Rough & Reflective vs. Smooth & Shiny

The finishing and polishing step is the home stretch in completing your restoration. It’s also one that may not get enough attention. See why achieving a smooth, shiny finish is important versus leaving the restoration rough and reflective. Read more.

Finish Strong in the Final Steps of a Class II

Proper execution during the finishing and polishing step is more important than you think. This look at how your finishing work can influence patient satisfaction.

Flowable Composite Resins CE Course

Take advantage of this two-credit CE course and learn how to decrease microleakage and shrinkage stress in composite restorations.

CaulkTalk: Ask Dr. Janyavula

Q: After using my fluted finishing burs and stones, do I really need to finish more?

Q: How can I reduce interproximal flash and required finishing?

Q: There are white lines around my restoration. What can I do to avoid this?

Have your own question? Tweet us @DENTSPYDaulk

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Upcoming Topics
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Get a smooth Class II finish with Enhance®

Learn more
Rough and Reflective vs. Smooth and Shiny

By: Jason H. Goodchild, DMD

The final step for achieving excellent clinical results with composite resin restorations is gross-contouring with a high-speed handpiece followed by finishing and polishing. The polishability of a composite is based on the filler type, shape, and content. And although a recent study showed that hybrid and microfilled composites perform best clinically, the trend in composite technology is for universal applicability. The creation of ideal surface polish of a composite restoration can improve the esthetics and longevity of restorations by reducing stain potential, biofilm accumulation, gingival inflammation, and minimizing the potential for wear.* In a study by Berger examining three composites and polishing systems (i.e., DENTSPLY Caulk, 3M ESPE, and Cosmident) supplied by the same manufacturer, it was his conclusion that, the polishing system from the same company as the composite resin should be used, as these showed good results in comparison with other polishers.**

In order to fully realize the benefits of making good material choices like DENTSPLY Caulk’s TPH Spectra® Universal Composite, proper attention to finishing and polishing is important. After light curing the final restorative layer, more dentin is left to pick up a coarse diamond bur to gross-contour the composite and reduce it into occlusion. After that, it is imperative that further steps be taken to reduce surface roughness and achieve a smooth composite surface. If a practitioner follows the course diamond bur with a polisher like Roeko® (DENTSPLY Caulk)-the surface may have a luster but be reflective, but upon high magnification may be rough and prone to plaque retention and staining (Figure 1). Conversely, if the composite is contoured with increasingly fine finishing burs and stored followed by Enhance® aluminum-oxide impregnated finishing discs, cups, or points (DENTSPLY Caulk) before picking up the polisher, a smoother, shinier surface that is resistant to plaque retention and staining is the result (Figure 2).

Remembering that both and feel largely influence patient satisfaction, proper execution during the finishing and polishing step is of critical importance. Enhance® polishers help practitioners to efficiently achieve the tactile feel, visual sheen and composite longevity that are expected by the patient.

Unique Characteristics of Enhance® Finishing:

- One of a kind system: Enhance® achieves both intermediate and final finishing in a single step. The pressure applied controls the aggressiveness. More pressure for an aggressive initial finish; less pressure to smooth the surface.
- Like a paste without the mess: Enhance® breaks down during use, releasing aluminum oxide particles effectively buff the restoration, working like a loose abrasive without the mess. As it breaks down, heat is dissipated rather than transferred to the tooth and restoration. Figure 3 shows an Enhance® point being used to finish a composite restoration on a typodont where the material is breaking down during use.

DENTSPLY Caulk is proud to be the first company to develop a complete Class II solution with individual components designed to be used together for consistent outstanding results. Learn more about how DENTSPLY Caulk can help you simplify your Class II restorations: call 1-800-5-D-CAULK or visit www.class2restorations.com today.

References:

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Dr. Jason H. Goodchild is a graduate of Dickinson College in Carlisle, PA. He received his dental training at the University of Pennsylvania School of Dental Medicine where he still holds a faculty position as a Clinical Associate Professor in the Department of Oral Medicine. Dr. Goodchild is a research dentist at DENTSPLY Caulk involved in educating dentists on new materials and techniques to improve clinical practice. He has published numerous articles and lectures internationally on the topics of treatment planning, restorative dentistry, pharmacology, emergency medicine in dentistry, endodontic dentistry, and dental photography.
Ask Dr. Janyavula

Dr. Janyavula takes on a few questions about finishing.

Q. After using my fluted finishing burs and stones, do I really need to finish more?

A. Fluted burs are designed to remove gross surface defects and to aid in the creation of proper anatomical form. Using them as the sole finishing/polishing instrument is likely to leave surface irregularities which can contribute to plaque traps and excessive staining. Numerous studies have emphasized the importance of sequential use of additional finishing and polishing systems after gross contouring to effectively remove the fine surface irregularities and impart a high gloss.

Q. How can I reduce interproximal flash and required finishing?

A. Interproximal finishing can be tedious and time consuming. Plus, if overdone, it can negatively impact the interproximal contact and contour. To reduce interproximal flash, choose a matrix system that creates a tight seal to keep the restorative material in place, and has anatomically contoured matrices that generate proper interproximal contours so that you don’t have to. Additionally, when using anatomically contoured matrices, flowable composite that will take the shape of the band, and can be placed in bulk, may help to reduce the need for interproximal surface refining after matrix removal.

Q. There are white lines around my restoration. What can I do to avoid this?

A. The white lines surrounding the restoration could have resulted from a number of causes including curing stress impacting the enamel/adhesive interface, preparation design (beveling of enamel margins), or from finishing and polishing at very high speeds. To avoid the white line phenomenon, it is advisable to use restorative materials with lower shrinkage stress, adhesives with lower film thickness, a curing light with lower irradiance for a longer cycle rather than higher irradiance for a shorter cycle, and to choose finishing and polishing products that can efficiently remove material and create luster to avoid the need for polishing at a high speed which can generate excessive heat.