

Zirlux FC Full Contour Staining Technique: Eliminate Dipping Solution In Your Laboratory!

Janet Jones, CDT

Janet has over 30 years experience in the dental field. She achieved her A.A.S. degree in Dental Laboratory Technology in Lexington, KY and has been a CDT for over 28 years. Janet owned and operated Jones Crown and Bridge for almost 20 years, specializing in all ceramics, before joining Ivoclar Vivadent as Territory Sales Manager for North and South Carolina in 2000. She is now Technical Consultant for Ardent, Inc., where she assists customers with technical issues and teaches educational courses for Pentron Ceramics.



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Zirlux FC is a full contour zirconia system available exclusively from Zahn Dental. The Zirlux FC system consists of 5 shades of preshaded, isostatically pressed, high-translucency zirconia and a coordinated system of stains and modifiers. Using the 5 base shades of zirconia, all 16 A–D and 3 bleach shades can be achieved using 7 stains and the glaze process. A shade coordination chart is included as a guide to match the required shade.

When finishing the crowns, use a fine diamond bur (≤50 μm) with water to prevent any localized heat buildup in the zirconia. Once you achieve the desired surface texture, sandblast the restoration with 50-micron aluminum oxide at no more than 50 psi. Polish the occlusal contacts with polishers indicated for zirconia to smooth the surface and reduce potential for wear of opposing dentition. Clean the restorations using a steam cleaner or place in an ultrasonic cleaner for 15 minutes in distilled water to ensure the surface is free of dirt, oils, or residue from milling and sandblasting.



Figure 1

Single Stain Technique

In this example we will be matching shade A-2, which requires only one application of stain #2 and was milled from the Zirlux FC shade 201. Dispense a small amount of stain on your palette, and mix thoroughly. The stain should be a smooth, creamy consistency,

like honey [Fig.1]. If the material seems too thick, wet your brush with Universal Glaze Medium to thin the paste on the palette. Use caution not to make it too thin or it will be difficult to achieve the desired shade.



Figure 2

The stain should be applied to the cervical and middle thirds of the tooth until the desired shade is reached. The stain applications should be an even layer [Fig. 2]. Avoid trying to apply too much stain at once as it will have a tendency to streak or pool at the margin.



Figure 3

The same stain may be applied to the occlusal to achieve the appearance of depth in the fossae. If desired, there are 7 characterization modifiers that can be used to enhance the occlusal surface. Blue, Grey, and a Blue/Grey blend are available to enhance the look of translucency of the cusp tips. Orange and Dark Orange can be used to stain grooves or to

increase chroma interproximally [Fig. 3]. The white stain is excellent for getting the “snowcap” effect on the cusp ridges and for areas of decalcification.

Fire the stain application according to the chart. After the stain firing, place glaze on your palette and mix thoroughly. If needed, you may add some Universal Glaze Medium with your brush to avoid thinning, it should be a creamy consistency. If you do not have the glazed surface you desire after firing, the glaze might have been thinned too much—or not enough glaze was applied. It is always safe to add more stain or more glaze and refire if you need to achieve a different esthetic outcome.

FIRING PARAMETERS-ZIRLUX FC STAIN & GLAZE

Pre Dry	Low Temp	Heat Rate	Vac	Vac Start	Vac Stop	Hi Temp	Hold	Cool
6 Min	800°F 425°C	100°F/min 55°C/min	≥28 in 720mm	900°F 480°C	1830°F 1000°C	1830°F 1000°C	0	0

COORDINATION CHART - ZIRLUX FC STAIN & GLAZE


Zirlux FC Shade	001			101							201				301		401		
Coordinates with Vita Shade	OM1	OM2	OM3	A1	B1	B2	C1	D2	D3	D4	A2	A3	A3.5	A4	B3	B4	C2	C3	C4
1st Stain	Pink	III	I	I	VII	IV	V	III	II	VII	II	II	II	III	I	I	VII	V	IV
2nd Stain	—	—	—	—	—	I	—	—	VI	VII	—	II	I	II	IV	I	III	III	V

Double Stain Technique


Some shades require two stain applications to achieve the desired shade. Using the shade coordination chart, determine which stains are required and place them on the palette. Mix as with the single stain technique to a creamy or honey-like consistency. In this case, we are staining for shade C2. The Zirlux FC shade 401 was used to mill the crown. Before applying stain, do any necessary finishing of the surface with a fine diamond and water to prevent heat buildup.

The first application will be stain #7 and will be applied to the entire surface of the crown, to match the occlusal one third of the shade tab. Fire this application according to the firing chart. The second application of stain will be stain #3. Again, mix it to a creamy consistency and apply to the cervical and middle third of the tooth, blending to match the shade tab. Any characterization may be done at this point to enhance the occlusal as in the single stain technique. The stain applications should be an even layer, avoid trying to apply too much stain at once as it will have a tendency to streak or pool at the margin. Fire the restoration again on the same program as the first stain firing.

Mix glaze to a creamy consistency and apply to the entire surface and fire again. The crown should exhibit a properly glazed, glossy surface.



FULL CONTOUR ZIRCONIA



For ordering information and more details see pages 8-9 or visit www.zahndental.com/zirlux

Quiz (Circle your answers)

Questions:

- What Zirlux FC stain is used to match the B1 Shade?
 - III
 - VII
 - II
 - I
- Zirlux FC restorations should not be sandblasted.
 - True
 - False
- Finish the surface of Zirlux FC with:
 - Carbide burs
 - Aluminum Oxide stones
 - Fine diamond burs
- What size Aluminum Oxide should be used to sandblast Zirlux FC?
 - 50 micron
 - 100 micron
 - 80 micron
- The Zirlux FC restoration shade used for matching shade D3 is:
 - 201
 - 401
 - 001
 - 101
- The Zirlux FC system consists of 5 shades of preshaded, isostatically pressed, high translucency Zirconia and a coordinated system of stains and modifiers.
 - True
 - False
- The stain and glaze firing temperature for Zirlux FC is:
 - 1500°F
 - 1800°F
 - 1000°C
 - 1000°F
- Occlusal contacts on Zirlux FC should be polished smooth.
 - True
 - False
- The Zirlux FC stain used to match the A3 shade is:
 - II & III
 - II & II
 - IV & V
 - III & I
- When doing the double stain technique, the first stain should cover the entire restoration.
 - True
 - False

Receive .5 point documented Scientific credit for passing the above quiz about this article. Return a completed quiz and contact information to Zahn Dental Marketing via mail, fax, or E-mail at the following addresses: Zahn Dental, 135 Duryea Road, Melville, NY 11747; fax to (631) 390-8179; e-mail to: zahn.dentalmarketing@henryschein.com. This quiz has been provided and approved by NBC (National Board for Certification).

You must provide all information above to ensure you receive credit. Previous participants may not have earned the .5 credit due to missing information or new state requirements.

A copy of this quiz has also been posted on the Zahn Dental Web site @ www.zahndental.com/quiz; click on CDT Quizzes.

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E-mail _____
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