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ISO AGS AMERICAN GLOBAL STANDARDS 17025 ACCREDITED

VpCI-368 Diluted to Match Fuch's Anticorit SV-7X

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ISO 9001 QUALITY SYSTEM REGISTERED
ENVIRONMENTAL ISO 14001 CERTIFIED SYSTEM REGISTERED

Background:
Our customer cleans and de-rusts pipes with a neutral pH chemical in a dip bath process. Once the pipes have been cleaned, they would like to use a solvent based coating that can be applied by dip bath. The entire process will take place in an outdoor environment in Tennessee, unsheltered from rain or precipitation, but dip tanks will be covered when not in use. Cortec Laboratories was asked to test a product comparable to Fuch's Anticorit SV-7X for protection. The product selected must be matched to a similar viscosity to the Anticorit as well.

Sample Received:
Fuch's Anticorit SV-7X – sample appeared to be in good condition, with no visible contamination

Method:
Viscosity, (CC-035)
ASTM D-1735, Water Fog
ASTM B-117, Salt Fog

Materials:
VpCI-368 D 3:1 lot#200119
SAE 1008 Carbon Steel Panels

Procedure:
Fuch's Anticorit was tested on a Brookfield viscometer and found to have a viscosity of 5.5 cSt. VpCI-368 D was diluted with mineral spirits and tested using the same settings until a viscosity of 7 cSt was achieved. The final dilution of this mixture was approximately 25% wt VpCI-368 in mineral spirits.

SAE 1008 carbon steel panels were rinsed with methanol for cleaning. Panels were then dipped in Fuch's Anticorti SV-7X or diluted VpCI-368 and allowed to dry overnight. Once dried, panels were then placed in the ASTM D-1748 chamber and inspected regularly for signs of corrosion.

Additional SAE 1008 carbon steel panels were rinsed with methanol for cleaning. Panels were then dipped in Fuch's Anticorti SV-7X or diluted VpCI-368 and allowed to dry overnight. Once dried, panels were then placed in the ASTM B-117 chamber and inspected regularly for signs of corrosion.

The wet film thickness on the panels treated with the diluted VpCI-368 and Fuch's Anticorit SV-7X was recorded to be 1.5 mils, which equates to a dry film thickness of < 0.5 mil.

Results:
VpCI-368 diluted provided better protection to the panels in ASTM D-1735 and ASTM B-117. No panels treated with the diluted VpCI-368 showed any signs of corrosion after 120.5 hours of testing in ASTM D-1735, while 2/3 panels treated with Anticorit SV-7X showed minor corrosion. Significant pooling was noted at the bottom of all panels prior to testing and can be seen in the figures below.

Both sets of panels failed ASTM B-117 conditions within 24 hours, showing moderate to heavy corrosion. Panels treated with the diluted VpCI-368 appeared to be in slightly better condition than panels treated with Anticorit SV-7X.

Full results and photos can be seen on the next page.

Table 1: ASTM D-1735 Results

Sample Name	Corrosion First Observed [hours]	Total Run Time [hours]	Notes
Fuch's Anticorit SV-7X	96	120.5	2/3 panels showed minor corrosion
VpCI-368 diluted	N/A	120.5	No corrosion observed
Test Start Time: 4/2/20 8:30 a.m.			
Test End Time: 4/7/20 9:00 a.m.			
Total Test Run Time: 120.5 hours			

Table 2: ASTM B-117 Results

Sample Name	Corrosion First Observed [hours]	Total Run Time [hours]	Notes
Fuch's Anticorit SV-7X	30.5	30.5	3/3 panels showed heavy corrosion
VpCI-368 diluted	30.5	30.5	3/3 panels showed moderate-heavy corrosion
Test Start Time: 4/2/20 8:30 a.m.			
Test End Time: 4/3/20 3:00 p.m.			
Total Test Run Time: 30.5 hours			

Photos:

Figure 1: Panels protected by VpCI-368, diluted to match Anticorit SV-7X, in ASTM D-1735 at 120.5 hours. Untreated panel on the left.

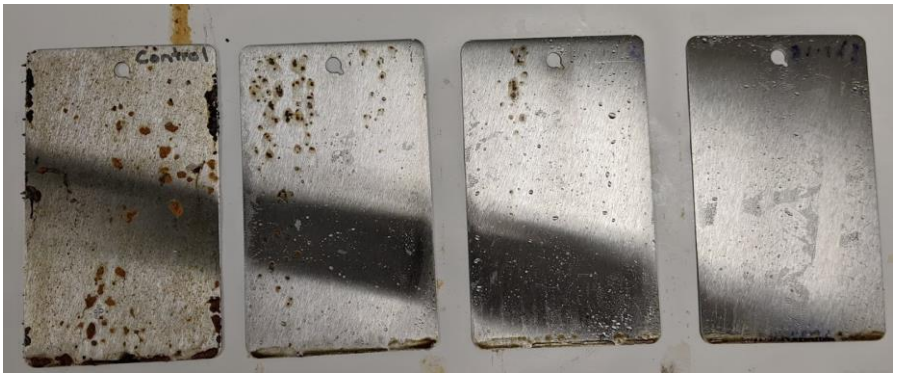

Figure 2: Panels protected by Anticorit SV-7X, in ASTM D-1735 at 120.5 hours. Untreated panel on the left. 2/3 panels showed signs of corrosion

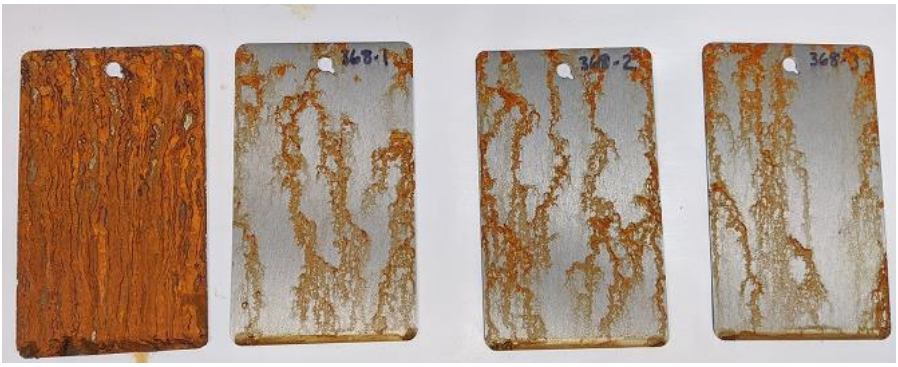

Figure 3: Panels treated by VpCI-368, diluted to match Anticorit SV-7X, in ASTM B-117 at 30.5 hours Untreated panel on the left.

Figure 4: Panels treated with Anticorit SV-7X in ASTM B-117 at 30.5 hours. Untreated panel on the left.

Interpretations:

Dilution of one part of VpCI-368 to three parts of mineral spirits matches the viscosity of Anticorit SV-7X. The failure of diluted VpCI-368 after 24 hours is due to the low dilution, far lower than typically recommended for this product.

This diluted VpCI-368 provided better corrosion protection than Fuch's Anticorit SV-7X. All panels that had been treated with the diluted VpCI-368 did not show any corrosion during 120.5 hours of testing while 2/3 panels treated with Anticorit SV-7X showed minor corrosion. Both the diluted VpCI-368 and Anticorit SV-7X showed moderate to heavy corrosion after 30.5 hours of testing in ASTM B-117 conditions. Panels that had been treated with diluted VpCI-368 appeared to be in slightly better condition.