STUDY AIM

According to instructions for use, BRILLIANT Crios must be sandblasted with Al₂O₃ before applying ONE COAT 7 UNIVERSAL. The objective of this study was to determine 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 Al₂O₃ and CoJet should show whether the CoJet sandblasting system is appropriate for this purpose.

EXPERIMENTAL SETUP

Samples of BRILLIANT Crios were either sandblasted with corundum (Renfert, Al₂O₃, 50µm) or CoJet (3M ESPE, 30µm). 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 24h water storage at room temperature (n=8).

RESULT

Both sandblasting media, 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 Al₂O₃. In both cases the failure of the interface BRILLIANT Crios, ONE COAT 7 UNIVERSAL, SYNERGY D6 Flow was cohesive. Due to the findings the CoJet sandblasting system (30µm, 3M ESPE) is an appropriate sandblasting material for pretreatment of BRILLIANT Crios before bonding with ONE COAT 7 UNIVERSAL.

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