

MIL-S-38228(USAF)
AMENDMENT 2
8 May 1967

SUPERSEDING
AMENDMENT 1
4 March 1965

MILITARY SPECIFICATION

SEALING COMPOUND, ENVIRONMENTAL, FOR AIRCRAFT SURFACES

This amendment forms a part of Military Specification
MIL-S-38228(USAF) dated 28 July 1964

Pages 1 and 2, paragraph 2.1, under "SPECIFICATIONS": Delete and substitute:

"Federal

"P-D-680	Dry Cleaning Solvent
"QQ-A-250/12	Aluminum Alloy 7075, Plate and Sheet
"QQ-A-250/13	Aluminum Alloy Alclad 7075, Plate and Sheet
"TT-E-751	Ethyl Acetate, Technical, Organic Coatings Use
"TT-I-735	Isopropyl Alcohol
"TT-M-261	Methyl-Ethyl-Ketone (For Use in Organic Coatings)
"TT-N-97	Naphtha, Aromatic
"TT-S-735	Standard Test Fluids; Hydrocarbon
"CCC-C-419	Cloth, Duck. Cotton, Unbleached, Plied-Yarns, Army and Numbered
"PPP-C-96	Can, Metal, 28 Gage and Lighter

"Military

"MIL-S-4383	Sealing Compound, Topcoat, Fuel Tank, Buna-N Type
"MIL-S-5059	Steel, Corrosion-Resistant (18-8), Plate, Sheet and Strip
"MIL-P-8184	Plastic Sheet, Acrylic, Modified
"MIL-T-9046	Titanium and Titanium Alloy, Sheet, Strip and Plate
"MIL-P-38714	Packaging and Packing of Two Component Materials in Semkits"

Page 3, paragraph 3.2.1: Delete "gray" and substitute "aluminum".

Page 3, paragraph 3.3.2, line 3: Delete "shall not be" and substitute "shall be not".

Page 3, paragraph 3.3.4, lines 3 and 6: Delete "0.50" and substitute "0.75".

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Page 5, Table III, column 1: Lines 4 and 5, delete and substitute: "72 hours immersion in TF-S-735, type III at $77^{\circ} \pm 2^{\circ}\text{F}$ ". Line 10, delete "at 140°F " and substitute "at $77^{\circ} \pm 2^{\circ}\text{F}$ ".

Page 5, paragraph 3.3.13, line 2: Delete "plastic" and substitute "plastic".

Page 5, paragraph 3.3.15: Delete.

Page 5, paragraphs 4.4 through 4.4.1.2: Delete and substitute:

"4.4 Quality conformance inspection

"4.4.1 Batch. A batch shall be the quantity of material run through a mill or mixer at one time.

"4.4.2 Sampling for quality conformance tests. A 1-quart sample shall be selected from each batch.

"4.4.3 Quality conformance tests. Quality conformance tests for acceptance of individual batch shall consist of the following tests:

- a. Specific gravity (4.7.1).
- b. Nonvolatile content (4.7.2).
- c. Viscosity of base compound (4.7.3).
- d. Flow (4.7.4).
- e. Application time (4.7.5).
- f. Tack-free time (4.7.6).
- g. Curing rate (4.7.7).
- h. Peel strength (4.7.9) using for type I sealing compound, aluminum panels only (includes aging); and for type II sealing compound, aluminum, stainless steel, and titanium panels, except that the panels shall be subjected to an accelerated cure of 48 hours at $77^{\circ} \pm 2^{\circ}\text{F}$ and 50 ± 5 percent relative humidity, followed by 24 hours at 140°F .

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1. Shaving and sanding (4.7.15) except that the panels shall be subjected to an accelerated cure of 48 hours at $77^{\circ} \pm 2^{\circ}\text{F}$ and 50 ± 5 percent relative humidity, followed by 24 hours at 140°F ."

Page 7, table IV, column 2, line 5: Delete "411-F-5550" and substitute "TT-I-735".

Page 7, paragraph 4.6.3, line 4: Delete "subjected to 200°F or higher".

