Technical Service Report

Prepared for: Marcy Tyler

Customer: Tremco Sealants
23150 Commerce Park Drive
Beachwood, OH 44121

Testing Laboratory: Momentum Technologies, inc.
1507 Boettler Rd.
Uniontown, OH 44685

Date: September 27, 2010

Samples: 1 – 5 gal pail of air barrier material labeled as ExoAir 230 Batch# 556695 produced in January 2010.

MTi Sample ID: MTi-100574 received by Momentum Technologies, inc. on July 1, 2010.

Project Number: AX08J0A
1.0 Abstract

1.1 Analysis of one 5 gal pail of air barrier material in accordance with ASTM E 2178 for ABAA approval.

2.0 Laboratory Conditions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Barometric Pressure, kPa</td>
<td>100.5</td>
</tr>
<tr>
<td>Air Flow Temperature, °C</td>
<td>24.4</td>
</tr>
<tr>
<td>Density of Air Through Flow Meter, kg/m^3</td>
<td>1.178</td>
</tr>
</tbody>
</table>

**Conclusion:** These laboratory conditions are used to convert all flow readings to STP in accordance with ASTM E 283 Section 12.1.

3.0 Calibration

The testing apparatus conforms to the calibration methods specified in ASTM E 2178 Section 8.1.2 and ASTM E 283 Section 9.

4.0 Preparation of Specimens

Five specimens were laid out at 40 wet mils 1.2m x 1.2m then once cured they were trimmed to 1m x 1m per ASTM E 2178 section 7.2.4, then attached as a free film to a wooden frame for support with a 1m x 1m opening. The testing apparatus was then attached to the wooden frame and tested per ASTM E 2178 section 8. **These specimens were not applied to any substrate; they were tested as a free film.**
### 5.0 Results in Tabular Form

<table>
<thead>
<tr>
<th></th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>150</th>
<th>300</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Std. Dev.</strong></td>
<td>0.00102</td>
<td>0.00131</td>
<td>0.00170</td>
<td>0.00186</td>
<td>0.00255</td>
<td>0.00418</td>
<td>0.00777</td>
</tr>
<tr>
<td><strong>Average Flow, L/(s*m²)</strong></td>
<td>0.00482</td>
<td>0.00531</td>
<td>0.00805</td>
<td>0.00987</td>
<td>0.01290</td>
<td>0.02211</td>
<td>0.03379</td>
</tr>
<tr>
<td><strong>Average Flow, cfm/ft²</strong></td>
<td>0.00095</td>
<td>0.00105</td>
<td>0.00158</td>
<td>0.00194</td>
<td>0.00254</td>
<td>0.00435</td>
<td>0.00665</td>
</tr>
<tr>
<td><strong>Upper Limit @ 95% Confidence, L/(s*m²)</strong></td>
<td>0.00608</td>
<td>0.00694</td>
<td>0.01017</td>
<td>0.01218</td>
<td>0.01607</td>
<td>0.02731</td>
<td>0.04345</td>
</tr>
<tr>
<td><strong>Lower Limit @ 95% Confidence, L/(s*m²)</strong></td>
<td>0.00355</td>
<td>0.00368</td>
<td>0.00593</td>
<td>0.00755</td>
<td>0.00973</td>
<td>0.01691</td>
<td>0.02412</td>
</tr>
<tr>
<td><strong>Requirement, L/(s*m²), (cfm/ft²), Max</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>0.02 (0.004)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>Pass</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Material Permeance, P</strong></td>
<td>0.00019</td>
<td>0.00011</td>
<td>0.00011</td>
<td>0.00010</td>
<td>0.00009</td>
<td>0.00007</td>
<td>0.00007</td>
</tr>
</tbody>
</table>

*P = Q/(ΔP*A)*, Where Q = Flow Rate, ΔP = Pressure Differential, A = Area

**Note:** The customer requested to also test at 500 Pa.

**Conclusion:** ExoAir 230 meets the requirements stated in section 4.1.5.2 of ABAA Process for Approval of Air Barrier Materials, Components and Assemblies.
6.0 Pressure vs. Air Flow in Graphic Form

**Pressure vs. Air Flow**

\[ y = 15466x - 45.863 \]

\[ R^2 = 0.9942 \]

**Conclusion:** The results above indicate the flow through the specimens with a unit of measurement of \( \text{L/(s*m²)} \) in accordance with ASTM E 2178 Section 8. The permeance is calculated in accordance with ASTM E 2178 Section 9.3. The log/log graph indicates an excellent correlation between flow and air pressure differential with an \( r^2 \) value greater than 0.99, conforming with ASTM E 2178 Section 10.1.3 and 10.1.3.1.
If you should have any questions or require any additional information, please call us at 330/896-5900.

Tested by,

Rodney G. Armstrong
Laboratory Engineer

Verified by,

Cindy L. Campbell
Laboratory Manager

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