VITIQUE

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How to achieve amazing results with a predictable esthetic veneer cementation

When working on a patient's smile, the main goal is to achieve an esthetic biointegration of the ceramics that are being bonded. To accomplish this, it is important to keep in mind that the final shade of the restorations will be determined by four factors.

TOOTH SHADE + CERAMIC SHADE & OPACITY + CERAMIC THICKNESS + CEMENT SHADE

The first thing the clinician has to do after the tooth preparation has been finished, is to establish the tooth or substrate color, as well as determine the available restorable space, which will later dictate the thickness and opacity of the ceramic.
In special cases, when the tooth has a very high saturation, there may be a need to further prepare the tooth in order to increase the thickness of the ceramic to cover the highly saturated substrate. This will prevent over-contouring of ceramics.

Having established the final desired shade, the substrate shade must be registered with a polarized photo in raw format and *eLAB® white_balance grey reference card* next to the teeth (Figure 1). Based on this information in addition to the ceramic thickness, the clinician alongside the technician must decide the proper type, shade and opacity the ceramic should have in order to achieve the desired result. (My personal preference is IPS e.max and feldespathic ceramics).

Figure 1. Raw polarized photo of the prepared teeth, using a white balance grey card and Vita Classic Shade Guide.

In theory, the ceramic alone should be able to mask the initial shade and provide the proper desired color, but that is not always the case. Furthermore, there will always be an interface between the tooth and the veneer, which is the cement. In certain situations, the luting agent shade will have a very important effect on the final shade, while in others not so much. *When ceramics are thinner or are more translucent, the cement will have a bigger impact on the final shade* (Figure 2).

Figure 2. Vitique cements in 5 colors: Transparent, A2.5, B1, Bleach Light, White

In contrast, when the ceramic has more thickness or is more opaque, the shade of the cement will not be as important. In cases when ceramics are too thick (over 0.8mm) and/or opaque (MO - HO), the use of a photo-activated cement may not be possible, therefore in order to assure proper polymerization, a dual cement like PermaCem Dual would be a better option.

During the cementation appointment, 3 of the 4 factors are unchangeable, so that is when the Vitique Veneer Cementation System can play a very important role. It is crucial for clinicians to understand the impact that different cement or try in paste shades will have on the resulting color of the restorations. Using the Vitique Try-in pastes (Figure 3), the clinician can determine prior to the permanent cementation, which cement shade will provide the best final veneer shade, in order to achieve the resulting color expected by both the clinician and the patient.

It is also important to know that when placing veneers without a try in paste, the final shade they will have once they are cemented cannot be properly appreciated. Therefore, to have successful results it is crucial to emulate this shade perfectly before cementing the veneers, and this can only be achieved through the use of Try-In pastes.

Besides being a key factor during the cementation process, the try-in pastes also give the dentist an opportunity to show the patient how their teeth will look after the veneers have been permanently bonded.

Figure 3. Vitique Try-In, A2.5.

Finally, a great quality of Vitique Cement is that all shades have great fluorescence, a property that teeth naturally have, so it is important not to take this away when restoring teeth, especially anteriors. To achieve good fluorescence, not only the cement needs to have this property, but the ceramic as well. Also necessary to have in mind, is that the whiter the color of the cement, the higher the fluorescence.

Shades Available (in both cement and try-in paste)

- Shade A4
- Shade A2.5
- Shade A1
- Shade B1
- Shade Transparent
- Shade Bleach Light
- Shade White
- Shade Pink

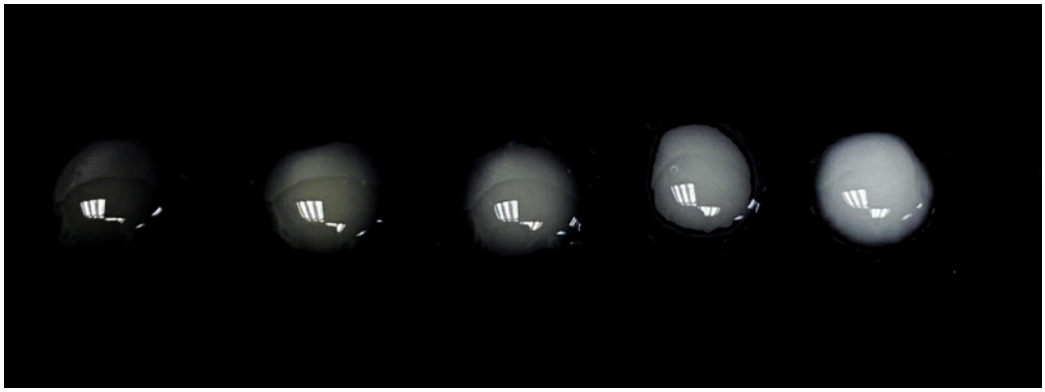

Figure 4. Shades of Vitique Veneer Cementation System. From left to right, Transparent, A2.5, B1, Bleach Light, White.

