

REALITY

RATINGS & REVIEWS | practical • unbiased • trusted
39TH anniversary

The Ratings | Bonding Agents — Universal

Clearfil Universal Bond Quick 2



Manufacturer

Kuraray Noritake

<https://kuraraydental.com/product/clearfil-universal-bond-quick-2/>

Prices

Kits

Bottle

\$229.99/5ml (\$46.00/ml)

Unidose (50)

\$236.99/5ml

(\$47.40/ml or \$4.74/dose)

Refills

Bottle

\$187.99/5ml (\$37.60/ml)

DC Activator

\$108.27/4ml (\$27.07/ml)



Shelf life

2.25 years

Raves & Rants

- ✓ No need to time application
- ✓ Works across-the-board
- ✗ No need to etch enamel as long as it is prepped
- ✗ Cannot use unidose with dual-cured/self-cured materials

2025

REALITY

RATINGS & REVIEWS

Five Star Award



★★★★★ 4.7

Introduction/ Manufacturer's Claims

Second generation universal, single-component bonding agent that is stated to work with all direct and indirect procedures as well as with all etching protocols and dentin hydration conditions, i.e., dry, moist or wet. However, to make it universal so it can be used with dual-cured and self-cured composites and cements, you still need to mix it with the a la carte Clearfil DC Activator (unless you are using it with other Kuraray products such as Panavia SA Cement Universal or Clearfil DC Core Plus).

But the real attraction with this adhesive is its application time. Hint: it is fast! This leads us to several facts of life that occur in many (most?) dental practices when it comes to applying bonding agents. The first fact, which plagues virtually all products, equipment, and materials, is ignoring the DFU/IFU, aka directions/instructions for use. You think you know how to use a product because it seems to be similar to others you have used in the past.

So you may glance at the chairside technique card that comes with many products these days, but these cards are meant to supplement the main directions, not replace them. This is due to the technique cards omitting many of the details from the main instructions that can mean the difference between success and failure.

However, those main directions, which are typically printed on thin, plain paper (they are easily contaminated and virtually impossible to disinfect) in a font that requires loupes to read, are many times long-winded, cryptic, and incomplete. So it is no wonder you may ignore them and only follow the aforementioned technique card.

The second fact about applying bonding agents is the tendency to be impatient and not allow them to dwell on the walls of your prep for enough time to perfuse into the tooth structure. This application brevity can result in less than expected performance from the adhesive and can manifest itself in post-op sensitivity, restoration dislodgement, and later down the road, brown lines at the margins that can signify leakage.

The third fact relates to isolation of the operative site. Since dental dams (remember: no rubber any more) are seemingly only used by a small percentage of clinicians for procedures other than endo, the risk of contamination is always present. So you want to move forthrightly through your procedure before the patient inundates the operative site with saliva.

And finally and certainly no less importantly, you have office overhead always bearing down on everything you do today in practice, which means you need to be time-efficient to earn enough to pay those bills and maybe even realize a slight profit for fun and entertainment.

With all this in mind, Kuraray, the manufacturer of the 5 Star, #1 rated, gold standards in self-etch adhesives and resin cements, namely Clearfil SE Bond 2 and Panavia V5 respectively, now brings us still another bonding agent called Clearfil Universal Bond *Quick 2*. From its name, you can already see that the clever folks at Kuraray realized that even though they had created some terrific products, these same products still required several steps and more time than many dentists were willing to spend when applying a bonding agent.

So how is *Quick 2* different than more conventional bonding agents? According to Kuraray, the original *Quick* had a new amide monomer that “rapidly permeates dentin and enamel” and presumably only required three seconds of application with a rubbing motion, although this 3-second directive was changed to merely apply and move on shortly after the product was introduced.

This new monomer combined with tried and true MDP was stated to “provide a very high curing property” resulting in “higher bonding strengths, less fluid absorption, and no waiting time.” It also released fluoride, but we wondered whether its quantity had clinical efficacy.

Now Kuraray Noritake has just raised the bar even higher with the second generation. This new version states from the get-go that there is no dwell time — you apparently just need to apply it to all surfaces of your prep using a “rubbing” motion, air dry, and light cure. No timing necessary!



