Extra prep work pays off big

Custom shade matching for an anterior tooth can be tricky, but this example highlights the use of try-in paste and the differences in final case outcomes.

To match an anterior tooth for a custom shade is the most difficult of procedures, as every technician knows. One of the problems is that there are so many factors that relate to the final outcome, including: 1.) Adjacent teeth color is often a big problem. If they are opacious in color, that is easier to mimic in our restorations than translucency or transparency. 2.) The height of contour of the teeth, lobe and the type of surface texture all relate to the final color, as well. We must decide whether the teeth are convex, concave or flat because each position will contrast the way the light reflects off of the teeth and therefore, our perception of the color.

For our case study, we will begin by discussing the prep design and after-prep color, targeting especially the facial area for a veneer prep.

CASE STUDY
The patient in our case study is a 30-year-old female. She sought replacement of her composite bonding on tooth #9, discolored and old and a veneer on #10, as well. The bonded tooth color was yellow, brown and orange in appearance which was displeasing to her eye. Since she was replacing the bonding with a veneer, the clinician gave the central a ¾ veneer prep which, of course, left less room for the technician’s porcelain work (Fig. A).

The cement color that the clinician would choose—knowing that most doctors prefer a translucent shade of cement—was of concern to the author. He thought that, in this case, Extra prep work pays off big

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The cement color that the clinician would choose—knowing that most doctors prefer a translucent shade of cement—was of concern to the author. He thought that, in this case,
translucent cement would not work because the orange stump color might create bleed-through. The technician needed to have a solution ready to recommend before final cementation.

01 With custom made porcelain shade tabs, the technician was able to match the color of the prepped tooth (Fig. B) and identify the subtle white calcification with translucency. Again, in order to measure and mimic the color of the occlusion 2/3, custom shade tabs were used (Fig. C).

02 When using the platinum foil technique, we can apply multi layered porcelain with regular body dentin color – in this case, mamelon IN47 (Fig. D) a product from GC Initial (Fig. E).

03 For the mesial distal corner, EOP4 was applied (Fig. F). With GC Initial Enamel 57 (Fig. G) overlaid on top of the Enamel Opal, the veneers were ready for firing (Fig. H) at 810°C.

04 The restorations were removed from the oven, with the foil left intact (Fig. I). After the foil was carefully removed, the color could be viewed and checked (Fig. J). On the master cast, the restorations were checked for texture, white calcification and translucency – all modifications that the author included in his porcelain build-up (Fig. K).

05 The next step was a search for the properly colored try-in paste. This related to the final restoration and the color of cement that needed to be chosen. Three try-in pastes were applied but were not suitable in color (Figs. L, M, N). A translucent paste was too yellow and an opaque white was too white. A regularly colored white try-in paste was eventually chosen and that information was passed on to the doctor. That was helpful to him when he finally got ready to cement the case because he didn’t have to deal with discolored restorations due to a cement issue. Often, if this happens, the restoration cannot be removed intact since it has been permanently placed. This creates problems for both the dentist and the technician who has to re-make the restoration, losing time and money in the process.

06 In (Fig. O), the central was next tried-in the mouth with the lateral (Fig. P). An immediate shot without the central demonstrates again the orange/yellow color that had to be masked (Fig. Q). Final shot, both restorations in place with beautifully matched color and modifications (Fig. R).

CONCLUSION
When the clinician initially tried in the veneers, he noted that the color looked too yellow and was wondering how to solve that problem. The author was concerned and set about trying to take care of the issue before the final cementation. The veneers were so thin already that there was no way to cut back on the depth of the porcelain build-up. If the color was too white, the restorations would not look natural in the mouth, either. Every case and situation is different and requires that we use the tools we have in hand to make our patients happy with the final outcome.

There were three important components to this case: preparation thickness, preparation design and after-prep color. Upon completion, the only thing left to solve was how to create a natural appearance upon cementation. If there had been more room in the preparation design, the cement might not have needed so much scrutiny. But in this case it did, and the final outcome was excellent thanks to that extra consideration.