Adhesion and Compatibility
Wall System Components Test Summary

Scope Statement
CavityComplete® Wall Systems include layers of components either in intimate contact or adhered. For the long-term performance of CavityComplete® Wall Systems it is necessary to test adhesion and compatibility between the adjacent layers to insure that the integrity of the layers and sealants is preserved.

ASTM C794 – 10 (Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants) is especially useful for quality measurements to evaluate adhesion of a given sealant to a variety of substrates. This test provides a valuable measurement of the ability of the cured sealant to maintain a bond to the substrate under severe peel conditions and covers a laboratory procedure for determining the strength and characteristics of the peel properties of a cured-in-place elastomeric joint sealant, single — or multi-component, for use in building construction.

AAMA (American Architectural Manufacturers Association) 713-08 (Voluntary Test Method to Determine Chemical Compatibility of Sealants and Self-Adhered Flexible Flashings) provides a means of evaluating the chemical compatibility of layers in contact in the building envelope. This test is intended for materials which are generally installed as concealed flashings behind claddings on exterior walls. The test method describes a laboratory screening procedure for evaluating the chemical compatibility of materials intended for use in construction and fenestration installations that are property installed.

The adjacent layers adhered to or in contact with each other in CavityComplete® Wall Systems were identified and tested according to one or both of ASTM C794 or AAMA 713-08, as appropriate. See Table 1 for the products tested. Table 2 shows the results of chemical compatibility testing and Table 3 the results of adhesion testing.

### Table 1

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tremco® ExoAir® 230</td>
<td>A fluid-applied, synthetic, vapor-permeable air barrier designed for use in commercial construction application</td>
</tr>
<tr>
<td>Tremco® ExoAir® TWF</td>
<td>ExoAir® TWF (Thru-Wall Flashing) is a 40-mil (1.0 mm) composite sheet designed for use as a thru-wall flashing</td>
</tr>
<tr>
<td>Tremco® Dymonic® 100</td>
<td>Polyurethane sealant</td>
</tr>
<tr>
<td>Mortar Net Solutions™ CompleteFlash™ corner</td>
<td>Injection molded, thermoplastic vinyl corner boot for use in thru-wall flashing systems</td>
</tr>
<tr>
<td>Mortar Net Solutions™ MPE-1</td>
<td>Modified polyether, general purpose sealant</td>
</tr>
</tbody>
</table>

### Chemical Compatibility Testing (AAMA 713-08)

**MortarNet® MPE-1 and ExoAir® TWF**

MortarNet® MPE-1 is used to adhere and seal ExoAir® TWF. An MPE-1 patty 40mm x 130 mm x 6 mm was centered on the face of an anodized aluminum surface approximately 75 mm x 150 mm x 1 mm. A 100 mm x 150 mm strip of the flashing was prepared and wrapped over the top 75 mm end of the aluminum within 30 minutes of the sealant application. Samples were then placed at a 60° to 70° angle into the oven specified for exposure.

**ExoAir® 230 and CompleteFlash™**

CompleteFlash™ preformed flashing components are installed over the ExoAir® 230 weather barrier. ExoAir® 230 was allowed to dry for 24 hours on a 75 mm x 150 mm x 1 mm piece of anodized aluminum. The CompleteFlash™ Corner was then clipped to the ExoAir® 230 and placed in the oven specified for exposure.
**ExoAir® TWF and CompleteFlash™ Corner**

A 100 mm x 150 mm strip of the flashing was prepared and placed over the CompleteFlash™ Corner and placed in the oven specified for exposure.

**Description of Trials and Results**

Method: AAMA 713-08 (Voluntary Test Method to Determine Chemical Compatibility of Sealants and Self-Adhered Flexible Flashings)

Conducted By: Tremco, 3735 Green Road, Beachwood, OH 44121

Dates: January to May 2014

Summary: Samples were placed in the 50°C (122°F) and 65°C (149°F) ovens and evaluated after 7 days and then 14 days. The two components are considered to PASS as long as there is not any observed liquification, no slumping, and no visible degradation of the tested components such as crazing, cracking, or softening.