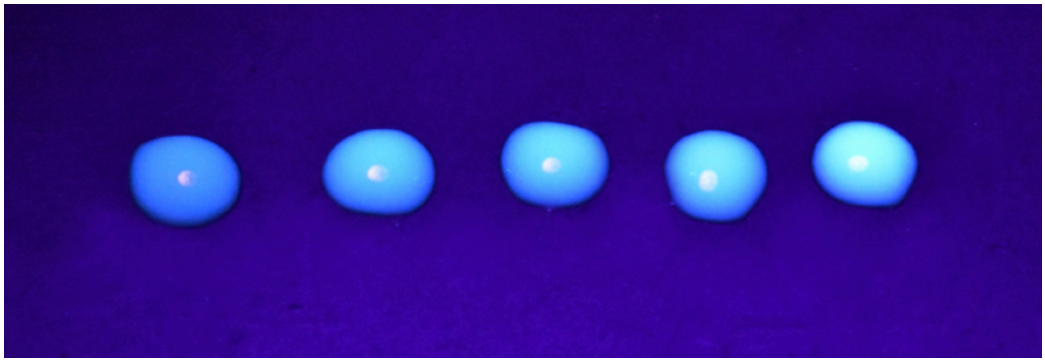

Figure 5. Fluorescence of Vitique Veneer Cementation System. From left to right, Transparent, A2.5, B1, Bleach Light, White.

Shade Selection Guide

This guideline is an approximation of different clinical scenarios, but each case is different and needs to be properly verified by the clinician with the Try-In pastes before cementation.

Ceramic Thickness

- Thin: ≤ 0.4 mm
- Medium: 0.5 - 0.8 mm
- Thick: > 0.8 mm

Substrate Shade

- Favorable
- Fair
- Unfavorable

Possible Clinical Situations: Try-in Paste Recommendation Guide

A. **Favorable Substrate (A1 - A2):** to maintain the tone with 0.4 mm or less of space, a BL4 MT thin ceramic can be used along with Vitique Transparent.

B. **Favorable Substrate (A1 - A2):** to achieve a reduction of one tone with 0.4 mm of space, a BL4 or BL3 MT thin ceramic can be used along with Vitique B1.

C. **Favorable Substrate (A1 - A2):** to achieve a reduction of two tones, with 0.4 mm of space a BL2 or BL3 MT ceramic should be used, along with Bleach Light.

D. **Favorable Substrate (A1 - A2):** to achieve a reduction of three tones without increasing the thickness or opacity of the ceramic, a BL2 or BL1 MT ceramic should be used along with Vitique Bleach Light or Vitique White.

E. **Fair Substrate (A3.5):** to obtain a reduction of three tones, a thicker and/or more opaque ceramic (MO) must be used, along with Vitique Bleach Light or Vitique White.

F. **Unfavorable Substrate (A4 +):** in these cases to reach a lighter shade, the thickness and opacity of the ceramic must be increased to the maximum possible according to each clinical situation. These cases require opaque dual cure cements.

It is important to note, that if the selection of ceramic shade and opacity is not correct, the cement will not be able to solve the problem. On the other hand, when the ceramic selection is not 100% optimal, but can be considered acceptable, the cement may be able to give the final value needed to achieve the desired shade.

F. **Favorable Substrate (A1 - A2)**, but the ceramic needs more value, Vitique Bleach Light or Vitique White can be used to obtain a slightly lighter shade (only if the shade and thickness of the ceramic allow it).

G. **Favorable Substrate (A1 - A2)**, but the ceramic needs less value, Vitique A2.5 or Vitique A4 can be used to lightly increase the saturation of the final result (only if the shade and thickness of the ceramic allow it).

CASE REPORTS

Case # 1

Replacement of two composite veneers on the maxillary lateral incisors, for 2 ceramic veneers. This patient had 2 composites done a few years earlier, which got stained with time and she wanted a more definitive and color stable solution.

- Tooth shade (after removing composite): A1
- Ceramic shade: BL4
- Ceramic thickness/opacity: Thin, MT
- Cement shade used: Vitique Transparent
- Desired Shade: A1

Figure 6. Initial situation.

