

CosmoPost

Instructions for Use



CE 0123

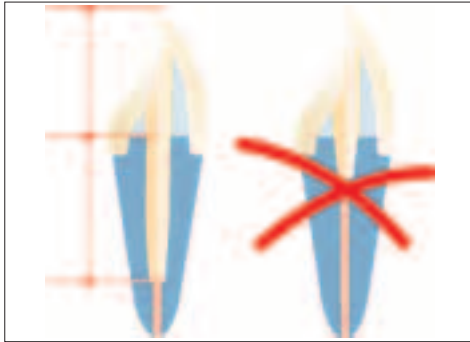
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CosmoPost – Basics first

Make sure that...

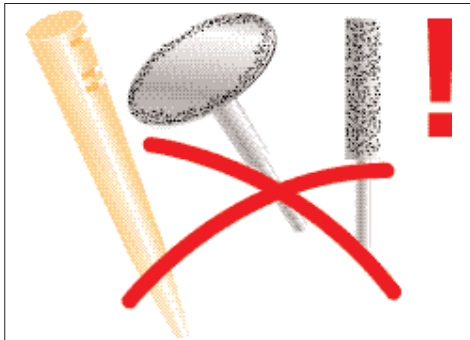


... the length of the post within the canal at least corresponds to the coronal length of the clinical crown,

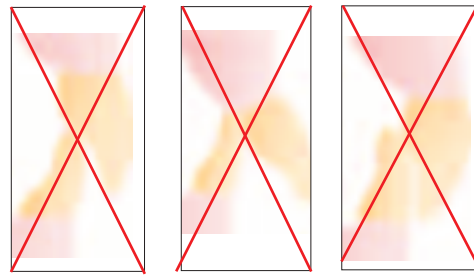
The following applications are absolutely contraindicated:



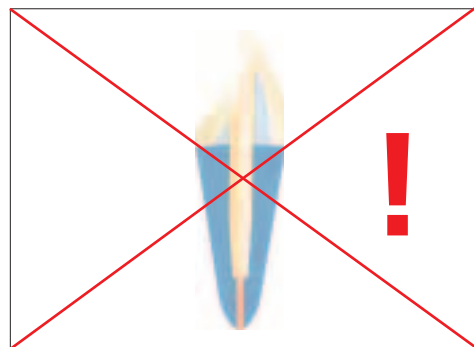
Using the 1.4-mm CosmoPost for the following teeth:
FDI designation: 13, 11, 21, 23, 33, 43
ADA designation: 6, 8, 9, 11, 22, 27



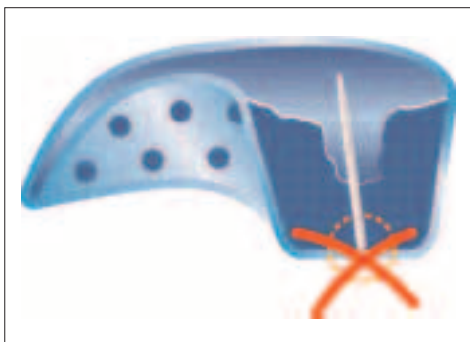
... the CosmoPost is not provided with retention grooves under any circumstances,



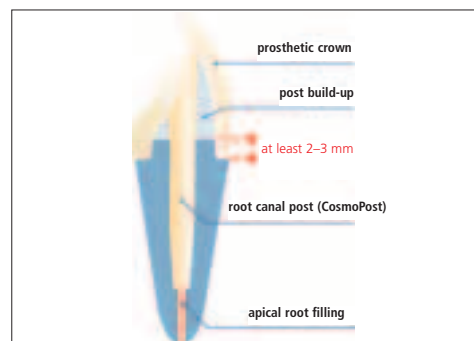
Application for patients with a deep overbite, bruxism or suspected bruxism.



If there is insufficient supragingival dental hard tissue.



... the impression post does not come into contact with the impression tray.



The supragingival dental hard tissue must measure at least 2–3 mm. In other words, the preparation margin must be approx 2–3 mm below the build-up.

CosmoPost – Notes for dentists and dental technicians

Important

- The indications and working parameters must be observed at all times
- The CosmoPost must not be adjusted by grinding, tapered, or provided with retention grooves, since such measures may result in predetermined breaking points on the post.
- The post must not be blasted with aluminium oxide (Al_2O_3). The surface of the post has already been roughened.

Indication

Since CosmoPost is a ceramic post system, the main indication is the aesthetically important anterior region, both in the maxilla and the mandible.

I Anterior region

– 1.4-mm CosmoPost

Use:

1. In the maxilla: only for the lateral incisors, ie, teeth 12 and 22 (FDI); teeth 7 and 10 (ADA).
2. In the mandible: for the central and lateral incisors, ie, teeth 32 to 42 (FDI); teeth 23 to 26 (ADA).

Any other application is contraindicated and may compromise the success of the prosthetic restoration.

– 1.7-mm CosmoPost

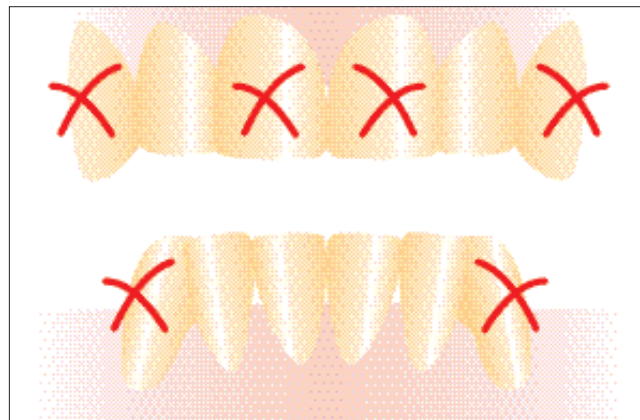
Use:

The 1.7-mm CosmoPost is used for those teeth, for which the diameter of the coronal part of the root or the coronal endodontium clinically indicates a 1.7-mm root canal post. These teeth are usually the four canines and the central incisors in the maxilla.

