

Original Article

Comparison of Flexural Strength between Five Commercial Bulk-Fill Resin Composites

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Abstract

Objective: To compare the flexural strength of five different bulk-fill resin composites.

Material and method: Five different types of bulk-fill resin composite were used in this study (Sonic-Fill, Filtek Bulk-fill Posterior Restorative, Tetric N-Ceram Bulk-Fill, Tetric Flow Bulk-Fill and Surefill SDR). Bulk-fill resin composite specimens were prepared using a stainless steel mold with dimensions, 25x2x2 mm, as specified by the ISO 4049 standard. Each group was composed of 10 specimens, giving a total of 50 specimens. The specimens were light cured and stored in a distilled water bath at 37°C for 24 hours. All specimens were tested with the universal test machine at a crosshead speed of 1 mm/min. The data was analyzed by one-way ANOVA and Tukey's test ($\alpha=0.05$).

Results: Five commercial bulk-fill resin composites had flexural strength values ranging from 84.3 to 138.9 MPa. The Sonic-Fill group showed significantly higher flexural strength, followed by Filtek-BF-Posterior, Tetric N-Ceram BF, Tetric Flow BF, and Surefill SDR.

Conclusion: According to the obtained results, Sonic-Fill resin composite had the highest flexural strength, followed by Filtek-BF-Posterior, Tetric N-Ceram BF, Tetric Flow BF, and Surefill SDR.

Keywords: Bulk-fill resin composite, Flexural strength

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