Clinical application of the FIBRAPOST and SEALACORE, PRODUITS DENTAIRES SA (PD), Switzerland

The development and introduction of Composite Posts reinforced with glass fibre or metal-free restorations have now become a viable option. The Glass Fiber Composite Posts of "PD", named FIBRAPOST are made of braided glass fibers in a multiaxial arrangement and in a resin bonding matrix (Epoxy resin with approximately 65% glass fiber content) providing high resistance to bending and torsion forces. They offer a resilience, which is practically the same as the dentine itself.

The outstanding feature of the Fibrapost (PD) is that they have an esthetically pleasing tooth-colour which will blend with the natural tooth colour and does not show through the composite restoration.

The composite which surrounds the fibres combines chemically with the luting composite and the composite used for the core build-up. This means that the post, the composite and the root dentine are securely bonded together and they all offer similar levels of resilience. As a result, shocks and stress are borne by the entire root and absorbed by the dentine just as they are in a normally healthy, non-restored tooth.

The Fibrapost are available in 4 different selected diameters (color-coded) and in a tapered grooved shape, ideal for the root canal and exactly matched by the compounding calibrated reamers.

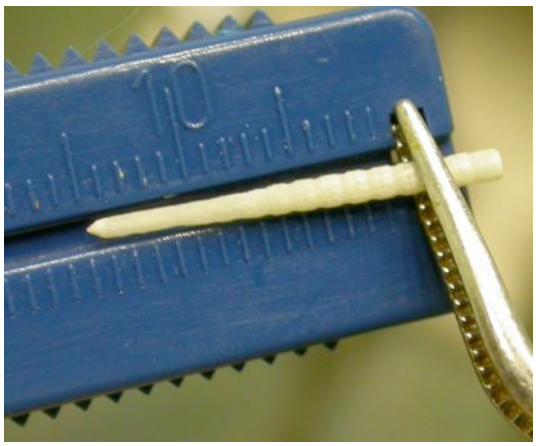
1. Widening of the root canal and forming the space for the glass fibre-composite post

A preliminary X-ray examination is required in order to evaluate the endodontic treatment, to reveal the specific topographic features of the root canal and to measure the inclination and curvature of the root canal. When working with the special drills and reamers from the full assortment **Fibrapost** kit (PD, Switzerland), it is recommended to widen the root canal first using instruments of smaller size, successively using the instruments of lager size. And then by means of the appropriate reamers from the assortment kit to form the final shape of the root canal corresponding to the particular size of the glass fibre-composite post.

Please Note:
The successive introduction of the instruments with the application of the preparations for the chemical widening of the root canal on the basis of EDTA (***Root-canal enlarger EDTA***, PD) enables to extend the life of the instruments and to decrease the blunting of the cutting edge of the root reamers.

While fitting the post it is important to remember that the post should be introduced to the full depth of the canal in order to avoid any gaps between the post and the root obturation material.

Please Note:
If necessary, a better fitting of the post into the canal can be achieved by the trimming of the apical part of the post with a diamond bur. The endodontic ruler is to be used for the accurate verification of the required depth.

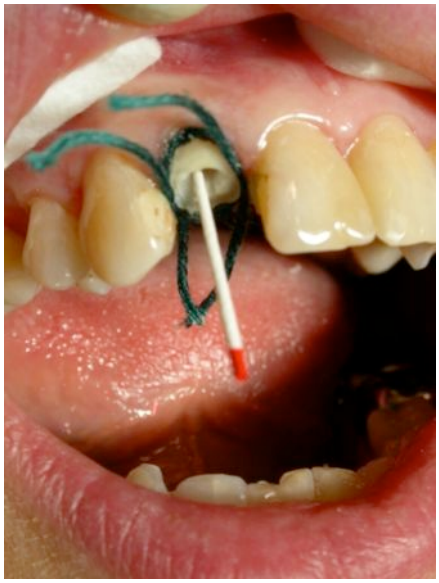



The root canal reamers from the assortment kit **Fibrapost** (PD, Switzerland) have special metal stops which allow to determine precisely the required depth and to compare it with the length of the glass fibre-composite post.

