

ABSTRACT NO.# 0487

Fuji IX GP EXTRA, G-COAT PLUS,
Fuji COAT LC, Fuji Varnish**0487*****Influence of coating materials on conventional glass-ionomer cement***

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Objectives: Conventional glass-ionomer cements(GIC) are widely used for restoration. However, they sometimes fail in wear or crack at the surface by long term fatigue. We investigated the influence of the various coating materials for the conventional restorative GIC, Fuji IXGP EXTRA(F9E) on its properties.

Methods: The flexural strength test was carried out referring to ISO/9917-2:1998. The surfaces of specimens were prepared using 600-grit SiC paper 10minutes after start of cement mixing. One group of F9E was not coated. Other groups were applied with G-COAT PLUS, Fuji COAT LC and Fuji Varnish according to manufacturer's instruction. The data was analyzed by t-test compared with Uncoated(**:p<0.01).

The tensile bond strength of several coating materials to F9E was carried out according to ISO/TS11405:2003. F9E disk (diameter:15mm, thickness:2mm) surfaces were prepared using 600-grit SiC papers. Bonding area was prescribed(diameter:3mm) with plastic tape. Coating materials were applied according to the directions. Acrylic blocks as tensile appliances were bonded onto the cured coats with self-cure acrylic resin(Unifast II,GC). The specimens were soaked in distilled water at 37°C for 23hours before tensile test. The data was analyzed by t-test compared with G-COAT PLUS(**:p<0.01).

Results: F9E coated with G-COAT PLUS showed the highest flexural strength. Tensile bond strength of G-COAT PLUS is significantly higher than other products. The results are attributed to adhesive monomer exclusively contained in G-COAT PLUS which enables to create the chemical bond to no-resin materials.

Conclusion: G-COAT PLUS has the highest bond strength to F9E among the examined coating materials, and the effect to improve the mechanical property of substrate restorative GIC. The application of G-COAT PLUS onto F9E is reliable and clinically recommendable. Coating material

Coating material	Uncoated	G-COAT PLUS	Fuji COAT LC	Fuji Varnish
Flexural strength of coated F9E (MPa)	16.8(3.3)	32.2(2.0)**	18.8(1.3)	18.6(3.0)
Tensile bond strength to F9E (MPa)	-	5.8(1.7)	1.7(0.8)**	1.8(0.7)**

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