CORROSION RESISTANCE OF HEXGUARD COATING FOR PRODELIN FASTENER HARDWARE

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REVISION 00

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1.0 PURPOSE
Determine the corrosion resistance of a new protective coating system for use on all Prodelin non-stainless fastener hardware.

2.0 CONCLUSION
Internal and external testing indicates the new protective coating system will provide the following corrosion resistance performance:
• 750+ hours of salt spray exposure testing per ASTM B-117 with no red rust formation.¹

3.0 TEST DATA

SALT SPRAY
Four (4) different types of coated fastener hardware (threaded fasteners, washers, lock washers, and nuts) were taken to an independent test laboratory for salt spray exposure testing.² All types were inspected and photographed at intervals during the test. (See attached photos) After 1000 hours salt spray exposure all the test samples were removed. No red rust was observed on any hardware after completion of 750 hours salt spray exposure, with exception to one of the four (4) washer samples upon which red rust was observed at 216 hours. At 840 hours salt spray exposure red rust spotting was noted on the threaded region of the threaded fasteners. No red rust was observed on any other parts. (Lab report and photos attached)

² Stork-Herron Test Laboratory, 1200 Westinghouse Blvd, Suite E, Charlotte, NC, 28273 (704)-588-1131
SALT SPRAY TESTING

Procedure

Five (5) samples were subjected to a continuous exposure to a 5% salt fog environment in a test chamber operated and maintained in accordance with ASTM B 117-97.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Elapsed Time</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1000 hours</td>
<td>Red rust was not detected on the significant surfaces. White Corrosion was exhibited after 432 hours.</td>
</tr>
<tr>
<td>2</td>
<td>1000 hours</td>
<td>Red rust was not detected on the significant surfaces. White Corrosion was exhibited after 600 hours.</td>
</tr>
<tr>
<td>3</td>
<td>1000 hours</td>
<td>Red rust was detected in the threaded region of the bolts after 840 hours. Red rust was not detected on the nuts. White Corrosion was detected after 336 hours on the bolts and after 432 hours on the nuts.</td>
</tr>
<tr>
<td>4</td>
<td>1000 hours</td>
<td>One Red rust was detected on one of the washers after 216 hours. White Corrosion was exhibited after 216 hours.</td>
</tr>
</tbody>
</table>

Brad Meacham, Metallurgical Technician
96 HOURS EXPOSURE

216 HOURS EXPOSURE

336 HOURS EXPOSURE
840 HOURS EXPOSURE

1000 HOURS EXPOSURE
96 HOURS EXPOSURE

216 HOURS EXPOSURE
336 HOURS EXPOSURE

432 HOURS EXPOSURE
600 HOURS EXPOSURE

840 HOURS EXPOSURE (BOLTS)

840 HOURS (NUTS)
96 HOURS EXPOSURE

216 HOURS EXPOSURE

336 HOURS EXPOSURE

432 HOURS EXPOSURE
600 HOURS EXPOSURE

720 HOURS EXPOSURE

1000 HOURS EXPOSURE

96 HOURS EXPOSURE