

The new era of *universal bonding*
and *cementing* technology.



Universal Bond II

FEATURING **ESTECEM II PLUS**

Changing the way restorations are done.



 **Tokuyama Dental**
Innovating Tomorrow's Dentistry, Today.™



Universal Bond II

Changing the way restorations are done.

The **only SELF-CURE universal adhesive** to bond a wide range of dental materials while following the same three quick and easy steps for any materials used in direct and indirect restorations. **Without the need to light-cure**, agitate surfaces, use additional primers and activators or wait in between steps.

Mix **Apply** **Air-Dry** **That's it!**



The application time is **only 25 seconds**

User-friendly

- **SELF-CURED: no need for light curing.**
- No need to wait after the application.
- No need for activator or primer.

Universal

- **Compatible with light, self and dual curing** composite materials.
- **Compatible with prosthetic materials in ceramics, zirconia or metals.**
- Compatible with all the etching techniques.

Reliable

- **High adhesion values on different tooth substrates (enamel and dentin).**
- High adhesion values on prosthetic materials.
- Innovative technology designed by Tokuyama.

Difference from TOKUYAMA UNIVERSAL BOND

Storage temperature

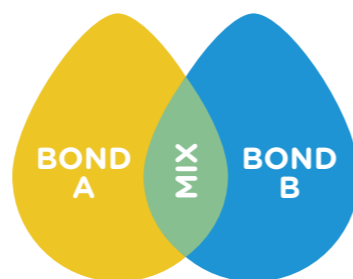
- Can be stored at room temperature (between 0 to 25°C /32 to 77°F).

Volume of Bond B reduced

- The volume of Bond B of Tokuyama Universal Bond II is 4ml (5ml for Tokuyama UNIVERSAL BOND).
- The volume of one drop is adjusted as "Bond A: Bond B = 1: 0.8".

Color changed

- Can be visually confirmed that it is mixed by color of the liquid.



The GREEN light for applying the mixing bond

Adhesion Mechanisms

BoSE Technology is the key technology for "**platform**" and "**no need to light-cure**".



- Borate self-cure technology (**BoSE**) is a chemical polymerization initiator has **good storage stability**. This chemical polymerization provides the same bond strength as photopolymerization systems.
- **BoSE Technology** is superior to the conventional chemical polymerization initiator, a benzoyl peroxide/amine system, because it exhibits **high catalytic activity under acidic conditions**.
- A thin bonding layer formed after air blow becomes because of progression of polymerization and curing on its adhesive interface (**Contact Cure**), when it comes into contact with resin materials such as composite resin.
- High activity under acidic conditions made it possible to be used with **self-curing** resin materials as well as **light-curing** and **dual-curing** type resin materials.

Thanks to the "**BoSE Technology**" system, **color stability is guaranteed over lasting time!**



3D-SR monomer (patented by Tokuyama) occurs three-dimensional cross-linking with the calcium ions of the dentine. We have achieved high adhesiveness thanks to our unique **SR monomer** technology which copolymerizes with other monomers.

10-MDP is also used as a part of the 3D-SR monomer and contributes to the formation of an adhesive layer to tooth.

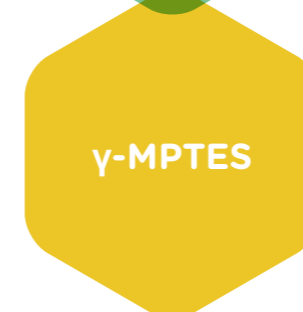
Furthermore, it contributes to adhesion to non-precious metal and zirconia as well as tooth.

➤ **TOOTH • ZIRCONIA • ALUMINA • NON-PRECIOUS METAL**



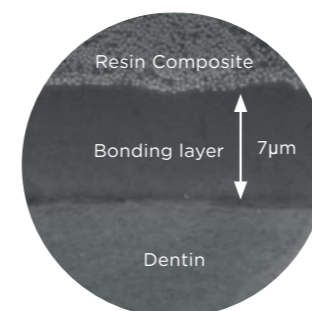
The sulfur atom in the thiouracil group of **MTU-6** interacts with precious metal (covalent bond) and additionally, the methacryl group co-polymerizes with monomers in dental-curable materials.