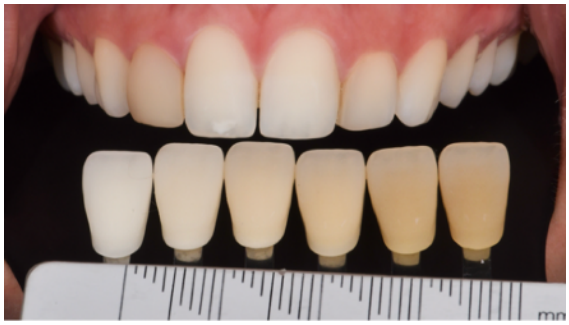

Figure 7. Preoperative appearance, polarized photo with white balance gray card and shade guide.

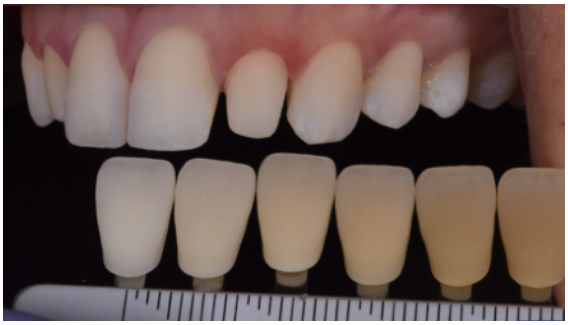

Figure 8. Prepared teeth, polarized photo with white balance gray card and shade guide.

Figure 9. Vitique Trans try in paste with veneers, polarized photo with white balance gray card to verify color before cementation (retraction cords are placed).

Figure 10. Final results, smile.

Figure 11. Final results, intra-oral.

Case # 2

Smile makeover: This patient had a lot of tooth wear due to acid consumption and diasthema in between his anterior teeth. This treatment started with Invisalign to improve alignment and then 8 ceramic veneers on the maxillary anterior teeth.

- Tooth shade after tooth preparation: A2
- Ceramic shade: BL3
- Ceramic thickness/opacity: Medium, MT
- Cement shade used: Vitique B1
- Desired shade: A1

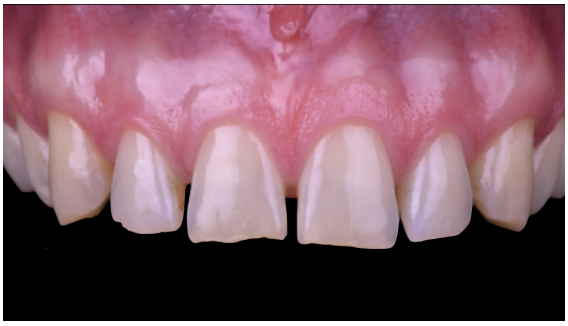

Figure 12. Initial situation.

Figure 13. Prepared teeth, polarized photo with white balance gray card.

Figure 14. Provisionals using Luxatemp.

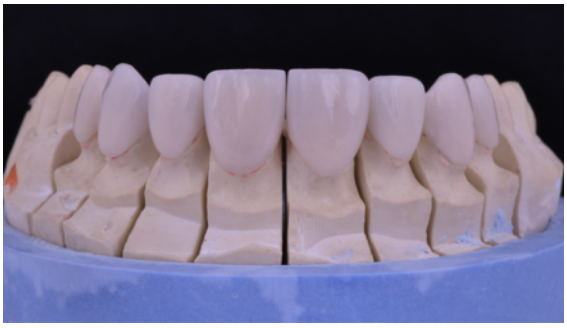

Figure 15. Ceramic veneers before cementation.

Figure 16. Final results, intra-oral.

Figure 17. Final results, smile.

Case # 3

Function & Esthetics: full mouth rehabilitation. This patient had severe enamel erosion that affected most of his teeth on vestibular and occlusal surfaces, so he wanted to have a prober bite and an esthetic white smile. This case was solved with anterior ceramic veneers and onlays which covered occlusal and vestibular surfaces on the posterior teeth.

- Tooth shade: A2 - A3
- Ceramic shade: BL2
- Ceramic thickness/opacity: Medium, LT
- Cement shade: Vitique Bleach Light and White.
- Desired shade: BL4

Figure 18. Initial situation, front view.

Figure 19. Initial situation, lateral view.

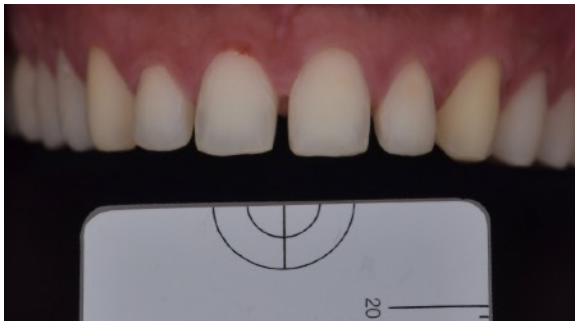

Figure 20. Prepared maxillary teeth, polarized photo with white balance gray card.

