

# PANAVIA™ F<sub>2.0</sub>

High bond strength

Anaerobic properties

Unique self-etching primer system

Special surface coating technology

for sodium fluoride



# THE UNIQUE ANAEROBIC-CURING RESIN CEMENT

The PANAVIA™ brand looks upon a scientific and clinical track record of more than 30 years. Being recommended as the universal adhesive resin cement of first choice, it provides permanent adhesive techniques in the areas of high-quality and difficult restorations for all ceramic and metal restorations as well as endodontic post cementations.

PANAVIA™ F 2.0 is accepted as a premium product by leading universities, displaying a high bond strength to tooth structures, metals and ceramics. In combination with the self-etching primer system, PANAVIA™ F 2.0 reduces post-operative sensitivity and provides consistently good results. The anaerobic-curing\* properties which do not begin until direct contact has been made with the restoration (no more contact with oxygen) and the smooth consistency make PANAVIA™ F 2.0 a popular aid in daily practice due to the user's self-defined working time. Even after releasing fluoride, the cement maintains its high mechanical strength due to the special surface coating technology with sodium fluoride.



\* def. 'anaerobic': not using oxygen from the air (compare Oxford English Dictionary 2008); exclusion of oxygen.

## CHARACTERISTICS AND ADVANTAGES OF PANAVIA™ F 2.0

Universal adhesive resin cement with proven high bond strength.	→	Better marginal sealing is expected.
Unique self-etching primer system.	→	Mild etching leading to a reduction of post-operative sensitivities. In addition, the catalyst system accelerates the polymerization of the cement from the tooth/cement interface to reduce the polymerization shrinkage stress.
Anaerobic properties	→	No time pressure even when cementing difficult restorations due to long working time.
No silane-treatment necessary for zirconia restoration.	→	Time saving due to less working steps.
Special surface coating technology with sodium fluoride.	→	High mechanical strength remains even after releasing fluoride into tooth structures.

## INDICATION

- ✓ Cementation of crowns, bridges, inlays, onlays and veneers made of metal, ceramic and composite resin
- ✓ Cementation of adhesion bridges
- ✓ Cementation of metal cores, resin cores, metal posts or glass fiber posts
- ✓ Amalgam bonding

## APPLICATION

- ✓ Metal, metal alloys (e.g. gold alloy or titanium)
- ✓ Metal oxide ceramics (e.g. zirconia)
- ✓ Silica-based ceramics
- ✓ Hybrid ceramics
- ✓ Composites
- ✓ Metal and glass fiber posts

## PANAVIA™ F 2.0 – PROPERTIES AND APPLICATION

PANAVIA™ F 2.0 is a dual-cure resin cement with anaerobic properties. Thus, the excess paste of PANAVIA™ F 2.0 can be light-cured by conventional halogen or LED lights. The cement which the light cannot reach is cured by its self-curing reaction in anaerobic conditions (with the exclusion of oxygen).

## ED PRIMER II

The self-etching ED PRIMER II is an advanced development – a convenient one-step procedure for etching and priming. ED PRIMER II penetrates gently and effectively enamel and dentin in one step. That enables the penetration by Kuraray's well-proven adhesive monomer MDP. When PANAVIA™ F 2.0 contacts the dried ED PRIMER II surface, the paste polymerizes from the adhesion interface. This is due to the polymerization accelerators in ED PRIMER II. The unique self-etching primer system reduces the polymerization stress on the adhesion interface. In consequence the optimal bond strength is guaranteed and the potential development of margin gaps is reduced. The result is a favorable clinical integration.



### ED PRIMER II – in brief

- ✓ Simplified pre-treatment: the self-etching ED PRIMER II enables the effective and gentle penetration of enamel and dentin in one step.
- ✓ Prevention of post-operative sensitivity through optimally harmonized, mild pH value (pH 2.4)
- ✓ Simple and forgiving handling through the water-based primer
- ✓ Chemical bond to the hydroxylapatite is created within the clinically relevant time period.