So what makes version 2 different than the original? Mainly, it seems, the lower the viscosity, which is accomplished through adjusting the manufacturing process. This essentially thinner solution evidently wets out the bonding surface more effectively and, therefore, allows faster application. It lowers the film thickness to 3-5 μ compared to 5-10 μ for the original. Not exactly earth-shattering, but significant percentage-wise nonetheless.

Of the evaluators who had also used the original version, most (60%) thought it was about the same, while the other 40% preferred this new version, mainly due to the lower viscosity.

Uses

All types of restorations. Requires mixing with Clearfil DC Activator for dual-cured and self-cured composites and cements from any manufacturer other than Kuraray Noritake.

The evaluators were split on how they chose to use it — 43% chose selective etch, while the other 57% were evenly divided between the etch & rinse (total etch) mode and those that moved between protocols to fit the clinical situation. Some comments:

- I am glad there are 3 protocols available. In kids, it was nice to “all-in-one” the bonding protocol to save some time. Or, if I had a deeper prep, the selective etch was nice to minimize potential for post-op sensitivity.
- I mostly used total etch, but I had one case with a deeper prep and a history of sensitivity, so I used it as self-etch. I never did selective etch.
- For a veneer, I used total etch.

Composition

Adhesive

HEMA, bisphenol A diglycidylmethacrylate (BIS-GMA), 10-methacryloyloxydecyl dihydrogen phosphate (MDP), hydrophilic amide monomers, colloidal silica, silane, sodium fluoride, and CQ in ethanol and water. Other Kuraray adhesives are filled 10% by weight, but the manufacturer will not disclose the filler content of this version. Film thickness is stated to be 3-5 microns.

DC Activator

Ethanol, initiators and accelerators.

pH

Adhesive 2.4

Adhesive/DC Activator 3.5

Viscosity

Adhesive All evaluators thought it was fine. Some comments:

- I thought it was just right.
- Felt very similar to Optibond Solo, which I usually use. Didn't drip off the applicator.
- Very nice compared to the original Quick.
- Easy to work with. Similar to other adhesives.
- Lower viscosity for easy use and more consistent application.

Adhesive/DC Activator All evaluators except one thought it was fine, with the lone holdout feeling it was too thick.

Odor

Adhesive Most evaluators (86%) thought it was similar to other adhesives, while the other 14% felt it was less offensive than other adhesives. Some comments:

- I did not notice an odor.
- Not noticeable to staff or patients.
- Similar to other self-etch adhesives.
- Not much difference.
- I didn't really notice any odor.

Adhesive/DC Activator All evaluators thought it was similar to other adhesives. One evaluator noted that it is a little more noticeable alcohol smell but I wouldn't say it was “worse” or bad.

Simplified Application Technique

1 Manufacturer states that you should dry the prep with either air or cotton rolls. Our tests found blotting with

non-lint gauze to create a moist surface produced the most consistent results, although air drying without desiccating the prep should also be acceptable. Therefore, regardless whether you are using etch & rinse or self-etch mode, blot the prep after rinsing to create matte surface with no visible moisture. Blotting the prep is our **MOIST** technique.

In the etch & rinse mode, most (82%) evaluators used moist, 9% preferred dry, and 9% went with wet. One evaluator noted: I generally lightly air dry but leave the prep slightly moist to be sure not to desiccate dentin to minimize post-op sensitivity and maximize bond strength.

In the self-etch mode, half of the evaluators used moist, while the other half used dry.

2 Apply the adhesive with light **RUBBING**. For **DUAL-CURED/SELF-CURED** restorations, mix equal drops of the adhesive with DC Activator and then apply it as noted above. Our tests showed that it is optimal to apply the adhesive to cover the entire prep, lightly rub the prep with an applicator tip for a few seconds, and suction the excess. You do not have to time this step.

Nevertheless, as far as the application time is concerned, half of the evaluators still chose to apply it longer than 10 seconds, while 36% stuck with applying it without timing as per the directions and 14% chose a 10-second time.

