ASTM D1621, Testing Compressive Properties of:
5/4 x 6 Deck Board (Sold Under Any of the Following Trade Names:
ChoiceDek®, MoistureShield®, or LifeCycle®)

Prepared for:
Advanced Environmental Recycling Technologies, Inc.
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Springdale, Arkansas 72764

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Test Report: AER111907-14
Issued: December 18, 2007

Prepared By:
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Director of Testing

Reviewed By:
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1. INTRODUCTION
Advanced Environmental Recycling Technologies, Inc. (AERT) retained NTA Testing Laboratories, Inc. (NTA) to assess the compressive properties of 5/4 x 6 scalloped deck boards in accordance with ASTM D1621. All tests were conducted at the NTA Testing Facility located in Nappanee, Indiana.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen size (l x w)</td>
<td>2-in. x Product Width (5.4-in.)</td>
</tr>
<tr>
<td>Loading Area</td>
<td>Specimen Area Fully Loaded</td>
</tr>
</tbody>
</table>

Table 1: Test Parameters

2. TEST PROGRAM
2.1. DESCRIPTION OF TEST SPECIMENS
Five similar test specimens were cut from the sample material provided by the client. A specimen description is provided in table 2, below, and a typical profile of this material is provided in Figure 1 of the Appendix.

Representative material was sampled by PFS personnel on November 27, 2007 at the client’s manufacturing facility located in Springdale, Arkansas.

<table>
<thead>
<tr>
<th>Decking</th>
<th>Size</th>
<th>5/4 x 6 Deck Boards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trade Names Sold Under</td>
<td>ChoiceDek® / MoistureShield® / LifeCycle®</td>
</tr>
<tr>
<td></td>
<td>Composition</td>
<td>45-50% Polyethylene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50-55% Wood Fiber</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0-5% Pigment Additive</td>
</tr>
</tbody>
</table>

Table 2: Specimen Description

2.2. TEST PROCEDURE
The test procedure is in accordance with ASTM D1621. Accordingly, each specimen is placed onto the lower platen and the upper platen applies the compressive load through the use of the testing machine. Each platen has a contact area which is larger than the surface area of the specimen, and the upper platen contains a spherical seating mechanism in order to compensate for any non-parallelism inherent in the specimen or test setup. The specimen is centered on the platen and is loaded at a specified rate until a yield point is reached or until the specimen has been compressed by 13% of its original thickness, at which point the test is stopped. A typical test setup may be seen in Figure 2.
3. TEST RESULTS

A total of five specimens were tested using the procedure outlined herein. The compressive strength, compressive modulus, and deflection at maximum load for each specimen are presented in Table 3, below. More detailed results may be seen in the Appendix.

It must be noted that the data provided herein applies only to the samples tested and may not be extrapolated beyond these samples to a larger population. Also, the full profile of these scalloped deck board specimens was tested; ASTM D1621 does not specifically address irregular shaped specimens.

<table>
<thead>
<tr>
<th>AERT Parent Specimen Number</th>
<th>NTA Specimen Number</th>
<th>Compressive Strength (psi)</th>
<th>Compressive Modulus (psi)</th>
<th>Deformation at Maximum Load (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>14219</td>
<td>1052</td>
<td>20567</td>
<td>0.1630</td>
</tr>
<tr>
<td>2-3</td>
<td>14220</td>
<td>944</td>
<td>23629</td>
<td>0.1627</td>
</tr>
<tr>
<td>3-1</td>
<td>14221</td>
<td>982</td>
<td>20768</td>
<td>0.1632</td>
</tr>
<tr>
<td>4-4</td>
<td>14222</td>
<td>876</td>
<td>21158</td>
<td>0.1625</td>
</tr>
<tr>
<td>5-1</td>
<td>14223</td>
<td>956</td>
<td>23509</td>
<td>0.1630</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>962</strong></td>
<td><strong>21926</strong></td>
<td></td>
<td><strong>0.1629</strong></td>
</tr>
</tbody>
</table>

REPORT PREPARED BY: 
Dale Arter
Director of Testing

REPORT REVIEWED BY: 
Douglas Berger, P.E.
Test Engineer
REFERENCES

APPENDIX

Figure 1: Specimen Construction

Compressive Load Applied through Testing Machine

Figure 2: Test Setup
APPENDIX

ASTM D1621, Standard Test Method for Compressive Properties of Rigid Cellular Plastics

Test Datasheet

Client: Advanced Environmental Recycling Technologies Inc.
Job Number: AER111907-14
Test Location: NTA Testing Laboratories, Inc.
Nappanee, Indiana

General:
Date Received: 12/3/2007
Construction Date: 12/7/2007
Test Date: 12/13/2007

Ambient Conditions:
Ambient Temp.: 73.7 deg. F
Ambient R.H.: 48.3% RH
Sensor Asset No.: 00586

Apparatus:
Measurement Device: 00643
Elapsed Time: 00000
Test Frame: 00140
Upper Platen: 00693
Lower Platen: 00132

Product Description:
Manufacturer: Advanced Environmental Recycling Technologies Inc.
Trade Name/Designation: MoistureShield / ChoiceDek / LifeCycle Decking
Material Description: Composite Decking, 1.25-in. thick

Test Data:

<table>
<thead>
<tr>
<th>Spec. No.</th>
<th>Average Width (in.)</th>
<th>Average Length (in.)</th>
<th>Average Thickness (in.)</th>
<th>Load at 10% Deformation (lbs)</th>
<th>10% Deformation (in.)</th>
<th>Compressive Strength (psi)</th>
<th>Compressive Modulus (psi)</th>
<th>Maximum Load at Max Load (lbs)</th>
<th>Deformation (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14219</td>
<td>5.405</td>
<td>2.039</td>
<td>1.186</td>
<td>11589</td>
<td>0.1421</td>
<td>1052</td>
<td>20567</td>
<td>15034</td>
<td>0.1630</td>
</tr>
<tr>
<td>14220</td>
<td>5.419</td>
<td>2.074</td>
<td>1.192</td>
<td>10605</td>
<td>0.1192</td>
<td>944</td>
<td>23629</td>
<td>17315</td>
<td>0.1627</td>
</tr>
<tr>
<td>14221</td>
<td>5.398</td>
<td>2.031</td>
<td>1.181</td>
<td>10766</td>
<td>0.1460</td>
<td>982</td>
<td>20768</td>
<td>16934</td>
<td>0.1632</td>
</tr>
<tr>
<td>14222</td>
<td>5.424</td>
<td>2.055</td>
<td>1.189</td>
<td>9765</td>
<td>0.1537</td>
<td>876</td>
<td>21158</td>
<td>17707</td>
<td>0.1625</td>
</tr>
<tr>
<td>14223</td>
<td>5.414</td>
<td>2.053</td>
<td>1.185</td>
<td>10263</td>
<td>0.1533</td>
<td>956</td>
<td>23509</td>
<td>17520</td>
<td>0.1630</td>
</tr>
</tbody>
</table>

Average: 10670 0.1429 962 21926 16902 0.1629
Standard Deviation: 648 0.0141 64 1515 1083 0.0003

Load vs. Deflection

Figure A1: Load vs. Deflection Plot for Specimen #14222

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Created By: Brad Wear
Revised & Approved By: Dale Arter

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