

# AEROSPACE MATERIAL SPECIFICATION

(R)

Sealing Compound, Polysulfide (T) Rubber,  
Fuel Resistant, Nonchromated Corrosion Inhibiting  
For Intermittent Use to 360 °F (182 °C)

## 1. SCOPE:

### 1.1 Form:

This specification covers polysulfide (T) rubber sealing compounds containing only non-chromated corrosion inhibitors, supplied as a two component system which cures at room temperature.

### 1.2 Application:

This product has been used typically for contact with air pressures, fuels and water, but usage is not limited to such applications. Each application should be considered separately. Polysulfide (T) rubber has a service temperature range of -65 to +250 °F (-54 to +121 °C), with short term recurring exposures (approximately 6 hours) to 360 °F (182 °C). It can be used for aerodynamic smoothing, cabin pressure and fillet sealing and fastener overcoating.

#### 1.2.1 Notation: AMS 3100 adhesion promoter should be applied prior to the sealant.

### 1.3 Classification:

Sealing compounds covered by this specification are classified as follows:

Class A – Suitable for application by brush. Available with the following application times in hours:

A-1/2

A-2

A-4

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#### SAE WEB ADDRESS:

## 1.3 (Continued):

Class B – Suitable for application by extrusion gun or spatula. Available with the following application times in hours:

B-1/4  
 B-1/2  
 B-1  
 B-2  
 B-4  
 B-12

Class C - Suitable for application by brush, extrusion gun, roller or spatula. Available with the following application times in hours:

Notation: ( ) Assembly time in hours.

C-2(2)  
 C-8(24)  
 C-12(48)  
 C-48(168)  
 C-96(336)

## 1.4 Precautions:

1.4.1 Safety – Hazardous Materials: Shall be in accordance with AS5502 (1.1)

## 2. APPLICABLE DOCUMENTS:

Shall be in accordance with AS5502 (2.)

## 2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, www.sae.org.

AMS 2471	Anodic Treatment of Aluminum Alloys, Sulfuric Acid Process, Undyed Coating
AMS 2629	Fluid, Jet Reference Fluid
AMS 3020	Oil, Reference, for "L" Stock Rubber Testing
AMS 3021	Fluid, Reference, for Testing Diester (Polyol) Resistant Material
AMS 3100	Adhesion Promoter, for Polysulfide Sealing Compounds
AMS 3276	Sealing Compound, Integral Fuel Tank and Fuel Cell Cavities, Intermittent Use to 360 °F (182 °C)

## 2.1 (Continued):

AMS 4045	Aluminum Alloy Sheet and Plate, 5.6 Zn – 2.5Mg – 1.6 Cu –0.23 Cr (7075 -T6 Sheet, T651 Plate), Solution and Precipitation Heat Treated
AMS 4049	Aluminum Alloy Sheet and Plate, 5.6 Zn – 2.5Mg – 1.6 Cu –0.23 Cr (Alclad 7075 -T6 Sheet, T651 Plate), Solution and Precipitation Heat Treated
AMS 4911	Titanium Sheet, Strip and Plate, 6Al, 4V Annealed
AMS 5516	Steel, Corrosion Resistant, Sheet, Strip, and Plate, 18Cr – 9.0Ni (SAE 30302) Solution Heat Treated
AMS-C-27725	Coating, Corrosion Preventive, for Aircraft Integral Fuel Tanks
AS5127	Methods For Testing Aerospace Sealants
AS5127/1	Methods For Testing Aerospace Sealants, Two-Component Synthetic Rubber Compounds (May, 1997. See 4.5.6)
AS5502	Standard Requirements for Aerospace Sealants

## 2.2 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, [www.dsp.dla.mil](http://www.dsp.dla.mil).

MIL-PRF-23377	Primer Coatings: Epoxy Polyamide, Chemical and Solvent Resistant
MIL-C-81706	Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys
MIL-PRF-85285	Coating, Polyurethane, High Solids
MIL-PRF-85582	Primer Coatings, Epoxy, Waterborne

## 2.3 PRI Publications:

Available from PRI, 161 Thornhill Road, Warrendale, PA 15086-7527, [www.pri.sae.org](http://www.pri.sae.org).