II Posterior region

- Depending on the clinical situation, both the 1.7-mm and 1.4-mm CosmoPost can be used in the posterior region. Generally, the 1.4-mm post is used for maxillary and mandibular premolars, while the 1.7-mm post is used for molars (distal canal in the mandible, palatal canal in the maxilla).

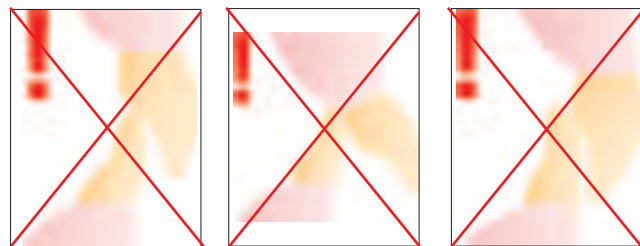
Contraindication



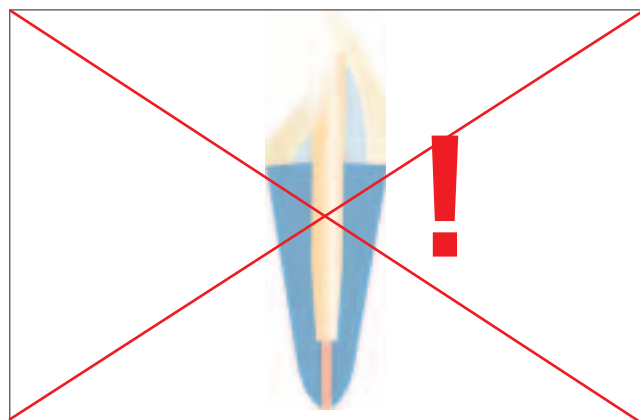
The use of the 1.4-mm CosmoPost is absolutely contraindicated for the marked teeth (FDI: 13, 11, 21, 23, 33, 43) (ADA: 6, 8, 9, 11, 22, 27).

Additional contraindications are as follows:

- Use of the CosmoPost for patients suffering from bruxism or suspected bruxism
- Deep overbite



- Less than 2–3 mm supragingival dental hard tissue



- Circular isogingival damage
- Allergy to any of the ingredients

Important

If the defined preparation (residual dentin) is not possible or one of the above contraindications is present, a **metal post must be used**, since the risk of a post fracture is clearly increased. A fractured post most often results in the **extraction** of the root, since the post is virtually **impossible to remove**.

IPS Empress Cosmo Ingot

Indication

Core build-up in combination with the CosmoPost (zirconium oxide root canal post).

Contraindication

- Neither metal alloys and metal-ceramics (eg IPS Classic, IPS d.SIGN) nor all-ceramic layering materials (eg IPS Empress, IPS Empress 2, IPS Eris for E2) may be fused to the CosmoPost (root canal post).
- Conventional IPS Empress ingots cannot be used in combination with the IPS Empress Cosmo Ingot.
- **If patients are known to be allergic to any of the ingredients, the IPS Empress Cosmo Ingot should not be used.**

Description of the assortments

CosmoPost

Description of the material

The CosmoPost is a parallel-conical root canal post made of zirconium oxide (ZrO_2) ceramic, which consists of ZrO_2 , HfO_2 , Y_2O_3 and Al_2O_3 .

The CosmoPost is available in two different sizes (1.4 mm and 1.7 mm in diameter).

Delivery form

CosmoPost Kit



- 3 CosmoPosts, 1.4 mm diameter
- 3 CosmoPosts, 1.7 mm diameter
- 3 impression posts, 1.4 mm diameter
- 3 impression posts, 1.7 mm diameter
- 1 root canal bur, 1.4 mm diameter (red)
- 1 root canal bur, 1.7 mm diameter (black)

CosmoPost Kit mit Rohli

CosmoPost Kit including ingots



- 3 CosmoPosts, 1.4 mm diameter
- 3 CosmoPosts, 1.7 mm diameter
- 3 impression posts, 1.4 mm diameter
- 3 impression posts, 1.7 mm diameter
- 1 root canal bur, 1.4 mm diameter (red)
- 1 root canal bur, 1.7 mm diameter (black)
- 10 IPS Empress Cosmo Ingots

The impression posts can also be used as temporary posts in provisional restorations.

Refills



5 CosmoPosts, 1.4 mm diameter

5 CosmoPosts, 1.7 mm diameter



5 impression posts, 1.4 mm diameter

5 impression posts, 1.7 mm diameter



10 IPS Empress Cosmo Ingots

1 root canal bur, 1.4 mm diameter



1 root canal bur, 1.7 mm diameter



Rotary instruments (2 root canal burs)

- 2 root canal burs (1.4 mm and 1.7 mm diameter) for the standardized preparation of root canals

The rotary instruments are also available as Refill.

IPS Empress Cosmo Ingot

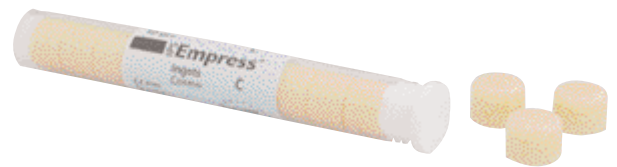
Description of the material

The IPS Empress Cosmo Ingot is made of IPS Empress glass-ceramic containing zirconium oxide. It is optimally coordinated with the CosmoPost.

The main components are SiO_2 and ZrO_2 . Additionally, the material contains: Al_2O_3 , P_2O_5 , Li_2O , Na_2O , K_2O , F and pigments.

