

Dear Authors,

Your submission Characterization of glass fiber-reinforced epoxy resin materials as a substitute for human dentin for bond strength tests to Brazilian Dental Science, has been revised and according to reviewers' comments, there are questions to be addressed and/or points to be clarified/corrected.

Please answer the reviewers considerations point-by-point in a separate document and also please make all the corrections in the text highlighted in yellow.

Deadline: 30 days

Thank you for considering Brazilian Dental Science for publishing your research. We are looking forward the revised version of you manuscript.

Sincerely,

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Reviewer A:

Recommendation: Revisions Required  
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*Comments to the Author*

This is a solid study on the use of dentin substitute materials for bond strength testing. It was well conducted and the results are reliable. A few issues, however, need to be addressed before a final decision.

“The distribution of fibers in the material resembles the network of dentinal tubules present in dentin morphology, as both materials provide resinous material tag formation along the long axis of fibers and tubules, which may reflect in the statistical similarity for the  $\mu$ SBS results (Table 3)”

This statement is invalid; dentin and resin fibers differ entirely in composition and anatomy. Please remove it.

“Thus, it can be inferred that not only the glass fiber arrangement within the epoxy resin influences the bond strength of GFRER with resin cement, but also the amount of glass fiber and its interaction with the epoxy resin.”

This is an overstatement, as the authors did not measure the fiber content. The fibers in the experimental material appear to be randomly distributed, which, according to your own observations, may account for the low bond strength.

“It was concluded that the glass fiber arrangement within the epoxy resin influences the bond strength results of the analog to dentin and the glass fiber reinforced epoxy resin material in the round-rod format can be used as an alternative substrate to human dentin in bond strength tests considering the cementation protocol utilized herein”

Why do you recommend only the round-rod format in your conclusion? Plate and round-rod specimens showed similar behavior, except for their bond strength results. However, the primary condition for using these resin fibers is their mechanical behavior being comparable to dentin, rather than their bond strength. In this sense, either the round-rod or the plate format is way stiffer than dentin. Please revise your conclusions to ensure they are consistent with your results.

Moreover, the authors did not age the specimens, which could be even more detrimental in the round-rod case than in dentin and thus constitute a study limitation.

Please consider reducing the number of references.

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Reviewer B:

Recommendation: Resubmit for Review

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*Comments to the Author*

Dear authors,

I congratulate you on addressing a relevant topic related to the development of dentin-analogue materials for bond strength testing. The study is well structured overall, but several methodological aspects require clarification.

The main issue concerns the lack of standardization in surface treatment, since dentin received phosphoric acid + adhesive and the GFRER groups received hydrofluoric acid + silane only. This difference prevents a direct comparison of bond strength results. In addition, the absence of baseline (non-aged) data makes it difficult to interpret the effect of thermal cycling. Please also clarify the rationale for including other mechanical tests, the number of specimens used in each

