

**Adhesive bond of veneering composites on various metal surfaces using silicoating, titanium-coating or functional monomers.**

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**OBJECTIVES:** This study compared the shear bond strength (SBS) between veneering composites and titanium (grade 1), a cobalt-chromium-alloy and a high precious-alloy, which were pretreated using silicoating systems, functional monomers or an experimental titanium-dioxide coating system. **METHOD:** The specimens were sized to rectangular plates of 20 x10 x 2mm(3) (l,w,h) and a composite cylinder (height of 4mm, diameter 5mm) was axially polymerized to the middle of the plates. After aging (24h or 150 d storage in distilled water at 37 degrees C, or thermal-cycling: 6000 x 5 degrees /55 degrees C) the SBS was determined. **RESULTS:** Independent of the type of metal and the conditioning/coating techniques the lowest SBSs were found after thermal-cycling. Titanium. The SBS of the silica coating systems and the functional monomers did not differ statistically on titanium. However, the titanium-dioxide coating method had significantly higher values than the other methods. Cobalt-chromium. The highest mean values were observed with the titanium-dioxide coating system and the phosphate acid ester. Precious alloy. No statistical significant different SBS was found for the silicoating and the titanium-dioxide coating methods, while the functional monomers were statistically significant (lower) different to both systems. **CONCLUSION:** Generally, the titanium-dioxide coating system achieved the highest SBS under different aging conditions and on all three different metal-surfaces.

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