

Effect of bracket base conditioning.

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INTRODUCTION: The aim of this study was to compare the effect of a silicoating system, the influence of sandblasting, and the effect of a silane-coupling agent after sandblasting on the shear bond strength of stainless steel foil-mesh brackets. To simulate the oral environment, all specimens were thermocycled (6000 times at 5 degrees C and 55 degrees C) in a mastication device before testing. **METHODS:** Four bracket groups were tested: group 1 consisted of 20 metal brackets that were sandblasted on the base; group 2 contained 20 brackets that were sandblasted, and a silane-coupling agent was applied; in group 3, the surface of the base of 20 metal brackets was treated by using a tribochemical system; and group 4 was the control group. The brackets were bonded with a light-curing adhesive to extracted third molars, and the shear bond strength and the adhesive remnant index score were determined. The brackets of group 1 were reconditioned after debonding with sandblasting and tested again (group 5). **RESULTS:** Sandblasting and tribochemical treatment of brackets improved the shear bond strength of stainless steel brackets. Combined sandblasting and silane-coupling treatment offers no benefit of increased in-vitro strength. **CONCLUSIONS:** The bond of resins to tribochemically silicoated stainless steel brackets seems to be sufficient to strengthen the bond between the adhesive and the metal bracket. This treatment is mainly indicated for low-compliance patients or teeth that are difficult to bond.