

new product review

new product



by
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Perhaps one of the things that has prevented clinicians from performing direct Class II composite restorations has been the inability to predictably achieve physiological interproximal contacts. The lack of a proper armamentarium most often has led to undercontoured gingival embrasures and open proximal contacts.

With the advent of high viscosity (also known as condensable or packable) composites, much improvement has been gained in that the compactability of the restorative material has aided more predictably in the achievement of tighter contacts. However, some of the matrices available are either too thick or lack physiologically adequate contour to allow for an ideal contact area formation. This review will focus on two new products which used either independently or combined can facilitate the realization of stress-free direct Class II restorations.

MICROBANDS/MICROSTRIPS *(Dental Innovations)*

MICROBANDS AND MICROSTRIPS

Based upon metal micromachining technology, Dental Innovations has brought a series of matrices onto the market. Micromachining is a process by which a stainless steel strip is thinned in a precisely demarcated area to .0005" or less. Micromachined products are given a rigid structure by an outline of .0015" stainless steel surrounding the extremely thin contact area. The surrounding superstructure keeps the foil-like contact area tense so it can be slipped in and out through the natural tooth contacts without ruffling or otherwise deforming.

MICROBANDS are matrix bands in which the contact areas have been anatomically contoured and thinned to .00045" or 11 microns. These numbers represent less than half the thickness of most matrix bands available. Used in a standard Tofflemire retainer, they can be easily slipped down through unprepared contacts of MO or DO preparations without much effort, provided the proximal surfaces do not have protruding ledges.

Microbands are available in three different shapes: 1) A standard shape(s) with either a long mesial or distal proximal box; 2) A nonstandard shape, the MUDL, is

used for long proximal boxes on the mesial of the upper teeth or the distal of the lower teeth, and; 3) The other non-standard shape, the DUML, is used for long proximal boxes on the distal of the upper teeth or the mesial of the lower teeth. (Figure 1) An assortment box contains all three shapes – 30 standards, 10 MUDL, and 1 DUML. Each of the three shapes can be ordered individually in packets of 50 bands of any one shape.

MICROSTRIPS, the siblings of sectional matrices such as GDS's and Palodent's, are micromachined separator strips thin enough to be easily slipped through natural anterior and posterior teeth proximal contacts. Microstrips are available in anterior, premolar, and molar shapes. (Figure 2) In addition, each shape is available with thin gingival edges and with reinforced gingival edges. The reinforced gingival edge provides an improved contour at the gingival third of the proximal surface, but sometimes renders it difficult to slide the strip down through a tight interproximal contact. In contrast, the strips with thin gingival edges can be easily slid down

through tight interproximal contacts. If nothing else works out, torquing the teeth apart with an instrument always allows for the insertion of even the thickest matrix.

Anterior microstrips (#1 and #2) can be most frequently used for isolating prepared teeth during bonding of esthetic veneers in order to protect the adjacent teeth from etching and keep cements out of the interproximal embrasures. Their minute thickness will not interfere with the seating of the restoration. Even though the manufacturer recommends that these extra thin strips be used for Class III and IV restorations, best results are still likely to be obtained with larger such defects through the utilization of free-hand bonding and concomitant use of clear mylar strips.

Molar and premolar microstrips manufacturer's recommended usage include protection of adjacent teeth during inlay/onlay cementation and replacement for matrix bands in conservative as well as moderate-sized Class II restorations in premolars. Even though it is the manufacturer's recommendation that the microstrips

be retained in interproximal areas of conservative preparations of posterior teeth without any adjunctive device, it is this author's opinion that proper wedging associated with retaining rings (such as the Bitine Ring) should provide the best operative results.

Microstrips are available for purchase in an assortment box containing 20 of each of the six designs (120 strips total) and are also available in packages containing 100 of any one design (#1 anterior reinforced gingival edge, #2 anterior thin gingival edge, #3 premolar reinforced gingival edge, #4 premolar thin gingival edge). It should be noticed that the informational material provided by the manufacturer on the Internet states that microstrips are available in designs for premolars and molars, but only premolar designs are listed, as noted above. In this author's experience, premolar-designed microstrips could likewise be used with moderately small Class II restorations of molar teeth.

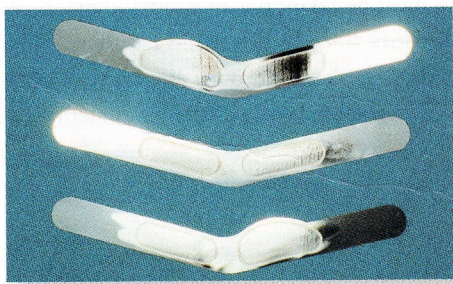


Figure 1

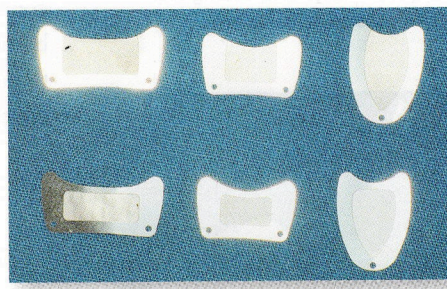


Figure 2

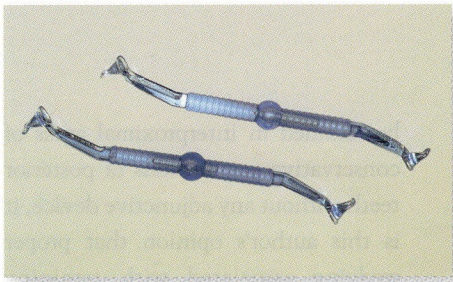


Figure 3

CONTACT PRO 2
(C.E.J. Dental)

