SCIENTIFIC MATERIAL INTERNATIONAL INC.

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Kent Integrated Scientific Systems,Inc.
4571 Gunn Highway Box 101
Tampa, Florida 33624

August 7,1987
SMI/REF: 870760

Attn: Dr. Keith Kent

Product: Kiss- Cote #1083

Dilution: As received

Douglas CSD #1 Reissued 1-22-79

Effect on Painted Surfaces Test	Conform
Residue Test	Conform
Sandwich Corrosion Test	Conform
Stress Crazing Test on Acrylic Plastics	Conform
Immersion Corrosion Test	Conform
Cadmium Removal Test	Conform
Hydrogen Embrittlement Test	Conform

Respectfully submitted,

Joseph Schruefer,Jr.

SMI

1. Effect on Painted Surfaces Test: The material shall not produce a decrease in paint film hardness greater than one pencil; that is, the number of the next softer pencil, or any discoloration or staining when tested in accordance with ASTM F 502. At least 2 panels shall be used per test.

   Result Conform

2. Residue Test: The material shall leave no residue or stain when tested in accordance with ASTM F-485.

   No visible stain or residue

   Result Conform

3. Sandwich Corrosion Test: The compound shall not cause significant corrosion of aluminum alloy faying surfaces when tested in accordance with the applicable ASTM test method, or under the following conditions of temperature and humidity:

   (a) Thirty-six (36) test panels 2 x 4 x .040 inch shall be prepared as follows:

   Six each- Aluminum alloy panels P/N 7452876-7 (nonclad 2024 T-3) Federal Specification QQ-A-250/4 Temp-T3, Alodined (colorless # 1000 or 1500) per Military Specification Mil-C-5541, Class 3.

   Six each- Aluminum alloy panels P/N 7452876-9 (nonclad 2024T-3) Federal Specification QQ-A-250/4 Temp-T3, Chromic Acid anodized per Military Specification Mil-A-8625 Type 1.

   Six each- Aluminum alloy panels P/N7452876-11 (clad 2024-T3) Federal Specification QQ-A-250/5 Temp-T3, Alodined (colorless #1000 or 1500) per Military Specification Mil-C-5541, Class 3.

   Six each- Aluminum alloy panels P/N 7452876-13 (clad 2024-T3) Federal Specification QQ-A-250/5 Temp-T3, Chromic acid anodized per Military Specification Mil-A-8625 Type 1.

   Six each- Aluminum panels P/N 7452876-15 (clad 7075-T6) Federal Specification QQ-A-250/13 Temp-T6, Alodined (colorless # 1000 or 1500) per Military Specification Mil-C-5541, Class 3.

   Six each- Aluminum alloy panels P/N 7452876-17 (clad 7075-T6) Federal Specification QQ-A-250/13 Temp-T6, Chromic acid anodized per Military Specification Mil-A-8625, Type 1.

3. (b) A sandwich set shall consist of two panels of the same alloy and surface finish. Assemble the panels into 3 identical groups, each having six different sets of panels, suitably identified by permanent marking.

(c) The material to be tested shall be applied at the use concentration with a clean brush to the face of one panel from each set in the first group. Dilution to use concentration, if required, will be accomplishrd with distilled water. The material shall be applied in an irregular manner and shall cover approximately one-half the panel face. The two similar panels shall be placed together in sandwich style with the test material in the faying surface between the two panels.

(d) The second group of panels will be sandwiched together in sets as described above except that the faying surface between the panel faces shall be coated with the material at the use concentration, diluted with tap water or noncrazing solvent as required.

(e) The third group of panels will be sandwiched together in sets as described above except that the faying surfaces between the panel faces shall be wet with tap water. This test may be omitted if the material is used in the concentrated form only.

(f) The three groups of panels shall be exposed at alternate intervals of 16 hours in the humidity cabinet and 8 hours in an oven. Beginning with the humidity cabinet exposure, the cycling test shall be continued for a total of seven days. The humidity cabinet shall be maintained at 100° ± 2°F (37.8° ± 1.1°C) and 98 to 100 percent relative humidity. The oven shall be maintained at 100° ± 5°F (37.8 ° ± 2.8°C). Each set of panels shall be exposed individually not stacked, in a horizontal position. After exposure, the panels shall be rinsed in warm tap water and scrubbed lightly with a soft nonmetallic bristle brush. After drying, examine each panel under 10X magnification and rate each set according to the following:

0- No visible corrosion

1- Very slight corrosion or discoloration

2- Slight corrosion

3- Moderate corrosion

4- Extensive corrosion

3. (g) The corrosion rating obtained on the sets of panels of the first and second groups shall be compared with the rating obtained on the third group. Corrosion on any panel in the first and second groups exceeding that obtained on the similar panels in the third group shall be considered as excessive.

(h) The corrosion rating obtained on the sets of panels tested with concentrated materials, for which comparison panels were not run, shall not exceed a rating of 1, as defined above.

