

Deep Cavity Restoration with the Quad Matrix System™ from Garrison®



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He is an ordinary affiliate member of organizations such as the Accademia Italiana di Odontoiatria Conservativa e Restaurativa (AIC), Sociedad Española de Prótesis Estomatológica y Estética (SEPES), Sociedad Española de Odontología Conservadora y Estética (SEOC), and Asociación Española de Endodoncia (AEDE).

Dr. Henarejos has contributed to research in dentistry, publishing in journals like the *Journal of Prosthetic Dentistry* and the *Journal of Esthetic and Restorative Dentistry*. You can view his work on ORCID: <https://orcid.org/0000-0001-7215-0292>.

In addition to his academic pursuits, Dr. Henarejos runs a private practice in Barcelona. He can be contacted via email at victor.henarejos@uic.es or Instagram at @victor.henarejos.

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Deep carious lesions pose significant challenges in dental practice, requiring meticulous management to preserve both tooth structure and pulpal health. While conservative approaches are recommended, achieving proper sealing, as well as accurate proximal contacts and contours, can be particularly challenging depending on the depth of the lesion. Research shows that sectional matrix systems with separation rings outperform circumferential matrices in creating tighter, more reliable contacts in Class II composite restorations. This is why selecting and applying the right matrix system is critical to prevent issues such as overhanging margins, open contacts, and food impaction—factors that can lead to periodontal complications.

To address these challenges, Garrison® Dental Solutions has developed the Quad Matrix System™—a revolutionary system designed to simplify even the most complex Class II direct restorations. Unlike traditional wedges (solid or hollow), which are pushed upward by the papilla and often distort the matrix, the unique split wedge technology of the Quad wedge conforms naturally to the “V”-shaped embrasure space. This design allows the wedge to remain low in the embrasure, maintaining the matrix’s shape and contour. Additionally, the asymmetrical tips and pads of the Quad ring work synergistically with the split wedge, enhancing the axial wall adaptation and ensuring a tight marginal seal. The system applies force precisely within the tooth’s embrasure space, resulting in a more consistent and effective restoration process.

This clinical case report demonstrates the restoration of a single Class II composite on the mesial side of a maxillary left first molar using the Quad Matrix System, showcasing the benefits discussed above.

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CASE REPORT: A 35-year-old male presented with a carious lesion on the mesial and occlusal surfaces of the maxillary left first molar, as observed visually and radiographically. The chosen treatment plan was to restore the tooth with direct composite restorations using the new Quad Matrix System.



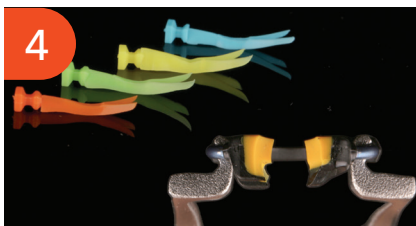
1
Initial situation. A carious lesion is present on the mesial and occlusal surfaces of the maxillary left first molar.



2
Rubber dam isolation of the upper left quadrant with a thick rubber dam sheet. Proper isolation of the operative field is crucial for the long-term success of direct composite restorations.



3
Cavity preparation completed. Carious tissue was removed using a fine diamond bur and ultrasonic tips. Before and during cavity preparation, it is important to place a wedge firmly into the interdental space to protect the rubber dam (pre-wedging).



4
Part of the Quad Matrix System. Quad split wedges, available in four sizes—small, medium, large, and anatomical (for irregular anatomies). The Quad asymmetrical ring (orange size) has one side with the traditional tip for contouring the tooth, and the other side incorporates a driver tip, designed to work with the Quad split wedges.



5
Placement and adaptation of the Quad Matrix System using a Firm Matrix Band sectional matrix (FXH300) and the orange pressure ring. The flexible nature of the wedge material and the driver tip of the ring work together to effectively secure the matrix band in the most apical area without causing matrix deformation. This unique feature minimizes excess material and promotes excellent contact points.



6
Occlusal view of the restoration before polishing and finishing, after removal of the pressure ring, wedge, and sectional matrix.

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Final restoration after polishing and finishing, palatal view. The restored proximal surface shows adequate interdental anatomy, emergence profile, and contact area, without excess material interproximal, thanks to the excellent adaptation of the Quad Matrix System.



Occlusal view of the final restoration after six months, showing a tight and well-contoured proximal surface and marginal ridge.



Palatal view of the final restoration after six months, where the natural palatal embrasure form has been restored, and gingival health has been maintained.

CONCLUSIONS: The Quad Matrix System plays a critical role in margin elevation techniques thanks to its innovative technology. This cutting-edge system simplifies the complexities of margin elevation procedures. Clinicians benefit from the unique synergy created by the Quad wedge and ring, which ensures a secure marginal seal, prevents deformation, and provides precise matrix adaptation, even in challenging subgingival areas.