



Bonding Tips for VITA ENAMIC®

by the co-developer of VITA ENAMIC, Dr. Russell Giordano

STEP 1

Etching and Silanation:

Appropriate acid etching (5% hydrofluoric acid / 60 sec) and use of silane is required, maximizing the bond to the restoration.

STEP 2

Use a composite resin bond and either light or dual cure

- **Light Cure:**
 - Only for thin ceramics like veneers.
- **Dual Cure:**
 - Needed for thick ceramic and opaque restorations.
 - Light cure for a few seconds in order to remove excess.
 - Fully cure using appropriate manufacturer instructions.

STEP 3

Remove excess cement

- Clean excess bonding cement.
- Cement removal should be parallel, not perpendicular, to avoid cement pull out.

Note: Cement spacing is critical; a cement layer that is too thick may weaken the bond strength.



Etch the enamel



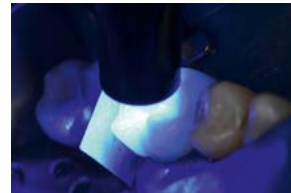
Condition the tooth substance



Silanizing



Insertion of the restoration



Light curing



Remove excess cement



Before



After

VITA ENAMIC – COMMON BONDING MISTAKES TO AVOID

- Using expired materials or mixing and matching brands could cause the bond to not cure or set correctly.
- Restoration and/or tooth structure contamination:
 - Clean restoration after milling with alcohol to remove any debris
 - Make sure air lines are free of oil or moisture
 - Mishandling restoration - contamination from finger oils or saliva will inhibit bonding
- Over-etching ceramic creates a layer of precipitated ceramic that may inhibit the bond.
- Under-etching ceramic may cause insufficient bonding.
- Bonding dentine/enamel etching.
 - Total Etch vs. Enamel Only: Total etch involves etching dentin for no longer than 15 seconds. Thorough rinsing is required to avoid sensitivity. This can improve bond strength when only dentin is available.
 - Improper application of the bonding agent: Scrubbing the tooth with the agent helps penetration into the dentin tubules. Collagen fibers are critical to bonding. Over-drying will cause the collapse of the collagen and will prevent proper bonding.

Recommended Composite Resin Bonding Systems

Inlays, Onlays and Crowns

Dr. Giordano has had particular success with:

Variolink Veneer for veneers and Multilink Automix for inlays, onlays and crowns. Clearfil Esthetic is also used in his clinics for crowns, and Multilink Hybrid is used for bonding to titanium.

[Click here to see a list of VITA bonding recommendations for CAD/CAM materials.](#)

- If the cement is too thick, it is more likely that de-bonding will occur.
- Light curing should not be used for thick or opaque ceramic, as the light is not strong enough to activate the photo-initiators. This will also happen if the curing light is too weak and/or the wrong wavelength.

VITA ENAMIC®: the first hybrid dental ceramic in the world



VITA ENAMIC is the only material with interconnected networks of ceramic and resin, combining the excellent etched bond of ceramic with the superior natural results from infused resin*

VITA ENAMIC is the first hybrid dental ceramic with a dual-network structure that combines the best that ceramic and composite materials have to offer. The CAD/CAM blocks are suitable for fabricating conventional inlays, onlays, veneers and crowns for anterior and posterior applications as well as minimally-invasive restorations such as no-prep veneers.

Thanks to a dual ceramic-polymer network, the new composite incorporates the benefits of ceramic and composite materials. Materials science testing shows that as well as offering excellent strength, VITA ENAMIC also ensures extraordinary levels of elasticity, even going so far as to include integrated crack prevention.

This new class of materials offers significantly less brittleness than a pure dental ceramic as well as abrasion behavior superior to that of conventional composite materials. As a result, it provides characteristics equivalent to those of natural dentition.

Enamic restorations mill in as little as 4 minutes, 19 seconds[†] and provide increased efficiency by allowing up to 148 crowns to be milled with one set of diamond tools. The revolutionary material also provides greater precision and improved edge stability.

*Technical and scientific documentation can be found at vitanorthamerica.com

[†]Depends on design software and milling unit.



Recommended Indications

Ideal for minimally invasive reconstructions and posterior crowns:

- Reconstructions in cases of limited space available
- Reconstructions of minor defects
- Non-prep veneer/tabletop
- Posterior tooth/molar crown
- Implant-supported crown

Available Shades

VITA 3D-MASTER® HT (high translucent)

- 0M1-HT, 1M1-HT, 1M2-HT, 2M2-HT, 3M2-HT

VITA 3D-MASTER® T (translucent)

- 0M1-T, 1M1-T, 1M2-T, 2M2-T, 3M2-T



About Dr. Russell Giordano

Dr. Giordano is an Associate Professor and Director of Biomaterials in the Department of Restorative Dentistry/Biomaterials at the Boston University Goldman School of Dental Medicine. Dr. Giordano received specialty training in prosthodontics at Harvard School of Dental Medicine and performed research at the Ceramics Processing Research Laboratory at the Massachusetts Institute of Technology leading to a D.M.Sc. degree in 1991 and a Certificate in Prosthodontics. Dr. Giordano is a Fellow of the Academy of Dental Materials and has been actively involved in ceramic materials development and CAD/CAM systems at MIT, Harvard, and Boston University. He currently serves on the editorial board of the Massachusetts Dental Society, the JDT, Spectrum and the Journal of Dentistry.

VITA shade, VITA made.

VITA
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For more information regarding VITA ENAMIC, contact VITA North America at:

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www.vitanorthamerica.com