PD 2000 Procedures for an Industry Qualified Product Management Process

## 2.4 Definitions: See AS5502 (2.3)

## 3. TECHNICAL REQUIREMENTS:

## 3.1 Materials:

The basic ingredient used in the manufacture of these products shall be synthetic rubber of the Polysulfide (T) type with additive(s) for corrosion inhibition. The sealing compound shall cure by the addition of a curing agent to the base compound, and shall not depend on solvent evaporation for curing. The material shall contain no lead compounds or chromium compounds. The curing agent shall possess sufficient color contrast to the base compound to permit easy identification of an unmixed or incompletely mixed sealing compound. Neither the base compound nor the cured sealant shall be red or pink in color. The base compound shall be of uniform blend and shall be free of skins, lumps, and gelled or coarse particles.

- 3.1.1 Qualification: All products sold to this specification shall be listed, or approved for listing, on the qualified products list, PRI QPL AMS 3265. The qualified products list shall be in accordance with PD 2000.
- 3.2 Date of Packaging: Shall be in accordance with AS5502 (3.1)
- 3.3 Toxicological Formulations: Shall be in accordance with AS5502 (3.2)
- 3.4 Quality:  
Shall be in accordance with AS5502 (3.3)
- 3.5 Shelf Life:  
Shelf life shall be a minimum of 9 months from the date of packaging. Material may be retested for shelf life extension.
- 3.5.1 Premixed and Frozen Material: Premixed and frozen material shall have a minimum storage life of 30 days at -40 °F (-40 °C) or lower, or 10 days at -10 to -40 °F (-23 to -40 °C) from date of mix/freeze. The date of mix/freeze shall be within the shelf life of the unmixed material.
- 3.6 Properties:  
The sealing compound and the curing agent shall conform to all requirements shown in Table 1, determined in accordance with the specified test methods.

TABLE 1 - Properties

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.6.1	Nonvolatile Content, by weight, min		AS5127/1 (5.1)
	Class A	84%	
	Class B	92%	
	(Class B-2: see Note 2.)		
	Class C	88%	
3.6.2	Air Content, max (Class B only)	4%	AS5127/1 (5.2)
3.6.3	Viscosity of Base Compound		AS5127/1 (5.3)
	Class A	100 to 600 poises	
	(Use No. 6 spindle @ 10 rpm)	(10 to 60 Pa•S)	
	Class B	9000 to 16000 poises	
	(Use No. 7 spindle @ 2 rpm)	(900 to 1600 Pa•S)	
	Class C	1500 to 4000 poises	
	(Use No. 6 spindle @ 2 rpm)	(150 to 400 Pa•S)	
3.6.4	Viscosity of Curing Agent	700 to 1600 poises	AS5127/1 (5.4)
	(Use No. 7 spindle @ 10 rpm)	(70 to 160 Pa•S)	
3.6.5	Flow (Class B only)	0.1 to 0.75 inches	AS5127/1 (5.5.1)
	(Class B-2: see Notes 1 and 2.)	(2.5 to 19.1 mm)	

TABLE 1 - Properties (Continued)

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.6.6	Application Time, min		AS5127/1 (5.6)
	Class A – From the beginning of mixing, the viscosity shall not exceed 2500 poise (250 Pa•S),		AS5127/1 (5.6.1) (Use No 7 spindle @ 10 rpm)
	Class A-1/2	½ hour	
	Class A-2	2 hours	
	Class A-4	4 hours	
	Class B – From the beginning of mixing, not less than 15 grams per minute shall be extruded.		AS5127/1 (5.6.2)
	Class B-1/4	¼ hour	
	Class B-1/2	½ hour	
	Class B-1	1 hour	
	Class B-2 (see Notes 1 and 2)	2 hours	
	Class B-4	4 hours	
	Class B-12	12 hours	
	Class C – From the beginning of mixing, not less than 30 grams per minute shall be extruded		AS5127/1 (5.6.2)
	Class C-2(2)	2 hours	
Class C-8(24)	8 hours		
Class C-12(48)	12 hours		
Class C-48(168)	48 hours		
Class C-96(336)	96 hours		
3.6.7	Assembly Time (Class C only)		AS5127/1 (5.7)
	Class C-2(2)	2 hours	
	Class C-8(24)	24 hours	
	Class C-12(48)	48 hours	
	Class C-48(168)	168 hours	
	Class C-96(336)	336 hours	

