

Supplementary Materials: Preparation of Silver Antibacterial Agents with Different Forms and Their Effects on the Properties of Water-Based Primer on *Tilia europaea* Surface

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The results of color difference, gloss, adhesion and impact resistance tests were assessed in terms of the statistical significance of the difference concerning the changing proportion of three kinds of antibacterial agents for the coating. The non-repeated two-way anova method was used for significance analysis. The analysis of variance at a significance level of 0.05 was performed to detect significant differences in coating properties.

Tables S1–S4 show the significant difference analysis of three kinds of antibacterial agents under different contents. In Tables S1–S4, SS is the sum of squares from the mean square, representing the sum of squares between groups and within groups; df is the degree of freedom, and MS is the mean square obtained by dividing the sum of squares by the degrees of freedom. F represents the test statistic, which is used to calculate the hypothesis test. P_{value} indicates the level of significance, which is used to evaluate the range and interval of overall parameters and calculate the probability of a possible experiment. F_{crit} represents the F value at a corresponding significance level. When F is less than F_{crit} , there is no difference between the two groups of data. The criterion for judging the significance of the difference is that if $0.01 < P_{value} < 0.05$, the difference is significant. If the $P_{value} \leq 0.01$, the difference is very significant. If $P_{value} > 0.05$, there is no difference. The results obtained by the above methods are that $F > F_{crit}$ and $P_{value} < 0.01$. It shows that there is a significant difference between the measured data in color difference, gloss, adhesion and impact resistance.

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Table S1. Significance analysis of color difference.

Difference Source	SS	df	MS	F	P _{value}	F _{crit}
antibacterial agent	35.89	6.00	5.98	4.87	0.01	3.00
content	46.47	2.00	23.23	18.90	0.00	3.89
error	14.75	12.00	1.23	-	-	-
total	97.10	20.00	-	-	-	-

Table S2. Significance analysis of gloss.

Difference Source	SS	df	MS	F	P _{value}	F _{crit}
antibacterial agent	1735.89	6.00	289.31	13.65	0.00	3.00
content	636.77	2.00	318.38	15.02	0.00	3.89
error	254.41	12.00	21.20	-	-	-
total	2627.07	20.00	-	-	-	-

Table S3. Significance analysis of adhesion.

Difference Source	SS	df	MS	F	P _{value}	F _{crit}
antibacterial agent	16.29	6.00	2.71	22.80	0.00	3.00
content	1.24	2.00	0.62	5.20	0.02	3.89
error	1.43	12.00	0.12	-	-	-
total	18.95	20.00	-	-	-	-

Table S4. Significance analysis of impact resistance.

Difference Source	SS	df	MS	F	P _{value}	F _{crit}
antibacterial agent	65.62	6.00	10.94	7.49	0.00	3.00
content	43.14	2.00	21.57	14.77	0.00	3.89
error	17.52	12.00	1.46	-	-	-
total	126.29	20.00	-	-	-	-