➤ **PRECIOUS METAL**

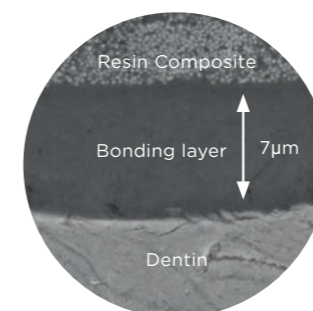


The new silane coupling agent, **γ-MPTES** is more stable in the bottle than the conventional one (γ-MPS), the adhesion effect lasts for a long time.

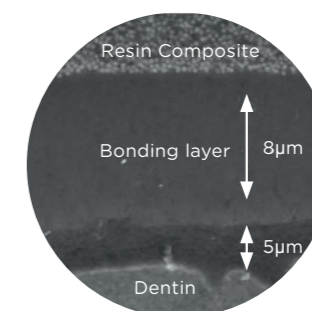
➤ **GLASS-CERAMICS • RESIN**



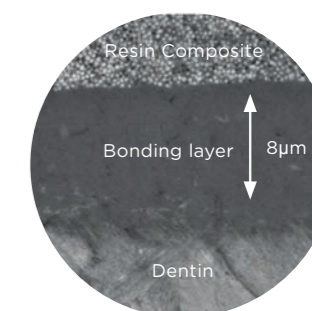
SELF-ETCH / DENTIN X 3.000



SELF-ETCH / ENAMEL X 5.000



TOTAL-ETCH / DENTIN X 5.000*



TOTAL-ETCH / ENAMEL X 5.000*

ESTECEM II PLUS

Tokuyama Universal Bond II used in combination with the new ESTECEM II PLUS dual resin aesthetic cement (4 shades available), offers **cementation** procedures simplified. Treatment of the tooth and the prosthetic product takes place without the need for specific primers as for other universal adhesives system (primer for zirconium oxide, or for metals or for ceramic, etc.).

ESTECEM II PLUS is indicated for cementation of:

- Glass/oxide-ceramic crowns, bridges
- Inlays and onlays (porcelain, zirconium oxide and alumina),
- Metals/alloys (precious, non-precious) e resinous materials.
- Luting of veneers, luting of abutments in ceramic or metal
- Glass fiber posts or quartz fiber posts.



CLEAR
A colorless and transparent shade. Suitable for Esthetic Crown and Veneers where the underlying tooth color provides most of the color needs.

UNIVERSAL
A shade having a tooth color. (A2) Ideal for Anterior Esthetic Restorations, and generally a wide range of shade matching cases. Universal shade is included in Kit.

BROWN
A shade having a dentin color. Suitable for ceramic or composite resin crowns.

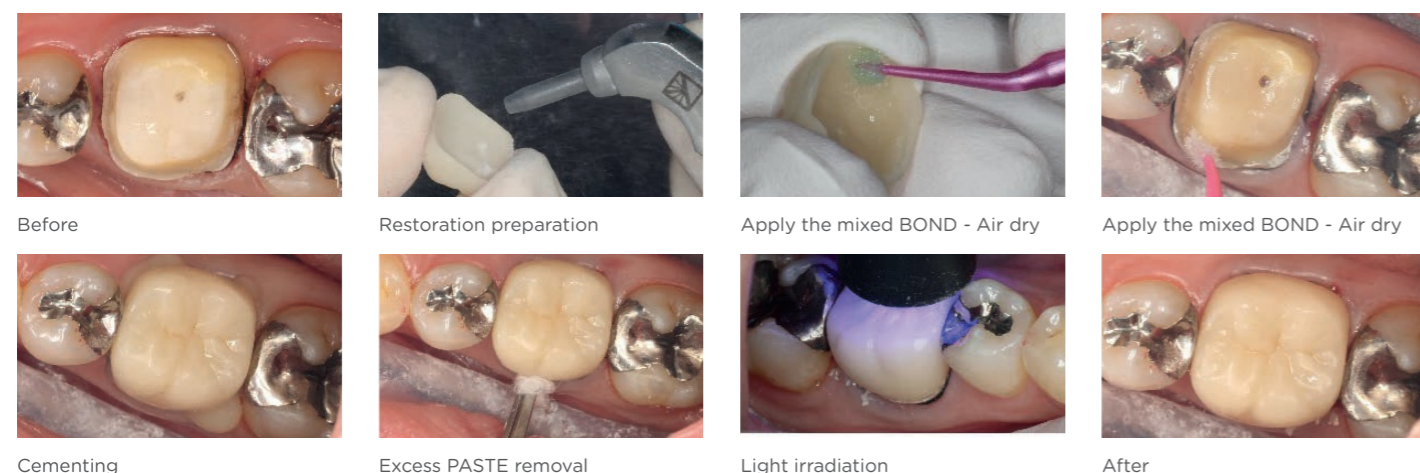
WHITE OPAQUE
A shade with high opacity. Suitable for veneer and other cases requiring masking of the underlying color.