Delivery form

The IPS Empress Cosmo Ingot is offered in vials containing ten ingots.



Instructions for Use for dentists

Length of the post and preparation

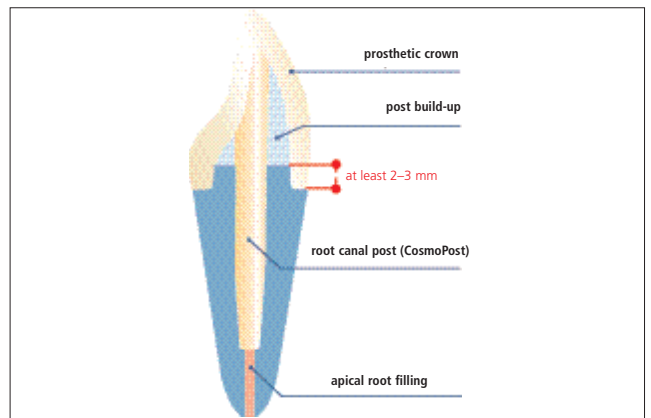
It is essential that

- the coronal length of the post within the canal at least corresponds to the coronal length of the prosthetic restoration;
- the post demonstrates adequate mechanical friction in the canal.

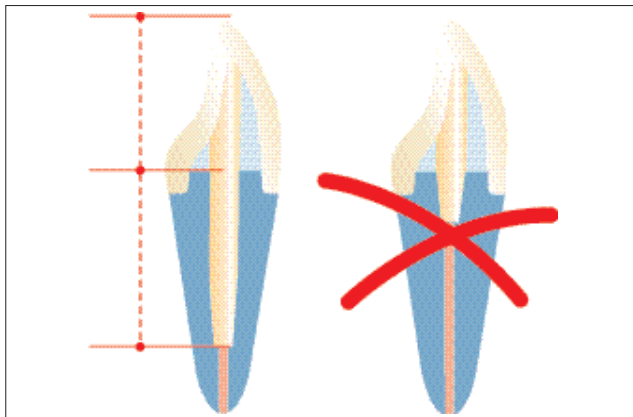


The adequate length of the post within the canal must be observed.
Prof. Dr. Dipl.-Ing. E.-J. Richter, Würzburg, Germany.

During the preparation of the remaining tooth structure and the contouring of the build-up, make sure that the build-up is provided with sufficient retentive surface around the entrance of the root canal: incorporation of an anti-rotation device in the form of a canal inlay or retention box or inclusion of a stable dentin lamella.



When preparing the core, the preparation margin must be located at least 2–3 mm below the build-up in the residual dentin.



The length of the post within the canal must at least correspond to the coronal length of the prosthetic restoration.

Adequate length is particularly important for maxillary anteriors, since the shearing forces in this area are very high and may result in a loss of retention of the post build-up.

Important

If this procedure is not possible, a **metal post must** be used, since the **risk of a post fracture** is clearly increased. A fractured post most often results in the **extraction** of the root, since the post is virtually **impossible to remove**.



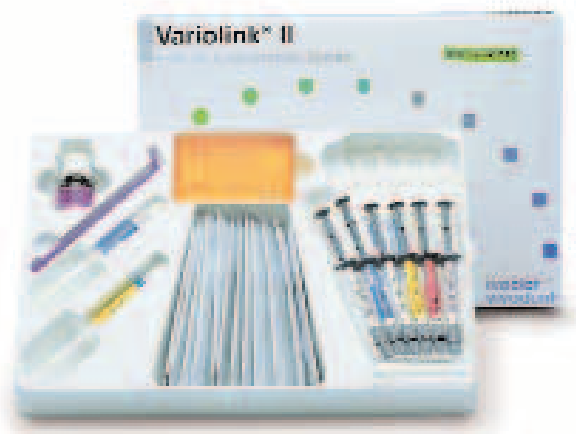
The preparation margin must be located 2–3 mm below the build-up.

Cementation

Generally, we recommend the adhesive cementation technique for incorporating the CosmoPost. The chemico-physical bond generated by adhesive cementation increases the retentive force. If conventional cements are used, an adequate retention surface is particularly important. This is achieved if friction is present even before cementation and the post demonstrates adequate length and accuracy of fit. We recommend a dual-curing composite cement (eg Variolink II System, Ivoclar Vivadent) for cementing the post and the post build-up. Self-curing composite cements and conventional cements (phosphate, glass ionomer, hybrid ionomer cements) may also be used. In such cases, the setting time of the cement has to be observed before work may proceed.

Procedure with the Variolink II luting composite system

Mix the selected shade (base paste) with the desired viscosity (catalyst paste). The mixed Variolink II is dual-curing, ie, the polymerization of the surface areas is initiated with blue light. In deeper areas, chemical polymerization takes place. For the cementation of root canal posts, we recommend using the low-viscosity catalyst, due to its flow properties. The shade is generally not decisive for the cementation of root canal posts. Nevertheless, the 6 shades offer ample possibilities of meeting the requirements of the individual clinical situation. For further information, please refer to the Instructions for Use of the Variolink II System and the following directions.



The Variolink II System is offered together with either the Syntac Classic or Excite DSC bonding agent.

1. Indirect method

Important

In the indirect method, the impression posts allow you to take impressions quickly and easily. In addition, you can use them as temporary posts in provisional restorations.

A. Preparation of the tooth / root canal

If luting composites (eg Variolink II System) are used, the application of a hydrophilic dentin primer in the canal is recommended to facilitate the adaptation of the composite to the canal walls. We recommend using the components of the Syntac Classic or Excite DSC dentin bonding systems in combination with Variolink II.

