ONLINE ISSN : 1881-1361
PRINT ISSN : 0287-4547

Dental Materials Journal
Vol. 29 (2010) , No. 1 p.84-88

[PDF (346K)] [References]

Effect of preliminary irradiation on the bond strength between a veneering composite and alloy

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(Received July 2, 2009)
(Accepted October 23, 2009)

Abstract:
The shear bond strength of a veneering composite (Solidex) and silver-palladium-copper-gold alloy (Castwell M.C.12) was evaluated for different duration times and irradiance for preliminary photo-polymerization. A veneering composite was applied onto a cast disk. Preliminary photo irradiation was performed using different duration times or irradiance. After final polymerization, the bond strength and the spectral distribution of each curing unit were determined. Shear bond strength was significantly higher for 90 s (12.4 MPa), than that for 0 s (8.3 MPa). With regard to the effect of irradiance, that from Solidilite (11.4 MPa) was significantly higher than that from Sublite S at 3 cm (8.7 MPa). The irradiance of Hyper LII and Sublite S at 3 cm was higher than Sublite S at 15 cm or Solidilite unit. Long time irradiation and low intensity is effective for preliminary irradiation in order to enhance the bond strength.

Key words:
Bond strength, Curing unit, Veneering composite

doi:10.4012/dmj.2009-055

JOI JST.JSTAGE/dmj/2009-055