CONTACT PRO 2

Contact Pro 2 is an improved version of its predecessor, and it is used to produce ideally shaped and positioned interproximal contacts with relative ease and predictability in direct Class II composite restorations. (Figure 3) It is available in two sizes to accommodate small and moderate size preparations. The extremities of the instrument are designed to fit into the proximal box filled with uncured composite, (Figures 4 & 5) while the instrument is pushed or pulled towards the direction of the contact generating a separating force through the matrix band at the correct level of contact. (Figure 6) The curing light guide is then held against the instrument's convex lens of the cone-shaped light concentrators, which were incorporated into the instrument ends, and the light is transmitted into the deepest areas of the preparation thus polymerizing the composite. (Figure 7) After curing, the instrument is removed, (Figure 8) and the void is filled with an additional increment of composite. Following curing, the occlusal box is packed with material, which is then cured, and the restoration is finished and polished. (Figure 9)



Figure 4: Class II preparation with the microband in place.

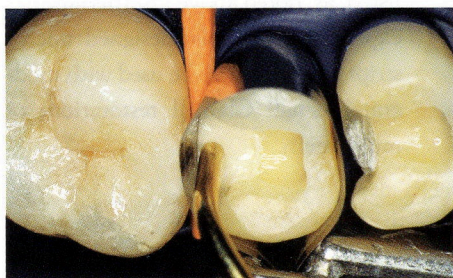


Figure 5: An uncured increment of composite is packed up to and slightly above the mesial-axial angle.

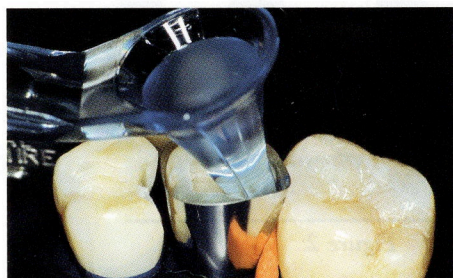


Figure 6: The instrument is pushed or pulled against the adjacent tooth.

In conjunction with Microbands or Microstrips, Contact Pro 2 can be a practical adjunct in the achievement of physiologically tight contacts. In preparation for the restorative process, the matrix can be gently burnished against the proximal contact of the adjacent teeth to check for closeness and contour. Extreme care must be taken not to exert too much pressure while burnishing against the matrix since its extra thin nature will sometimes lead to paper-like perforations. The best contours, especially of deeper proximal boxes, are thus achieved by the convexity of the instrument end itself.

(figures continued on page 14)

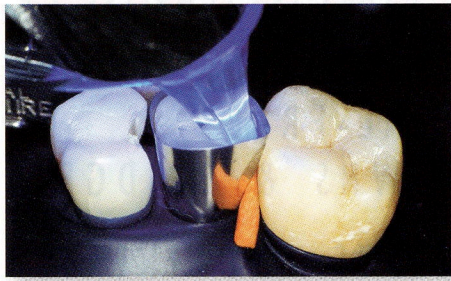


Figure 7: The light guide is held against the convex lens of the instrument and the composite is cured.



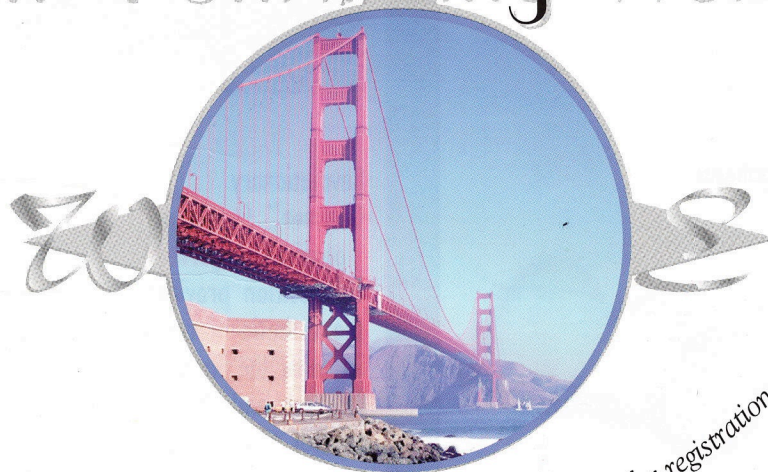
Figure 8: The instrument is removed leaving a void to be filled with an additional composite increment.



Figure 9: The final increment is compacted to proper anatomy and the restoration is cured and finished.

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