- Remove the coronal part of the root filling using the root canal reamer. Stop about 4 mm from the apex (eg Gates-Glidden or Peeso from Brasseler).
- Select the suitable post size (observe the above indications and contraindications).
- Prepare the canal lumen with standardized CosmoPost root canal burs.
- Try in the impression post. Make sure that the post fits tightly in the canal without being able to move.
- Prepare the remaining tooth structure.
- No undercuts
- A defined insertion path of the core build-up must be observed in remaining dentition.
- Prepare an inlay cavity in the pulp chamber.
- Place a retraction cord if necessary.
- Take an impression of the core including the impression post with an addition cross-linked impression material, using the double mix or single phase technique.
- Take an impression of the antagonist jaw in order to determine the coronal height of the build-up.
- Fabricate a resin temporary with the help of the impression post.

Important:

The tooth should not be subjected to masticatory or parafunctional loading while the temporary restoration is in place.

B. Fabrication of the build-up in the dental laboratory

Provide the dental technician with clear instructions regarding the fabrication of the build-up (occlusal distance to the antagonist, circular chamfer, convergence of the build-up, etc). The root post is supplied in sandblasted form and should not be additionally prepared in the dental laboratory. After investing the post and the build-up, only the build-up should be sandblasted. The Instructions for Use for dental technicians provide a detailed description of the fabrication of the post build-up.

C. Try-in of the post build-up

- Remove the temporary and clean the core, eg with a polishing brush and pumice or prophylactic paste (eg Proxyl).
- Try in the post build-up.
- The post build-up should be positioned in the root canal in its defined position without leaving any visible gaps.

D. Conditioning of the post build-up

- Condition the entire ceramic build-up with hydrofluoric acid (IPS Ceramic Etching Gel):
- Apply the gel with a brush and let it react for 1 minute. Rinse with water and dry. If the hydrofluoric acid is accidentally spilled on the post, the quality of the post is not compromised.
- Silanize the contact surface of the ceramic build-up with Monobond S. Apply the liquid with a brush and let it react for 1 minute. Blow off excess.
- Apply Heliobond on the contact surface of the build-up using a brush. Disperse with blown air. Do not light cure.
- Store the conditioned build-up in a container protected from light (eg Vivapad with cover).

Observe safety precautions when working with hydrofluoric acid.

E. Cementation of the post build-up

- Place a retraction cord.
- Rinse the root canal (eg 5% sodium hypochloride) and dry with paper points.
- Etch the root canal with 37% phosphoric acid (eg Total Etch) for 10–15 seconds, rinse and dry with paper points. Etching is optional when using Syntac Classic, but compulsory when using Excite DSC.

When using Syntac Classic:

- Wet the canal walls with Syntac Primer using a brush, respectively Endo Brush. Let the material react for 15 seconds.
- Dry the canal with paper points.
- Wet the canal walls with Syntac Adhesive using a brush, respectively Endo Brush. Disperse with blown air and let react for 10 seconds.
- Dry the canal with paper points.

When using Excite DSC:

- Etch as described above.
- Using an endodontic brush, wet the canal walls with Excite DSC for 15 seconds.
- Dry the canal with paper points.

Cementation:

- Mix Variolink II base and catalyst in a 1:1 ratio. Apply this mixture to the post and the contact surface of the build-up and place the post build-up in the canal. The working time of Variolink II is approx 4 minutes as of the beginning of mixing (at 37 °C / 98 °F).
- Remove excess cement with a suitable brush. Use a flat condenser to keep the post build-up in place.
- Continue applying slight pressure to the post build-up and cure Variolink II in the area of the cement border with a polymerization light for 60 seconds each from the buccal and lingual and from the mesial and distal, if possible. Given the translucency of the dentin and the post build-up, the composite can be light cured up to a depth of approx 2–3 mm.

Important

The Variolink II catalyst must be refrigerated, since storage at room temperature compromises the quality of the material. Nevertheless, Variolink II must be applied at room temperature, otherwise the working time (setting time) of the material is extended by approx 1 minute. The behaviour of the material during light-curing does not depend on the storage temperature.

F. Preparation and temporary restoration

- Prepare the build-up
- Take impression
- Place temporary restoration
- Make sure that the preparation margin is located approx 2–3 mm below the build-up.

Important

- **Use only eugenol-free cements (eg Provilink)**, as eugenol may inhibit the polymerization of the luting composite
- When using **resin-based temporary cements (eg Provilink)**, isolate the core with Vaseline, to remove the temporary without any problems.

G. Adhesive cementation of the restoration

Preparation of the core and the remaining tooth structure:

- Remove the temporary and clean the core with a polishing brush and pumice or with prophylactic paste (eg Proxyt).
- Ensure adequate relative isolation. Prevent contamination with saliva. If possible, use a rubber dam.
- Etch enamel areas with 37% phosphoric acid (eg Total Etch) for 15–30 seconds. Rinse with water spray and dry. Depending on the dentin bonding system used, the dentin may also be etched. Etching is optional when using Syntac Classic, but compulsory when using Excite DSC.
- Apply Monobond S on the ceramic build-up and let it react for 60 seconds. Distribute with blown air.

When using Syntac Classic:

- Apply Syntac Primer on the enamel and dentin, let it react for 15 seconds and blow dry with air.
- Apply Syntac Adhesive on the enamel and dentin, let it react for 10 seconds and blow dry with air.
- Apply Heliobond on the enamel, dentin and build-up and disperse to a thin layer with blown air; do not light-cure.

