

(GB) INSTRUCTIONS FOR USE

I. INTRODUCTION

PANAVIA F 2.0 is a dual-curing (chemical and light) resin based cement system for metal, composite, and silanated porcelain restorations.
 PANAVIA F 2.0 consists of ED PRIMER II, PANAVIA F 2.0 paste and OXYGUARD II.
 ED PRIMER II contains HEMA and 5-NMSA as well as MDP and consists of liquid A and liquid B.
 PANAVIA F 2.0 Paste releases fluoride.
 ALLOY PRIMER improves the bond strength for precious alloy and PANAVIA F 2.0 Paste. Tin plating is not required.

II. INDICATIONS

PANAVIA F 2.0 is indicated for the following applications:
 [1] Cementation of metal crowns and bridges, inlays and onlays.
 [2] Cementation of porcelain crowns, inlays, onlays and veneers.
 [3] Cementation of composite resin crowns, inlays, and onlays.
 [4] Cementation of adhesion bridges.
 [5] Cementation of endodontic cores and prefabricated posts.
 [6] Amalgam bonding.

[NOTE]

Use cement shades appropriate to individual cases.
 The shades of adhesive cements and applicable cases

Restoration	Cement shade	TC, Light	White	Opaque
Metal inlays and onlays; metal crowns and bridges				
Porcelain or composite inlays, onlays and veneers;				
Preformed posts and cast metal cores				
Adhesion bridges and splints	anterior			
	posterior			
Bonded amalgam restorations				

:RECOMMENDED :ADEQUATE :NOT RECOMMENDED

III. CONTRAINDICATIONS

[1] Patients with allergy to methacrylate monomers.
 [2] Patients with allergy to acetone (ALLOY PRIMER)

IV. SIDE EFFECTS

The mucous membrane may turn whitish when contacted by primer due to protein coagulation. This is a temporary phenomenon that will disappear in a few days.

V. INCOMPATIBILITY

[1] Do not use eugenol containing materials for pulp protection and temporary sealing since they retard the curing process.
 [2] Do not use hemostatics containing ferric compounds, since they may impair adhesion and the remaining ferric ion may cause discoloration in the margin or surrounding gingiva.
 [3] Do not use PANAVIA F 2.0 paste with PANAVIA F paste, or the mixed paste will not cure completely by light curing.

VI. PRECAUTIONS

1. Safety precautions

- If any hypersensitivity such as a rash or dermatitis occurs due to contact with the product, discontinue the use of the product and consult a physician.
- In order to prevent the occurrence of hypersensitivity due to contact with methacrylate monomers, acetone or acid, wear gloves or take other appropriate protective measures.
- Use caution to prevent the product from coming in contact with the skin or getting into the eye. Before using product, cover the patients eyes with a towel to protect the patient eyes from splashing material.
- If the product comes in contact with the human body, take the following actions:
 <If the product gets in the eye>
 Immediately wash the eye with copious amounts of water and consult a physician.
 <If the product comes in contact with the skin>
 Immediately wipe it off with a cotton pledget moistened with alcohol or gauze and wash with copious amounts of water.
- Use caution to prevent the patient from accidentally swallowing the product.
- If a patient or operator feels sick from inhaling the acetone contained in the product, allow them to rest and breathe fresh air.
- Any actual or near pulp exposure area should be covered with a hard setting calcium hydroxide material. Do not use eugenol materials for pulp protection.
- When using with preformed stainless posts, the post should not contact metal restorations. Cover the post with composite resin.
- Avoid looking directly at the curing light when curing the product.
- Keep the product out of reach of children.

2. Handling and manipulation precautions

- PANAVIA F 2.0 polymerizes by a dental curing light (irradiate wave length : 400-515nm). Use the light blocking plate to avoid exposing the material to an operating light or natural light (sunlight from windows)
- Make sure the disposable nozzle or disposable brush tip is securely attached to prevent the patient from swallowing them.
- After placing the restoration on the tooth, the cement could cure due to the operatory light. Use caution not to let the operatory light come too close to the patient.