TABLE 1 - Properties (Continued)

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.6.8	Tack-Free Time (Measured from beginning of mixing), hours, max		AS5127/1 (5.8)
	Class A-1/2	10	
	Class A-2	24	
	Class A-4	48	
	Class B-1/4	8	
	Class B-1/2	12	
	Class B-1	16	
	Class B-2	24	
	(See Notes 1 and 2.)		
	Class B-4	36	
	Class B-12	120	
	Class C-2(2)	24	
	Class C-8(24)	96	
	Class C-12(48)	N/A	
	Class C-48(168)	N/A	
	Class C-96(336)	N/A	
3.6.9	Standard Cure Time (time to reach 30 Durometer A), hours, max		AS5127/1 (5.9)
	Class A-1/2	30	
	Class A-2	72	
	Class A-4	90	
	Class B-1/4	16	
	Class B-1/2	32	
	Class B-1	48	
	Class B-2	72	
	(See Notes 1 and 2.)		
	Class B-4	90	
	Class B-12	240	
	Class C-2(2)	72	
	Class C-8(24)	168	
	Class C-12(48)	336	
	Class C-48(168)	8 weeks	
	Class C-96(336)	16 weeks	
3.6.10	Specific Gravity, max average	1.50	AS5127/1 (6.1)

TABLE 1 - Properties (Continued)

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.6.11	14-Day Hardness, min (Note 3)	40 Durometer A	AS5127/1 (6.2)
3.6.12	Hydrolytic Stability	30 Durometer A	AS5127/1 (6.6)
3.6.13	Shaving and Sanding (Class B only)	No rolling or tearing of the sealant, smooth finish	AS5127/1 (6.7)
3.6.14	Paintability	No separation from sealant	AS5127/1 (6.8)
3.6.15	Weathering	No cracking, chalking, peeling or loss of adhesion	AS5127/1 (6.9)
3.6.16	Resistance to Thermal Rupture, max	0.15 inch (3.8mm) No blistering or sponging	AMS 3265 (4.6.1)
3.6.17	Weight Loss & Flexibility Weight Loss, Max Flexibility	10% No cracking or checking	AS5127/1 (7.4)
3.6.18	Volume Swell	5 to 15%	AS5127/1 (7.5)
3.6.19	Low Temperature Flexibility	No visual evidence of cracking or checking. No loss of adhesion	AMS 3265 (4.6.2)
3.6.20	Tensile Strength and Elongation (Class B) min		AS5127/1 (7.7)
3.6.20.1	Standard Cure	200 psi (1380 kPa), 200% elongation	
3.6.20.2	12 days at 140 °F (60 °C) in AMS 2629, Type I	200 psi (1380 kPa), 200 % elongation	
3.6.20.3	12 days at 140 °F (60°C), + 60 hours at 160 °F (71 °C), + 6 hours at 180 °F (82 °C) all in AMS 2629, Type I	125 psi (862 kPa), 100% elongation	

TABLE 1 - Properties (Continued)

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.6.20.4	12 days at 140 °F (60 °C) + 60 hours at 160 °F (71 °C) + 6 hours at 180 °F (82 °C), all in AMS 2629, Type I, followed by Standard Heat Cycle in Air as in 4.5.3	125 psi (862 kPa), 25% elongation	
3.6.20.5	Standard Heat Cycle as in 4.5.3	200 psi (1380 kPa), 100 % elongation	
3.6.20.6	72 hours at Standard Conditions in AMS 3021	200 psi (1380 kPa), 200% elongation	
3.6.20.7	72 hours at Standard Conditions in AMS 3020	200 psi (1380 kPa), 200% elongation	
3.6.21	Shear Strength (Class C only), min	150 psi (1034 kPa), 100 % cohesive failure	AS5127/1 (7.8)
3.6.22	Corrosion Test Cyclic Loading and Exposure Aluminum/Titanium Couple Aluminum/Alclad Aluminum Couple Aluminum/Epoxy Graphite (AS4/3501-6) Composite Couple	No visible evidence of corrosion No visible evidence of corrosion No visible evidence of corrosion No visible evidence of corrosion	AMS 3265 (4.6.3)
3.6.23	Peel Strength, min	20 lbf/inch (3580 N/m) /100% cohesive failure	AMS 3265 (4.6.4)
3.6.24	Repairability, min	10 lbf/inch (1750 N/m) /100% cohesive failure	AMS 3265 (4.6.5)