Case Studies

1. Cementing of Zirconia crown



2. Cementing of CAD-CAM composite crown



TOKUPOST

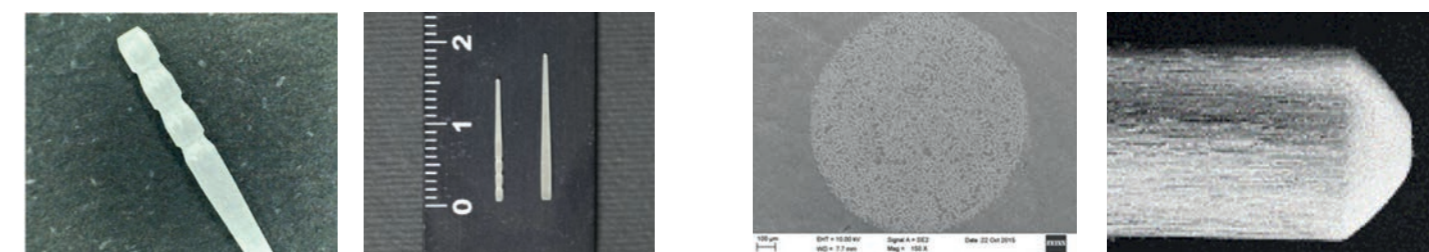
The new hyperquartz fiber posts for maximum translucency and maximum aesthetic result.

NOW IMPROVED WITH **NEW X.RAY**



New hyperquartz Fiber Posts with **CALIBRATED DRILL** and **VERIFIER** (In order to verify the length and the measure of the root canal, avoiding the pollution of the fiber post). The size of Toku Post 15 Retention is meant to achieve, in the coronal portion, a situation of Optimal Fitting, ensuring

adequate distribution of loads. Also the retentive “notches” allow better anchoring of the material (**Tokuyama Universal Flow SUPER LOW**) for Core Build-Up, ensuring functionality of post-endodontic treatment.



TokuPost 15 R (retention) The ideal length of TokuPost S.E.M. images courtesy of Prof. Campanella (University of Tor Vergata - Roma)



Indications

The necessity of coronal restoration through the use of a root fiber post is driven:

1. by the need to anchor, and then retention, of coronal restoration, through the use of a root fiber post or through the extension of the restorative material in the root canal
2. by the need to increase the strength of the coronal abutment by means of the posts in their turn anchored along the root canals.

Benefits

- **Anatomical shape:** Optimized design, comply with the major kinds of Ni-Ti instruments, able to preserve the dentin into the conservative root canal preparation.
- **Excellent strength and flexibility:** flexural modulus similar to dentin, able to guarantee the durability of the restoration.
- **Translucency:** Higher translucency, high light transmis-

	Ø 0,55	Ø 0,75	Ø 0,95
	15 Retention		18 Straight
	<ul style="list-style-type: none"> Ø Coronal 1,05 mm Ø Apical 0,55 mm 		<ul style="list-style-type: none"> Ø Coronal 1,25 mm Ø Apical 0,55 mm
	<ul style="list-style-type: none"> Ø Coronal 1,25 mm Ø Apical 0,75 mm 		<ul style="list-style-type: none"> Ø Coronal 1,45 mm Ø Apical 0,75 mm
	<ul style="list-style-type: none"> Ø Coronal 1,45 mm Ø Apical 0,95 mm 		<ul style="list-style-type: none"> Ø Coronal 1,65 mm Ø Apical 0,95 mm

sion even through the tooth, ensuring light curing in the apical area.