Report No: 14076 (for complete test reports, please contact Tremco Technical Services at 866-209-2404)

**Table 2: Chemical Compatibility Testing (AAMA 713-08)**

<table>
<thead>
<tr>
<th>Trial</th>
<th>Material Interface</th>
<th>Exposure (°C)</th>
<th>Observation</th>
<th>Slump (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MPE-1 / ExoAir® 230</td>
<td>50 (Level 1)</td>
<td>No slumping or discoloration</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65 (Level 2)</td>
<td>No slumping or discoloration</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>CompleteFlash™ corner / ExoAir® 230</td>
<td>50 (Level 1)</td>
<td>No slumping or discoloration</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65 (Level 2)</td>
<td>No slumping or discoloration</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>CompleteFlash™ corner / ExoAir® TWF</td>
<td>50 (Level 1)</td>
<td>No slumping or discoloration</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65 (Level 2)</td>
<td>No slumping or discoloration</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Adhesion Testing (ASTM C794)**

**Description of Samples**

- **MPE-1 to ExoAir® 230**
  MPE-1 is used to seal TotalFlash® to the ExoAir® 230 air/weather barrier Sealant, approximately 25 mm x 76 mm x 1.6 mm with wire mesh embedded was applied over the ExoAir® 230.

- **MPE-1 to CompleteFlash™ Corner**
  MPE-1 is used to adhere/seal CompleteFlash™ corners to TotalFlash® sealant, approximately 25 mm x 76 mm x 1.6 mm with wire mesh embedded was applied over the CompleteFlash™ Corner.

- **MPE-1 to ExoAir® TWF**
  MPE-1 is used to adhere/seal TotalFlash® which is fabricated with Tremco® ExoAir® TWF strips of the ExoAir® TWF, 25mm x 76 mm, were placed over MPE-1 (wet) and tooled to ensure contact of the flashing and sealant.
Description of Trials and Results
Conducted By: Tremco, 3735 Green Road, Beachwood, OH 44121
Dates: January to May 2014
Summary: Samples were evaluated after allowing the sealant to cure for 14 days at room temperature. Samples were placed in the testing machine allowing the MortarNet® MPE-1 and ExoAir® TWF, to be pulled back at 180°. ASTM C 794 is a test method which is part of the ASTM C 920 Sealant Specification. In the ASTM C 920 specification, it is required to have a minimum 5 pli and 80% cohesive failure (CF) when testing according to ASTM C 794.
Report No: 14075 (for complete test reports, please contact Tremco Technical Services at 866-209-2404)

Summary of Results
The following products that are used in the water management for CavityComplete® Wall Systems have been approved, based on the testing contained in this document.

- Mortar Net Solutions™ MPE-1 can be used when applied to the dry surface of the ExoAir® 230
- Mortar Net Solutions™ MPE-1 can be used when applied to the CompleteFlash™ Corner
- Tremco® ExoAir® TWF can be used when applied to the MortarNet® MPE-1
- Tremco® ExoAir® TWF is compatible with the Mortar Net Solutions™ MPE-1 sealant at Level 1 and Level 2 exposures
- The dry surface of the Tremco® ExoAir® 230 is compatible with the Mortar Net Solutions™ CompleteFlash™ Corner at Level 1 and Level 2 exposures
- Tremco® ExoAir® TWF is compatible with the Mortar Net Solutions™ CompleteFlash™ Corner at Level 1 and Level 2 exposures
- In order to fill an errant hole caused by a misplaced and/or removed Pos-I-Tie® or screw, fill the void with Dymonic® 100, taking care to allow the Dymonic® 100 to make contact with the ExoAir® 230 below the insulation and fill the hole fully and flush to the outer surface of the insulation.

Table 3: Adhesion Testing (ASTM C794)

<table>
<thead>
<tr>
<th>Trial</th>
<th>Material Interface</th>
<th>Adhesion (lb/in, pli)</th>
<th>Failure Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CompleteFlash™ corner / ExoAir® 230</td>
<td>8.6</td>
<td>100% cohesive</td>
</tr>
<tr>
<td>2</td>
<td>CompleteFlash™ corner / MPE-1</td>
<td>27</td>
<td>100% cohesive</td>
</tr>
<tr>
<td>3</td>
<td>MPE-1 (wet) / ExoAir® TWF</td>
<td>5</td>
<td>100% cohesive</td>
</tr>
</tbody>
</table>

The CavityComplete® Wall Systems exclude the masonry veneer, wood and steel studs, concrete masonry units, the exterior sheathing, and interior and exterior gypsum board. A detailed list of the components is available at www.CavityComplete.com.