Figure 21. Prepared mandibular teeth, polarized photo with white balance gray card.

Figure 22. Final results, front view.

Figure 23. Final results, lateral view.

Case # 4

This case type is probably one of the most complicated scenarios to solve. The left central incisor was endodontically treated and had an unfavorable color. The patient consumes 3 cups of coffee a day plus staining food, and was looking for a definitive solution regarding the color. She also wanted both incisors to be slightly longer. We decided to do a 0.3 mm veneer on the right incisor and a thick ceramic on the left one to solve her problem long term.

Right Central Incisor

- Tooth shade: A1
- Ceramic shade: B1
- Ceramic thickness/opacity: Thin, MT
- Cement: Vitique B1
- Desired shade: A1

Left Central Incisor

- Tooth shade: A3.5 - A4
- Ceramic shade: B1
- Ceramic thickness/opacity: Thick, MO
- Cement: PermaCem Dual
- Desired shade: A1

Figure 24. Initial situation.

Figure 25. Initial situation, polarized photograph.

Figure 26. Prepared teeth, polarized photograph.

Figure 27. Final results, polarized photograph.

Figure 28. Final results, intra-oral.

Figure 29. Final results, smile.

In order to get great results, please consider this step by step tips.

1. After removing the temporaries, make sure the tooth surface is clean and free of any residues, most times there is thin Luxatemp temporary material or bonding adhesive left. The use of high magnification loupes (over 5x) is highly recommended.
2. Dry the teeth with oil-free air and try in the restorations to check proper fit, insertion axis, marginal adaptation and proximal contact points.
3. My recommendation is to apply the try-in paste on the tooth surface, and then place all the veneers on top to check the final shade. It is also very important to verify with the patient that they are pleased with the resulting color.

→ If the shade needs to be corrected, clean the teeth and the restorations with water spray and repeat the try-in with a more suitable try in paste shade.

4. Remove the restorations and clean them thoroughly with alcohol. Clean the teeth with abundant water spray. Note that any residues of the Vitique Try-In paste can impair the permanent cementation of the restorations.
5. Prepare the ceramics for cementation:
   i. Etch the ceramics with hydrofluoric acid gel according to the type of ceramics (IPS e.max ceramics require 20 seconds), then rinse with water spray for 60 seconds and finally dry them with oil-free air for 30 seconds.
   ii. Apply a thin layer of silane and leave on for 60 seconds, then dry carefully with a light stream of air for 30 seconds.
6. Place retraction cord on the teeth and ensure proper isolation of the working area.
7. Prepare the teeth for cementation:
   i. Apply phosphoric acid and leave for 15 seconds, then rinse with water spray and dry with oil-free air.
   ii. Apply the adhesive system and lightly dry with oil-free air, I do not recommend curing the adhesive system, because in some cases it might affect the proper fit and insertion of veneers. In order to assure proper polymerization of both the cement and bonding agent we need to use a 1200 mW/cm^2 curing lamp. If the ceramic is not thin or is too opaque, this technique is not possible. In any case, a very thin layer of bonding agent must be applied and excess should be removed with a light stream of air.

8. Apply Vitique Esthetic Resin Cement with the veneer tip on the fitting surface of the restorations, taking special care not to leave any bubbles. Position the ceramics gently on the teeth. If handling the veneers is too complicated for you, and you feel you might touch the cement with your fingertips during the cementation, you could also apply the cement on the tooth surface.
9. Check proper fit and insertion of each veneer.
10. Gently remove excess with a brush, with caution of not displacing any veneer.
11. Cure at the margins for 3-5 seconds and remove excess cement using a curette.
12. Cure the veneers for 40 seconds on the margin, on the mid face and from a palatal angle.

→ Light curing units should have an output of 450 nm and light intensity should be a minimum of 1200 mW/cm^2. While curing, place the light as close as possible to the restorations.

13. Remove cement residue in the cervical area with a fine curette, as well as carefully removing the retraction cord, making sure it is completely eliminated.
14. Apply glycerin on the margins and cure 40 seconds on each side using a 1200 mW/cm^2 light.
15. Polish margins with fine thin finishing burs and/or polishers at 5000 RPM.
16. Verify occlusion.
17. Hand a mirror to your patient for their final approval and explain proper hygiene indications.
18. Around 3 to 4 days after veneer cementation, it's recommended to do a proper checkup of gum healing, taking special notice if there are any cement leftovers. Radiographic control is also recommended.
19. After 7-10 days of veneer cementation, have another check up and take the final photos to show the patient the before and after results.
20. After taking the photos, it is important to explain to the patient that they must come in for regular checkups and cleanings. They could be every 3 to 6 months depending on the patient.