Intertek

Test Report

Report Number:140829001SHJ-BP-2

Original Report Date: December 29, 2014

Sample Description:

Product: WPC
Model: LHMA027
Samples Quantity: 25 pieces
Sample ID: S140829001SHJ-001~025
Date Received: 2014-09-29
Date Test Conducted: 2014-09-29~2014-12-17

Tests Conducted:

Test Methods: BS EN 15534-4:2014, EN ISO 1183-1:2012, ASTM D7031:2011, ASTM D696:2008e1, ASTM D6007:2002(2008) and EN 71-3:2013

Conclusion:

For details refer to attached page(s).
The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

Should you have any queries about the test report, please contact:

Approved by:	**Checked by:**	**Prepared by:**
Sun Sun	Daniel Zhang	Torres Qi
Assistant Manager	Senior Project Engineer	Testing Engineer

Test Items, Method and Results:

Test Items	Test methods	Test requirements	Test Results	Verdict
Flexural properties [1]	EN 15534-1:2014 ANNEX A	Flexural properties - F'max ≥ 3300 N (arithmetic mean value) - F'max ≥ 3000 N (individual values) - Deflection under a load of 500 N ≤ 2,0 mm (arithmetic mean value) - Deflection under a load of 500 N ≤ 2,5 mm (individual values)	Bending Strength: 51.3 MPa Modulus of elasticity: 4379 MPa Mean value of maximum load: 7716 N Minimum value of maximum load: 7514 N Deflection at 500 N Mean value: 0.72 mm Maximum value: 0.80 mm	Pass
Boiling test	EN 15534-1:2014 8.3.3	1) Mean value of water absorption ≤ 7 % in weight 2) Individual values of water absorption ≤ 9 % in weight	Water absorption Mean value: 0.5% Max. value: 0.6%	Pass
Creep behaviour [1]	EN 15534-1:2014 7.4.1	Known span in use ΔS ≤ 10 mm for arithmetic mean value ΔS ≤ 13 mm for individual values ΔSr ≤ 5 mm for arithmetic mean value	Mean value: ΔS=0.98 mm ΔSr=0.62 mm Max value: ΔS=1.06m	Pass
Impact resistance	EN 15534-1:2014 7.1.1 EN ISO 179-1:2010	/	13.05 J/m	/
Moisture resistance under cyclic test conditions [1]	EN 15534-1:2014 8.3.2, EN 321:2002 EN 310:1993	Mean of decrease of bending strength ≤ 20 % - Individual decrease of bending strength ≤ 30 %	Bending strength Original sample: 51.3 MPa After moisture condition: 50.4 MPa Mean decrease: 2% Max. individual decrease: 5%	Pass

Test Items	Test methods	Test requirements	Test Results	Verdict
Swelling and water absorption (24 hours immersion)	EN 15534-1:2014 8.3.1 EN 317:1993	1) Means swelling ≤ 4 % in thickness ≤ 0,8 % in width ≤ 0,4 % in length 2) Individual swelling ≤ 5 % in thickness ≤ 1,2 % in width ≤ 0,6 % in length 3) Mean water absorption ≤ 7 % in weight 4) Individual water absorption ≤ 9 % in weight	Means swelling 0.2% in thickness 0.02% in width 0.03% in length Max. value 0.3% in thickness 0.04% in width 0.04% in length Water absorption Mean value: 0.1% Max. value: 0.1%	Pass
Resistance to indentation	EN 15534-1:2014 7.5, EN 1534:2010	/	Brinell hardness: 282 N/mm^2 Rate of elastic recovery: 26%	/
Nail and screw withdrawal	EN 15534-1:2014 7.6, EN 13446:2002	/	Surface withdrawal: 20.3 N/mm^2 Edge withdrawal: 16.6 N/mm^2	/

Note:

1. The test span was 350 mm offered by applicant

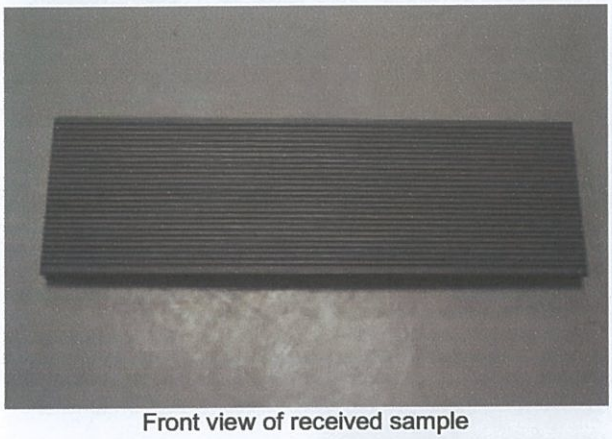
Test Items	Method	Result
Density	EN ISO 1183-1:2012 method A	1290 kg/m^3
Freeze-thaw 3 cycles [2]	ASTM D7031:2011, EN 310:1993	Bending strength: 53.7 MPa Modulus of elasticity: 4991 MPa
Linear thermal expansion [3]	ASTM D696:2008e1	41.4×10^{-6} /℃
Formaldehyde [4]	ASTM D6007:2002(2008)	0.02 ppm
Pb, Cu content [5]	EN 71-3:2013	

	Limit (mg/kg)	Result (mg/kg)
Copper (Cu)	7700	<10
Lead (Pb)	160	<10

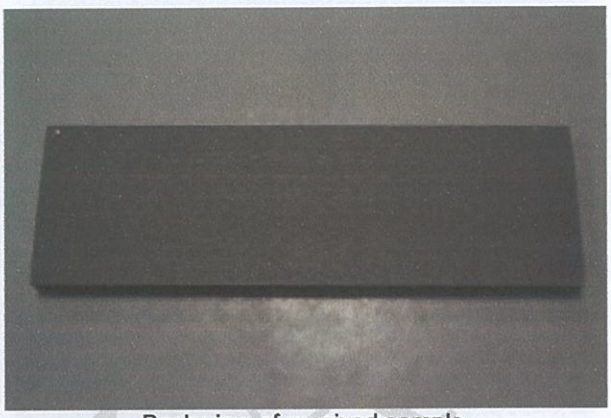
Note:

2. The test span was 350 mm offered by applicant
3. The test temperature was form -30℃ to 30℃
4. As per ASTM D6007:2002(R2008) small chamber method, formaldehyde content was detected by UV-VIS spectrophotometer
   Chamber type: 0.225 m^3 stainless steel chamber
   Climatic conditions: 25℃, 50%R.H.
   Loading factor: 0.95 m^2/m^3
   Detection limit = 0.02 ppm
   ppm = parts per million
5. mg/kg = Milligram per kilogram

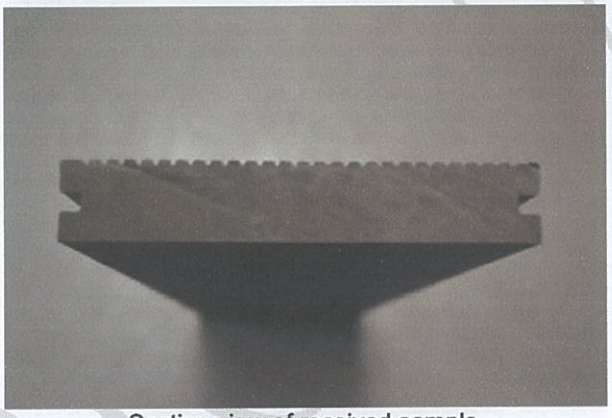
Appendix A: Sample photos



Front view of received sample



Back view of received sample



Section view of received sample

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The End of Report