3. Storage precautions

- Do not use after the expiration date. Note expiration date on the outside of package.
- ALLOY PRIMER is flammable. Keep away from flame.
- The product should be refrigerated (2-8°C/36-46°F) when not in use; bring it to room temperature before using.
- ALLOY PRIMER should be stored at 2-25°C/36-77°F when not in use.
- Keep away from extreme heat or direct sunlight.
- The bottle or syringe cap should be replaced as soon as the resin has been dispensed from the bottle or syringe. This prevents evaporation of volatile ingredients.

VII. KIT COMPONENTS

PANAVIA F 2.0 consists of the following components. They are available as a set or single components.

- ED PRIMER II (adhesive primer) Liquid A 4ml, Liquid B 4ml
 * There is no need for washing after application and the primer should be left in place.
- PANAVIA F 2.0 paste A paste 2.3ml, B paste 2.3ml
 * B paste is available in four shades: TC, Light, White and Opaque.
- ALLOY PRIMER 1 ml (Refill bottle holds 5ml)
 * This metal adhesive primer provides high bond strength to both precious and base metals.
 * It enhances the bond strength of PANAVIA F 2.0 to precious metals.
- OXYGUARD II 6 ml
 * This Oxygene-blocking agent allows polymerization of the PANAVIA F 2.0 Paste.
- Accessories
 Mixing plate, spatula, mixing paper, small brush holder, disposable brush tip, disposable nozzle, light-blocking plate

VIII. RELATED PRODUCTS

The following products are necessary for specific procedures.

- CLEARFIL PORCELAIN BOND ACTIVATOR 4 ml
 * This product contains a silane coupling agent. Mixing it with CLEARFIL SE BOND PRIMER or CLEARFIL LINER BOND 2V PRIMER or CLEARFIL NEW BOND or CLEARFIL PHOTO BOND improves the bond strength to porcelain or cured composite.
- K ETCHANT GEL 6 ml
 * This phosphoric acid solution is used for pretreatment of uncut enamel and porcelain.

IX. CLINICAL PROCEDURES

1. Basic procedure (use of adhesive cement)

[NOTE]

Use the mixed paste as soon as possible after dispensing and mixing.

1) Dispensing the pastes

- Align marking on the nut with the deference line on the plunger and turn the syringe to dispense the necessary amount of A paste minimum turn of the syringe should be half a turn.
- Equal amounts of A paste and B paste should be dispensed.
- The amount of paste dispensed at last rotation of the syringe could be inaccurate. Therefore, discard the syringe before using the last portion.
- The necessary amount of paste for a typical applications is:

Number of rotations of syringe	Applications
Half a turn	Inlays and onlays
1 turn	Crowns

[NOTE]

- If the paste is dispensed by turning the plunger a quarter of a turn, the performance of the product could be impaired when the paste hardens.
- If not used immediately, it should be covered with a light-blocking plate.
- Mixing A paste and B paste
 Mix sufficient A paste and B paste on the mixing plate for 20 seconds. Be sure there is no water mist on the mixing plate or spatula before using them; the presence of water could shorten the working time of the mixed paste.

[CAUTION]

- The working time of mixed paste could vary if mixing is insufficient.
- The paste must be used within 3 minutes after mixing.

[REMARKS]

The working times of PANAVIA F 2.0 Paste from dispensation to the completion of cementation are :

Working time of PANAVIA F 2.0

Working steps	Working time
1. Dispensing the pastes (by turning the syringe the same amount of turn)	15 min.
2. Mixing the pastes (for 20 sec.)	3 min.
3. Placing the restoration under pressure ...In the case of root canal	60 sec. 40 sec.
4. Light curing ...Conventional halogen, LED *1 ...Plasma arc, fast halogen *2 Applying OXYGUARD II	20 sec. 5 sec. 3 min.

Light intensity of approved curing lights (400~500nm)

*1) Conventional halogen (>250mW/cm²), LED (>160mW/cm²)
 *2) Plasma arc (>2000mW/cm²), fast halogen (>550mW/cm²)

2. Standard procedure I (indications 1 to 4: for cementation)

The flow chart below shows the standard clinical procedure I.

