

# REALITY NOW

THE INFORMATION SOURCE FOR ESTHETIC DENTISTRY

JANUARY/FEBRUARY 2010 NUMBER 212

## FirstLook | FLOWABLE COMPOSITES – SELF-ADHESIVE



### Vertise Flow

Kerr

[www.kerrdental.com](http://www.kerrdental.com)

#### PRICES:

**Intro + Trial Kit**  
\$199.00/10g (\$19.90/g)

**Refills**  
\$120.00/4g (\$30.00/g)

**SHELF LIFE**  
1.5 years refrigerated

Marketed as a “self-adhering flowable composite”, Vertise Flow is attempting to raise the bar in this still developing category of self-adhesive restorative materials. But Kerr is wisely restricting its indications at this time to small Class I restorations, pit and fissure sealants and liners/bases under larger restorations. In other words, using it for other types of definitive restorations such as Class V or core buildups is not yet part of its bag of tricks.

On the other hand, it is being recommended as a porcelain repair material without etching with hydrofluoric acid or even using silane. The table in the right column shows the results of our tests not only on feldspathic porcelain, but also on three different types of metal copings (if you need to repair a PFM with exposed metal) and Lava (just in case the veneering porcelain fractured off the zirconia core).

So how does Vertise Flow achieve its adhesion? According to Kerr, the primary bonding mechanism is chemical between the interaction of calcium ions from the tooth and the phosphate functional groups in the GPDM monomers in the material. This chemistry is similar to that used in OptiBond, our perennial 5 Star bonding agent. The secondary bonding mechanism is stated to be micromechanical by the etching process facilitated by the pH of 1.9, which is similar to that of numerous self-etching materials. This pH, however, is stated to increase to almost neutral after light curing.

With an OptiBond pedigree, we had high expectations with Vertise Flow, although our best results with OptiBond have been achieved after etching with phosphoric acid. Our bond strength tests found that Vertise Flow is a capable material, but not quite at the OptiBond level. And it required 24 hours to achieve levels consistent with what is generally considered to be clinically acceptable. Here are the results:

Substrate	Immediate Bond Strength (MPa)	24 hour Bond Strength (MPa)
Enamel	13.2	21.9
Dentin	11.3	19.3
Feldspathic porcelain	17.3	24.2*
High noble metal	16.4	36.1
Noble metal	18.5	36.0
Non-precious metal	18.7	37.9
Lava	18.5	24.6

\* Porcelain fractured in two specimens

The application procedure is not difficult, but it is quite specific. This means you can't just syringe Vertise Flow into the preparation like you would any other flowable. After cleaning and drying the tooth,

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you inject the first increment in a thin layer (less than 0.5mm) since it is acting, in effect, as a self-etching adhesive. This first layer is then agitated aggressively using the disposable brushes that come with the kit.

Note that these are brushes, not applicator tips, so this agitation maneuver is more like moving the material around as opposed to rubbing it into the tooth's surface. This agitation is done for 20 seconds followed by 20 seconds of light curing if you can get the tip of the light within 2-3mm of the tooth's surface. However, if you are using shades A3.5 or universal opaque or if you are using Vertise Flow at the bottom of a medium deep proximal box (6mm), then our tests showed curing needs to be increased to 40 seconds.

After this first increment, you can add another layer to finish restoring a small Class I or, in the case of a larger preparation, you should then switch to a more conventional composite.

The material itself is easy to dispense and has a consistency that facilitates the agitation step without being overly runny. Its flow was measured to be 4.0-4.5 using the scale of zero being like liquid and 5 having virtually no flow. This means it has minimal flow without being runny.

It is filled 70% by weight and 48% by volume, while the average particle size is 1 micron, which means it should polish reasonably well. Using our three standard polishing instruments, we found that D-Fine Double Diamond and HiLuster Plus were able

to produce an enamel-like gloss, but PoGo did not polish Vertise Flow very well.

According to Kerr, it has "reduced voids", which means its porosity would be expected to be on the low end. Our assessment using transilluminated disks and the surfaces of our polish test specimens confirmed that the porosity appeared to be minimal.

It comes in typical tuberculin-like syringes and is available in six Vita shades (A1, A2, A3, A3.5, B1 and B2), plus universal opaque, XL, and translucent. We measured the translucency/opacity of A2 to be 61%, which is similar to body shades (more opaque than enamel, but less opaque than dentin). The universal opaque is 80%, which should be reasonably adequate if you are blocking out metal when doing a repair. XL is 65% and lighter than B1. Translucent is 43%, which is slightly more opaque than most incisal shades.

However, if you choose to use it in the esthetic zone as a definitive restorative material, such as when you would be repairing an anterior crown or veneer, just be aware that it does not fluoresce, appearing dark and purplish compared to natural tooth structure.

Self-adhesive materials have the potential to simplify our procedures and inventory of products, but they must perform up to the level of more conventional bonding agent/restorative combinations. Vertise Flow appears to be a step in the right direction as long as you stay within its indications.

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