

Signum zirconia bond

Zirconia is a well established material in the dental field and is used for several indications. The application ranges from framework material over monolithic veneers to fully anatomical crowns and bridges. Is there a positive effect for using zirconia bonders before adhesive cementation?

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Comparison of the shear bond strength of various zirconia bonding systems before adhesive cementation of zirconia.

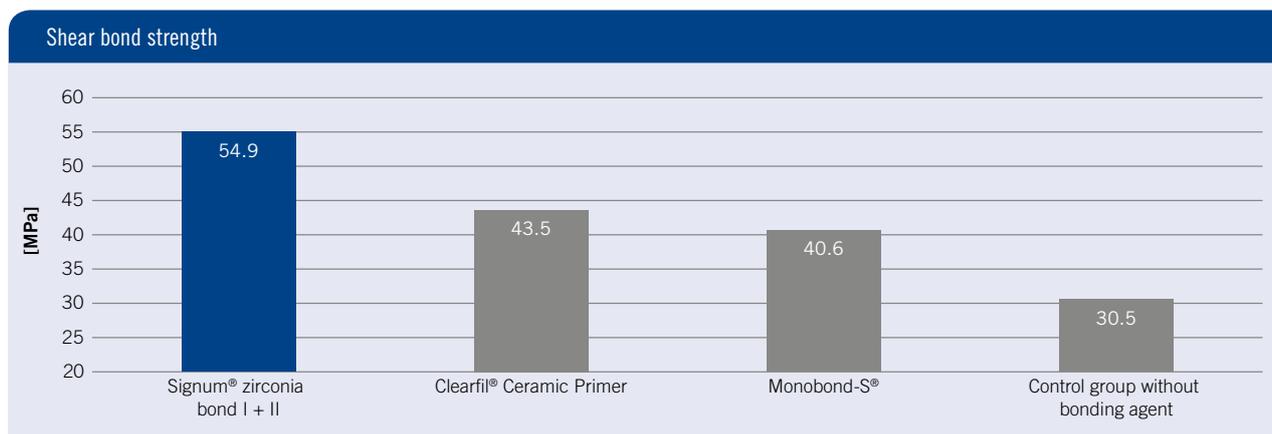
Purpose

The objective of this in-vitro research is to determine the influence of various bonders for zirconia on the shear bond strength in the context of adhesive cementation.

Material & Method

In total 40 disc-shaped zirconia specimens were produced and the surfaces were prepared with Al₂O₃ (grit size of 110 μm, with 2,8bar). The specimens were divided into 4 groups for the examination of 3 different bonders: Monobond-S® (Ivoclar), Clearfil® Ceramic Primer (Kuraray) and Signum® zirconia bond (Kulzer) and one control group. Composite blocks (Filtek® Z250, 3M ESPE) were cemented on the zirconia discs with a resin cement (Panavia F 2.0 (Kuraray) after conditioning with one of the bonding agents respectively without bonding in the control group. The specimens were examined in a universal testing machine and shear bond strength was calculated.

Results



Failure rates of tested specimens [%]

Group	Adhesive	Cohesive	Adhesive + cohesive
Signum® zirconia bond I + II	20	60	20
Clearfil® Ceramic Primer	30	50	20
Monobond-S®	40	40	20
Control measurement without bonding	60	30	10

Conclusion

Usage of zirconia bonders for the adhesive cementation of zirconia has a positive effect on the shear bond strength between ceramic and resin cement. Signum zirconia bond showed the highest bond strength values in the present investigation.

Source:

Ural C, Külünk T, Külünk S, Kurt M, Baba S: Determination of resin bond strength to zirconia ceramic surface using different primers. Acta Odontol Scand. 2011 Jan; 69(1):48-53.

The study was abbreviated and summarised and all diagrams and titles have been established by Kulzer.

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