Some comments:

- I tried to use it for less than 5 sec to see if it does what it says. I also used in cases where I needed to be fast.
- I applied and rubbed for about 5 seconds, then let it sit for another 5 seconds before curing.
- It spread easily and after evaporating solvent, it appeared as a glossy layer over entire surface.
- I applied it closer to 15 seconds.
- Immediate application is great for maximizing efficiency.

In the etch & rinse mode, most evaluators (55%) used gentle agitation, while rubbing/scrubbing was used by 45%. Two evaluators noted they used gentle rubbing as opposed to scrubbing. In the self-etch mode, half of the

evaluators used gentle agitation, while the other half used rubbing/scrubbing.

3 Apply **GENTLE AIR** to evaporate the solvents. Note: *Quick 2* has the uncanny ability to produce a shiny surface after the solvents are evaporated. In our tests, none of our specimens needed a second coat to produce a shiny surface. This shiny surface is not always achieved with other adhesives after a single application.

4 Light-cure adhesive or the adhesive mixed with the DC Activator for 10s.

*Using this technique, the bond strengths (MPa) with **light-cured** composite were:*

Substrate	Self-Etch	Etch w/PA
Enamel	26.9	25.3
Dentin	38.4	33.9

These results show that etching the enamel with PA may not be necessary, although it may be beneficial from a microleakage standpoint. Note that the enamel tests were done on prepared enamel. Etching unprepared enamel is always a prudent procedure. For dentin, self-etch appears to be superior to etching with phosphoric acid.

The evaluators reported no debonds using this adhesive with light-cured, dual-cured, or self-cured materials.

Post-Operative Sensitivity

Direct restorations No evaluators reported any post-operative sensitivity. One evaluator opined that post-op sensitivity is rare in general. I did use self-etch on a deeper prep where I'd normally use Gluma (and I did not use Gluma this time) but the patient did not report any sensitivity or pulpal issues post-op.

Indirect restorations No evaluators reported any post-operative sensitivity.

Packaging

Bottle Kit Easy to stack box with product identification on three sides and top. Plastic shrink-wrapped for security. Expiration date is on a label on one side. The squeeze-type bottle has moisture-resistant printing that includes the expiration date, but the light gray printing is somewhat difficult to read, although it resists removal during disinfection procedures. The cap is the easy-opening, rear-hinged type with an appendage that allows one-handed operation.

Most (77%) evaluators thought the bottle design was fine, but not particularly better than competitors, while the other 23% found it to be better than competitors. Two comments:

- Easy to open the cap.
- Very easy to use with one hand and dispensing is easy and reduces waste.

Unidose Kit Easy to stack box with product identification on three sides and top. Plastic shrink-wrapped for security. Expiration date is on a label on one side. Unidoses inside are in a Ziploc bag.

The actual grey unidose has two sections, with the top one being the twist-off cap and the bottom holding the contents. The cap has the product identification and expiration date. The bottom section also has a flat bottom so the unidose can stand upright on its own.

Most (80%) evaluators thought the unidose design was fine, but not particularly better than competitors, while the other 20% found it to be better than competitors.

Overall, most (86%) evaluators found the packaging to be acceptable, while the other 14% thought it was exemplary.

Directions

Both the bottle and unidose kits come with two sets of instructions. One set is multi-lingual, plain paper in the annoying foldout format. These instructions are long and tedious to wade through, but reasonably easy to follow. Beveling porcelain in the marginal area is recommended when performing a repair, but beveling can result in the repair material being overly thin and more likely to flake off or fracture under occlusal load. "Adherend surface" is used, but its meaning can be nebulous.

The second set of instructions differ depending on the packaging type. In the bottle kit, plastic-laminated treatment room cards feature color illustrations and easy-to-follow, step-by-step application procedures. Overall, the cards are well done, but still omit how to treat the tooth prior to applying the adhesive in the self-etch mode. In the unidose kit, there is a coated paper sheet that mimic the cards.

