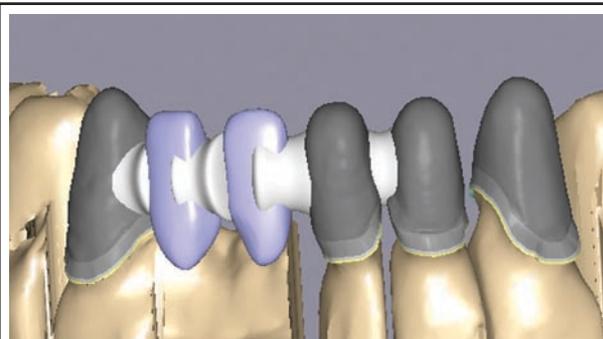


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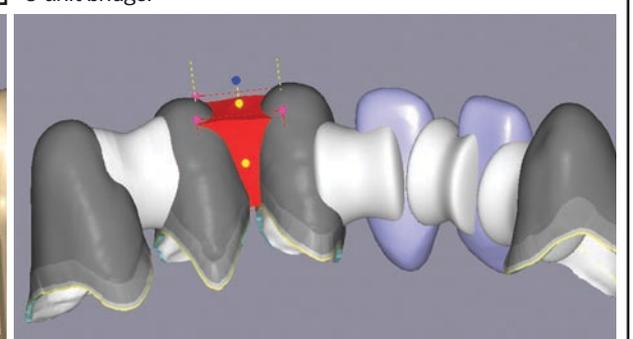
Specializing in fixed restorations, Kahng provides custom cosmetic work. He stresses education, communication, and a team approach to patient care.



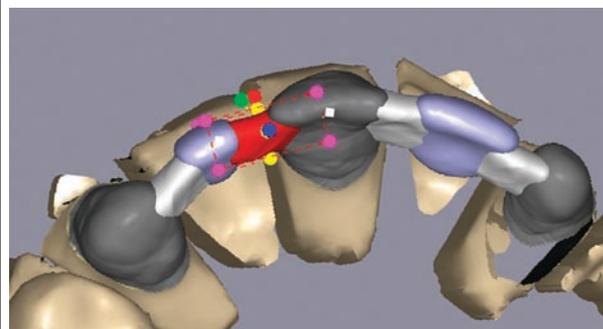
**Fig. A** A pre-op view with temporization: #6-10 and #22-27, 6-unit bridges each, #11, a single unit and #12-14, a 3-unit bridge.



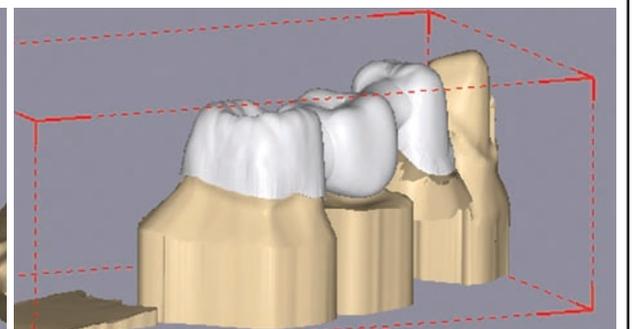
**Fig. B** View of one bridge's general design from etkon's scanning system.



**Fig. C** A view of the frame design by etkon, especially the joint area.



**Fig. D** An occlusal view with detailed graphics display the restoration design.



**Fig. E** A final view of the designed framework before it's sent to the milling center.



**Fig. F** The zirconia design, ready for porcelain application.



**Fig. G** The Zirconia frame design for #22-27 has been received from the milling center.



**Fig. H** Check occlusal room in the zirconia frame design.



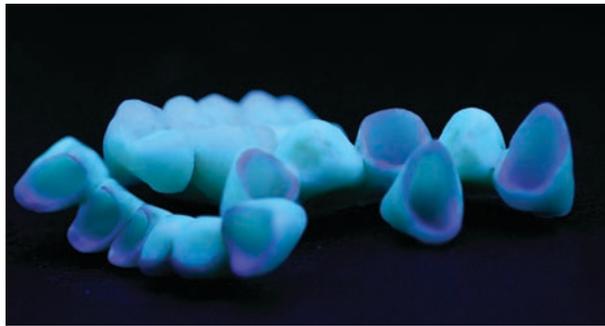
**Fig. I** Second build-up stage with GC ZR Initial porcelain.



**Fig. J** Side view of the final restoration.



**Fig. K** The appearance of the #12-14, 3-unit bridge.



**Fig. L** Under UV lighting, the porcelain is checked for fluorescence.



**Fig. M** Immediate post-op view after cementation.



**Fig. N** The natural appearance is demonstrated in this immediate post-op side view.

### ART OF SCANNING

One of the benefits of using the etkon scanning system and outsource milling center is that default or path of insertion problems can be blocked out. In addition, incisal height can be increased or decreased so that the technician's final restoration will have the necessary amount of room to achieve truly esthetic results. The final goal should incorporate how many millimeters tall and wide the prosthesis will be. The frame designed by a computer will not work if the technician doesn't know the full contour. Therefore, it is recommended that the technician have this information before attempting to scan. The

technician will then have more control and proper design over the joint area for support and porcelain longevity.

### ART OF THE PORCELAIN

A benefit to the GC ZR lower fusing (810°C) porcelain system is lower dentition. This is better tolerated by the natural teeth because it involves less grinding. From the technician's viewpoint, the porcelain is easy to polish with diamond paste and a wheel.

This case illustration, beginning on page 56, takes you through each step required to create a long-span zirconia bridge. [lab](#)

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