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Evaluating Corrosion Protection Systems

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Background: Customer currently uses LPS2 as a rust preventive on spare machined metal bars. Cortec will evaluate the effectiveness of this method and compare it to VpCI packaging options.

Sample Received: Four machined bar samples, packed in individual plastic sleeves

Method: ASTM D-1748 (120°F, ~99% relative humidity), modified

Materials: Four machined bar samples
Four plastic packing sleeves
VpCI-126 Blue film, 4-mil (Lot 110220)
VpCI-131 foam
Laboratory grade methanol

Procedure: The following procedure was used:

- 1) Four machined bar samples were sent by customer; all were packed in individually plastic sleeves.
 - a. One of the bars was treated with LPS2, and the plastic sleeve was labeled as such.
 - b. This bar was visually inspected, repacked tested as received.
- 2) The other three bars were cleaned with methanol prior to testing.
- 3) After cleaning, bars were prepared as follows:
 - a. No preparation (control).
 - b. VpCI-131 foam pad added to plastic sleeve.
 - c. Bar wrapped in VpCI-126 Blue film and repacked.
- 4) All bars were allowed to sit in lab conditions overnight.
- 5) All bars were then placed in ASTM D-1748 humidity cabinet.
- 6) Bars were visually inspected periodically.
- 7) After 600 hours, bars were removed from ASTM D-1748 humidity cabinet.
- 8) Bars were unpacked, visually inspected, and photographed.

Results: The following results were found:

Protection Method	Time to Corrosion (Hours)
None (control)	120
LPS2	480
VpCI-131	432
VpCI-126	600

Photos:



Interpretations: Of the three rust preventive options tested, VpCI-126 proved to be the most successful. In addition to providing the best corrosion protection, VpCI-126 also provides a clean and dry alternative to LPS2.