



DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
RADM WILLIAM A. MOFFETT BUILDING
47123 BUSE ROAD, BLDG 2272
PATUXENT RIVER, MARYLAND 20670-1547

IN REPLY REFER TO

Ser 434200A/10.0024
13 May 2010

SurTec International, GmbH
Attn: Mr. Nabil Zaki
9 Skyline Drive
West Orange, NJ 07052

Dear Mr. Zaki:

This letter is to inform you that SurTec 650C – ChromitAL TCP and SurTec 650V – ChromitAL TCP have met the qualification requirements for specification MIL-DTL-81706B, Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys.

Listing on the Qualified Products List (QPL) will appear as indicated below. To ensure correct listing, please advise us within 14 days from the date of this letter of any discrepancy.

	Manufacturer's Designation	Test or Qualification Reference	Manufacturer's Name and Address
Type 2 A 1 C Type 2 B 1 C Type 2 A 1 B Type 2 B 1 B Type 2 A 1 A Type 2 B 1 A	SurTec 650C – ChromitAL TCP	This letter	SurTec International, GmbH 9 Skyline Drive West Orange, NJ 07052 <u>Plants:</u> CST-SurTec, Inc. 6801 Engle Road, Suite J Middleburg Hts, Ohio, 44130 SurTec Deutschland GmbH SurTec-Straße 2 64673 Zwingenberg GERMANY


	Manufacturer's Designation	Test or Qualification Reference	Manufacturer's Name and Address
Type 2 A 1 C Type 2 B 1 C Type 2 A 1 B Type 1 B 1 B Type 2 A 1 A Type 2 B 1 A	SurTec 650V -- ChromitAL TCP	This letter	SurTec International, GmbH 9 Skyline Drive West Orange, NJ 07052 <u>Plants:</u> CST-SurTec, Inc. 6801 Engle Road, Suite J Middleburg Hts, Ohio, 44130 SurTec Deutschland GmbH SurTec-Straße 2 64673 Zwingenberg GERMANY

The following statements are binding upon the manufacturer per the Defense Standardization Manual 4120.24-M:

- a. This listing does not guarantee acceptance of the product in any future purchase.
- b. This listing does not constitute a waiver of any requirements of the specification or of the provisions of any contract.
- c. Any use of such listing for publicity, advertising, or sales shall not state or imply that the product is the only one of that type so qualified, or that the Government in any way recommends or endorses the manufacturer's product. Violation is cause for removal of the product from the list by the Government activity concerned.
- d. This listing applies only to products produced in the plants specified in this letter of notification and is effective at 8:00 am local time as of the date of this letter. If extension of qualification to any of your other plants is desired, please request such extension through this office.
- e. This listing applies to amendments or revisions of the specification unless otherwise notified.
- f. This listing applies only to products identical to that qualified. There shall be no change in formulation or manufacturing procedure unless the material is re-examined for compliance with the requirements of the specification by the qualifying activity. Failure to notify the qualifying activity of a change in formulation is cause for removal from the QPL. The manufacturer is cautioned not to change type or grade of ingredients because of possible change in performance characteristics.
- g. To retain this listing, manufacturers must comply with retention of qualification requirements. Failure to comply will be sufficient cause for removal from the QPL.

For clarification or further information, please contact Ms. Amy Fowler at (301) 342-0986. Address written correspondence to: Naval Air Warfare Center Aircraft Division, Attn: Ms. Amy Fowler, Code 4.9.7.2, Building 2188, 48066 Shaw Road, Patuxent River, MD 20670-1906.

Sincerely,

A handwritten signature in black ink that reads "Kevin J. Kovalski". The signature is written in a cursive style with a large initial "K".

KEVIN J. KOVALESKI
Head, Industrial & Operational Chemical Branch

Copy to:

DSCR (FAEAA/Myers)

NAWCAD LAKEHURST (Code 4.9.1 B120-3)

NADEP CHERRY POINT NC (Code 4.3.4)

NADEP NORTH ISLAND CA (Code 4.3.4)

NADEP JACKSONVILLE FL (Code 4.3.4)

NAWCWD CHINALAKE CA (Code 4.3.4)

AFRL/MLS-OLR (S&KT)

LAB REPORT #LR10-008

Date: 13 May 2010

Title: Report on SurTec 650C – Chromital TCP and SurTec 650V – Chromital TCP for MIL-DTL-81706B Testing for Methods A, B and C

Prepared By: Amy L. Fowler

Prepared For: SurTec International, GmbH

Location: Inorganic Coatings Laboratory, Materials Engineering Division, 48110 Shaw Road, Bldg. 2187, Patuxent River, MD 20670

Purpose: This report provides the results of the testing performed on SurTec International's SurTec 650C – Chromital TCP and SurTec 650V – Chromital TCP products. The products were submitted for testing against requirements within MIL-DTL-81706B, Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys.

Approach: SurTec requested that the SurTec 650C – Chromital TCP and SurTec 650V – Chromital TCP be assessed per MIL-DTL-81706B Type II, Class 1A and 3, Material Form I, Application Methods A, B, and C.

