

NEW PRODUCT review

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COSMOPOST™ & IPS EMPRESS® COSMO (Ivoclar Vivadent)

As today's society has become more aware of its esthetic needs, and, consequently, more demanding of close-to-natural results, an urge for better materials bearing improved esthetic properties exists. The anterior segment is the esthetic zone that calls for the greatest restorative challenge in that any imperfection will readily be revealed by the slightest smile or lip movement. The graying effect often perceived in ceramo-metal restorations has been overcome by the utilization of all-ceramic crowns which present a light transmission comparable to that of natural anterior teeth. However, all-ceramic restorations can only be successfully implemented provided a tooth-colored core is present. Varying alternatives have been proposed in the literature to get around the dark shine through of metal alloys which results from decomposition products of corrosion deposited in the dental and periodontal tissues. Reducing the labiover-

tical dimension of the metal coping, firing a layer of

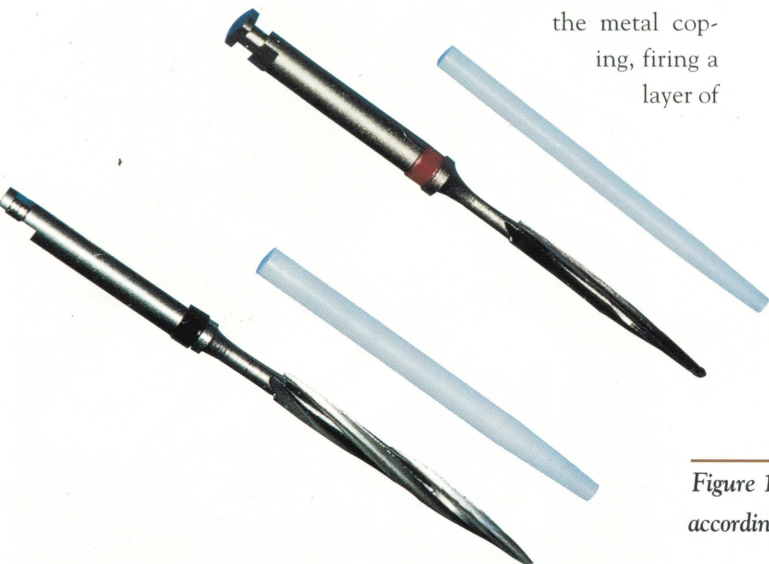


Figure 2: CosmoPost™ is a metal-free, high strength, zirconium oxide tooth-colored post available in assortment kits and refill packages.

opaque porcelain over the metal core, veneering the metal core with an opaque composite material, utilizing bondable reinforcement fibers, or implementing an all-ceramic monobloc technique, are all viable alternatives that aim at enhancing the esthetic result by allowing either a blocking of the underlying darkened structure and/or promoting an improvement in light propagation.

CosmoPost™ is a slightly tapered, pre-fabricated, high-strength zirconium oxide all-ceramic esthetic post designed to be used either in direct or indirect post and core techniques. Some of the advantages of CosmoPost™ include being metal free, biocompatible, fracture resistant, radiopaque, corrosion resistant, and porosity free. It is indi-

Figure 1: The post size and corresponding bur should be selected according to the root size.

cated for preprosthetic stabilization of endodontically treated teeth with largely intact clinical crown, and for preprosthetic build-up of devitalized, endodontically treated teeth with severe loss of sound structure of the clinical crown. Additionally, CosmoPost™ can be utilized in direct intraoral post and core build-ups with composite restoratives. If an indirect method is preferred, CosmoPost™ can be utilized associated with IPS Empress® Cosmo ingots.

IPS Empress® Cosmo is a laboratory-fabricated, glass ceramic core build-up ingot designed to be pressed onto the CosmoPost™ according to the IPS Empress Technique. IPS Empress Cosmo ingot is tooth-colored, translucent and biocompatible. High bond strengths are achieved once it is pressed onto the CosmoPost™ and an accurately fitting post and core is the end result. It is important to notice that neither conventional IPS Empress Ingots nor other all-ceramic layering materials can be used in combination with the CosmoPost™.

CosmoPost™ is available in assortment kits and refill packages (Figure 1). The introductory assortment kit comprises three 1.4x20.5 mm and three 1.7x20.5 mm CosmoPosts™, one root canal reamer, one 1.4 mm root bur, and one 1.7 mm root bur. The refill packages contain five 1.4x20.5 mm and five 1.7x20.5 mm CosmoPosts™.

DIRECT TECHNIQUE

- Using the reamer, remove the root filling stopping approximately 4 mm short of the apex.
- Prepare the canal lumen with the 1.4 mm or 1.7 mm bur according to the size of the root.

- Try in the selected CosmoPost™ and check for accuracy of fit.
- Since the CosmoPost™ is supplied already sand-blasted, no further preparation is necessary. Should it become contaminated with saliva during the try-in, simply clean it with 32–38% phosphoric acid for five seconds, rinse and dry it.
- Clean the root canal and prepare it for bonding by etching, rinsing and applying a hydrophilic dual cure adhesive.
- Coating the CosmoPost™ with an adhesive is optional since a low viscosity, highly wetting composite will be used for luting. Silanization of the post is not required.
- Apply the dual cure or self cure luting resin of your choice into the root canal and introduce the CosmoPost™ exerting slight digital pressure.
- While securing the post in position