TABLE 1 - Properties (Continued)

Paragraph	Property	Requirement	Test Procedures (Paragraph)
3.6.25	Storage Stability		
3.6.25.1	Accelerated Storage		AS5127/1 (9.1)
	Viscosity of Base Compound	Same as 3.6.3	
	Flow	Same as 3.6.5	
	Application Time	Same as 3.6.6	
	Assembly Time (Class C only)	Same as 3.6.7	
	Tack Free Time	Same as 3.6.8	
	Standard Cure Time	Same as 3.6.9	
	Peel Strength (4 Aluminum panels, Sulfuric acid anodized in accordance with AMS 2471 and coated with AMS-C-27725 Type II, Class B (See 8.6) 2 panels in AMS 2629 Type I; 2 panels in AMS 2629 Type I / 3% saltwater; all at 140 ° F (60 °C) for 7 days	20lbf/inch (1750 N/m) / 100 % cohesive failure	AS5127/1 (8.1)
3.6.25	Storage Stability		
3.6.25.2	Long Term Storage		AS5127/1 (9.2)
	Application Time	Same as 3.6.6	
	Tack-Free Time	Same as 3.6.8	
	Standard Cure Time	Same as 3.6.9	
<p>Note 1: Two cartridges of freshly mixed Class B-2 sealing compound shall be held at Standard Conditions to be tested for Flow, Application Time, Tack-Free Time, and Standard Cure Time. These tests shall be run concurrently during the mixing/freezing process.</p> <p>Note 2: Class B-2 shall be tested using sealing compound which has been freshly mixed, then quick-frozen and thawed in accordance with AS5127/1 (4.4).</p> <p>Note 3: Does not apply for longer work life sealants including Classes B-12; C-12/48; C-48/168; C-96/336</p>			

## 4. QUALITY ASSURANCE PROVISIONS:

- 4.1 Responsibility for Inspection: Shall be in accordance with AS5502 (4.1)
- 4.1.1 Source Inspection: Shall be in accordance with AS5502 (4.1.1)
- 4.1.2 Sampling: Shall be in accordance with AS5502 (4.1.2)
- 4.2 Classification of Tests: Shall be in accordance with AS5502 (4.2)
- 4.2.1 Qualification Tests: All technical requirements listed in Table 1 are qualification tests (see 8.1) and shall be performed on the initial production of the sealing compound prior to shipment to a purchaser, when a change in ingredients and/or processing requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.
- 4.2.1.1 Qualification: All products sold to this specification shall be listed, or approved for listing, on the Qualified Products List, PRI QPL AMS 3265. The qualified products list shall be in accordance with PD 2000: See AS5502 (2.1). Class B-2 shall be the first material that is qualified for each supplier of sealing compound in accordance with (8.1). Class B-2 sealing compound shall be tested for, and shall meet all technical requirements of this specification with the exception of requirements unique to other classes of the sealing compound.
- 4.2.1.2 Once qualification for Class B-2 has been obtained, other classes of the sealing compound may be qualified. The formulation for other classes, and for other Class B application times, shall be the same as Class B-2, except for minor variations necessary for conformance to viscosity and application time requirements. All compounds shall meet all technical requirements of this specification. However, other classes of the sealing compound need only to be tested to the initial acceptance tests listed in 4.2.2, plus all peel strength tests listed in Table 8, or as defined by purchaser or QPL agency.
- 4.2.2 Initial Acceptance Tests: Requirements shown in Table 2 are initial acceptance tests and shall be performed on each batch.
- 4.2.3 Final Acceptance Tests: Requirements shown in Table 3 are final acceptance tests and shall be performed on each lot. Acceptance tests of the final packaged product shall consist of the following:
- 4.3 Sampling and Testing: Shall be in accordance with AS5502 (4.3)
- 4.3.1 Acceptance Tests: Shall be in accordance with AS5502 (4.3.1)
- 4.3.1.1 Batch and Lot: A batch shall be defined as the quantity of material run through a mill or mixer at one time. A lot shall be defined as material from one batch of each component assembled (packaged) as finished product in one size and/or type of container at the same time. The lot, when used, shall be traceable to the batches of base compound and curing agent.