For Methods A and C, test panels were cleaned using a nonsilicated, nonchromated, mildly alkaline cleaner for 5 minutes at 120°F and deoxidized using a nonchromated deoxidizer and desmutter for aluminum alloys at 72°F for 3 minutes. Test panels were then processed in accordance with the SurTec recommended parameters: 20% concentration at 104°F for 2 – 10 minutes.

For Method B, test panels were cleaned using red Scotch-Brite™ pads (3M 7447) until the surface of the test panel was water break-free. Test panels were then processed in accordance with the SurTec recommended parameters: 20% concentration at ambient temperature for 5 – 10 minutes.

Corrosion Resistance: Corrosion resistance test panels were subjected to a 5% salt spray test in accordance with ASTM B 117, except that the significant surface was inclined 6° from the vertical. Class 1A test panels were exposed for 336 hours and Class 3 test panels were exposed for 168 hours.

Paint Adhesion: Class 1A and Class 3 test panels were finished with one coat of a VOC compliant epoxy-polyamide primer conforming to MIL-PRF-23377, Class C and MIL-PRF-85582, Class C to a dry film thickness of 0.0006 to 0.0009 inch (0.6 to 0.9 mil). Primers were cured in accordance with the primer specification prior to testing for paint adhesion in accordance with FED-STD-141, Method 6301.3 and ASTM D 3359 Test Method A – X-Cut Tape Test.

Coating Weight (Class 1A, Type II): Class 1A test panels were weighed to the nearest 0.1 milligram within 3 hours after applying the conversion coating. Immediately after weighing, the test panels were immersed for 60 seconds in freshly made nitric acid solution. The nitric acid solution was maintained at room temperature and composed of equal parts by volume of concentrated nitric acid (70% HNO₃) and deionized water. After removal of the conversion coating, the specimen was rinsed using deionized water, blown dry, and reweighed. The coating weight of the SurTec 650C – ChromitAL TCP and SurTec 650V – ChromitAL TCP films in milligrams per square foot was calculated by taking the difference of the final weight from the initial weight then multiplying by a conversion factor.

Contact Electrical Resistance (Class 3): The electrical resistance of Class 3 test panels was measured under an applied electrode pressure of 200 pounds per square inch (psi). The electrical resistance was measured on a set of test panels 24 hours after the conversion coating was applied and on a set of test panels 24 hours after 168 hour salt spray exposure. Ten measurements were taken on each panel in accordance with MIL-DTL-81706B, Section 4.5.5.

Storage Stability: In accordance with MIL-DTL-81706B, Section 3.9, the storage stability testing was performed after no less than 12 months. Storage samples were not opened or agitated during the stipulated storage period. After having been stored in its original container for the specified time period, the product was tested in accordance with MIL-DTL-81706B, Section 3.5.1, Table I.

Test Summary: The following information pertains to test results of SurTec 650C – ChromitAL TCP and SurTec 650V – ChromitAL TCP.

Corrosion Resistance: After 336 hours of salt spray exposure, Class 1A test panels showed no evidence of corrosion when compared to unexposed control panels using the naked eye. After 168 hours of salt spray exposure, Class 3 test panels showed no evidence of corrosion when compared to unexposed control panels using the naked eye. Areas within 0.25 inch from the edges of the test panel, the identification markings, the panel holding points during processing, and differences in color between the test panels and the control panels were not evaluated.

Paint Adhesion (wet tape): Class 1A and Class 3 panels received ratings of either 4A or 5A in accordance with ASTM D 3359. No intercoat separation occurred between the paint system, the conversion coating, or the base metal.

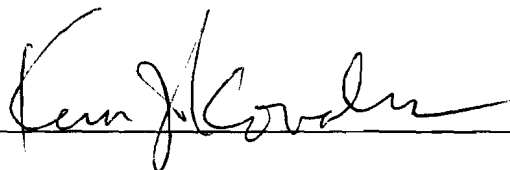
Coating Weight (Class 1A, Type II): In accordance with MIL-DTL-81706B, Section 3.6, the coating weights of the Class 1A, Type II test panels were not less than 10 milligrams per square foot of surface area.

Contact Electrical Resistance (Class 3): In accordance with MIL-DTL-81706B, Section 3.7, the contact electrical resistance measurements of class 3 test panels were less than 5,000 microhms psi as applied and 10,000 microhms psi after salt spray exposure.

Storage Stability: After 336 hours of salt spray exposure, Class 1A test panels showed no evidence of corrosion when compared to unexposed control panels using the naked eye. After 168 hours of salt spray exposure, Class 3 test panels showed no evidence of corrosion when compared to unexposed control panels using the naked eye. Areas within 0.25 inch from the edges of the test panel, the identification markings, the panel holding points during processing and differences in color between the test panels and the control panels were not evaluated.

Reviewed by: Kevin Kovaleski, Industrial & Operational Chemicals Branch Head

Signature: _____

A handwritten signature in black ink, appearing to read "Kevin J. Kovaleski", written over a horizontal line. The signature is cursive and somewhat stylized.