

## Report on the bending strength of Luna Wing when in use with a fiberglass product

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In response to requests from dental technicians in a number of different countries, YAMAKIN tested the bending strength of Luna Wing when in use with a fiberglass product.

[Test Method]

**A fiberglass product for dental use, which had already been impregnated with light cure type monomers, was prepared. Luna Wing was built up on the fiberglass product** and tested in accordance with JIST6517 (ISO10477) testing specifications; the bending test pieces were measured. (The fiberglass should be placed at the bottom and Luna Wing should be applied on the fiberglass. This is very important!)

[Results]

The following table and chart show the results of the bending strength of Luna Wing in use with a fiberglass product:

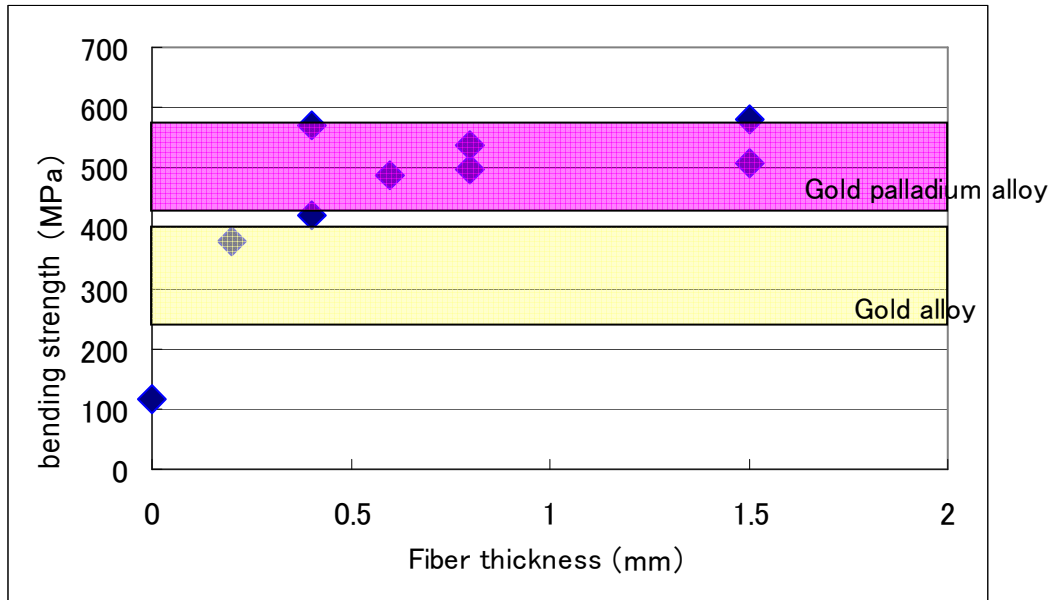
Fiber thickness(mm)	Bending Strength (MPa)	Breaking Energy (mm·N)
0	117	11
0.2	379	222
0.4	570	139
0.4	420	205
0.6	487	182
0.8	498	169
0.8	538	168
1.5	507	166
1.5	580	168
Average (0.2-1.5mm)	497	177
Deviation(0.2-1.5mm)	70	26

← Luna Wing only

\*\*Luna Wing : Dentine (DA3)

\*\*Fiberglass: FIBREX-LAB(MEDIAL), angelus

Correlation diagram between the bending strength of Luna Wing and fiberglass thickness



[Results]

The bending strength of Luna Wing when in use with a fiberglass product of 0.2mm thickness was approximately 400MPa, as shown in the diagram. When the fiberglass was thicker than 0.4mm, the value reaches approximately 500MPa. This value is the same as Gold-Palladium alloys, and higher than Gold alloys. As the test piece contains fiberglass, cracks appeared; however, the test piece itself did not fracture.

Breaking energy was also checked. Luna Wing in use with a fiberglass product exhibits a breaking energy 12 to 20 times higher than Luna Wing alone and 5 to 7 times higher than TWiNY alone. This means that fracturing is in practice virtually unthinkable.

[Conclusion]

From the above test results, it was learned that the use of a fiberglass product with Luna Wing or TWiNY will achieve the same strength as alloys.

--End of Report