

# SHANDONG LVSEN WOOD-PLASTIC COMPOSITE CO., LTD

## TEST REPORT

### SCOPE OF WORK

wpc co-extrusion hollow decking

### REPORT NUMBER

210628005SHF-001

### TEST DATE(S)

2021-06-28 - 2021-08-02

### ISSUE DATE

2021-10-11

### PAGES

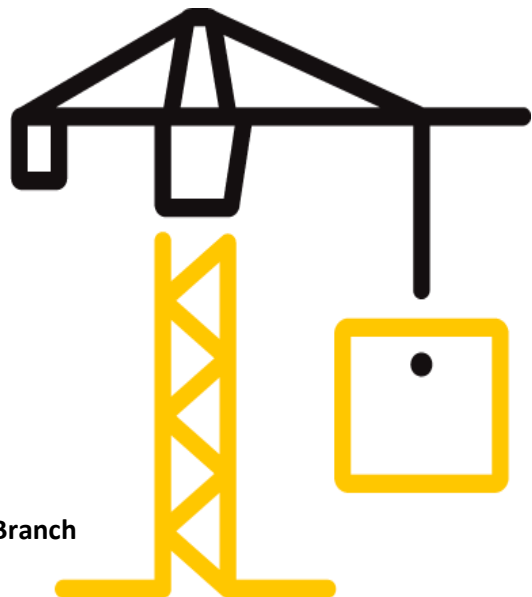
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### DOCUMENT CONTROL NUMBER

LFT-APAC-SHF-OP-10k(May 1, 2021)

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Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch



## Test Report

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## Test Report

Issue Date: 2021-10-11 Intertek Report No. 210628005SHF-001  
Applicant: SHANDONG LVSEN WOOD-PLASTIC COMPOSITE CO., LTD  
Address: NANLING VILLAGE, GAOQIAO TOWN, YISHUI COUNTY, SHANDONG PROVINCE, CHINA.  
Attn: Yuan Zhang  
Manufacturer: SHANDONG LVSEN WOOD-PLASTIC COMPOSITE CO., LTD  
Address: NANLING VILLAGE, GAOQIAO TOWN, YISHUI COUNTY, SHANDONG PROVINCE, CHINA.  
Test Type: Performance test, samples provided by the applicant.

### Product Information

|                           |                                 |                      |                        |
|---------------------------|---------------------------------|----------------------|------------------------|
| <b>Product Name</b>       | wpc co-extrusion hollow decking | <b>Brand</b>         | /                      |
| <b>Sample Description</b> | Good Condition                  | <b>Sample Amount</b> | 2 packages             |
|                           |                                 | <b>Received Date</b> | 2021-06-23; 2021-07-08 |
| <b>Sample ID</b>          | <b>Model</b>                    | <b>Specification</b> |                        |
| S210628005SHF.001~006     | LSCO-S1                         | 140*22mm             |                        |

### Test Methods And Standards

|                               |   |
|-------------------------------|---|
| <b>Test Standard</b>          | EN 15534-1:2014 Section 7.1.2.1, 7.5, 8.3.1, 9.2, 6.4.2, EN 15534-4:2014 Section 4.5.1, 4.5.7, 4.5.5, 4.5.6, 4.4, CEN/TS 15676:2007, ISO 11359-2:1999 |
| <b>Specification Standard</b> | EN 15534-4:2014   |
| <b>Test Conclusion</b>        | The samples were tested according to the above standards, and the results are shown in the following page.  |

Note:

1. This report relates specifically to the sample(s) that were drawn and provided by the applicant or their nominated third party. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment and only relate to the sample(s) as received and tested.

### Report Authorized



Daniel Zhang      Sally Xie      Flora Fan  
 Name: Daniel Zhang      Name: Sally Xie      Name: Flora Fan  
 Title: Approver      Title: Reviewer      Title: Project Engineer

## Test Report

Issue Date: 2021-10-11

Intertek Report No. 210628005SHF-001

### Test Items, Method and Results:

EN 15534-4:2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

| Test Items                     | Test Method  | Test Results  | Test requirements   | Verdict |
|--------------------------------|--|---|---|---------|
| Falling mass impact resistance | EN 15534-4:2014<br>Section 4.5.1<br>EN 15534-1:2014<br>Section 7.1.2.1 | Hollow profile<br><br>Max. Crack length (mm): No Crack<br><br>Max. Residual Indentation (mm):<br>0.09 | None of 10 test specimens shall show a failure with a crack length $\geq 10$ mm or a depth of residual indentation $\geq 0.5$ mm. | Pass    |