Page 10, table V: Delete and substitute:

"Table V. Flow-test intervals

Minimum specified application time	Intervals at which flow tests shall be conducted
1/2 hour	Initial reading only
2 hours	Initial, 50 and 90 minutes
4 hours	Initial, 2 and 3-1/2 hours"

Page 10, paragraph 4.7.5: Line 2, delete "QQ-A-287" and substitute "QQ-A-250/13". Line 8, delete "smoothing" and substitute "sealing".

Page 10, paragraph 4.7.7, line 3: Delete "smoothing" and substitute "sealing".

Page 10, paragraph 4.7.8, line 3: Delete "QQ-A-287" and substitute "QQ-A-250/13".

Page 12, line 4: Delete "28 days" and substitute "14 days".

Page 12, paragraph 4.7.9: Delete and substitute:

"4.7.9 Peel strength. Panels shall be prepared for peel strength evaluation as specified in table VI and coated with a $1.8 \pm 1/64$ inch thickness of sealing compound.

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Table VI. Peel strength panel preparation

Panel material	Panel size	Type I (No. of panels)	Type II (No. of panels)
Aluminum alloy conforming to QQ-A-250/13, T6	0.040 by 2-3/4- by 6 inches	6	2
Stainless steel conforming to MIL-S-5059 composition 302, annealed, finish 2B	0.025 to 0.040 inch by 2-3/4- by 6 inches	2	2
Titanium conforming to MIL-T-9046 type 1, composition A	0.025 to 0.040 inch by 2-3/4- by 6 inches	2	2

After the compound has immobilized, 1 end of a 3- by 12-inch strip of wire screen, 20- to 40-mesh aluminum or monel wire fabric, or cotton duck conforming to type III of CCC-C-419 shall be placed on each panel, leaving a loose end 6 inches in length. An additional 1/32-inch thick coating of sealing compound shall be applied over the screen or fabric strips and the panels allowed to cure for 14 days. Four of the type I sealant on aluminum panels shall be immersed in covered glass vessels; two in fluid conforming to type III of AF-S-735, and two in di-2-ethylhexyl sebacate with one-half percent phenothiazine at $77^{\circ} \pm 2^{\circ}\text{F}$ for 72 hours. These and the remaining type I sealing compound panels shall be tested for peel strength at the end of the immersion period. The peel strength for the immersed panels shall be measured within 30 minutes after removal from the test fluid. The type II sealing compound panels should be tested after the 14-day cure. A 1-inch wide section shall be cut through the strip and compound on each test panel to provide the center inch for the peel test. The specimens shall be stripped back at an angle of 180 degrees to the metal panel in a suitable tensile testing machine having a jaw separation rate of 2 inches per minute. The results shall be the numerical average of the peak loads."

Page 12, paragraph 4.7.10, line 2: Delete "QQ-A-283" and substitute "QQ-A-250/12".

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Page 13, paragraph 4.7.11: In the second sentence, delete "28-day cure" and substitute "14-day cure". Delete the fifth and sixth sentences and substitute: "After 72 hours of fluid immersion, the specimens shall be removed from the fluid and tested within 5 minutes. Panels subjected to oven aging shall be allowed to cool for 16 to 24 hours at standard conditions before testing."

Page 13, paragraph 4.7.14: Delete.

Page 14, figure 3, title: Delete "Plan" and substitute "Panel".

Page 16, figure 5: Delete.

Page 18, paragraph 5.1.1.1.1: Add "The air in the top of the base compound containers shall be replaced with nitrogen gas immediately prior to closing the containers."

Page 19, paragraph 5.1.1.1.2, line 3: Between "containers" and "as" add "conforming to MIL-P-38714".

Page 19, paragraph 6.1, last line: Delete "and has less resistance to abrasion than type I".

Page 20, paragraph 6.2c: Delete "(see 5.1.1.1.1)" and substitute "(see 5.1.1.1.1 and 5.1.1.1.2)".

Custodian:
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Preparing activity:
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