## CLEARFIL™ CERAMIC PRIMER PLUS

The newly developed CLEARFIL™ CERAMIC PRIMER PLUS is a one-bottle ceramic primer that contains MDP,  $\gamma$ -MPS and ethanol. It maintains excellent adhesion properties on ceramic restorations in a long-term storage through the optimum combination of these ingredients. Besides the proven adhesive monomer MDP for bonding to metal or metal oxide ceramic, it also contains the silane coupling agent  $\gamma$ -MPS, which ensures a strong hold on silica-based ceramics.



## CLINICAL CASE

Before



After



Inlay

Crown

Veneer

## TECHNICAL DATA

	Shear Bond Strength	
	24 hours	3.000 thermal-cycles
Human enamel	28.7 MPa	28.0 MPa
Human dentin	15.8 MPa	15.4 MPa
Zirconia (Cercon* <sup>1</sup> )	43.4 MPa	34.4 MPa
Alumina (Procedura* <sup>1</sup> )	32.4 MPa	28.4 MPa
Gold Alloy (Type IV)* <sup>2</sup>	28.0 MPa	32.3 MPa
Titanium (Titan 100)	38.8 MPa	37.6 MPa

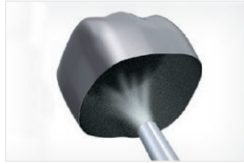
Source: Kuraray Noritake Dental Inc.

\*<sup>1</sup> Not a trademark of KURARAY CO., LTD.

\*<sup>2</sup> with ALLOY PRIMER

## CLINICAL PROCEDURE

### Cementation of precious & semi-precious metal crowns, PFM crowns, bridges, inlays and onlays



1 Sandblast, wash & dry.



2 Apply ALLOY PRIMER to internal surface of precious metal restoration.

### Cementation of ceramics/composite restorations



1 Sandblast, then ultrasonic clean and dry.



2a Apply K-ETCHANT GEL (40% phosphoric acid) to clean surface for 5 sec. Rinse and dry.



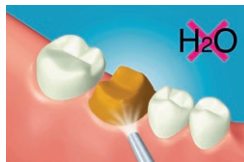
2b Apply CLEARFIL™ CERAMIC PRIMER PLUS to the internal surface of the restoration and dry.

For cementation of metal oxide ceramic restorations (e.g. zirconia), a silane pretreatment (2a, 2b) is not required due to the adhesive monomer MDP included in the paste.

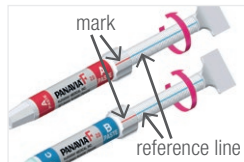
### Common steps



3 Mix equal amounts of ED PRIMER II A & B and apply to the tooth.



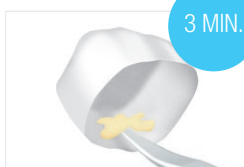
4 Gently air dry.



5 Dispense equal amounts of paste A & B.



6 Mix paste A & B for 20 sec.



7 Apply the mixture of the paste to the sandblasted crown.



8 Remove excess cement. (For easy clean-up, partially light-cure the excess cement for 2–3 sec. with conventional halogen or LED light, then remove the excess.)



9a Light-cure the margins. 20 sec. per surface (conventional halogen or LED light) 5 sec. per surface (Plasma arc or fast halogen light).

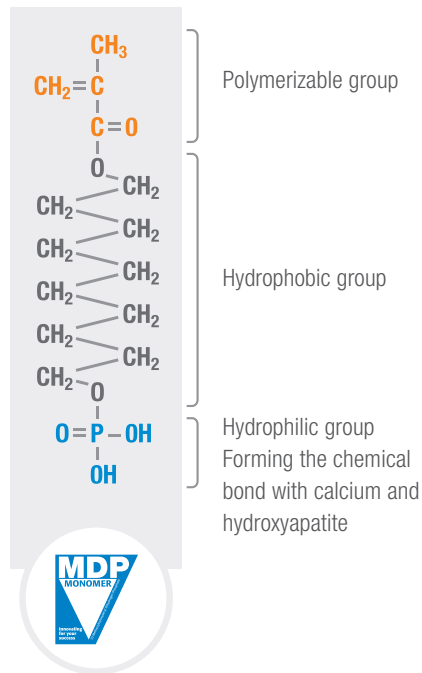


9b Self-cure material by applying OXYGUARD™ II to the margins. Then wait for 3 min.

