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Evaluating the Effectiveness of VpCI-126

To: Customer

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Background: Customer wanted testing performed to compare the difference in protection between desiccant and VpCI-126 bags. To evaluate the protection characteristics three bags full of springs were sent to Cortec’s laboratory for accelerated weathering in humidity chambers.

Sample Received: Three bags were received in good condition. Each bag was heat sealed and free of tears or holes.

1. Control Bag: Springs in a polyethylene bag
2. Desiccant Bag: Springs in a polyethylene bag with three “Sorb-it Can” desiccant devices
3. Cortec Bag: Springs in a VpCI-126 bag

Method: ASTM D1735 Conditions (water fog chamber at 100 °F)
Large Environmental Cabinet (120 +/-5F, >95% humidity)*

*Cortec Laboratories, Inc. is not ISO/IEC 17025 accredited for the test(s) marked.

Materials:

1. CCX Cyclical Corrosion Chamber (ASTM D1735 Conditions)
2. Large Environmental Cabinet

Procedure: The three bags were tested as received. All three bags were placed into ASTM D1735 conditions and visually inspected periodically for corrosion. After one month elapsed with no visible signs of corrosion, the bags were moved to more aggressive test conditions. These conditions were held for another two months before the bags were removed from testing. Springs were visually inspected and photographed.

Results:

	Start	Stop	Duration
ASTM D1735	10/7/15 at 4:00pm	11/7/15 at 10:00am	738 hours
Large Env. Cabinet	11/7/15 at 10:00am	1/11/16 at 12:00pm	1562 hours

Table 1: The times and durations of the different test methods utilized.

	Protection Method	Observations
1	4-mil PE	Rust was first noticed on 10/22/15 (bottom of bag) Majority of rust was found on top at the end of testing
2	4-mil PE + Desiccant	Moisture on the bag obscured the corrosion until the end of the test. Rust was only seen on the top of the springs.
3	VpCI-126	No corrosion

Table 2: The bag types and corresponding observations from testing.

Results relate only to the items tested

Photos:



Photo 1: The control bag after 2300 hours of humidity testing



Photo 2: The desiccant bag after 2300 hours of humidity testing. Desiccant was located on the bottom of the bag.



Photo 3: The VpCI-126 bag after 2300 hours of humidity testing



Photo 4: The VpCI-126-protected springs after 2300 hours of humidity testing. Springs were removed from the bag to inspect for any signs of corrosion which may not have been apparent from initial inspection.

Interpretations:

The results of this test show that VpCI-126 provides superior protection over the amount of desiccant used in this test. Where desiccant eventually becomes saturated with moisture, the active protection within the VpCI-126 bag will maintain protection even in the presence of moisture.