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Bond strength of ceramic brackets with various bonding systems

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ABSTRACT

The purpose of this investigation was to determine the shear and tensile bond strengths of various ceramic and ceramic-filled brackets in combination with commonly used bonding systems. One monocrystalline, two polycrystalline and one ceramic-filled plastic bracket types were tested in combination with one light-cured and two chemically-cured bonding systems. Bonding procedures were performed on properly prepared human teeth. Shear and tensile tests were performed on an Instron test machine. The shear bond strength of the mono- and polycrystalline ceramic brackets was not affected by the bonding system. There was a difference among bonding systems used with the ceramic-filled plastic bracket. Ceramic-filled plastic and polycrystalline ceramic brackets exhibited the greatest resistance to tensile force, while monocrystalline brackets showed the highest propensity for tensile fracture of the wings.

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