When using Excite DSC:

- Etch with 37% phosphoric acid (eg Total Etch): enamel for 15–30 seconds, dentin for 10–15 seconds. Then, rinse and dry.
- Apply Excite DSC on the enamel, dentin and the post build-up, gently agitate the adhesive onto the surfaces for 15 seconds and disperse it to a thin layer using an air syringe; do not light-cure

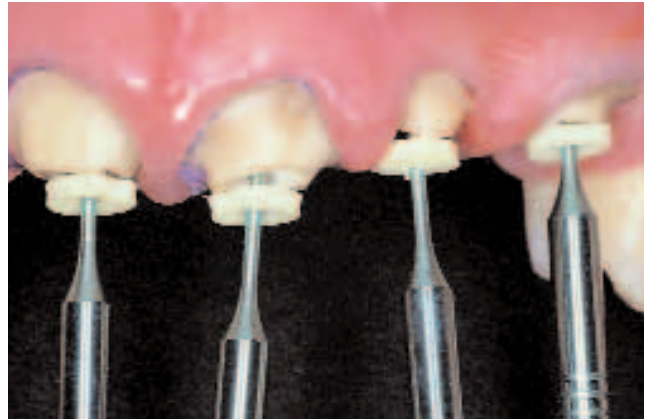
Preparation of the restoration

Condition the IPS Empress restoration according to the instructions and insert with Variolink II. For a detailed description of this procedure, please refer to the Instructions for Use / Technique Guide of the Variolink II System.

Example of the indirect method



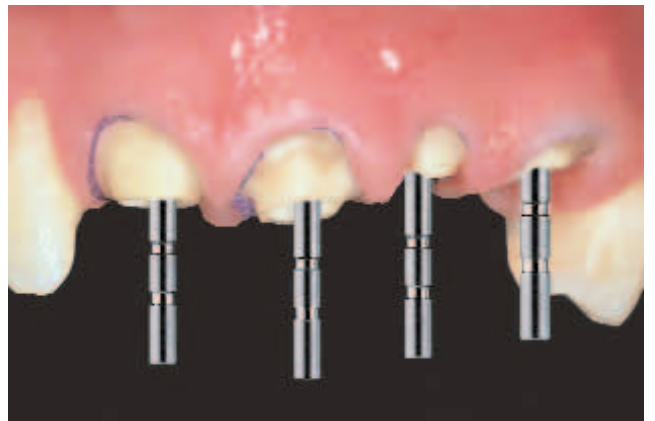
Anterior trauma affecting teeth 23, 22, 21, and 11 (FDI) (ADA: 11, 10, 9, 8)



Pre-drilling with a root canal reamer (eg Gates-Glidden or Peeso from Brasseler)



Standardized canal preparation with root canal burs*



Preparation for the impression using impression posts**



Permanently incorporated ceramic build-ups with ComoPost. The preparation margin is located approx 2–3 mm below the build-up.



Situation after the incorporation of the all-ceramic crowns (IPS Empress).

* It must be noted that a 1.7-mm root bur was used for pre-drilling in tooth 23, 21 and 11(FDI) (ADA: 11, 9, and 8), while a 1.4-mm root bur was used for tooth 22 (FDI) (ADA: 10).

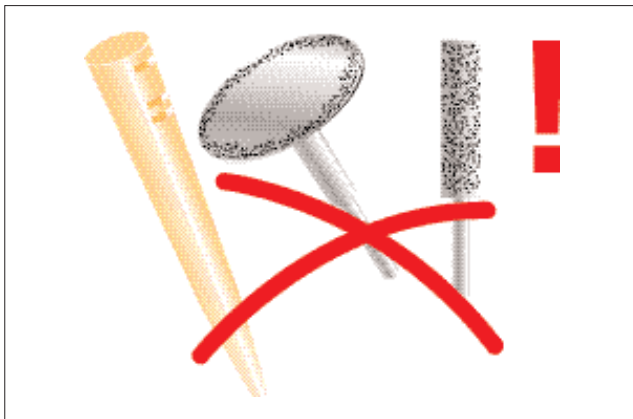
** The original picture has been modified to show the impression posts.

2. Direct method

The root canal post is supplied sandblasted. Further preparation or silanization is unnecessary. If the root post is contaminated, for example, with saliva during the try-in procedure, it should be cleaned with commercially available 37% phosphoric acid (eg Total Etch). Apply the gel to the CosmoPost, rinse and dry.

Important

The post must not be adjusted by grinding under any circumstances. Retention grooves must not be applied. Such measures may result in predetermined breaking points on the post. However, shortening the post with suitable diamond burs is possible.



Retention grooves must not be applied to the CosmoPost under any circumstances.

A. Preparation of the tooth / root canal

If luting composites (eg Variolink II System) are used, the application of a hydrophylic dentin primer in the canal is recommended to facilitate the adaptation of the composite to the canal walls. We recommend using the components of the Syntac Classic or Excite DSC dentin bonding systems in combination with Variolink II.

- Remove the coronal part of the root filling using the root canal reamer (e.g. Gates-Glidden or Peeso from Brasseler). Stop about 4 mm before the apex.
- Select the adequate size of the post (observe the above indications and contraindications).
- Prepare the canal lumen with standardized instruments.
- Try in the post.
- Ensure adequate relative isolation. Prevent contamination with saliva. If possible, use a rubber dam.
- Rinse the root canal (eg 5% sodium hypochloride) and dry with paper points.
- Etch the root canal with 37% phosphoric acid (eg Total Etch) for 10-15 seconds. Rinse and dry with paper points. Etching is optional when using Syntac Classic, but compulsory when using Excite DSC.

When using Syntac Classic:

- Wet the canal walls with Syntac Primer using a brush. Let the material react for 15 seconds.
- Dry the canal with paper points.
- Wet the canal walls with Syntac Adhesive using a brush. Disperse the adhesive with blown air and let it react for 10 seconds.
- Dry the canal with paper points.

When using Excite DSC:

- Etch as described above.
- Wet the canal walls with Excite DSC for 15 seconds using an endodontic brush.
- Dry the canal with paper points.

