

# Beautiful Esthetics with Minimal Effort

By Thomas 'Buddy' Wester, CDT

Recently, I received a call from one of our clients about fabricating a six-unit case composed of three single units and a three-unit bridge, originally manufactured as a zirconia-to-IPS e.max (Ivoclar Vivadent) restoration.

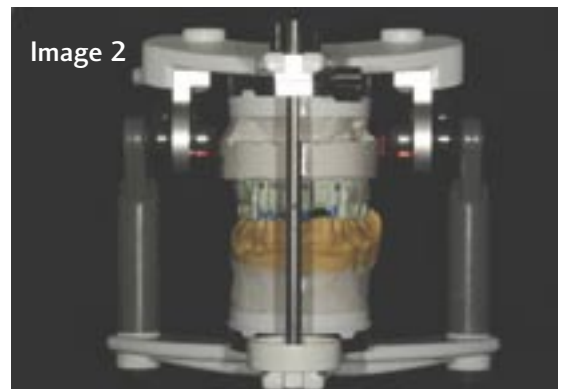
The restoration was for an approximately 65-year-old, female patient. She had old composite veneers on Nos. 8 and 9, a crown on No. 7 and chipped incisal edges and heavy staining. She was seeking a new restoration for Nos. 6 - 11.

Upon further discussion with the dentist, I learned that the patient desired an esthetically pleasing look. **Image 1** is a pre-operative photo of the patient. The dentist and I discussed the best material to use when manufacturing this restoration. Ivoclar Vivadent's introduction of the IPS e.max system has given the technician a comprehensive, concise set of materials he or she can use to manufacture different types of restorations with one system. It can be used with

Image 1



Image 2



press or CAD/CAM techniques. Because this case involved press ceramics, I had the choice of IPS e.max Press, a lithium disilicate, or IPS e.max ZirPress, a glass ceramic that is pressed onto zirconium oxide in a fast and efficient procedure.

The decision was made to manufacture the case using IPS e.maxPress and then layering for esthetics. I use the e.max system on a daily basis with consistent and esthetically pleasing results. In this article I will demonstrate my approach to achieve beautiful esthetics with minimal effort using the IPS e.maxPress.

**Image 2** – The models and dies were manufactured and mounted on a Stratos articulator. A symmetry (stick) bite was not provided, so the models were mounted level with the horizontal plane.



Image 3

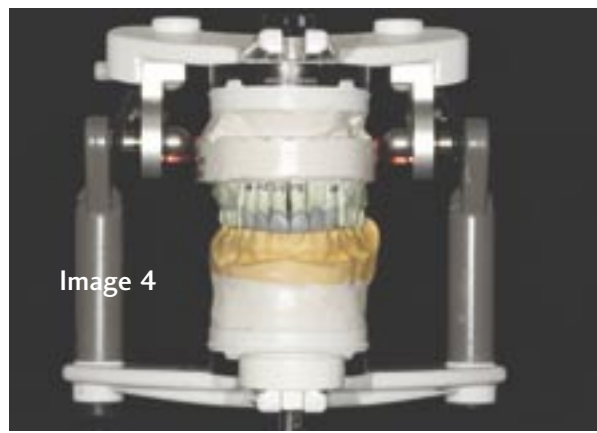


Image 4



Image 5

**Images 3 and 4** – The case was waxed keeping in mind the patient's desire to have a softened look to restorations with rounded distal edges and square misial edges. The wax up completed, it was sectioned and prepared for matrixing.

**Image 5** – The Sil-tech (Ivoclar Vivadent) matrix was made and prepared for cut back of the wax.



Image 6

**Images 6-8** – The cut back was carried out following Ivoclar's guidelines for shape and pattern thickness. These guidelines include cutback and wax-up of the incisal third to a minimum of .4mm, but keep in mind one should have about 1mm of layering porcelain with no sharp points or edges in the wax pattern.



Image 7



Image 9



Image 10



Image 8

**Images 9 and 10** – The margins were finalized and the patterns sprued paying strict attention to detail for pressing success. Those details include: spruing should be carried out in the direction of the prep; the sprue and pattern should be no longer than 15mm-16mm and placed at an angle of 45° to 60°; the longer side of the pattern should face outward; and the attachment areas should be rounded and smooth. The pressing cycle was carried out using the IPS e.maxPress LT-B1 ingot.

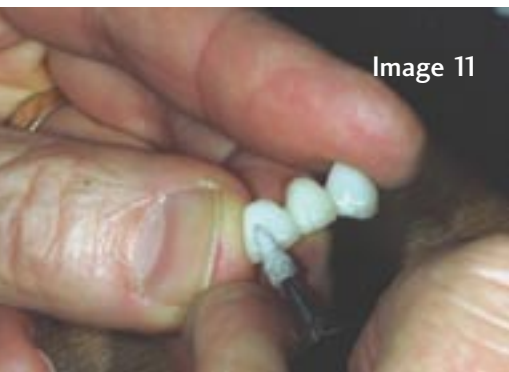


Image 11

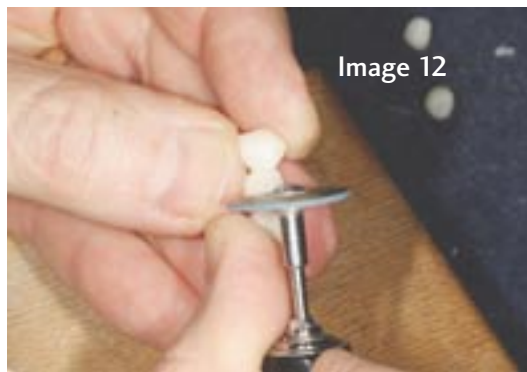


Image 12



Image 13

**Images 11-13** – The pressings were divested, cleaned with Invex liquid (Ivoclar Vivadent), sand blasted and steam cleaned. The pressings were cut off, seated on the dies and the sprues removed. The surface was prepared using stones and rubber wheels then checked against the matrix for clearance.



