INT **STUDY** RESTORATION

Shear bond strength of BRILLIANT Crios sandblasted with CoJet*

BRILLIANT Crios

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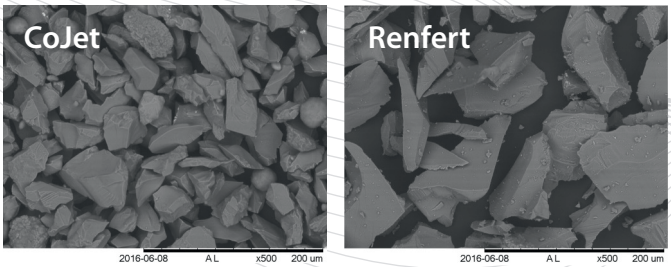
STUDY AIM

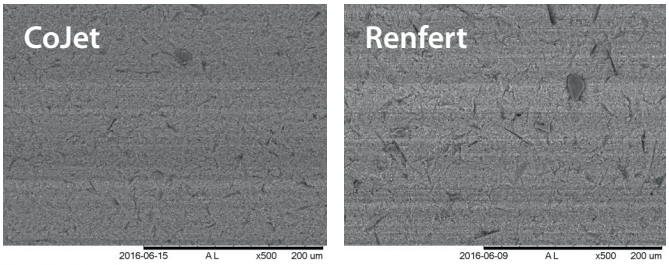
According instructions for use BRILLIANT Crios has to be sandblasted with Al_2O_3 before application of ONE COAT 7 UNIVERSAL. The objective of this study was to show whether it is possible to use CoJet sandblasting system (3M ESPE) for pretreatment of BRILLIANT Crios before the application of ONE COAT 7 UNIVERSAL.
A direct comparison of sandblasting with a commercial available Al_2O_3 and CoJet should show whether the CoJet sandblasting system is appropriate for this purpose.



SEM pictures of Renfert and CoJet sandblasting material

EXPERIMENTAL SETUP

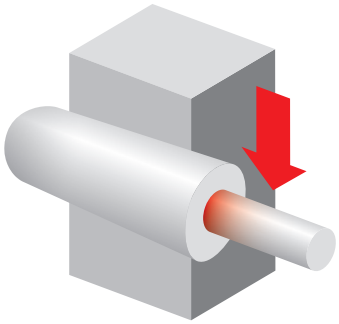
Samples of BRILLIANT Crios were either sandblasted with corundum (Renfert, Al_2O_3, 50µm) or CoJet (3M ESPE, 30 µm). The sandblasted surface was bonded with ONE COAT 7 UNIVERSAL. SYNERGY D6 Flow was applied on the bonded surface. Bonding and Flow were cured through the BRILLIANT Crios material (3mm). Shear bond strength (SBS) was determined with a Watanabe setup after 24 h water storage at room temperature (n=8).

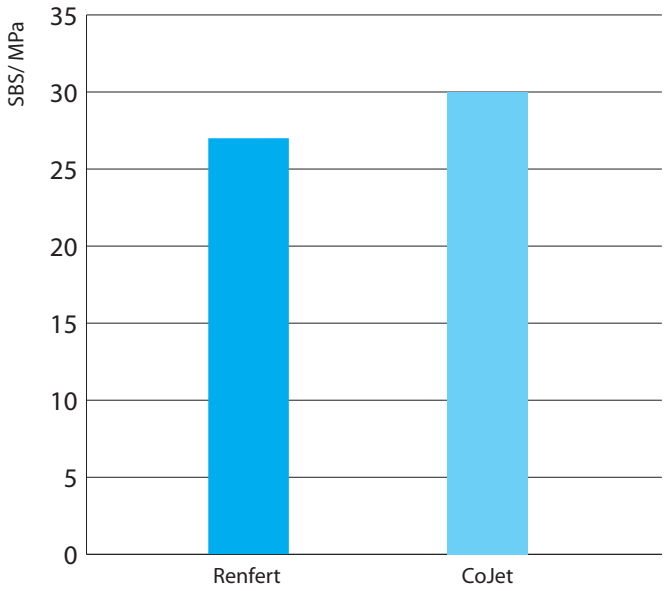


SEM pictures of BRILLIANT Crios surfaces sandblasted with Renfert and CoJet

RESULT

Both sandblasting materials, Renfert and 3M ESPE, show an edged surface. In both cases the BRILLIANT Crios surface is roughened after sandblasting. Shear bond strength of CoJet sandblasted samples are in the same range as the samples treated with Renfert Al_2O_3. In both cases the failure of the interface BRILLIANT Crios, ONE COAT 7 UNIVERSAL, SYNERGY D6 Flow was cohesive. Due the findings the CoJet sandblasting system (30 µm, 3M ESPE) is an appropriate sandblasting material for pretreatment of BRILLIANT Crios before bonding with ONE COAT 7 UNIVERSAL.





Shear bond strength (SBS) of bonded BRILLIANT Crios (ONE COAT 7 UNIVERSAL, SYNERGY D6 Flow) sandblasted with Renfert and CoJet

*Cojet is not a registered trademark of COLTENE

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