Cementation:

- Mix Variolink II base and catalyst in a 1:1 ratio and apply the mixture to the root canal post. Insert the post into the root canal with pumping movements to prevent air from being trapped. The working time of Variolink II is approx 4 minutes as of the beginning of mixing (at 37 °C / 98 °F).
- Remove excess cement in the coronal region with a brush. Apply slight pressure on the post to hold it in place in the canal.
- Continue applying slight pressure on the post and cure Variolink II in the area of the cement border with a polymerization light for 60 seconds each from the buccal and oral.

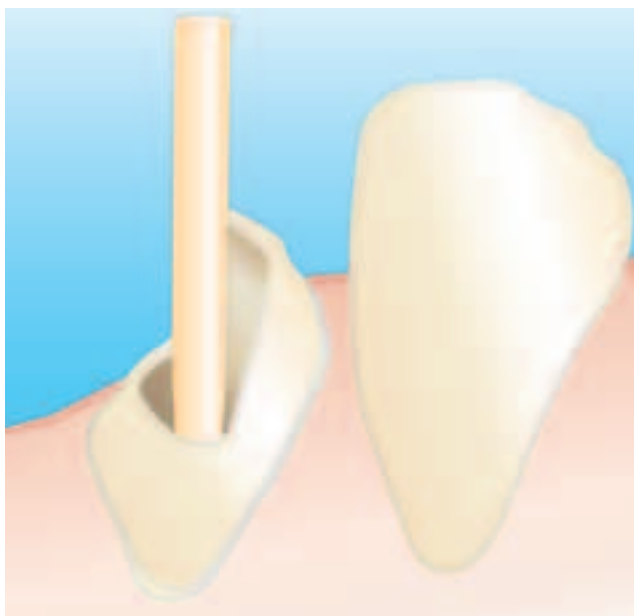
Important

Variolink II catalyst must be refrigerated, since storage at room temperature compromises the quality of the material. Nevertheless, Variolink II must be applied at room temperature, otherwise the working time (setting time) of the material is extended by approx 1 minute. The behaviour of the material during light-curing does not depend on the storage temperature.

B. Direct modelling of the build-up

Model the build-up on the cemented root canal post using a suitable posterior composite (eg Tetric Ceram). Apply layers of 2–3 mm only. Light-cure each layer for 60 seconds.

Example of the direct method



Starting point:
Partial loss of the remaining coronal tooth structure
Situation after crown preparation
CosmoPost in situ

C. Preparation and temporary restoration

- Prepare the build-up. The preparation margin must be located 2–3 mm below the build-up in the residual dentin.
- Take the impression.
- Place the temporary restoration.

Important

- Use only eugenol-free cements (eg Provilink, since eugenol may inhibit the polymerization of the luting composite).
- When using resin-based temporary cements (eg Provilink), isolate the core with Vaseline to prevent the cement from chemically bonding with the composite build-up.

D. Adhesive cementation of the restoration

Preparation of the core and the remaining tooth structure:

- Remove the temporary and clean the core, eg with a polishing brush and pumice or prophylactic paste (eg Proxyt).
- Ensure adequate relative isolation. Contamination with saliva must be prevented.
- Etch enamel areas with 37% phosphoric acid (eg Total Etch) for 15–30 seconds. Then rinse and dry. Depending on the dentin bonding system used, the dentin may also be etched. Etching is optional when using Syntac Classic, but compulsory when using Excite DSC.
- Silanize the composite build-up: Apply Monobond S on the build-up and let it react for 60 seconds. Disperse with blown air.

When using Syntac Classic:

- Apply Syntac Primer on the enamel and dentin. Let it react for 15 seconds and blow dry with air.
- Apply Syntac Adhesive on the enamel and dentin. Let react for 10 seconds and blow dry with air.
- Apply Heliobond on the enamel, dentin and build-up and blow to a thin layer; do not light-cure.

When using Excite DSC:

- Etch with 37% phosphoric acid (eg Total Etch): enamel for 15–30 seconds, dentin for 10–15 seconds. Then, rinse and dry.
- Apply Excite DSC on the enamel, dentin and build-up and agitate it onto the surfaces for 15 seconds. Disperse to a thin layer using an air syringe; do not light-cure.

Preparation of the restoration:

Condition the IPS Empress restoration according to the instructions and insert with Variolink II. For a detailed description of this procedure, please refer to the Instructions for Use / Technique Guide of the Variolink II System.

Instructions for Use for dental technicians

IPS Empress Cosmo Ingot – Instructions for Use

The dentist takes an impression using the impression posts and passes the impression on to the dental laboratory.

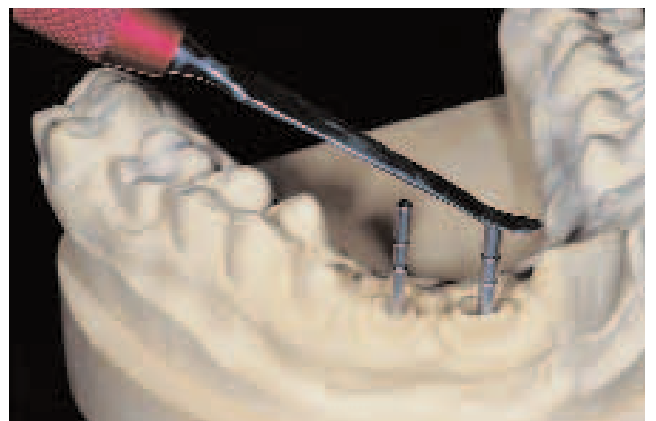


Model fabrication

- The dental technician must check the accurate fit of the impression post in the impression by exerting slight pressure on the post using a suitable instrument.