### Note:

1. The falling mass was 1000g and the height was 700mm.

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Indenter: a hardened steel spherical body with diameter of 10 mm

Test load: Additional load of 2000N with preload of 20N

Indentation time:  $(25 \pm 5)$  s

Recovery time: at least 24h

| Test Items                | Test Method                      | Test Results                   |
|---------------------------|----------------------------------|--------------------------------|
| Resistance to indentation | EN 15534-4:2014<br>Section 4.5.7 | Brinell hardness: 67.17 MPa    |
|                           | EN 15534-1:2014<br>Section 7.5   | Rate of elastic recovery: 54 % |

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| Test Items   | Test Method  | Test Results  | Test requirements  | Verdict |
|--|--|---|--|---------|
| Swelling and water absorption<br>(28 days immersion) | EN 15534-4:2014<br>Section 4.5.5<br>EN 15534-1:2014<br>Section 8.3.1 | Mean Swelling:<br>0.62 % in thickness<br>0.28 % in width<br>0.04 % in length<br>Max. Swelling:<br>0.83 % in thickness<br>0.32 % in width<br>0.04 % in length<br>Water absorption:<br>Mean: 3.44 %<br>Max.: 3.64 % | Means swelling:<br>$\leq 4$ % in thickness<br>$\leq 0,8$ % in width<br>$\leq 0,4$ % in length<br>Max. swelling:<br>$\leq 5$ % in thickness<br>$\leq 1,2$ % in width<br>$\leq 0,6$ % in length<br>Water absorption:<br>Mean $\leq 7$ %<br>Max. $\leq 9$ % | Pass    |

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### Test Items, Method and Results:

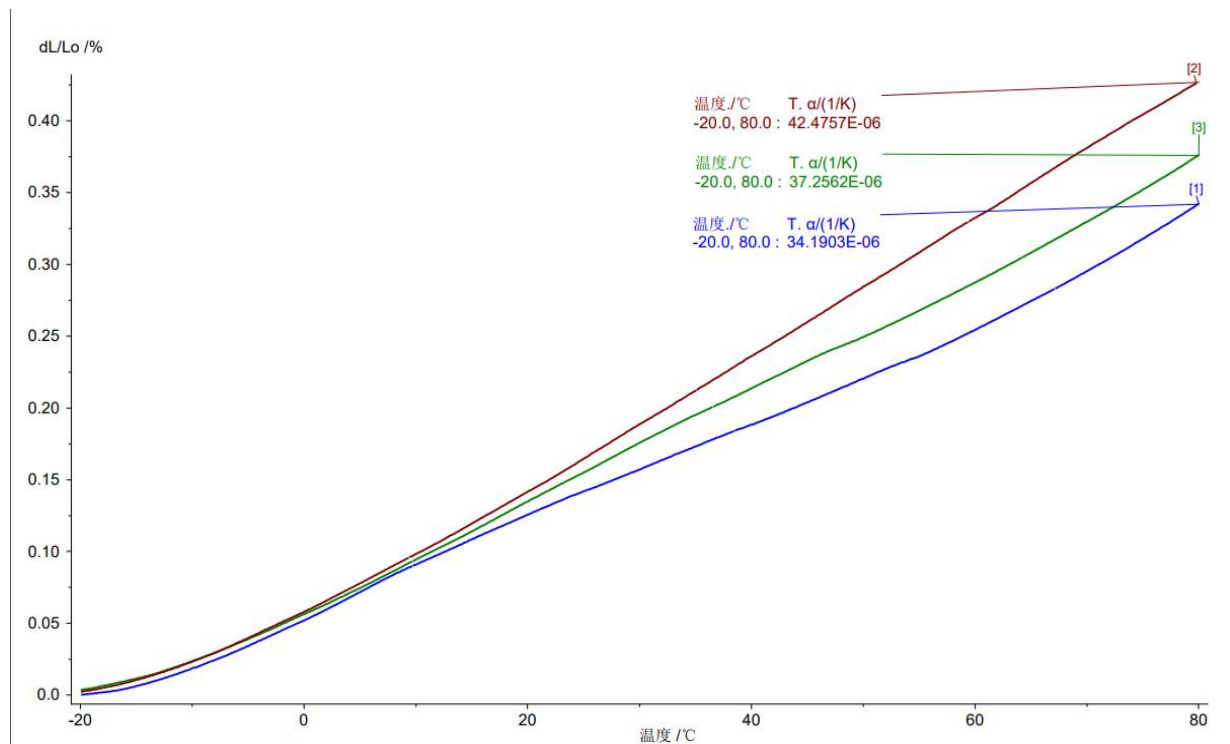
EN 15534-4:2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

| Test Items                           | Test Method  | Test Results                                 | Test requirements                      | Verdict |
|--------------------------------------|--|--|--|---------|
| Linear thermal expansion coefficient | EN 15534-4:2014<br>Section 4.5.6<br>EN 15534-1:2014<br>Section 9.2<br>ISO 11359-2:1999 | Mean:<br>$38.0 \cdot 10^{-6} \text{ K}^{-1}$ | $\leq 50 \cdot 10^{-6} \text{ K}^{-1}$ | Pass    |

