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## *Evaluating Corrosion Protection Systems for Rotor Sets from Customer*

**Purpose:** To compare current packaging methods used by customer to similar Cortec methods.

**Method:** ASTM D-1748 humidity cabinet (120°F, ~95% relative humidity)

**Materials:** 6 ductile iron rotor sets, provided by customer  
 8 gray iron rotor covers, provided by customer  
 Desiccare Inc. desiccant pouches  
 VpCI-126 Blue film  
 VpCI-440

**Procedure:** The following procedure was used:

- 1) All parts were cleaned with methanol prior to testing.
  - a. 4 rotor sets and 4 covers were used for testing.
- 2) After cleaning, the rotor sets and covers were packaged as follows:
  - a. Control (no protection)
  - b. Current VCI film + desiccant
  - c. VpCI-126 Blue film
  - d. VpCI-126 Blue film + VpCI-440
    - i. Parts were dipped in 5% VpCI-440 solution and allowed to air dry overnight prior to packaging.
- 3) After packaging, the parts were allowed to condition overnight.
- 4) All parts were then placed in ASTM D-1748 humidity cabinet.
- 5) All parts were visually inspected periodically.
- 6) After 600 hours, all parts were removed from ASTM D-1748 humidity cabinet.
- 7) All parts were visually inspected.

**Results:** The following results were found:

Part/Packaging	Time to Failure (Hours)
Rotor set/Control	<8
Rotor set/Current packaging	144
Rotor set/VpCI-126	432
Rotor set/VpCI-126 + VpCI-440	DNF*
Cover/Control	<8
Cover/Current Packaging	72
Cover/VpCI-126	264
Cover/VpCI-126 + VpCI-440	360

DNF – Did not fail during 600 hours of humidity testing.



**Conclusion:** VpCI products provided greatly improved corrosion protection for components used by customer. VpCI-126 film provided greater than three times the corrosion protection on the rotor set and rotor cover. VpCI-440, used at 5% concentration, also increased corrosion protection significantly.

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