TEST REPORT

REPORT NUMBER: 101646287MID-001
ORIGINAL ISSUE DATE: May 15, 2014
REVISED DATE: NA

EVALUATION CENTER
Intertek
8431 Murphy Drive
Middleton, WI 53562

RENDERED TO

Accsys Technologies
5000 Quorum Dr. Suite 620
Dallas, TX 75254

PRODUCT EVALUATED: Accoya® Wood
EVALUATION PROPERTY:ASTM C 1371-04a (reapproved 2010), ASTM C1549-09 and ASTM E1980-11

Report of Testing Accoya® Wood for compliance with the applicable requirements of the following criteria: ASTM C1371-04a (reapproved 2010) Standard Test Method for Determination of Emittance of Material Near Room Temperature Using Portable Emissometers, ASTM C1549-09 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperatures Using a Portable Solar Reflectometer. ASTM E1980-11 Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

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2 Introduction

Intertek has conducted testing for Accsys Technologies on Accoya® Wood to calculate the Solar Reflectance Index (SRI) at standard conditions. Testing was conducted in accordance with ASTM C1371-04a (reapproved 2010) Standard Test Method for Determination of Emittance of Material Near Room Temperature Using Portable Emissometers, ASTM C1549-09 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperatures Using a Portable Solar Reflectometer; and ASTM E1980-11 Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces. This evaluation began May 15, 2014 and was completed May 15, 2014.

3 Test Samples

3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on May 9, 2014 in good condition.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Accoya® Wood
Accoya is a chemically modified wood based upon acetylated wood technology. It is produced through a process that has brought together a long-established, extensively proven wood modification technique and leading-edge patented technology – acetylation to create a high performance wood, ideal for outdoor use and challenging applications. Accoya® has properties that match or exceed those of the best tropical hardwoods and treated woods, yet is manufactured using wood from sustainable sources

This is the Initial Solar Reflectance (SR)

4 Testing and Evaluation Methods

4.1. TEST STANDARDS

ASTM C1371-04a (reapproved 2010) Standard Test Method for Determination of Emittance of Material Near Room Temperature Using Portable Emissometers was used to determine the thermal emissivity and ASTM C1549-09 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperatures Using a Portable Solar Reflectometer.

Using the solar reflectance and thermal emissivity of the specimen surface, the SRI is calculated on three convective coefficients of 5, 12, 30 $W \cdot m^{-2} \cdot K^{-1}$, corresponding to low-, medium-, and high-wind conditions, respectively.

4.1.1. Deviation from Standard Method

No deviations to the test standards

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The room temperature was 25.0 ^{o}C with a Relative Humidity of 32%

ASTM C1371-04a (Reapproved 2010) Results

Sample	Trial 1	Trial 2	Trial 3	Average
1	0.69	0.72	0.70	0.70
2	0.67	0.65	0.64	0.65
3	0.68	0.73	0.75	0.72
			Total Average	0.69

ASTM C1549-09 Results:

Sample	Trial 1	Trial 2	Trial 3	Average
1	0.694	0.714	0.690	0.699
2	0.720	0.719	0.718	0.719
3	0.687	0.680	0.682	0.683
			Total Average	0.700

5.2. EXAMINATION OF RESULTS

Reported is the solar reflectance and thermal emittance of the test surface and the calculated SRI and the SRI calculated for three convective coefficients of 5, 12, 30 $W{\cdot}m^{-2}{\cdot}K^{-1}$, corresponding to low-, medium-, and high-wind conditions, respectively.

ASTM E1980-11 Solar Reflectance Index (SRI) Results

Convective Coefficient	SRI
Low	**77**
Medium	**81**
High	**83**

6 Conclusion

Intertek has conducted testing for Accsys Technologies on Accoya® Wood to calculate the Solar Reflectance Index (SRI) at standard conditions. Testing was conducted in accordance with ASTM C1371-04a (reapproved 2010) Standard Test Method for Determination of Emittance of Material Near Room Temperature Using Portable Emissometers, ASTM C1549-09 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperatures Using a Portable Solar Reflectometer; ASTM E1980-11 Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

The SRI using the medium convective coefficient for Accoya® Wood is 81.

There is no pass fail criteria specified.

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.

INTERTEK

Reported by: _____
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Reviewed by:
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REVISION SUMMARY

DATE	SUMMARY
May 15, 2014	Original Report