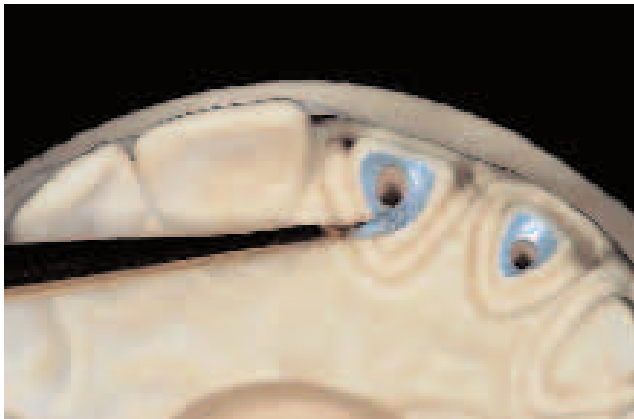


- Isolate the impression post protruding from the impression with IPS Empress die material separating liquid. This prevents the plaster or the model material from bonding with the impression post.
- Fabricate the master model as usual.
- Make sure that the master model is removed from the impression in the direction of insertion of the impression posts.
- Check the accuracy of fit of the impression post on the completed model.

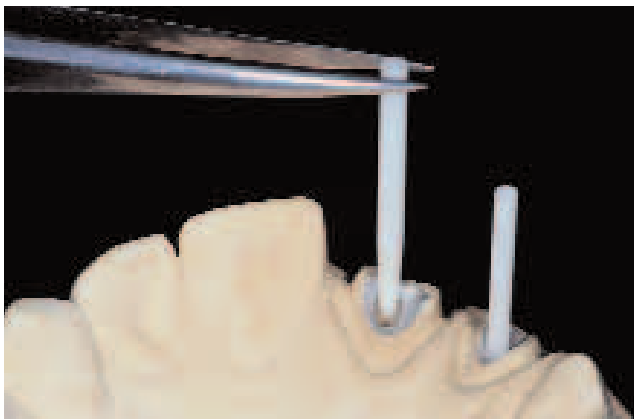


Preparation for modelling

- Remove the die from the model. Using pliers, carefully remove the impression post from the master model by slightly rotating it.
- Now, prepare the die for the spacer or the isolation and mark the preparation margin.
- It is advisable to use a sealant (eg Margidur from Benzer).
- Apply two layers of the spacer (total layer thickness approx. 15–20 mm) in the root cavity after the sealant has set (see fig).



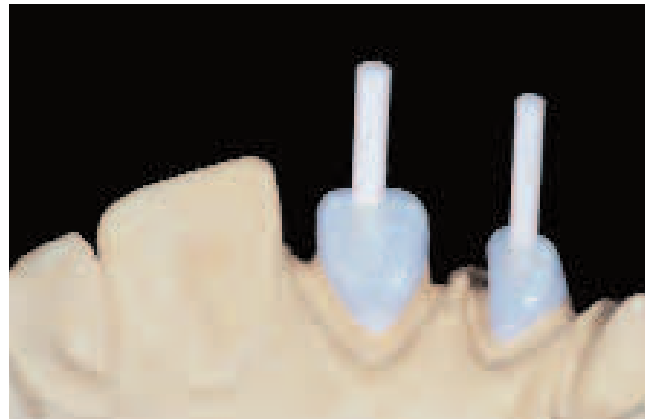
- Isolate the die after curing of the Spacer (eg Die-Lub from Dentaforum) and thoroughly disperse with blown air.
- Insert a CosmoPost of the correct size.



- Check the position of the CosmoPost in the die by slightly rotating it. Carefully remove excess spacer.

Modelling

- Modelling must be carried out with dental wax that burns without leaving residue.
- During modelling, the subsequent preparation has to be kept in mind. For shoulder preparations, the build-up should end approx 1 mm before the preparation margin.



Important

The CosmoPost must be used in the length supplied. It may only be shortened to a functional length once the individual build-up has been pressed to it. This has the advantage that the CosmoPost is stable in the investment material. In this way, pressing errors can be prevented. Furthermore, when working with very small pieces, make sure to invest a dummy object together with the actual build-up.

Spruing

- Remove the modelled post build-up from the die and remove any interfering areas. If necessary, carefully blow off excess isolation material.
- Place the sprue in the direction of flow of the ceramic at the thickest spot (use a round wax profile, 2.5–3 mm diameter, depending on the size of the build-up).



Important

The pieces should be at least 3 mm apart. The distance of at least 10 mm between the objects to be pressed and the investment ring must be observed. Excess isolation material must be removed. Spruing must be carried out taking the direction of flow of the ceramic into account. A dummy object must be invested together with very small individual pieces.

Investment

Invest the pieces with the IPS Empress 2 Special Investment Material or the IPS Empress 2 Speed Investment Material.

Important

Do not use debubblers. Observe the corresponding Instructions for Use of the IPS Empress 2 Special Investment Material or IPS Empress 2 Speed Investment Material. The IPS Empress Special Investment Material for the layering technique cannot be used together with the Cosmo Ingot. Observe the mixing times. Check the correct fit of the paper ring around the ring base and the ring gauge.

Investment with IPS Empress 2 Special Investment Material

| Indication | Concentration | Small ring (100 g) special liquid : distilled water | Large ring (200 g) special liquid : distilled water |
|--|---------------|---|---|
| Preprosthetic build-up in combination with the CosmoPost | 50–60% | 11 ml : 11 ml (50%) 13 ml : 9 ml (60%) | 22 ml : 22 ml (50%) 26.5 ml : 17.5 ml (60%) |

Investment with IPS Empress 2 Speed Investment Material

| Indication | Concentration | Small ring (100 g) special liquid : distilled water | Large ring (200 g) special liquid : distilled water |
|--|---------------|---|---|
| Preprosthetic build-up in combination with the CosmoPost | 40–50% | 11 ml : 16 ml (40%) 13.5 ml : 13.5 ml (50%) | 22 ml : 32 ml (40%) 27 ml : 27 ml (50%) |

When using the IPS Empress 2 Speed Investment Material make sure to switch on the preheating furnace on time.

