User Report Part 1

Aesthetic Restorations using a Universal Composite

Kerr PREMISE™ is a new universal composite for anterior and posterior restorations. Using discrete Nano-fillers, average size 0.02 microns, a high filler content of 60% by volume, 84% by weight is achieved. This reduces polymerization shrinkage that according to Kerr is only 1.6%.

Author: Michael Melerski, Berlin.

The expectation of obtaining the greatest possible marginal density combined with a strength greater than that of traditional hybrid composites places this material in the spotlight of interest of any practitioner.

Two accompanying "Classic" Vita® shade guides are provided for pre-operative shade selection. Also included are various Opaque and characterisation shade tabs. This makes "Optimum" shade taking easy allowing the user to correctly evaluate future placement of the selected shade.

Shade determination should always be done preoperatively. This will prevent inaccurate shade taking due to dehydration of the natural tooth structure during treatment.

Using an appropriate layering technique, the wide range of dentines, enamels and characterisation shades make it possible for any practitioner to create, direct restorations in the anterior and posterior region with good to perfect natural aesthetics.

(Fig. 1) Proximal caries in tooth N^{o} 12.

(Fig. 2) Conditioned cavity.

(Fig. 3) Polished Premise™ restoration.

(Fig. 4) Insufficient occlusal fillings Nº. 46, 47.

(Fig. 5) Conditioned cavities under cofferdam.

(Fig. 6) Finished, polished Premise™ restorations.

37 % phosphoric acid (Kerr Gel Etchant) was used for conditioning the cavities and Optibond® FL (Kerr) was used in the total etch technique. Exposed dentine should not be fully dried before application of the primer but should contain residual moisture. This technique will allow capillary action to draw the primer into the dentin tubules. The primer is then worked for 20-30 seconds using a microbrush.

Cavity margins should always be bevelled following standard preparation guidelines. This helps to control placement establishing a precise fit and contributing to an increased chameleon effect.

Premise™ exhibits a smooth consistency and can be easily modelled without sticking to the instrument.

Premise™ Packable is also available and is recommended for use in the posterior region. Due to its increased viscosity it can be compressed into the cavity.

After light polymerisation the restoration is ready for finishing. Discs of different grit sizes are utilised and all occlusal interferences are removed.

If preferred, all marginal areas of the restoration can be re-etched before polishing using 37 % phosphoric acid. Optiguard (Kerr) light-cured surface sealant is then applied to fill any micro-cracks or fractures that may have occurred during polymerisation.

Subsequent polishing of the restoration is done in our practice using brownies and the Occlubrush® (Kerr) in different sizes. Premise™ has been shown to polish quickly and easily. This can be contributed to the addition on nano particles in the resin matrix.

The degree of polymerization shrinkage and its effects on any marginal discrepancy cannot be verified in the dental practice. The margin appears perfect even under 3.2x magnification loupes.

Of course, the parameters presented regarding polymerization shrinkage and long-term stability must be confirmed and assessed in other clinical and experimental studies. However, our clinical applications have produced outstanding results. Easy handling and excellent polishing characteristics make Premise™ the material of choice when creating direct aesthetic restorations in the anterior and posterior region.

User Report Part 2

Premise Passes its 12-month Practical Test

PREMISE™ (Kerr) is the latest generation of nanofilled universal composite. Michael Melerski, Specialist in aesthetic dentistry (DGÄZ) reports on his experience after 12-month application.

Author: Michael Melerski, Berlin.

Our positive impression is that that this new nanofilled universal composite from Kerr has performed exceptionally well. Our initial evaluation took place in the spring of 2005. Since then, approximately 400 restorations have been placed in both the anterior and posterior regions.

With only a few exceptions, the previously described procedures were used for all restorations.

Cavity preparation was oriented toward the defect.

Where possible all margins were bevelled.

Total etch in combination with Optibond® FL was utilised.

Layering of the restoration always took place in the presence of coffer dam.

Finishing and polishing was achieved with Brownies and Occlubrush® (Kerr)

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Case 1

(Fig. 1) Finished Premise™ restoration

Case 1

(Fig. 2) Insufficient amalgam filling and secondary caries.

(Fig. 3) Finished cavity.

Case 2

(Fig. 4) Insufficient fillings and secondary caries 46/47.

(Fig. 5) Finished cavities.

(Fig. 6) Conditioned cavities.

(Fig. 7) Finished Premise™ Restorations.

With careful and correct layering optimal marginal adaptation can be achieved. The working consistency of Premise™ can be improved further when subjecting the material to a working temperature of 54 –56º C. This can be advantageous making Premise™ easier to model. Care may be needed if adopting this technique as excess modelling may promote adhesion to the modelling instrument.

In our practice we place Unidose syringes on a metal cover over a heated water bath before starting treatment. If stored in a refrigerator Premise™ should never be used immediately after its removal. Its flow characteristics are not optimised at low temperature.

A Nano-filled flow material is desirable especially for marginal areas and for pressureless layering of cervical fillings.

Clinical follow-up of the restorations after three and six months show stable results both in surface quality and at the restorations margins. Inspection was completed optically using 3.2x magnification spectacles fine probes and dental floss. All restorations were shown to be shade-stable within the evaluation period.

Very rarely did we notice cracks or horizontal enamel fissures in the area of the intact dental substrate adjacent to the restorations. Historically these were frequently observed when using traditional hybrid composites probably due to surface stress after polymerisation shrinkage.

By using the same layering technique for Premise™ and traditional hybrid composite, our observation lead absolutely to the conclusion that low polymerisation shrinkage of only 1.6% (Kerr) was a positive factor.

Clinical studies on the long-term stability of this new composite material are now called for in order to investigate and verify the positive experiences achieved at our practice.