Aluminum - (2024-T3) Alodined (colorless #1000)	0
Aluminum - (2024-T3) Anodized	1
Aluminum - (Alclad 2024-T3) Alodined (colorless)	0
Aluminum - (Alclad 2024-T3) Anodized	1
Aluminum - (Alclad 7075-T6) Alodined (colorless)	0
Aluminum - (Alclad 7075-T6) Anodized	1

Note Silicone has slight blead out on anodized surface.

Result Conform

4. Stress Crazing Test on Acrylic Plastics: The compound shall not cause crazing cracking, or other attack of acrylic based plastics when tested in accordance with ASTM F-484, using Type C material at a stress level of 4500 psi.

Result Conform

5. Immersion Corrosion Test: The average weight loss of aluminum alloy specimens shall not exceed 10 milligrams per coupon when tested per ASTM F-483. The aluminum alloy 7075-T6 alclad coupons shall conform to Federal Specification QQ-A-250/13 Temp-T6, with corners and edges smoothed.

Result Conform less thanl.0 mg

6. Cadmium Removal Test: The average weight loss of cadmiun from low-hydrogen embrittlement cadmium plated steel specimens shall not exceed 10 milligrams per coupon when tested in accordance with the applicable ASTM test method or as follows:

(a) Each of three 1 x 2 x .040 inch 4130 steel panels ,P/N 7452876-23 per Military Specification Mil-S-18729 shall be accurately weighed and the weight recorded. Each of the weighed specimens shall be

cont'd to next page

Cont'd of Cadmium Removal Test

totally immersed in a minimum of 100 ml of the compound for 24 hours. The concentration of the solution shall be that which is recommended for use on the aircraft. The specimens shall then be rinsed with distilled water, acetone, and air dried. The specimens shall be placed in an oven at 395° ± 15°F. (201.7 ± 8.3°C.) for one (1) hour and allowed to cool to room temperature. The specimens shall be weighed and the average weight loss of the three specimens recorded.

Result Conform +.7 mg

7. Hydrogen Embrittlement Test: Hydrogen Embrittlement testing shall be in accordance with ASTM-F-519, Type 1C.

Result Conform

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August 10,1987
SMI/REF: 870760

Attn: Dr. Keith Kent

Product: Kiss-Cote #1083

Dilution : As received

Boeing D6-17487

Sandwich Corrosion Test	Conform
Acrylic Crazing Test	Conform
Paint Softening Test	Conform
Hydrogen Embrittlement Test	Conform

Respectfully submitted,

Joseph Schruefer, Jr.

Client: Kent Integrated Scientific Systems,Inc. Date: August 10,1987
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Boeing D6-17487,Revision H
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6. Sandwich Corrosion Test :

6.1 Test Specimen:

a. Panel size: 2 x 4x 0.040 to 0.060 inches.

b. Panel Material

(1) Clad 7075-T6 aluminum alloy per QQ-A-250/13
(Optional: Clad 2024-T3 per QQ-A-250/5)

(2) Bare 7075-T6 aluminum alloy per QQ-A-250/12
(Optional: Bare 2024-T3 per QQ-A-250/4)
Anodized in accordance with BAC 5019 or Mil-A-8625,Type I.

6.2 Test Procedure:

a. Test panels required: Eight of each type per Section 6.1.b above.

b. Prepare two sandwich test specimens of each panel material as follows:

(1) Cut a filter paper (Whatman No.5 or equivalent) to 1 X 3 inches and place in the center of one panel.

(2) Saturate the filter paper with the solution to be tested. Avoid excess solution.

(3) Place a second panel of the same material over the saturated filter paper, forming a sandwich. Hold the sandwich together with waterproof tape.

c. As a control, prepare two sandwich test samples for each material in accordance with Section 6.2.b, except use distilled or deionized water instead of the solution to be evaluated.

d. Expose the test panels in a controlled humidity cabinet according to Table II.

e. After the 64 hour humidity exposure, separate the sandwich and wash the panels with water and a soft bristle brush. Blot dry.

f. Corrosion in excess of that on the control panels is unacceptable.

Conc 7075-T6 Clad Conform

7075-T6 Anodized Conform

Result Conform

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8. Acrylic Crazing Test:

The material being tested shall not craze, crack, or etch acrylic test specimens when tested in accordance with ASTM F 484 using Type A Acrylic stressed to an outer fiber stress of 3000 psi.

Result Conform

12. Paint Softening Test:

12.1 Test procedure:

The material shall not produce a decrease in paint film hardness greater than 2 pencil hardnesses, or any discoloration on staining, when tested in accordance with ASTM F 502. Also test Corogard, applied over Mil-P-23377 epoxy primer applied per ASTM F 502 or over BMS 10-11, Type I primer applied per BAC 5736. Slight darkening of the Corogard is acceptable. Use three panels per test.

Result Conform

13. Hydrogen Embrittlement Test:

Hydrogen Embrittlement testing shall be in accordance with ASTM F 519 using Type 1C specimens.

Result Conform