Image 14

**Images 14 and 15** – Once surface preparation was completed the frames were sand blasted with one to two bars of pressure and steam cleaned. A wash layer was applied utilizing the matrix for control. I used neutral for most anteriors because this provides me with some translucency and a canvas to apply the internal highlights in the incisal one-third of the restorations. The case was fired.



Image 15



Image 16

**Image 16** – The internal highlights were added utilizing Ivoclar Vivadent's Essence stain kit using the colors sapphire, cream, khaki and white. When applying these highlights the technician will begin to see the beauty and esthetic nature of the material take shape. In this case, the highlights were then fired prior to incisal layering.



Image 17



Image 18

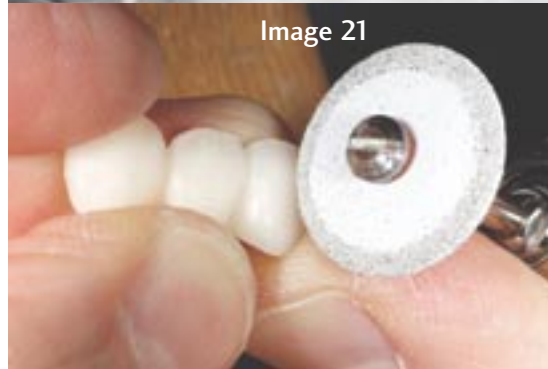


Image 19

**Images 17-19** – The incisal layering was applied using powders from the IPS e.max Ceram (Transpa Incisal 1 and Opal Effect 2) on the mesial and distal line angles and a little Transpa Blue on the mesial and distal corners. This step was completed using the matrix for control of the bake. The work was placed on a honeycomb tray and fired.

**Images 20 and 21** – Once the work was fired, minimal grinding and shaping was all that was needed. The matrix was the key to maintaining shape and incisal edge position that in turn reduces grinding time. The matrix allows you to maintain the contours established at the time of the original wax up. Surface texture was applied with diamond burs and then soften with a rubber wheel.

**Images 22 and 23** – Light staining was all that was needed to achieve correct color and surface characterization. After firing the stains, a partial glaze of the restorations was applied. Glaze paste was applied every where except in the incisal one-third. The contacts were later adjusted.



**Image 24** – Following firing of the glaze, the contacts were checked and adjusted. The crowns were lightly rubber wheeled and polished with diamond paste. The completed restoration shows the beautiful esthetics with predictable results achieved in this case.



**Images 25** – The restoration two weeks after seating.

As dental technicians we are always searching for efficiency without sacrificing esthetics. The case presented here shows how we don't have to forsake one for the other. In the end, not only was I satisfied as a technician with the final restoration, but so was the dentist and the patient. You can't ask for better results than that. 📌



### About the Author:

Thomas "Buddy" Wester, CDT, is a ceramist with Seven Hills Dental Laboratory in Tallahassee, Fla. He has been certified in crown and bridge for 25 years. He is president of the Florida Dental Laboratory Association and a member of the Florida Academy of Cosmetic Dentistry. He is a certified LVI master technician.



### Earn CDT/RG credits for this article and quiz!

Receive ½ point CDT/RG documented scientific credit for reading this article and passing the quiz. To get your credit, complete the quiz located on the FDLA Web site at [www.fdma.net](http://www.fdma.net) using the Newsletter link. Once you have completed the quiz, fax it to FDLA at 850-222-3019. This quiz is provided to test the technician's comprehension of the article's content and does not necessarily serve as an endorsement of the content by FDLA.





## focus Magazine Article Quiz 1st Quarter 2009

### “Beautiful Esthetics with Minimal Effort”

By: Thomas ‘Buddy’ Wester, CDT

- Why was the patient discussed in the article getting work done?
  - It was medically necessary
  - The patient wanted an esthetically pleasing look
- Which company’s materials were used to complete the restoration?
  - Ivoclar Vivadent
  - Whip Mix
  - Jensen Industries
  - Heraeus Kulzer
- According to the manufacturer’s guidelines for shape and pattern thickness, what is the minimum of the cut back and wax up?
  - .1mm
  - .3mm
  - .4mm
  - .6mm
- In the pressing process the spruing should be carried out in the opposite direction of the prep.
  - True
  - False
- The sprue and pattern should be no longer than...
  - 11mm – 12mm
  - 13mm – 14mm
  - 15mm – 16mm
  - 17mm – 18mm
- A \_\_\_\_\_ layer was applied utilizing the matrix for control.
  - Wash
  - Third
  - Transparent
- Which of the following stain colors were used on the restoration?
  - Sapphire
  - Khaki
  - Cream
  - All of the above
- The matrix was the key to maintaining shape and incisal edge position that in turn reduces grinding time.
  - True
  - False
- Where was the glaze paste applied?
  - The incisal third
  - All over
  - No glaze paste was applied
- Following the firing, the crowns were heavily rubber wheeled.
  - True
  - False

Passing quiz grades are worth ½ point documented scientific credit towards your CDT or RG renewal.  
Look for more quizzes in future issues of *focus* magazine!

Your must submit your completed quiz to FDLA by fax at 850/222-3019 or by mail to the address below.

Name: \_\_\_\_\_ CDT #: \_\_\_\_\_ Date: \_\_\_\_\_

FDLA, 325 John Knox Rd, Ste L-103, Tallahassee, Florida 32303 · (850) 224-0711 phone · (850) 222-3019 FAX

This quiz is provided to test the technician’s comprehension of the articles content, and does not necessarily serve as an endorsement of the content by FDLA or NBC.