TECHNICAL BULLETIN

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Air and Water Infiltration

On April 3, 2009, McElroy Metal, Inc. tested its 238T Panel for air leakage and water penetration.

TEST METHODS:
Air Leakage: ASTM E1680-95, “Rate of Air Leakage Through Exterior Metal Roof Panel Systems”

Water Penetration: ASTM E1646-95, “Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference”

TEST SPECIMEN:
McElroy Metal, Inc. 24 Ga. 16 in. wide 238T Roof Panels were attached to purlins with 6” fixed panel clips using (2) #12-14 x 1 1/4” hex head self drilling fasteners per clip. Factory applied sealant was used in the seam cap. The seam cap was seamed onto the panel ribs.

TEST RESULTS:
*Results are extrapolated to different panel widths.

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Static Pressure Differential (psf)</th>
<th>Air Infiltration Rate (cfm/lf)</th>
<th>Air Infiltration Rate (cfm/sf)</th>
<th>Static Pressure Differential (psf)</th>
<th>Rate (gal/hr/sf)</th>
<th>Test Duration (min)</th>
<th>Water Infiltration</th>
</tr>
</thead>
<tbody>
<tr>
<td>238T / 138T 16&quot; 24** Ga.</td>
<td>+/- 1.57</td>
<td>0.0002</td>
<td>0.0001</td>
<td>20</td>
<td>5</td>
<td>15</td>
<td>None</td>
</tr>
<tr>
<td>238T / 138T 16&quot; 24** Ga.</td>
<td>+/- 4.0</td>
<td>0.0022</td>
<td>0.0017</td>
<td>238T / 138T 16&quot; 24** Ga.</td>
<td>+/- 6.24</td>
<td>0.0030</td>
<td>0.0022</td>
</tr>
<tr>
<td>238T / 138T 18&quot; 24** Ga.</td>
<td>+/- 1.57</td>
<td>0.0002</td>
<td>0.0001</td>
<td>20</td>
<td>5</td>
<td>15</td>
<td>None</td>
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<td>0.0022</td>
<td>0.0013</td>
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<td>+/- 6.24</td>
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<td>238T 24&quot; 24** Ga.</td>
<td>+/- 6.24</td>
<td>0.0030</td>
<td>0.0015</td>
</tr>
</tbody>
</table>


**Test results are valid for heavier gauges or thicknesses.
**Test results are valid for 138T panels based on identical seam configuration.