- **Radiopacity:** Ideal radiopacity, allows a perfect Rx control for future diagnosis.
- **Monolithic area:** the flexural modulus of TokuPOST, the features of ESTECEM II PLUS, guarantee functional and predictable results of endodontically treated tooth.

Platform of the restorative process

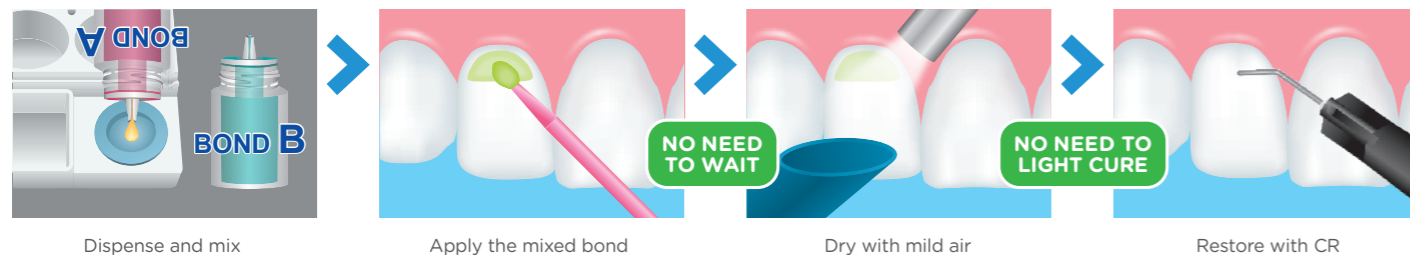
Tokuyama Universal Bond II is an adhesive system that supports both **direct restoration, intraoral repair** and **indirect restorations**. Its compatibility with **Total, Self or Selective Etching** techniques makes it versatile depending on the clinical situation to be faced.



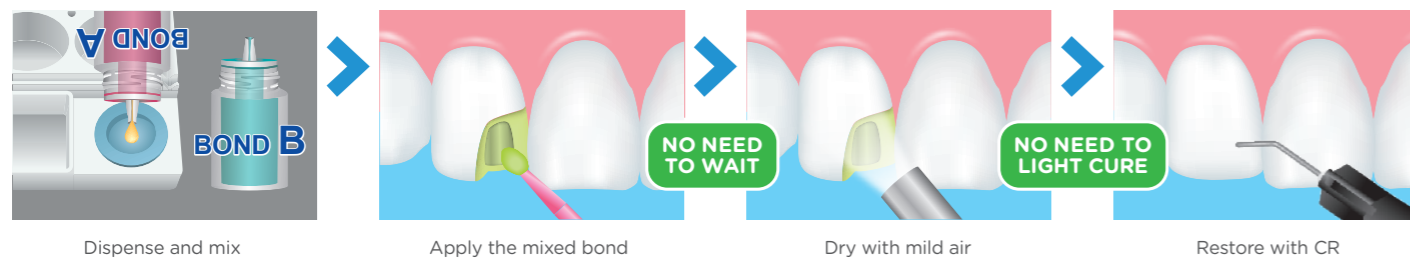
① With composite resins

• It can be used **without** additional primers **regardless of the prosthesis materials for intraoral repair.**

Direct restorations with composite resin (CR)



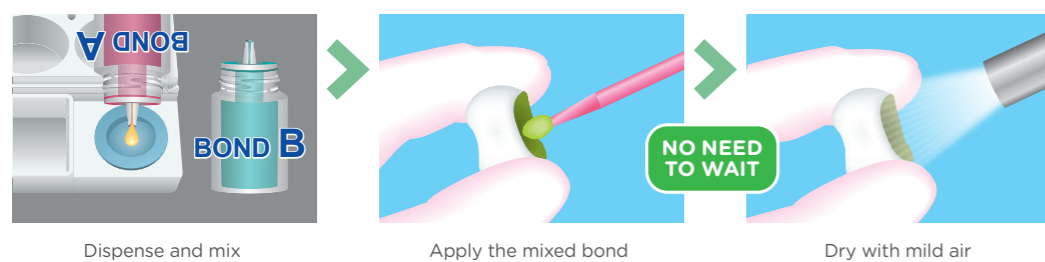
Intraoral repair of restorations with composite resin (CR)