### Note:

1. Test item is subcontracted on accreditation by CNAS L2233.

### Test graph



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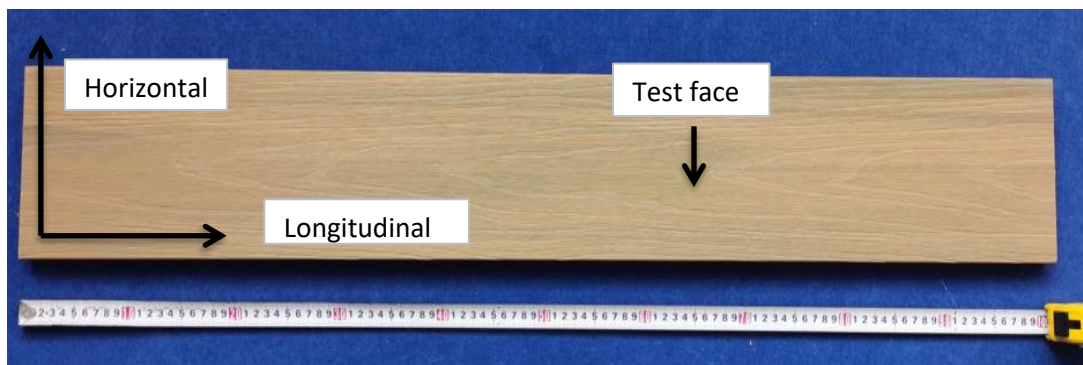
### Test Items, Method and Results:

EN 15534-4:2014 Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) Part 4: Specifications for decking profiles and tiles

| Test Items                      | Test Method   | Test Results  | Test requirements        | Verdict |
|---------------------------------|---|---|--------------------------|---------|
| Slipperiness<br>(Pendulum test) | EN 15534-4:2014<br>Section 4.4<br>EN 15534-1:2014<br>Section 6.4.2<br>CEN/TS 15676:2007 | Test condition: Dry condition<br>Longitudinal direction:<br>Mean: 80<br>Min.: 75<br>Horizontal direction:<br>Mean: 91<br>Min.: 88 | Pendulum value $\geq 36$ | Pass    |
|                                 |   | Test condition: Wet condition<br>Longitudinal direction:<br>Mean: 36<br>Min.: 32<br>Horizontal direction:<br>Mean: 39<br>Min.: 38 |                          |         |

Note:

- Requirement is cited from EN 15534-4:2014 Table 1.
- Test surface and direction please refer to below picture.





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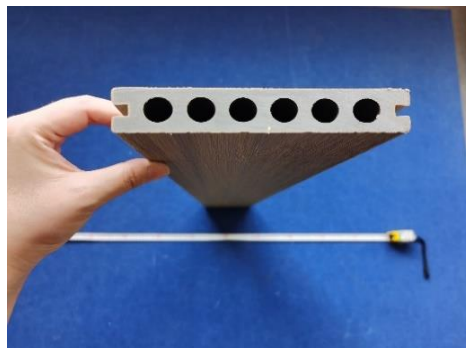
### Appendix A: Sample Received Photo



Front view (Only for Slipperiness test)



Back view (Only for Slipperiness test)



Section View (Only for Slipperiness test)

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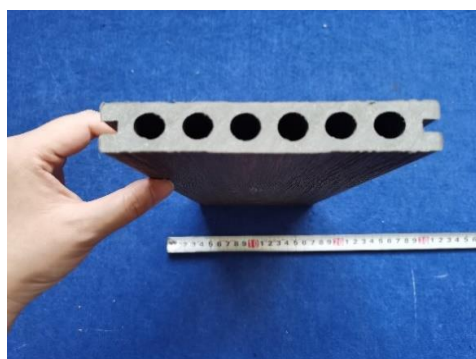
### Appendix A: Sample Received Photo



Front view (for other tests)



Back view (for other tests)



Section View (for other tests)

### Revision:

| NO.              | Date       | Changes     |
|------------------|------------|-------------|
| 210628005SHF-001 | 2021-10-11 | First issue |