Surface treatment of restoration	Treat the surface of the restoration
Cleaning abutment tooth and cavity	Clean the adherend surface to prepare for cementation
Tooth surface treatment	Treat the abutment tooth surface or the entire surface of the cavity surface with ED PRIMER II. * If the abutment is made of a precious metal alloy, apply ALLOY PRIMER to the precious metal alloy first.
Preparing adhesive cement	Dispense the necessary amount of each paste according to the case and mix the two pastes
Placing the restoration	Apply the paste mix to the restoration and place restoration on the abutment or cavity
Removing excess cement	Remove excess cement at marginal areas
Curing adhesive cement	Cure the adhesive cement at marginal areas by using a light curing unit or applying OXYGUARD II
Finishing	Finish the restoration by polishing

[1] Surface treatment of restoration

- Precious metals (crowns, bridges, inlays and onlays)
 - Sandblasting (as necessary)
 Sandblast the restoration surface using 30-50 micron alumina particles at an air pressure of 4.2 - 7 kg/cm² (60-100 PSI); 2-3 seconds per cm² will remove the luster producing a matte finish.
 - Ultrasonic cleaning
 Clean the restoration surface in an ultrasonic unit for 2 minutes.
- Applying ALLOY PRIMER
 Apply a thin coat of ALLOY PRIMER to the precious metal alloy.

[CAUTION]

If the adherend surface is contaminated with saliva or blood after ultrasonic cleaning, clean the adherend surface in the ultrasonic unit using a neutral detergent and then wash it for 1 minute with running water.

2. Non-precious metals

- Sandblasting (as necessary).
 Sandblast the restoration surface using 30-50 micron alumina powder at an air pressure of 4.2-7 kg/cm² (60-100 PSI); 2-3 seconds per cm² will remove the luster producing a matte finish.
- Ultrasonic cleaning
 Clean the restoration surface in an ultrasonic unit for 2 minutes.

[CAUTION]

If the adherend surface is contaminated with saliva or blood after ultrasonic cleaning, clean the adherend surface in an ultrasonic unit using a neutral detergent and wash it for one minute with running water.

3. Porcelain and cured composite restoration (inlays, onlays, crowns and veneers)

- Sandblasting
 Sandblast the restoration surface using 30-50 micron alumina particles at a low air pressure. (1-2 kg/cm² (14-28 PSI))
- Etching with phosphoric acid
 Etch the adherend surface with K ETCHANT GEL.
- Rinse and dry
 After etching with phosphoric acid, rinse the adherend surface with water and dry.
- Silane coupling treatment
 Silanate the adherend surface using the following:
 Application of the mixture of CLEARFIL PORCELAIN BOND ACTIVATOR and CLEARFIL SE BOND PRIMER or CLEARFIL LINER BOND 2V PRIMER or CLEARFIL PHOTO BOND or CLEARFIL NEW BOND.

[NOTE]

After treating the restoration surface, proceed to cementation quickly.

[2] Adherend surface treatment

- Cleaning cavity or abutment tooth surface
 - Remove temporary sealing agent or temporary cementation agent from the adherend surface.
 - When cementing to uncut enamel or using with adhesive bridge or porcelain laminate veneers, apply K ETCHANT GEL to the adherend surface for 10 seconds.
- Adherend surface treatment
 - Mixing ED PRIMER II
 Dispense one drop each of Liquid A and Liquid B into well of the mixing dish and mix.
 - Applying ALLOY PRIMER
 If a precious metal abutment tooth is used, apply ALLOY PRIMER to its metal surface.

[CAUTION]

If the adherend surface is contaminated with saliva or blood after ALLOY PRIMER is applied, clean the adherend surface with a cotton pledget moistened with alcohol and apply ALLOY PRIMER again.

- Applying ED PRIMER II
 Apply ED PRIMER II to the entire tooth surface (enamel and dentin) of the adherend surface or metal or composite resin abutment tooth with a disposable brush tip or sponge and leave it in place for 30 seconds.
- Drying
 Using a sponge or paper point, remove excess primer to prevent the formation of a pool of the primer in the root canal or at the corners of the cavity. Dry the primer completely with gentle air flow. Remember that a pool of the primer will cause quick polymerization of the adhesive cement. Also do not rinse.
 To prevent the primer from splattering, it is good practice to dry while using a vacuum.

[CAUTION]

ED PRIMER II should be applied on the entire surface of the tooth structure. Do not apply it to the restoration.