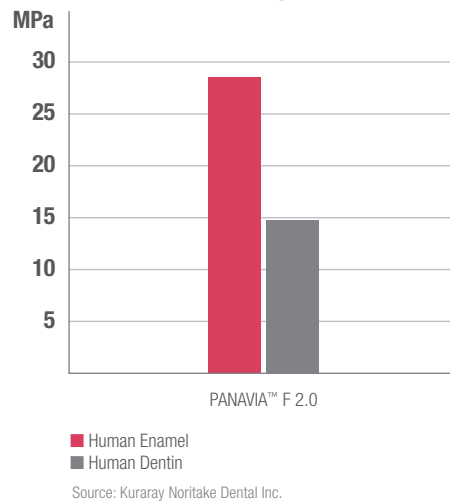
## STRONG BOND STRENGTH & CONSISTENT MARGINAL INTEGRITY

Kuraray's unique adhesive monomer MDP in the primer creates a strong chemical bond to hydroxylapatite. Being in use for more than 20 years, the MDP has a proven excellence in adhesion.

### STRUCTURE OF ADHESIVE MONOMER MDP



### Shear bond strength to human tooth after 3.000 Thermal-cycles



## AVAILABLE IN FOUR COLOR SHADES



### TC (tooth color)

Color support for the natural tooth.

### Light (translucent)

Transparent, ideal for veneers, restorations made of metal oxide ceramics.

### White

But not opaque. Affects dark tooth and tooth discolorations optimally and naturally.

### Opaque

Covers the underlying surface completely. Especially suitable for precious/non-precious alloys and adhesion/Maryland bridges.

## PRODUCT ASSORTMENT

### PANAVIA™ F 2.0: KIT

1 PANAVIA™ F 2.0 A Paste (5.0 g/2.3 ml), 1 PANAVIA™ F 2.0 B Paste (4.6 g/2.3 ml), 1 ED PRIMER II Liquid A (4 ml), 1 ED PRIMER II Liquid B (4 ml), 1 OXYGUARD™ II (6 ml),

Accessories: 1 mixing pad, 1 mixing spatula, 1 mixing dish, 1 brush tip handle, 50 disposable brush tips, 20 disposable nozzles, 1 light blocking plate

#485-WD TC

#487-WD Opaque

#486-WD White

#488-WD Light



### PANAVIA™ F 2.0: HALF KIT

1 PANAVIA™ F 2.0 A Paste (5.0 g/2.3 ml), 1 PANAVIA™ F 2.0 B Paste (4.6 g/2.3 ml), 1 PANAVIA™ F 2.0 ED PRIMER II Liquid A (4 ml), 1 PANAVIA™ F 2.0 ED PRIMER II Liquid B (4 ml)

Accessories: 1 mixing pad, 1 mixing spatula

#505-WD TC

#508-WD Light

#506-WD White



### PANAVIA™ F 2.0 REFILL

#### A Paste

#493-WD (5.0 g/2.3 ml)

#### B Paste

#494-WD TC (4.6 g/2.3 ml)

#495-WD White (4.6 g/2.3 ml)

#497-WD Light (4.6 g/2.3 ml)

#496-WD Opaque (4.6 g/2.3 ml)



### ED PRIMER II

#491-WD Liquid A (4 ml)

#492-WD Liquid B (4 ml)



### OXYGUARD™ II

#490-WD (6 ml)

### OXYGUARD™ II Disposable Nozzles

#917-WD (20 pcs.)



### CLEARFIL™ CERAMIC PRIMER PLUS

#3637-WD (4 ml)

### ALLOY PRIMER

#064-WD (5 ml)

### K-ETCHANT GEL

#013-WD (6 ml)



- Before using this product, be sure to read the Instructions for Use supplied with the product.
- The specifications and appearance of the product are subject to change without notice.
- Printed color can be slightly different from actual color.

"CLEARFIL", "PANAVIA", and "OXYGUARD" are registered trademarks or trademarks of KURARAY CO., LTD.



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