Overall, most (71%) evaluators found the directions to be acceptable, while the other 29% thought they were exemplary. Some comments:

- A little wordy and jumbled when trying to follow directions for a given scenario. (E.g. "when using as a self etch, move to section A-5" - almost felt like a board game!
- I liked the fact that NO WAITING TIME was highlighted, but otherwise, they were nothing special.
- Like most others.
- Very elaborate and details all the various uses clearly. The differences such as when to light cure vs not light cure could have been highlighted or in bold. The flow chart visuals are very helpful and easy to follow with the color coding of the different uses.

Strengths



- You put it on and then blow it and you are done!! If it works as advertised, this is a definite game changer. Kuraray's reputation is unmatched in the adhesive department.
- Easy to break off top of unidose.
- Simple to use — no waiting.
- Did not encounter any debonds or post-op sensitivity with the material.
- Ability to utilize the product in 3 different scenarios was nice!
- Strong bond, good for self-etch in cases where sensitivity is a concern, has a wide range of applications.
- Spread evenly after drying, nice to not think about waiting time even though 5 seconds is NO BIG DEAL.
- Ease of use. Bottle dispenser is nice.
- No debondings.
- Easy to use. Less time if you want to use it as directions state.
- Very versatile.
- Great material if used properly!
- A good simple adhesive.
- Very versatile: can be used for most restorative procedures and ability to use with other products; efficient, increased bond strength, lower viscosity.

Weaknesses



- Its brand new. It's hard to believe. But other than that, the product has no weakness.
- Didn't see as much as I normally do in other unidoses.
- A two-step self-etch is a better choice but takes more time.
- For multiple restorations being restored at the same time, increasing the volume of material in the unit dose packaging would be more efficient than having to open multiple unit dose wells.
- I could not find any weaknesses.
- Technique sensitive product.
- None perceived yet.
- None.
- None.
- Maybe color, but no real weaknesses.
- Some may not like the viscosity.
- None.
- A very strong yellow color.
- Inconvenient that unidose has some limitations and can't be used with DC Activator; a bit confusing about when to use DC Activator.

BOTTOM LINE

- Think of the possibilities. Adult that has a bad back and can't sit for a long time. A kid that has an attention span of a gnat....you win in both cases. You get the same bond strength in a fraction of the time. The product needs to be on the tooth for one second?!! Wow. What's next? Pixi dust?!
- I like others better.
- I use it when my assistant is new and does not know how to handle a two-step self-etch adhesive.
- I did not encounter debonds or post-op sensitivity with the material. However, increasing the volume of material in the unit dose packaging would be more efficient.
- I would have this in my arsenal. I prefer total etch and Gen 5 Bonding, but to have the ability to do all types of bonding is a plus!
- Quality bonding agent that can be used in a variety of applications.
- Excellent product from a reliable manufacturer.
- Excellent adhesive. I have been using it for everything now.
- Liked it.
- Love the product. Kuraray is a good company. It has no real downsides.
- If unhappy with your adhesive, this may be one you want to consider.
- I can recommend the product!
- If you are in need of an adhesive, this is a good one from a good company with a long track record.
- Versatility, ease of use and higher bond strength make it a very desirable product to have.





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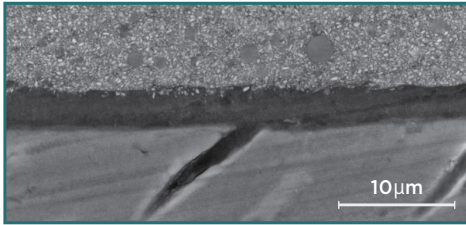
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Easy to apply independent of cavity morphology

Thin adhesive layer prevents adhesive pooling in margins and abutments, and creates a uniform bond layer. Applies thinly and disperses evenly.