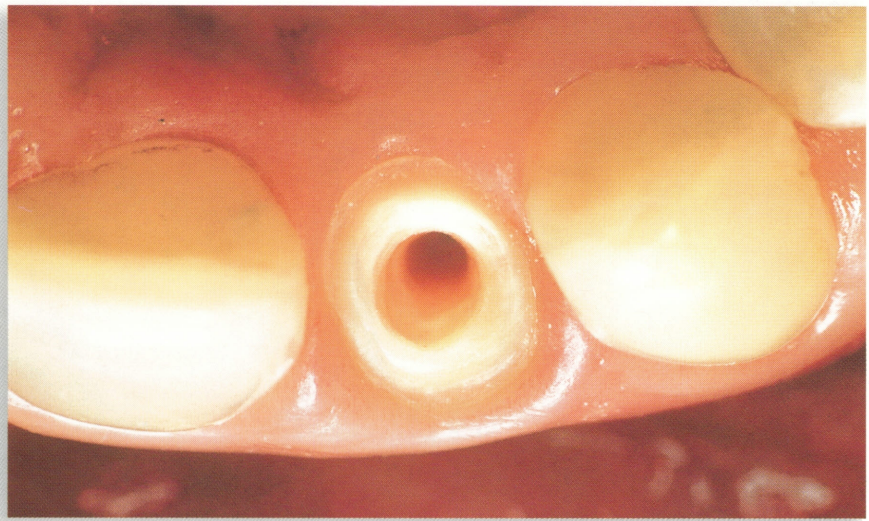


Figure 3: The root canal lumen is mechanically prepared to the CosmoPost™ shape.

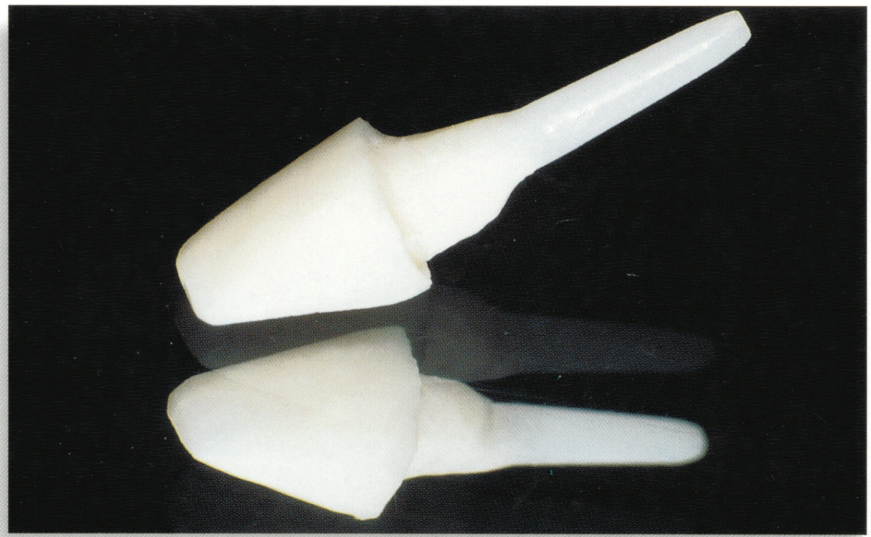


Figure 4 : The IPS Empress Cosmo Ingot is a laboratory fabricated, translucent glass ceramic core build-up designed to be pressed onto the CosmoPost™.

under slight pressure, remove the excess luting composite with a brush leaving the coronal portion of the post slightly smeared with the cementing agent.

- If a dual cure luting composite is used, while exerting continuous pressure on the post, light cure the luting composite around its borders for 40 seconds on each aspect of

the tooth. If a self cure luting composite is used, wait till initial hardening of the material commences to remove digital pressure.

- Using a hybrid restorative composite that most closely approximates the desired shade of the dentin of the natural dentition, build up the coronal portion of the post to create a tooth-colored core.

- Light cure the hybrid composite core from all aspects, 40 seconds each.
- The preparation of the core can be accomplished as usual and the impression can be taken immediately.

INDIRECT TECHNIQUE

- Select the post size and prepare the lumen of the root canal as for the direct technique (Figures 2 and 3).
- Adapt a small mass of composite in the form of a pellet around the coronal portion of the CosmoPost™ and light cure it. This creates retention to allow for easy removal of the post during impression taking.
- Reintroduce the post into the canal lumen until it becomes fixed.
- Take a transfer impression with a rubber-based material on a tray, removing the CosmoPost™ from the root canal. Send it to the laboratory for fabrication of the IPS Empress Cosmo core.
- The IPS Empress Cosmo core (not the post) should be returned from the laboratory already sandblasted with aluminum oxide or etched with hydrofluoric acid (Figure 4). If surface treatment has not been carried out in the laboratory, sandblast or etch the Empress build-up according to the manufacturer's instructions.
- At the seating appointment, after trying in the post and core, prepare the root canal for bonding as for the direct technique (Figure 5).
- Silanate the Empress build-up. Apply a dual cure hydrophilic



Figure 5: Prior to cementation, the CosmoPost™/IPS Empress CosmoPost™ and core is tried in for accuracy of fit.



Figure 6: The tooth-colored post and core is luted using a dual or self cure luting composite.

adhesive to the CosmoPost™ and Empress build-up.

- Etch the root canal with 32–38% phosphoric acid, rinse, and apply a hydrophilic dual cure adhesive. Lute the post and core into place using a dual or self cure luting composite (Figure 6).
- Carry out any necessary preparation refinement and take the impression (Figure 7).

When utilized through a direct or indirect technique, CosmoPost™ permits the achievement of metal-free, strong, and natural-looking restorations that integrate the beauty of the colors found in natural tooth structure and surrounding soft tissue (Figure 8). *ACD*



Figure 7: Any necessary preparation refinements are carried out prior to impression taking.



Figure 8: A natural integration between a healthy looking tissue and a life-like restoration is achieved.

ACD