The investment material contains quartz powder. Avoid inhalation of grinding dust because of the risk of subsequent lung damage (silicosis).

Preheating

Parameters

Preheat the investment ring, including the AlOx plunger, but **without the ingot**, in a conventional preheating furnace. Please refer to the Instructions for Use for the IPS Empress 2 Special Investment Material or the IPS Empress 2 Speed Investment Material for the preheating parameters.

Given the low press temperature required, the IPS Empress Cosmo Ingot is not preheated together with the investment ring. The room temperature ingot is placed into the investment ring when preheating is completed. The material is then pressed in the EP600 or EP500 press furnace.

Important

Given the similar coefficients of thermal expansion of the IPS Empress Cosmo Ingots and the AlOx plunger, make sure to use a clean or new AlOx plunger to prevent the pressed material from sticking to the AlOx plunger.

Important

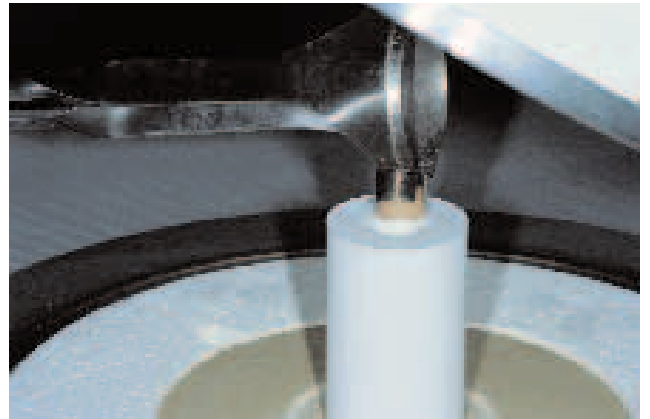
- Carefully remove investment material and ceramic residue from the AlOx plunger after each use. Always keep the marked side of the AlOx plunger upwards.
- Clean the furnace regularly.
- If desired, preheating in conjunction with the IPS Empress 2 Special Investment Material (but not in conjunction with the IPS Empress 2 Speed Investment Material) may also be performed overnight. Since the investment material may be prone to crystallization, however, preheating over the weekend should be avoided.

Pressing

Switch the furnace on in good time.

Calibrate the furnace regularly. Please see the corresponding information regarding the calibration of the furnace in the Instructions for Use of the Temperature Checking Set 2 of the EP 500 and the Automatic Temperature Checking Set 1 of the EP 600/EP 600 Combi.

Remove the investment ring from the preheating furnace and place the cold IPS Empress Cosmo Ingot in the ring.



Insertion of the cold ingot in the investment ring

Next, position the AlOx plunger.



Insertion of the pre-heated AlOx plunger in the investment ring

Pressing in the EP 600

Select Program 4 (Cosmo)

Pressing in the EP 500

Pressing temperature: 900 °C/1652 °F

Holding time: 10 min

Heating rate: 60 °C/108 °F min

Post pressing time: 0

Pressing power (indicator): 5 bar

Vacuum on: 500 °C/932 °F

Vacuum off: 900 °C/1652 °F

Stand-by temperature: 700 °C/1292 °F

| P | B | t ↑ | T | H | V ₁ | V ₂ | Pressure | N |
|----|--------|-------|--------|----|----------------|----------------|----------|---|
| 11 | 700°C | 60°C | 900°C | 10 | 500°C | 900°C | 5 bar | – |
| 11 | 1292°F | 108°F | 1652°F | 10 | 932°F | 1652°F | 5 bar | – |

Divestment

(at the earliest after approx 60 minutes)

- After cooling, the investment cylinder may show cracks. These cracks developed (immediately around the AlOx plunger) during cooling as a result of the different CTEs of the various materials (AlOx plunger, investment material and pressed materials). They do not compromise the result of the pressing cycle.
- Once the pressing procedure has been completed, divesting is carried out according to the usual IPS Empress method (blasting with Ivoclar Vivadent special jet medium at 1 bar pressure).



Removing the pressed object / Finishing



Pressed post build-up

Important

Extensive grinding may produce microcracks in the ceramic framework as a result of local overheating. Consequently, grinding should be reduced to a minimum.

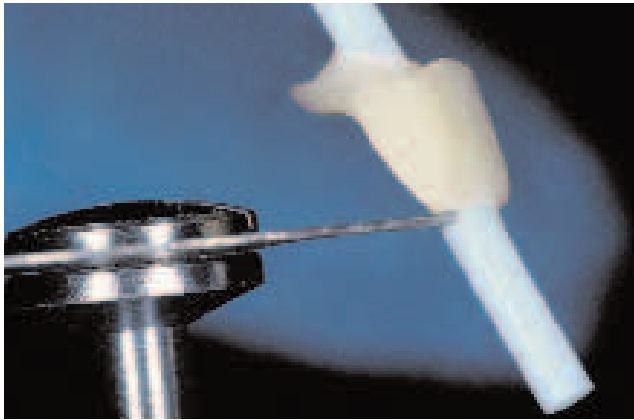


Cutting

Carefully place the divested post build-up on the master model.



Carefully cut the projecting ComoPost.



Cutting of the ComoPost.

Finally, the pressed post build-up is finished with fine diamonds.



Various views of the post build-up on the model.

Important

- The CosmoPost does not have to be etched with IPS Ceramic Etching Gel. The post demonstrates a microstructure that corresponds to that of etched ceramic.
- The contact surface (Cosmo Ingot) of the post build-up is conventionally etched with IPS Ceramic Etching Gel.

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