CORRECTION

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Correction: Shear strength properties of hybrid (hinoki cypress and Japanese cedar) cross-laminated timber



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In the calculation of normal and shear stress in each layer using Eqs. 7a-8b, there was an error in inputting the modulus of elasticity for Hinoki and Sugi. Erroneously, values of 12.5 GPa and 8.6 GPa were used, respectively, instead of the correct elastic moduli listed in Table 1. It should be noted that these erroneously input values were actually the partial means, consisting of the correct values found in Table 1.

Originally, the correct values were used for stiffness calculation of imaginary beam A and B.

Therefore, the impact of aforementioned input errors was confined to the calculation of sectional stress. Following the correction of these values, the recalculated results showed a slight overall increase, but it did not affect the conclusions drawn in the paper [1].

As a result of this re-calculation, corrections have been made to Figs. 11, 12, 13 and 14, as well as Tables 5 and 6.

The corrections in the main text are clearly indicated below:

In the Abstract section, the sentence that reads as "The magnitude.....the mean shear strength of the cross layer was estimated to be 1.33 MPa." should read as "The magnitude.....the mean shear strength of the cross layer was estimated to be 1.48 MPa."

In page 15, under the section "Shear modulus in cross layer obtained from strain measurement", the sentence that reads as "The mean of the rolling shear G_{90 ex} was 79.0 MPa with a coefficient of variation of 19%." should read as "The mean of the rolling shear G_{90 ex} was 81.3 MPa with a coefficient of variation of 19%."

In page 17, under the section, "Rolling shear strength of cross layer", the sentence that reads as "The estimated shear strength of the cross layer was 1.33 MPa." should read as "The estimated shear strength of the cross layer was 1.48 MPa."

In page 17, under the section, "Conclusions", the sentence that reads as "From the regression.....the mean shear strength of the cross layer was estimated to be 1.33 MPa." should read as "From the regression.....the mean shear strength of the cross layer was estimated to be 1.48 MPa."

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(b) Asymmetric-four-point bending test

Fig. 11 Horizontal distribution of shear stress in the cross layer and cross-sectional shear stress distributions at representative sections



Fig. 12 Sample shear stress–strain curve obtained from the experiment. Shear stress is estimated by multiplying α_{mid} (see Fig. 11) with the nominal shear stress



Fig. 13 Relation between nominal shear strength and the magnitude of shear stress in the cross layer (α_{av})



Fig. 14 Comparison of rolling shear strength of sugi (Japanese cedar) obtained in the current study and in previous studies. Error bars for data points of previous studies indicates standard deviation. The error bar of the current study indicates root of mean squared error of the linear regression in Fig. 13

Specimen	Rolling shear modulus G _{90_ex}			
Layer config.	Loading	l _{ef} /d	α_{mid}	
3L3P	Asy. 4-point	3.00	70.4	
3L4P	Asy. 4-point	1.50	67.1	
5L5P	Asy. 4-point	1.46	92.1	
5L5P	Asy. 4-point	2.50	67.7	
5L7P	Asy. 4-point	1.41	104	
5L7P	3-point	1.41	86.9	
Average			81.3	
SD(COV)			15.2 (18.7%)	

Table 5 Rolling shear modulus estimated from the strainmeasurement

Layer config.	Three-point bending test			Asymmetric four-point bending test		
	$I_{\rm ef}/d$	α _{av}	τ _{nom} [MPa]	l _{ef} /d	α _{av}	τ_{nom} [MPa]
3L3P	1.57	0.890	2.11	1.57	0.930	1.91
	3.57	1.108	1.31	3.00	1.075	1.00
3L4P	1.50	0.957	1.65	1.50	0.978	1.33
5L5P	1.46	0.995	1.73	1.46	1.007	1.17
	3.46	1.093	1.01	2.50	1.067	1.04
5L7P	1.41	0.980	1.80	1.41	0.995	1.30

Table 6 Magnitude of shear stress in cross layer (α_{av})

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Reference

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