

**Internal lab-no.:** 188U1512-0523\_3-4 Date: 16.06.2023

Task:	Authenticity of timber		
Date of receipt:	25.05.2023	Customer:	Panda Panels Agencies Ltd
Testing period:	25.05.2023 – 16.06.2023		Sandy Farm, The Sands, Farnham, Surrey
External lab-no.:	/	GU10 1PX, UK	
On behalf of:	Agroisolab UK	Attn.:	Chris Williams

Sample Details:		Analysis information:	
Samples(s):	3-4/4	Methods Agroisolab:	AIL-1.1c (2015-02)
Sampling by:	Agroisolab UK	Parameter:	$\delta^2\text{H}$ , $\delta^{18}\text{O}$ , $\delta^{13}\text{C}$ , $\delta^{34}\text{S}$
The results refer to provided samples.		Remark: First sample preparation was done by Agroisolab UK.	
The following information in the table was given by customer: sample, declaration.			

Results of Analysis:							
No.	Sample	Decl.	$\delta^2\text{H}_{\text{org}}^*$ [‰] v.s. vsmow	$\delta^{18}\text{O}_{\text{org}}^*$ [‰] v.s. vsmow	$\delta^{13}\text{C}^*$ [‰] v.s. VPDB	$\delta^{34}\text{S}^*$ [‰] v.s. VCDT	Origin Evaluation
3	PPA-RIL-BIR-2023.1 Veneer Timber (PLY) - DEC Betula sp. (top)	China	-148.4 +/- 2.5	20.5 +/- 0.5	-27.1 +/- 0.1	5.5 +/- 0.3	
4	PPA-RIL-BIR-2023.6 Veneer Timber (PLY) - DEC Betula sp. (core)	China	-150.1 +/- 2.2	20.1 +/- 0.5	-25.9 +/- 0.1	6.4 +/- 0.3	

\* +/- total combined single standard uncertainty

- Quick evaluation:**
- = likely to be from declared origin
  - = doubts, has to be verified with further information
  - = unlikely, based on current evidence the sample is evaluated as mislabeled with respect to its provenance

**Remark:** China is a large country, which also borders Russia in the north-east. All in all, it is not trivial to check the origin of such a large country without a more precise indication of its small-scale origin. In addition, overlaps in the isotope ratios are possible or to be expected, especially in regions close to the border (e.g. Russia). It should also be noted that the present database consists mainly of reference samples from northeastern regions in China.

### Interpretation:

- Test samples 3 (PPA-RIL-BIR-2023.1) and 4 (PPA-RIL-BIR-2023.6) show  $\delta^2\text{H}$  or  $\delta^{18}\text{O}$  isotopic signatures, which could be expected in China. Therefore, an origin from China is currently likely. Furthermore, it is likely that the samples originate from North Eastern regions of China.  
Further detailed verification can be done if direct reference samples from the logging area / concession can be made available.

**Conclusion: Samples 3 and 4:** Currently likely for an origin from China (North-East).

Best Regards,

S. Hofem  
(Food Chemist)  
- Scientific Manager -

Annex of order 188U1512-0523\_3-4  
 Photos of samples 3 and 4:

