

# Achieving Fast, Easy and Tight Class II Contacts with Reel Matrix™

by Dory Stutman, DDS • [smilesstyle@optonline.net](mailto:smilesstyle@optonline.net)



Posterior direct composite restorations continue to be among the treatments that clinicians provide on a frequent and regular basis. Challenging enough given the limited visibility and access that are characteristic of the posterior area, these restorations typically require technique sensitive adhesive protocol, including incremental layering and curing of the composite.<sup>1</sup> Even when meticulous placement techniques are implemented, posterior direct composite restorations can be prone to polymerization shrinkage and microleakage that lead to secondary caries and post-operative sensitivity.

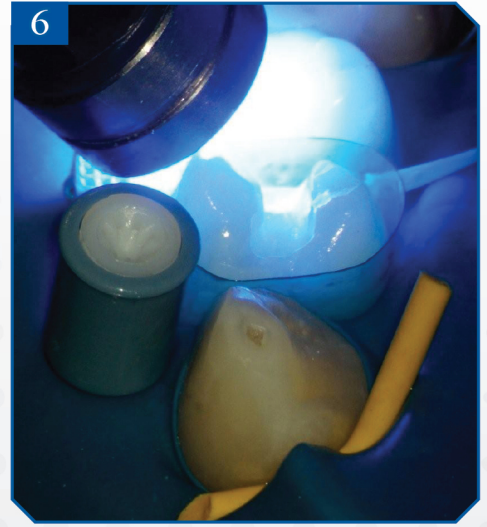
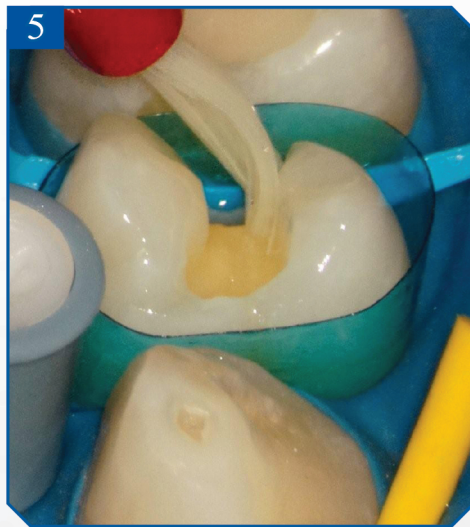
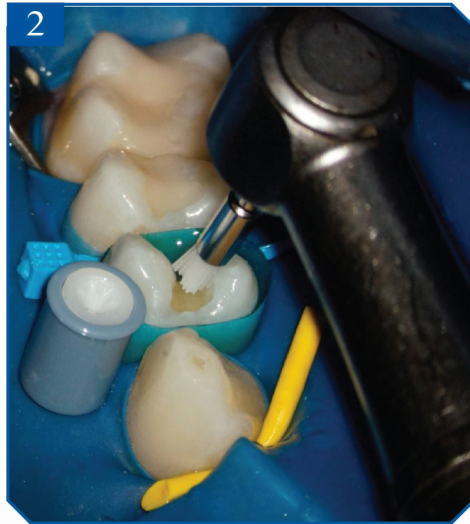
Additionally, proximal concavities in premolars or molars creates difficulty when reproducing natural cervical anatomy. Proper placement of pre-contoured matrices and the use of wedges can help clinicians establish an optimal emergence profile and adequate contours by adapting to the cavosurface area and preventing gap formation.<sup>2</sup> Establishing tight and anatomically precise contacts when placing Class II restorations can be difficult if adjacent teeth are not adequately separated and a flexible matrix used. In fact, matrix selection and the manner in which it

is used significantly affects both the quality and longevity of the final posterior direct composite restoration.<sup>3</sup>

Creating natural contacts between posterior teeth when placing Class II composite restorations is impacted by the type of matrix system used. Restorations placed using a circumferential pre-contoured transparent matrix systems have been shown to have proximal contact points in a more occlusal location.<sup>4</sup> Additionally, the use of circumferential matrices has been shown to result in less overhang than sectional matrices, with a flexible matrix producing less overhang than dead-soft matrices.<sup>5,6</sup>

## An Efficient & Predictable Alternative

Today clinicians have an easier to use alternative when placing Class II, mesio-occlusal, and disto-occlusal composite restorations. Reel Matrix™ incorporates thin Tofflemire-style matrix bands that are pre-contoured in three dimensions and coupled with an applicator handle for direct composite and amalgam placement. When combined with anatomical wedges and separa-



tor rings, clinicians can achieve tight contacts at the natural height of contour. Further, the efficient design and ease of use speed placement of large restorations and core buildups.

Contributing to ease of use is the manner in which the pre-loaded reels pop into the handle. The reel is pressed into the handle and the grippers retracted to lock it in place. If the regular matrices (i.e., yellow hubs) are used, they are easily pushed through contacts. Additionally, the retainer-less design greatly speeds quadrant work while improving

visibility and patient comfort. When a separator ring (e.g., 3D XR) is used, buccal and lingual flash is virtually eliminated.

### Indications

Reel Matrix is the ideal matrix system choice for such indications as crown build-ups, posts, and cores, where a cure-through matrix is necessary. With the clear version, it is also the ideal choice for large Class II restorations, providing improved visualization of the overall restoration. This matrix also can be

used with the 3D/3D XR ring for slightly wide or slightly deep posterior restorations for improved results. Additionally, the Tofflemire-style contoured matrix is easy to apply and enables a cure-through option that can facilitate restoration of the distal of canine or short or malpositioned teeth, as well as conservative Class II preparations.

