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Brake Pad Housings

To: Customer

From: Cortec Corporation Laboratories
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Project #: 15-109-1125.bis

Results reported by:

A handwritten signature in blue ink that reads 'Casey Heurung'.

Casey Heurung
Technical Service Engineer

Approved by:

A handwritten signature in black ink that reads 'Robert T. Kean'.

Robert T. Kean
Laboratory Director



Background:

Customer is considering changing their current packaging system to one with a stronger VpCI protection. Their current packaging method, Armor paper in a polyethylene bag, was tested in ASTM 1735 conditions against a VpCI-126 bag with a BioPad.

Sample Received:

Samples came in good conditions with no corrosion evident on the metal surface. A fresh bag and paper were also received so the test could be performed with new materials.

Method:

Modified ASTM 1735 (98% RH at 100 °F)

Materials:

- 1) VpCI-126
- 2) BioPad
- 3) Q-Fog Humidity Chamber
- 4) Zip-Ties

Procedure:

A modified ASTM 1735 was followed for this test. The parts were placed in bags with emitters rather than hanging in the chamber. The test was run for a total of 360 hours, at which point the test was stopped due to the large amount of rust visible from the bottom of the Armor-protected bag and a slight brownish tint to the water in the Cortec-protected bag which was expected to be the first signs of corrosion.

Results:

System	Rust First Noticed	Run Time
PE + Armor Paper	5/21/15 at 9:00am	47 Hours
VpCI-126 + BioPad	N/A	360 Hours
Chamber Start Time: 5/19/15 at 10:00am		
Chamber Stop Time: 6/3/15 at 10:00am		

Table 1: The run times of the test.

Photos:



Picture 1: An overview of all parts from both bags after 360 hours in the humidity chamber. The top row is from the Armor-protected bag while the bottom row is from the Cortec-protected bag.



Picture 2: A closer image of the Armor-protected parts after 360 hours in the chamber. These were the parts in the bottom of the bag.

Interpretations:

The Cortec-protected parts clearly show a lower level of corrosion than the Armor-protected parts. The Armor-protected parts primarily corroded on the bottom of the bag where the polyethylene was in direct contact with the metal surface. This type of corrosion was not seen in the Cortec system because VpCI-126 has contact-phase protection to discourage this type of corrosion.

The test was ceased because it appeared the water of the VpCI-126 bag was discolored in a way indicating corrosion. In fact, upon further examination of the parts from both bags the Cortec-protected parts possessed no corrosion.