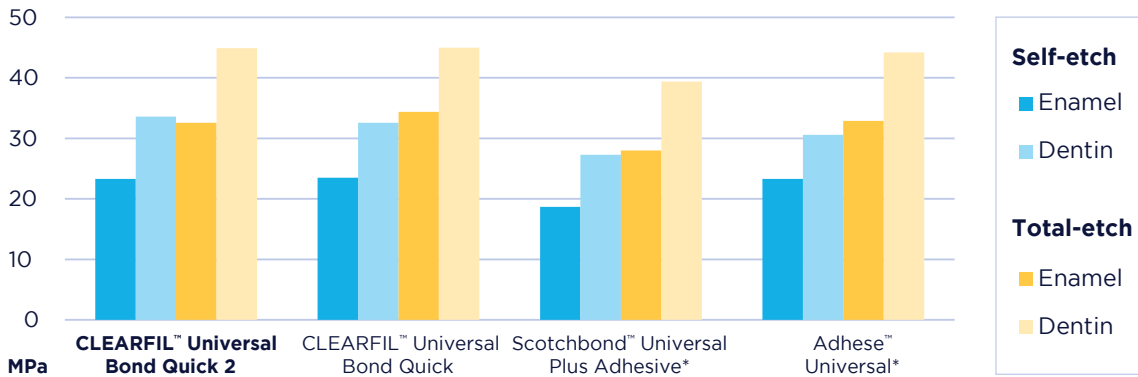
Filled with CLEARFIL MAJESTY™ ES Flow/CLEARFIL™ Universal Bond Quick 2 and visualized with Scanning Electron Microscope (SEM). Scale: 10 Qm Source: Kuraray Noritake Dental Inc.

Key features

- Quick Application & No Waiting Time
- Lower Film-Thickness
- Stronger Bond Layers
- Uniform Bond Layer (Prevents Pooling)
- Room Temperature Storage

CLEARFIL™ Universal Bond Quick 2 exhibits high bond strength in all etching modes.

Test conditions: Notched-edge shear bond strength to bovine teeth (ISO29022) Adherend surface: bovine enamel and dentin #600 polished surface, Coated area: 2.38 mm dia. Irradiator: PenCure 2000 standard mode. Stored in water at 37°C for 24 hours. Shear bond strength is measured by autograph (crosshead speed: 1mm/min).



Test Methods: Notched-edge shear bond strength to bovine teeth (ISO29022)

*Not a trademark of Kuraray Co., Ltd

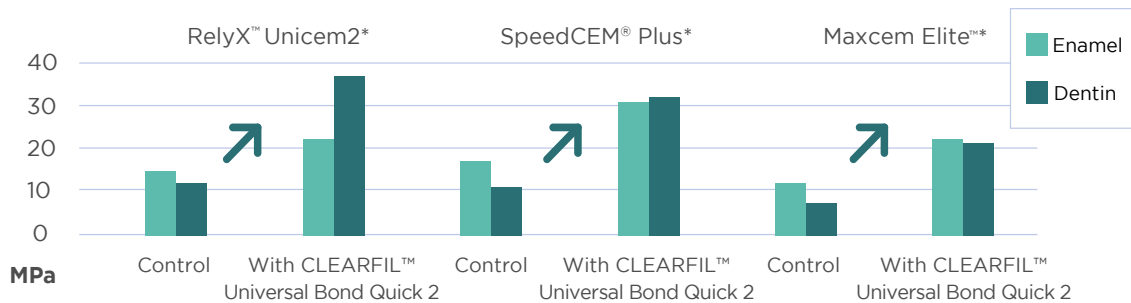
Source: Kuraray Noritake Dental, Inc.

Universal self-adhesive cement compatibility

Shear bond strength to tooth structure when used in combination with other self-adhesive cement.

Test conditions: adherend surface: human enamel or dentin #1000 polished surface adherend area: 3 mm dia. Irradiator: PenCure 2000 standard mode. Stored in water at 37°C for 24 hours. Shear bond strength is measured by autograph (crosshead speed: 1mm/min)

Control: Control: Direct application to human dentin without pre-treatment.



