The advent of new and improved composites, as well as the patient’s desire for more esthetic restorations, has resulted in an increase in posterior composite placement. In the early 1970s, these materials demonstrated a problem with excessive wear. Optimized filler content and filler size distribution, along with improved resin formulations, have increased the wear resistance and strength of new composites. However, their use is more technique sensitive and time-consuming, and it is harder to achieve a good contact in the proper position. In addition, these materials undergo polymerization shrinkage that may adversely affect the interproximal margins.¹

In order to overcome some of these problems, specific composites for posterior teeth have been developed, and new operative techniques that employ a variety of sectional matrices (Compositight®, Garrison Dental Solutions, Spring Lake, MI; Palodent®, DENTSPLY Caulk, York, PA) and contact formers (TriMax, AdDent, Inc., Danbury, CT; Contact Pro™ II, CEJ Dental) have been introduced.²,³ Achieving suitable interproximal contacts and contour is essential to avoid food impaction, periodontal disease, and recurrent decay.⁴

Inadequate contacts result from utilizing amalgam techniques with composite. Conventional circumferential bands pull away from adjacent teeth when the retainer is tightened around the tooth to be restored. This usually results in a flat, non-anatomical proximal contour. The shape of the interproximal surface should be convex occlusally and concave gingivally. The proximal contact is oval in the buccolingual direction and is usually located approximately 1 mm gingival to the marginal ridge. The interdental papilla normally fills the space apical to this contact and prevents lateral food impaction. Appropriate contour of the teeth adjacent to the papilla is needed to maintain its shape. Wedges may not only separate the teeth, but elevate them occlusally into contact.⁵

The introduction of a new matrix band (Contact Perfect™, Miltex, Inc., York, PA, 17402) (Figure 1) that fits into a conventional Tofflemire retainer but overcomes its deficiencies for composite placement (i.e., flat, non-anatomical contour) may be advantageous for those who prefer a Tofflemire to a sectional matrix. The matrix band, which is .001
in thick, has 2 windows and a shield covering them that are positioned at the mesial and distal contact areas. Upon removal of the shield and slight pressure, the composite is displaced into direct contact with the adjacent tooth.

**TECHNIQUE**

1. The Contact Perfect matrix band is placed similar to a traditional Tofflemire matrix, with the apertures/shields positioned at the area of desired contact (Figure 2). The connection tabs and shield connectors are used to aid in band alignment. Place the Tofflemire retainer in and onto the tooth.

2. The shield connectors are now snipped with scissors to allow an unobstructed view of the field, and a high-speed vacuum is used to catch the clippings (Figure 3).

3. Sharp scissors are used to snip the middle aspect of the connected removal tabs. Avoid cutting near the removal eyelets.

4. Wedges are placed on only the mesial and distal aspects to prevent gingival excess. Etchant is placed with slight agitation and rinsed until all color is removed. A bonding agent is applied with a light scrubbing motion, lightly air-dispersed to evaporate the solvent, and then light-cured for 10 seconds. Alternatively, a self-etching bonding agent can be used, if desired.
A layer of resin (Filtek™ Z 250, 3M ESPE, St. Paul, MN) that has been heated in a thermal-assisted light polymerization unit (Calset™ AdDent, Inc.) is adapted on the gingival floor in a 1-mm to 2-mm increment and sloped upward, away from the shields (Figure 4), and then light-cured for 20 to 30 seconds. Treatment of the composite with a thermal unit permits increased flow and possibly better adaptation of the composite to the preparation. It also allows a higher degree of conversion in a shorter period of time. Both boxes are packed and cured simultaneously after the resin has reached body temperature. Resins that are sculptable and non-sticky, such as the new nano composites, are appropriate.

5. The mesial box is packed to the height of the marginal ridge. Subsequently, an interproximal carver (Figure 5) is used to contour the marginal ridge and occlusal (e.g., buccal and lingual) embrasures. This also removes excess from the shield and facilitates its removal. A P-1 instrument is used to shape the occlusal anatomy prior to curing (Figure 6).

7. An explorer is used to engage the eyelet in the shield and remove it with a quick vertical motion (Figures 7a and 7b). This permits direct contact with the adjacent tooth. The poke should be very gentle and 2 mm or more back from the marginal ridge. Since only .001 in of movement is needed (i.e., the thickness of the original window), the poke should be very gentle. Experience with the technique allows the operator to know how much force is necessary to displace the specific composite used. The other side is treated in a similar manner.

9. A handpiece and finishing diamond (or scissors) are utilized to sever both arches of the band from the U-shaped notch.

10. The retainer is tightened more, allowing separation of one side of the Contact Perfect by the lower distal notches. The matrix should be snugly secured in the retainer to prevent the band from slipping out during tightening. Scissors are used to separate the intact mesial side, and then the remainder of the band is removed.

CONCLUSION
Achieving a predictable, ideally shaped contact is one of the few remaining obstacles in posterior composite placement. Different matrices, contact formers, and packable composites have been developed to overcome this deficiency. This assortment enables clinicians to select the material and technique that is suitable for their use in any given clinical situation. Not all materials and devices are suitable for every clinician and patient. For clinicians who prefer a Tofflemire matrix to a sectional retainer, the Contact Perfect allows the use of a traditional Tofflemire retainer to achieve a properly positioned contact when placing composite (Figures 9 through 11). A short learning curve is necessary to become proficient in the band’s proper usage.

REFERENCES
Miltex offers Contact Perfect Matrix Bands in 3 different styles. An introductory pack will also be available to help dentists get started. For more information, please contact your local Miltex authorized dealer or contact Miltex Customer Service at our toll free phone 1-866-854-8300.

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