

## A sticky, flexible and strong material for better dentistry

Restorations of endodontically treated teeth represent a big part of modern restorative treatment. A post and core should be fabricated to provide retention for the coronal restoration- most often an indirectly made crown. Traditionally metal cast post and core systems have been used. Advantages of the cast metal structures are their strength and individual fit. However fabrication of cast restorations requires two appointments and a dental laboratory work involved. The big disadvantage of the rigid structures like metal is their high modulus of elasticity (200 GPa). High modulus of elasticity of the post may cause the uneven stress distribution between the post and dental tissues resulting in fracture of the weaker material- dental tissues. Therefore alternative systems of standard fiber posts were introduced. The fiber posts have modulus of elasticity closer to that of dentin (fiber post = 20 GPa, dentin 18=GPa). The standard posts are round in cross section and therefore are best suited only for canals which are circular in cross section. The individual fit therefore is difficult to achieve in the many clinical situations.



Fig. 1. A. Initial clinical image, B. A direct composite resin mock-up, C. Silicon index fabrication, D. The custom- made post formation: additional posts were added to the main post to reinforce the orifice area, E. The custom made post is still flexible after it was removed from the canal.

Most often the post and core systems are used to retain indirect restorations which are cemented or adhesively bonded because nor cast metal neither prefabricated fiber posts possess adhesive surface.

Recently a new type of adhesive and flexible fibre posts was introduced - everStick<sup>®</sup>POST. The posts are made of silanated glass fibers in thermoplastic polymer and light curing resin matrix. The patented resin mixture is called interpenetrating polymer network structure (IPN). The IPN structure is responsible for proper bonding between the post surface and a restorative or luting composite resin. The IPN structure also makes EverStick posts flexible and sticky before light curing.

This article describes a new technique of direct composite resin crown fabrication on the everStick post. A 62-year-old female patient came to the dental clinic complaining of full crown fracture of tooth 12. A rubber dam isolation was achieved and the everStick post was fabricated following manufacturer's instructions. For the restoration build up a microhybrid resin composite Gaenial with a self-etching, light-cured bonding system Gaenial Bond (GC Corporation, Tokyo, Japan) were used. The crown fabrication started from the palatal layer of composite resin which was applied by

means of a silicon index and light cured for 20 seconds. A dual cure self-adhesive resin cement was used to cement the post and light cured for 40 seconds. Two further layers of Gaenial in AO2, A2 shades were placed to obtain the dentin shape and shade of the crown. For the enamel layer of the restoration Gaenial BW shade was used. Each layer was light cured separately for 20 seconds. The restoration was polished with diamonds under water cooling. The final gloss was achieved by means of polishing discs and brushes with a polishing paste. The results achieved after 3 days and 12 months showed satisfactory aesthetics and marginal integrity of the restoration.



Fig. 2. A. After light curing the palatal layer of composite the EverStick post was cemented in the canal, B. AO2 and A2 shades of the composite were used to obtain dentin shape and colour, C. Gaenial BW shade was used to form the enamel layer, D. The view three days after the restorative procedure, E. The 12-month post-operative view

The everStick posts have several advantages comparing to cast metal or prefabricated posts, especially when used to retain direct composite restorations. They do not require a root canal preparation made by standard cylindrical burs which may weaken the remaining tooth structure. They can be shaped individually by filling the pulp chamber completely with fibres and strenght would be maximised in the most critical area. In the coronal part they can be flattened creating a better retention area for restorations. EverStick posts can be used in curved canals because they are flexible and allow good light transmission.

Conclusion: Direct composite resin crown fabrication on a custom formed root canal post could be used as an economical and conservative treatment option.

**Valdas Vilkinis**

*A. Juozapaviciaus 99-3, Kaunas, Lithuania.*

## Publication

[Direct composite resin crown fabrication on a custom formed root canal post - EverStick®POST.](#)

Vilkinis V, Žilinskas J  
*Stomatologija. 2016*