Please Note:
The length of the apical part of the post must be two thirds (2/3), while the coronal part must be one third (1/3) of the length of the post.

2. Preparation of the root space for the adhesive fixation of the post

It is recommended by the manufacturer to use the adhesive system SEALACORE BONDING (PD) and SEALACORE COMPOSITE (PD) as a dual-curing flowable hybrid composite for cementation of posts and core build-ups.
The root of the tooth should be isolated in order to prevent it from blood and gum fluid penetration. For this purpose a retracting thread can be used which should be placed into the dento-gingival sulcus circularly round the tooth root. Prepare, clean and dry the root canal in the usual way. Etch the root canal with SEALACORE ETCHING according to product's instruction for use.

Apply SEALACORE BONDING with a syringe rather than with a brush. SEALACORE Activator has to be added to SEALACORE BONDING in 1:1 ratio in cases where light-cure is not guaranteed and chemical cure is required. It is convenient to dry with oil-free air for 15 seconds the canal and to remove excess of bonding material from the canal using paper points which allow to obtain a thin layer of the bonding material.
After the application a 20 second light cure with a dental halogen lamp should be done for the polymerization of the bond.

3. Preparation of the glass fibre-composite post

Place the post onto the glass slide, coat it with the orthophosphoric acid for 40 seconds, rinse and dry.

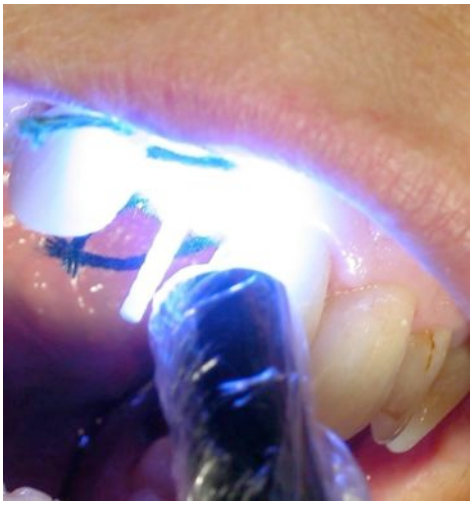
Please Note:
After etching do not touch the post.

Apply the SEALACORE BONDING/Activator 1:1 mixture with a brush onto the post. Dry cautiously with oil free air for 15 seconds.

4. Fixation of the glass fibre-composite post

After mixing, a thin layer of the SEALACORE COMPOSITE should be put onto apical part of the post and to fill the root canal using paste filler. SEALACORE COMPOSITE (PD) has a high mechanical strength and a low dissolubility. Delivered in auto-mixing 1:1 syringes it can be easily applied.

Seat Fibrapost into the canal gently and maintain firm pressure until the post is sealed. For a fast stabilisation after fixing the post and removal of excess cement, light-cure the coronal part for 40 sec.



For further restoration of the tooth, SEALACORE COMPOSITE is recommended for usage. Due to its flow properties SEALACORE COMPOSITE is auto-mixed in equal proportions and forms a homogeneous material without air-bubbles. The intraoral curved nozzles allow fast and accurate insertion directly into the prepared cavity. For contouring, use an adequate instrument for composites. Allow SEALACORE COMPOSITE to self-cure for 3 minutes. For optimal results it should be light-cured afterwards for 40 seconds.

The advantages of tooth restoration with the use of SEALACORE COMPOSITE are: good bonding of the restoration, high compressive strength, and good adhesion to hard tooth tissue – all that has a positive effect on the strength of the whole restoration. The final core preparation can be done in 3 minutes after the application of the material using an adequate bur.

Written by
Dr. Murad Muradov, b.h.d.
Chair of Dentistry Assistant professor of
Moscow Regional Clinical Research Institute