② As primer for prosthetic materials

• Can be used **as primer** for silica-based, zirconia-based, and metal restorations
 • To obtain **high bond** durability with prosthetic materials such as IPS e.max that requires silane coupling treatment

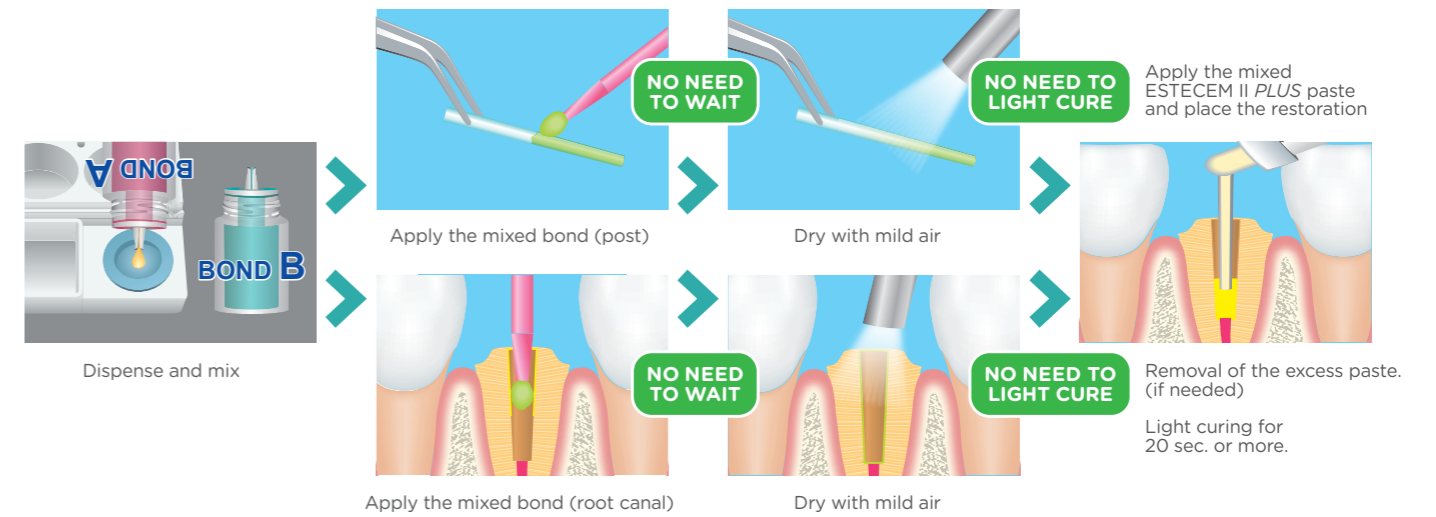
Use as a primer for indirect restorations



③ With core build-up materials

• **No need to light-cure**, adheres firmly even in root canals where curing light is difficult to reach.
 • Can be used for **both** root canal treatment and fiber post material.

Bonding of core build ups made of core build up materials



④ With adhesive resin cements

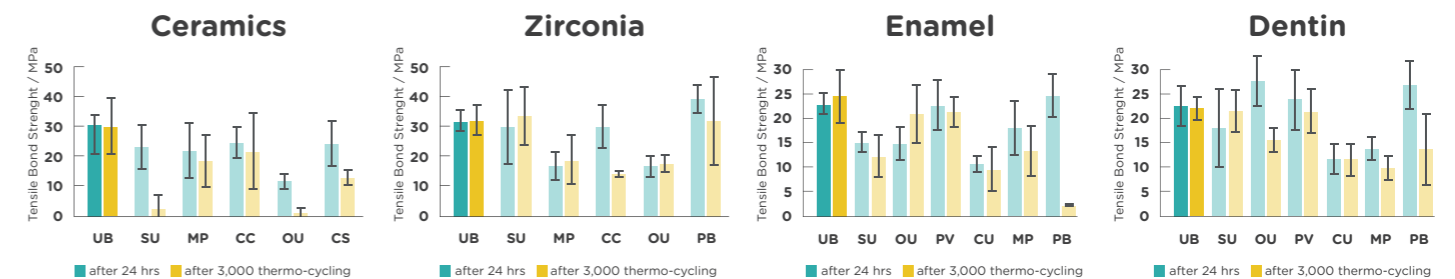
• Both abutment teeth and prostheses can be processed **without additional primers.**

Cementation of indirect restorations and veneers when combined with ESTECM II PLUS



Research Data

The versatility of Tokuyama Universal Bond II and its high and **stable adhesive performances** with different types of substrates (**enamel, dentin, metals, composite resins, zirconium oxide, ceramic, alumina, etc**)*, are highlighted even after thermocycling.