[3] Preparing PANAVIA F 2.0 paste

Prepare the adhesive cement according to the basic clinical procedure. Refer to IX.1. "basic procedure".

[4] Cementation

- Applying mixed paste to the restoration
 Apply the mixed paste to the restoration.

[CAUTION]

DO NOT apply PANAVIA F 2.0 paste to the tooth surface primed with ED PRIMER II as this will accelerate the set of PANAVIA F 2.0 Paste.

2. Cementing restoration

Cement the restoration to the cavity or the abutment tooth. Cementation should be completed within 60 seconds.
 When porcelain laminate veneer is cemented, light cure the veneer for 10 seconds before removing excess cement.

[CAUTION]

When the adhesive cement comes in contact with ED PRIMER II, the polymerization of the adhesive cement is accelerated.

3. Removing excess paste

Any excess PANAVIA F 2.0 paste remaining at the margin can be removed with an explorer or small scaler. The restoration can then be finished and polished with pumice and water.

4. Curing cement margin

Cure the mixed paste along the cement margin, using either of the following two methods.
 Light curing method
 When it is possible to light cure adhesive cement along the cement margin, such as inlays and onlays, light cure each section of the cement margin for 20 seconds by conventional halogen curing lights (>250m W/cm²) or LED curing lights (>160mW/cm²). If plasma arc curing lights (>2000mW/cm²) or fast halogen curing lights (>550mW/cm²) are used, each section of the cement margin can be cured for 5 seconds.

[CAUTION]

The Opaque paste should not be light cured but allowed to cure by using OXYGUARD II. It has a low curing depth.

OXYGUARD II
 Use OXYGUARD II to cure the mixed paste as follows:
 With a disposable brush tip, apply OXYGUARD II to the margin. After 3 minutes remove OXYGUARD II with a cotton roll and water spray.

[5] Finishing

Remove excess cement adhered to tooth surface by polishing.

3. Standard procedure II (Indication 5: core build up)

[NOTE]

This procedure is for use with a preformed post and composite resin core building-up. For the cementation of metal cores, refer to standard procedure 1. And according to the instruction for use of the post and composite resin.

The flow chart below shows a typical procedure for core build up.

Surface treatment of the post	Treat the surface of the post as necessary
Cleaning the cavity and preparing an orifice of the root canal	Clean the adherend surface and prepare the root canal opening
Tooth surface treatment	Treat the tooth surface with ED PRIMER II
Preparing adhesive cement	Dispense the necessary amounts of the pastes and mix them
Seating the post	Apply the mixed paste to the post and seat it in place
Light curing	Light cure the adhesive cement to secure the post in place
Built-up composite resin	Build-up the composite resin for preparation of the abutment
Curing and finishing composite resin	Cure the composite resin to form an abutment

[1] Surface treatment of the post

- Sandblasting
 Sand blast the post as necessary.

[NOTE]

Some preformed posts do not require sandblasting. Refer to the Instruction for use of the specific post.

2. Applying ALLOY PRIMER

Apply ALLOY PRIMER to the post if it is precious metal alloy.

[2] Cleaning cavity and preparing root canal

Remove the temporary sealing agent from the cavity and filling material from the root canal. Using a Pizo reamer, prepare and clean the root canal opening.

[3] Tooth surface treatment

- Mixing ED PRIMER II
 Dispense one drop each of Liquid A and Liquid B on the mixing dish and mix.
- Applying ED PRIMER II
 Using a sponge or a broach cotton, apply the mixture to the root canal, on the root surface and the tooth structure. Leave it in place for 30 seconds.
- Removing excess primer (the same step is also needed in the case of metal cores)
 Using a sponge, broach cotton or paper point, remove excess primer to prevent the primer from pooling at the corners of the cavity and inside the root canal.
- Drying
 Dry the primer with gentle air flow. It is good practice to dry while using a vacuum to prevent the primer from splattering.

[CAUTION]

Dry the primer completely. A pool of the primer at the corners of the cavity or inside the root canal will cause quick polymerization of the mixed paste.

[4] Preparing PANAVIA F 2.0 paste

Prepare the adhesive cement according to the basic clinical procedure. Refer to IX.1. "basic procedure".

