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Bond Strength of U-Bond - a 7th-generation Bonding Agent

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Purpose – To determine the shear bond strength of *U-Bond*, a 7th-generation bonding agent, to human tooth structure.

Materials and Methods – The bonding agent (*U-Bond*, Vericom Co., Ltd., Lot #UB172) was applied according to manufacturer’s instructions to enamel and dentin of extracted adult human molars ground through 600-grit silicon carbide abrasive. TPH3 composite (*DENTSPLY Caulk*) was then placed on top of the bonding agent utilizing the Ultradent Shear Test mold and jig to produce a 2.38 mm diameter cylinder. While in the mold, the cylinder was light cured according to manufacturer’s instructions. The prepared specimens were stored in water at 37°C for 24 hours before testing. Shear bond strength was measured using a universal testing machine (Instron 5866) at a cross-head speed of 1 mm/min. Means and standard deviations were calculated.

Results – The shear bond strength to human superficial dentin was 32.3 (6.5) MPa. The shear bond strength to human enamel was 28.8 (3.2) MPa.

Ultradent Shear Bond Strengths of U-Bond for Ground Enamel and Superficial Dentin	
Tissue Substrate	Bond Strength, MPa
Ground Enamel	28.8 (3.2)
Superficial Dentin	32.3 (6.5)

Conclusions – The shear bond strength of *U-Bond*, a 7th-generation bonding agent, to extracted human enamel and dentin was high.