UB : Tokuyama Universal Bond II / ESTECM II PLUS | SU : Scotchbond Universal Plus Adhesive / Rely X Universal** | OU : Opti Bond Universal / NX3**
 PV : Panavia V5 tooth primer / Panavia V5** | CU : Clearfil Universal Bond / Panavia SA** | MP : MultiLink Primer / MultiLink Automix** | PB : Prime & Bond Active / Calibra Ceram**

Packaging available

KIT UNIVERSAL BOND II

- Bond A (5 ml)
- Bond B (4 ml)
- Mixing well
- 5 Dimple Disposable mixing wells
- 25 Disposable applicator brushes



REFILL

- Bond A (5 ml) / • Bond B (4 ml) / Accessories

KIT ESTEC EM II PLUS

- Bond A (5 ml)
- Bond B (4 ml)
- Color Universal Paste A/B (vol 2,3 ml each / poids 4,7 g each)
- 15 Cementing Mixing Tip
- 5 Mini Mixing Tip S
- 5 Nozzle for Mixing Tip S
- Mixing well
- 5 Dimple Disposable mixing wells
- 25 Disposable applicator brushes



REFILL



- Brown - Universal - Clear - White opaque

TOKUPOST

SET REFILL (15R/18)

- 20 Quartz fiber posts
- 1 calibrated drill
- 1 verifier



SET TRIAL

- 10 Quartz fiber posts assorted (5 posts x 18S 0.75 + 5 posts 15R 0.75)
- 1 calibrated drill + 1 verifier

SET MASTER

- 30 Quartz fiber posts assorted (5 posts x each type)
- 3 calibrated drills (1 drill x each type)
- 3 verifier measure (0.55 - 0.75 - 0.95)



TIPS & TRICKS

- Keep the bottles as **vertical** as possible dispensing the drops in the mixing pad with 1:1 ratio (the bottles have different drop "size").
- Generally speaking, the best performance of universal adhesives is obtained with the Selective Etch technique (**enamel selective etching**). In case of non milled enamel, we recommend using **Tokuyama Etching Gel HV**.
- In the disposable well, narrower and deeper, the **application time is 3 minutes** after mixing (suggestion: for indirect restorations).
- The oxygen inhibiting the more superficial layer of the adhesive, disappears after applying the composite/flowable/cement material, and therefore **Tokuyama Universal Bond II** perfectly completes its curing (**Contact Cure**).
- **TokuPost VERIFIER** is the key to choose the fitting post for your conservative canal root preparation. Some suggestions are to use - **0.55 (YELLOW)** as large use (non invasive preparation), on lower incisors root canal or as an accessory post. - **0.75 (ORANGE)** for palatal root canal on upper molars, or monoradicular teeth, or distal root canal on lower molars. - **0.95 (RED)** for very flared tooth (maybe using the 0.55 as accessory as well).



GOOD 2 KNOW

Why Tokuyama Universal Bond II is "Two bottle"?

THE ADVANTAGES:

- To maintain the **freshness of the silane** coupling agent so that the bond strength does **not change** from the start to the end of use.
- To obtain **stable bond durability** with prosthetic materials such as IPS e.max that requires silane coupling treatment.
- For **strong chemical polymerization**(self-curing) by our unique "BoSE Technology".
- Self-curing **unifies the protocol** regardless of the type of resin.

Inactivation of silane coupling agent

If the silane coupling agent is stored with water and acid in the same bottle, **hydrolysis occurs** and the activated silane coupling agent condenses with each other, **reducing reactivity** with the prosthetic materials.

Problems in conventional initiator

Conventional chemical polymerization **initiators** are **inactivated** under an **acidic condition**, like BPO-Amine, or have high activity but low storage stability compared to TBB (**TrybutylBorane**).