### Cleaning & Disinfection

The reels and matrices are single use, disposable items and



- Figure 1. View of the Reel Matrix handle positioning the matrix above the tooth and placing it. The wedge wand seals the gingival margins.
- Figure 2. The preparation was cleaned (e.g., Ultradent Starbrush).
- Figure 3. Occlusal view of preparation.
- Figure 4. The preparation was etched for 15 seconds, then rinsed.
- Figure 5. The bonding agent (e.g., Futurabond, Voco) was brushed on.
- Figure 6. The bonding agent was cured.
- Figure 7. Flowable composite (e.g., G-aenial Universal Flo) was placed and cured.
- Figure 8. The direct composite (e.g., Venus, Heraeus) was placed and cured.
- Figure 9. A12 blade was used to refine the contours.
- Figure 10. View of the final restoration being polished.

should not be sterilized. Prior to use, they may be sprayed with chemical disinfectant, if desired. The Reel Matrix instruments can be cleaned first in the open position, then sterilized, but not immersed in liquid or placed in an ultrasonic cleaning unit.

Visible debris or organic matter should be removed with a disposable wipe or surface brush and warm tap water with soap or detergent. If debris remains, instruments can be wiped or brushed again, all external surfaces rinsed with warm tap water, then dried.

The Reel Matrix instruments may be dry heat sterilized, chemoclaved, or steam autoclaved according to the manufacturer's instructions. Cold sterilization involving soaking the instrument in liquid should not be used.

### **Class II Direct Composite Technique using Reel Matrix**

The following describes a technique for utilizing the Reel Matrix to enable placement of an anatomically correct Class II

posterior composite restoration. By incorporating the Reel Matrix, interproximal surfaces can be restored to precise and natural contour, with predictable contact with the adjacent teeth.

1. Prepare the tooth and place a rubber dam.
2. To begin using the Reel Matrix, push the tensioning ball on the handle forward, extending the reel gear and grippers. Press the reel onto the gear and retract the tensioning ball, firmly engaging the reel with the gear while being retained by the grippers.

“Dentists will continue to seek the most reliable and time efficient materials to ensure they provide clinically sound and long-lasting treatments.”

3. Wedge both the mesial and distal sides of the tooth to be restored, producing sufficient separation to allow matrix placement. Note: pre-wedging is not necessary if the contact is broken.
4. Orient the reel either on the buccal or lingual side of the tooth to be restored. Note: it is best to place it opposite wider restorations.
5. Use the handle to position the matrix above the tooth and place it (Figure 1). Note: it may be helpful to use a finger to seat the matrix.
6. Remove both wedges and firmly seat the matrix, using your finger to help seat the matrix.
7. Turn the tensioning ball; the reel will tighten the matrix. Release the reel by pushing the tensioning ball forward.
8. Apply a wedge to seal the gingival margins. Note: for best results, use a Garrison separator ring to reduce buccal and lingual flash and to provide the extra separation needed to achieve ideal contacts. Use a contact-forming instrument to help broaden the contact.
9. Properly clean and etch the preparation (Figures 2 through 4).
10. Apply your preferred bonding and composite materials according to the manufacturer's instructions (Figures 5 through 8).
11. Remove the wedges, and repeat steps 2 and 3 to re-grip the reel. Use the tensioning ball to loosen the reel sufficiently to allow for matrix removal. If the contact is too tight to allow matrix removal with the handle, release the reel from the handle and use a Garrison Matrix Forceps to remove it.
12. Finish and polish the restoration using your preferred methods (Figures 9 and 10).

## Conclusion

It is likely that patient demand for natural-looking, tooth-colored restorations will continue, even when treatment is for lesions in the posterior of the mouth. Therefore, dentists will

continue to seek the most reliable and time efficient materials to ensure they provide clinically sound and long-lasting treatments. Using a matrix system like Reel Matrix can enable them to quickly and precisely place anatomically correct Class II posterior composite restorations that demonstrate exceptional contacts. ♦

## References

1. Sarrett DC. Clinical challenges and the relevance of materials testing for posterior composite restorations. *Dent Mater.* 2005 Jan;21(1):9-20.
2. Patras M, Doukoudakis S. Class II composite restorations ad proximal concavities: clinical implications and management. *Oper Dent.* 2013 Mar-Apr;38(2):119-24.
3. Qualtrough AJ, Wilso NH. Matrices: their development and in clinical practice. *Dent Update.* 1992 Sep;19(7):281-2, 284-6.
4. Kampouropoulos D, Paximada C, Loukidis M, Kakaboura A. The influence of matrix type on the proximal contact in Class II resin composite restorations. *Oper Dent.* 2010 Jul-Aug; 35(4): 454-62.
5. Loomans BA, Opdam NJ, Roeters FJ, Bronkhorst EM, Huysmans MC. Restoration techniques and marginal overhang in Class II composite resin restorations. *J Dent.* 2009 Sep; 37(9):712-7.
6. Chuang SF, Su KC, Wang CH, Chang CH. Morphological analysis of proximal contacts in class II direct restorations with 3D image reconstruction. *J Dent.* 2011 Jun; 39(6):448-56.

## CE CREDIT

All participants scoring at least 80% on the examination will receive a certificate verifying 1 CEU Credit. To take the test and receive credit, or request a sample please go to [http://cpsmagazine.com/dental-team-member/achieving-tight-contacts\\_exam](http://cpsmagazine.com/dental-team-member/achieving-tight-contacts_exam)