*Not a trademark of Kuraray Co., Ltd

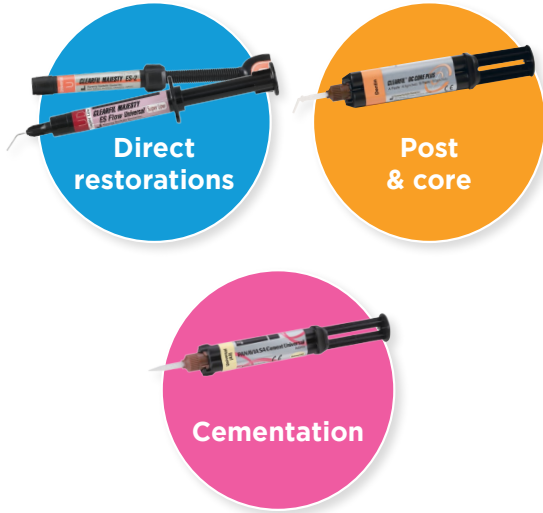
Source: Kuraray Noritake Dental, Inc.

In case of using other manufacturer self-adhesive cements, light-cure of CLEARFIL™ Universal Bond Quick 2 is required. In case of using CLEARFIL™ Universal Bond Quick 2 with PANAVIA™ SA Universal Cement, light-cure of the bond is not required.

Simplified, universal restorative system without separate activators *

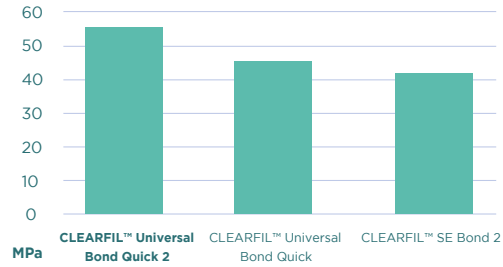
Ideal companion for immediate dentin sealing with a strong bond layer

Strong adhesive layer with higher mechanical strength will be an ideal companion to seal and protect dentin.



Test conditions: Samples (beam shape; 1.0 x 1.0 x 10 mm):
 1) Light curing of bonding material with solvent distilled away
 2) Stored in water at 37°C for 24 hours.
 3) Ultimate tensile strength is measured by autograph (crosshead speed: 1mm/min)

Ultimate tensile strength



*In cases where CLEARFIL™ DC CORE PLUS and PANAVIA™ SA Cement Universal are used. When using with other manufacturers products, please refer to the IFU for specific instructions.

K. Hosaka et. al., (Tokushima Univ.)
 The 159th Meeting the Japanese Society of Conservative Dentistry Program A7

Direct restorations using light-cure composite resin

- Tooth pretreatment**
Choose either etching procedure
 a. Self-etching (Move to section 2)
 b. Selective-etching: Apply K-ETCHANT Syringe to the uncut and/or cut enamel, then rinse and dry (10sec)
 c. Total-etching: Apply K-ETCHANT Syringe to the entire cavity (enamel and dentin), then rinse and dry (10sec)
- Apply BOND with a rubbing motion**
No waiting time
- Dry by blowing mild air until BOND does not move****
5sec+
- Light-cure****
- Place composite resin, light-cure and finish**

*1 Use a vacuum aspirator to prevent BOND from scattering.

**2 Refer to Table below for light-curing time.

Dental curing unit and curing time

Type	Light source	Light Intensity	Light-curing time
Halogen	Halogen lamp	More than 400 mW/cm ²	10 seconds
LED	Blue LED*	800-1400 mW/cm ²	10 seconds
		More than 1500 mW/cm ²	5 seconds

The effective wavelength range of each dental curing unit must be 400-515nm.
 *Peak of emission spectrum: 450-480nm

Ordering information

#4041-KA
Bottle Standard Kit
 1-Bond (5ml)
 1-K-ETCHANT Syringe (3ml) & 20 Needle Tips
 1-Dispensing Dish
 1-Light-Blocking Plate
 50-Applicator Brushes (Fine Silver)

#4042-KA
Bottle Refill
 1-Bond (5ml)

#4044-KA
Bottle Value Pack
 3-Bonds (5ml each)

#4046-KA
Unit Dose Standard Pack
 50 Unit-Dose
 1-K-Etchant Syringe (3ml) & 20 Needle Tips
 50-Applicator Brushes (Fine Silver)

#4047-KA
Unit Dose Value Pack
 100 Unit-Dose
 1-K-Etchant Syringe (3ml) & 20 Needle Tips
 100-Applicator Brushes (Fine Silver)

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- 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.

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