[5] Seating the post

- Apply the mixed paste to the post.

[REMARKS]

The mixed paste is applied to the metal post for cementation.

- Seating the post into the root canal
 After applying the mixed paste to the post, insert it into the root canal quickly. It is advisable to lightly vibrate the post while inserting it into the root canal to prevent the entrapment of air bubbles.

[CAUTION]

If multiple posts are to be fitted to a single tooth, use caution to prevent excess cement from flowing into other root canals.

[CAUTION]

Never use a lentulo spiral for loading the adhesive cement into the root canal. If the adhesive cement is loaded into the root canal using a composite resin syringe, the polymerization of the cement is accelerated. It is necessary to fit the post as quickly as possible.

3. Spreading excess cement

Using a small brush, spread excess cement over the remaining crown and post head.

4. Curing adhesive cement

Light cure the adhesive cement on the remaining crown and post head for 20 seconds by conventional halogen curing lights (>250mW/cm²) or LED curing lights (>160mW/cm²). If plasma arc curing lights (>2000mW/cm²) or fast halogen curing lights (>550mW/cm²) are used, each cement margin has to be cured for 5 seconds.

[NOTE]

If it is difficult to light cure if the opaque cement is used; use the core build-up composite resin.

[6] Build-up composite resin

Build-up the composite resin for preparation of the abutment tooth according to the instruction for use.

[7] Curing and finishing of composite resin

After curing the composite resin, prepare an abutment tooth.

4. Standard procedure III (indications 6: Amalgam Bonding)

The flow chart below shows the standard clinical procedure III.

Cleaning of tooth structure	Clean and prepare the cavity in the normal manner for an amalgam restoration
Treatment of tooth surface	Treat the entire cavity surface with ED PRIMER II
Preparing of adhesive cement	Dispense the necessary amount of each paste according to the case and mix the two paste
Placing the amalgam	Apply the mixed paste to the entire cavity surface and place the triturated amalgam into the abutment or cavity
Removing excess cement	Remove excess cement at marginal areas
Curing adhesive cement	Cure the adhesive cement at marginal areas using a light curing unit or applying OXYGUARD II
Finishing	Finish the restoration

[1] Cleaning of tooth structure

Cleaning cavity or abutment surface
 Remove temporary sealing material or temporary cementation material from the adherend surface.

[2] Treatment of tooth surface

- Preparing ED PRIMER II
 Dispense one drop each of Liquid A and Liquid B on the mixing plate and mix.
- Applying ED PRIMER II
 Apply ED PRIMER II to the entire adherend tooth surface (enamel and dentin), metal, or composite resin abutment with a small brush or sponge and leave it in place for 30 seconds.
- Drying
 Using a sponge or paper point, remove excess primer to prevent the primer from pooling in the corners of the cavity. Dry the primer completely by using gentle air flow. Remember that a pool of the primer will cause quick polymerization of the adhesive cement. To prevent the primer from splattering, it is good practice to dry while using a vacuum.

[3] Preparing of adhesive cement

Prepare the adhesive cement according to the basic clinical procedure. Refer to IX.1. "basic procedure".

[4] Placing the amalgam

- Apply the adhesive cement to the cavity
 Apply a thin, even layer of the mixed adhesive cement to the entire cavity surface primed with ED PRIMER II being careful to avoid entrapping air.

[CAUTION]

ED PRIMER II accelerates the set of the adhesive cement, the adhesive cement should be applied to the primed cavity quickly.

2) Amalgam filling

The triturated amalgam should be condensed on the unset adhesive cement.

Occlusal carving can be accomplished in the normal manner.

[5] Removing excess cement

Any slight excess of PANAVIA F 2.0 paste remaining at the margin can be removed with an explorer or small scaler.

[6] Curing adhesive cement

Cure the mixed paste along the cement margin, using either of the following two methods.

Light curing method
 When it is possible to light cure adhesive cement along the cement margin, such as inlays and onlays, light cure each section of the cement margin for 20 seconds by conventional halogen curing lights (>250mW/cm²) or LED curing lights (>160mW/cm²). If plasma arc curing lights (>2000mW/cm²) or fast halogen curing lights (>55