Bond Strength of Vertise Flow to Porcelain Substrate

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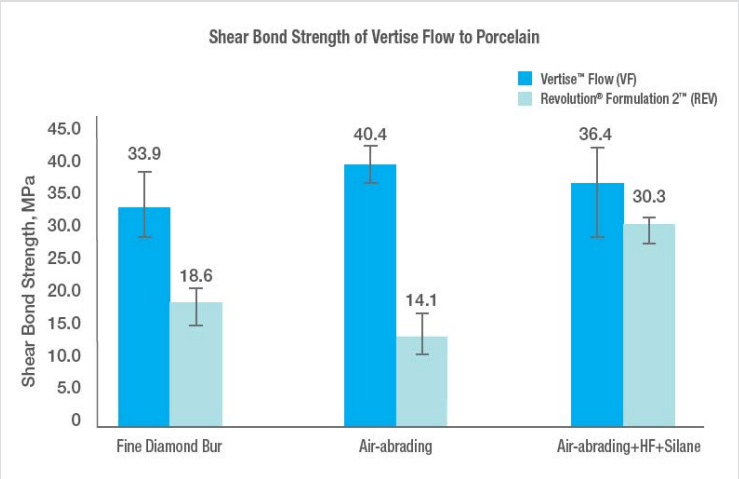
Aim of the Study:

To evaluate the shear bond strength (SBS) of a new self-adhering flowable composite Vertise Flow (VF, Kerr) and a traditional flowable composite Revolution Formula 2 (REV, Kerr) to CAD/CAM porcelain Vitablocs Mark II (Vitablocs, Vident) with and without the standard porcelain surface treatment regiment using HF etching and silane primer. Methods: The surface of the Vitablocs was prepared in three different ways prior to bonding with the flowable composite: (i) roughening with a fine diamond bur; (ii) air-abrading with aluminum oxide; and (iii) air-abrading with aluminum oxide, followed by 9.5% HF (Gresco Products Inc.) etching, and Silane Primer (Kerr).

Bonding was conducted with a jig (Ultradent) having a cylindrical mold (D=2.38 mm). The bonded specimens (n=8 per group) were stored in de-ionized water (37°C) for 24 hours before being de-bonded on an Instron mechanical tester using shear force. ANOVA analysis was performed on all data.

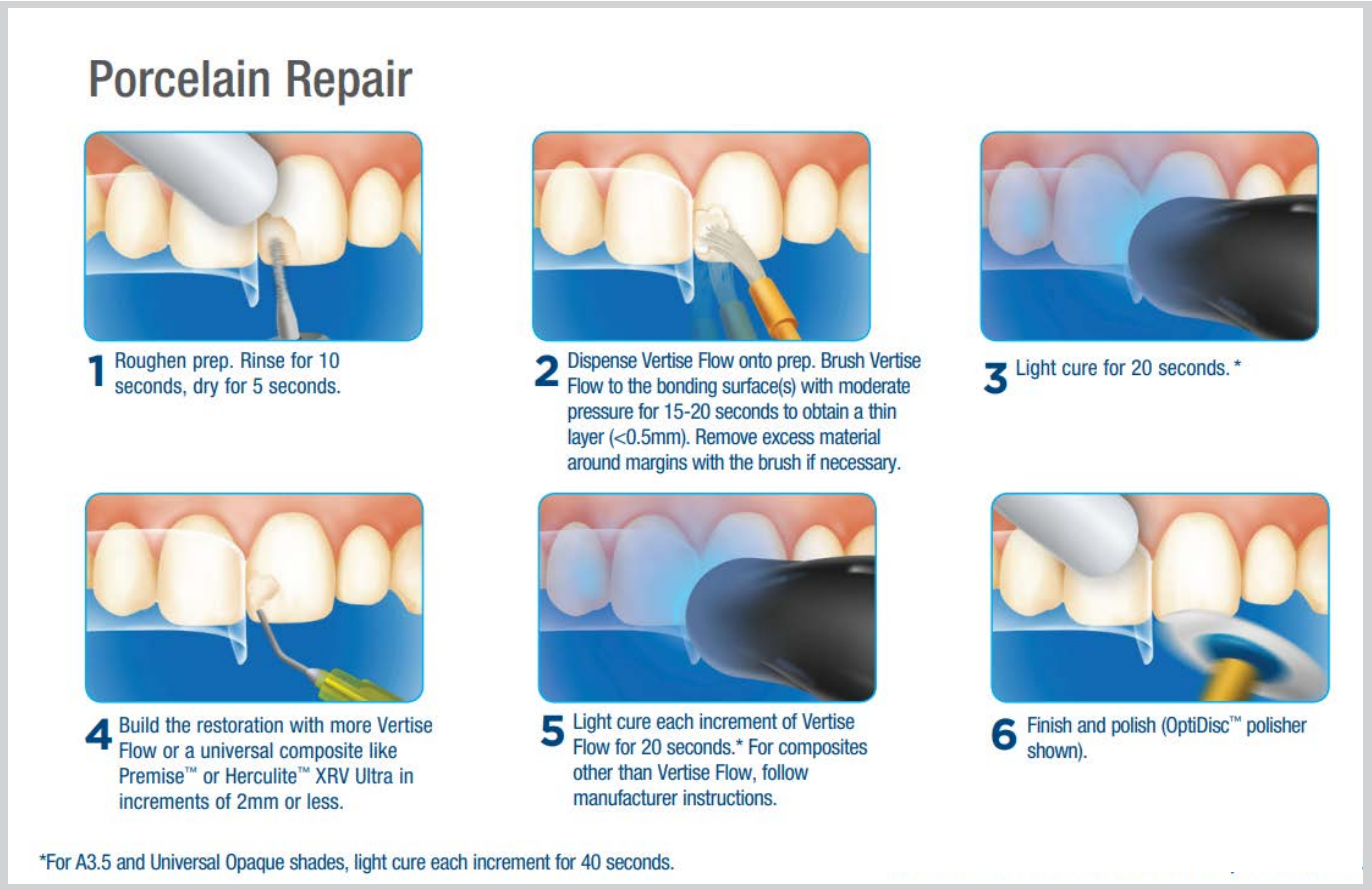
Results:

HF/Silane treatment statistically ($p<0.05$) increased the SBS of REV to porcelain substrate. For VF, there was no statistical difference ($p>0.05$) among the 3 surface preparation groups, suggesting that VF could bond effectively to porcelain without HF/Silane treatment. The bond strengths of VF to porcelain without HF/ Silane treatment was either comparable or better than that of REV to porcelain with HF/Silane treatment, but statistically higher ($p<0.05$) than that of REV to porcelain without HF/Silane treatment.



Conclusion:

Effective bonding to a porcelain substrate can be achieved with Vertise Flow self-adhering flowable composite without the need for HF etching and Silane Primer treatment, offering a simplified restorative procedure for porcelain repair.



Tips & Tricks

Prep (bevel) all margins prior to application of Vertise Flow. Vertise Flow is self-etching so does not require a seperate etching process or saline primer to bond to porcelain.

Use provided brush with the first layer to obtain sufficient contact for optimal adhesion.

If the lost part is larger and in stress bearing areas use regular composite on the top to build up the restoration, if the lost part is smaller in non stress bearing area use of Vertise Flow is recommended.