TABLE 2 - Acceptance Tests

Test	Requirement Paragraph
Nonvolatile Content	3.6.1
<sup>1</sup> Viscosity of the Base Compound	3.6.3
<sup>1</sup> Viscosity of the Curing Agent	3.6.4
Flow (Class B only)	3.6.5
Application Time	3.6.6
Assembly Time (C-4(4) only)	3.6.7
Tack-Free Time	3.6.8
Standard Cure Time	3.6.9
14-Day Hardnes	3.6.11
Shear Strength (Class C only)	3.6.21
Peel Strength	3.6.23 and 4.6.4.3

<sup>1</sup>Testing need not be performed on material packaged in sectionalized containers or small size containers less than eight ounces (235 mL).

TABLE 3 - Final Acceptance Tests

Test	Requirement Paragraph
Air Content	3.6.2
Application Time	3.6.6
Tack-Free Time	3.6.8
Standard Cure Time	3.6.9

- 4.3.1.2 Initial and Final Acceptance Tests: Each batch shall be subjected to both initial and final acceptance testing. Sufficient material for initial acceptance testing shall be packaged in the same type containers that are being procured. Initial acceptance tests are those listed in 4.2.2. After successful completion of the initial acceptance tests, the batch shall be released for final packaging. During packaging, test kits shall be selected at random for final acceptance testing. Final acceptance testing is to be conducted on the final packaged product and consist of those tests outlined in 4.2.3.
- 4.3.1.3 If the batch is being packaged in different types and/or size containers, the final acceptance tests shall be conducted on each type and/or each size containers. If the sealing compound is being procured under different purchase orders, but the purchase orders call for the same type and size containers, it is only necessary to conduct the final acceptance tests one time.
- 4.3.1.4 Plastic Injection Kits: Shall be in accordance with AS5502 (4.3.1.3)
- 4.3.1.5 Cans, Pails, and Drums: Shall be in accordance with AS5502 (4.3.1.4)

4.3.1.6 Both Type Containers: Shall be in accordance with AS5502 (4.3.1.5)

4.3.2 Statistical Sampling Plan: When a statistical sampling plan has been agreed upon by the purchaser and supplier, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.3 and the report for 4.7 shall state that such plan was used.

4.3.3 Qualification Test Samples: Samples should consist of one five-gallon (19-L) pail of base compound with one 1-gallon (4-L) pail of curing agent, two 1-quart (1-L) kits of sealing compound, three 1-pint (1/2-L) kits of sealing compound, one 1-quart (1-L) container of curing agent, and two 1-pint (1/2-L) containers of adhesion promoter.

Samples shall be identified as specified herein and below:

SEALING COMPOUND, POLYSULFIDE (T) RUBBER, NONCHROMATED, CORROSION INHIBITING FOR INTERMITTENT USE TO 360 °F (182 °C)

AMS 3265B Class

MANUFACTURER'S IDENTIFICATION \_\_\_\_\_

BATCH/LOT NUMBER \_\_\_\_\_

DATE OF PACKAGING \_\_\_\_\_

SHELF LIFE EXPIRATION DATE \_\_\_\_\_

STORE BELOW 80 °F (27 °C)

4.3.4 Shelf Life Surveillance and Updating:

4.3.4.1 Sampling: Shall be in accordance with AS5502 (4.1.2)

4.3.4.2 Shelf-Life Testing: The inspections to be conducted for shelf-life surveillance and updating are listed in Table 4.

TABLE 4 - Shelf-Life Testing

Test	Requirement Paragraph
Appearance	3.1
Viscosity of Base Compound <sup>1</sup>	3.6.3
Viscosity of Curing Agent <sup>1</sup>	3.6.4
Application Time	3.6.6
Tack-Free Time	3.6.8
Standard Cure Time	3.6.9
Peel Strength: two aluminum panels, sulfuric acid anodized per AMS 2471, coated with AMS-C-27725 Type II Class B corrosion preventive coating (see 8.6), and aged in AMS 2629, Type I for 7 days at 140°F (60°C).	3.6.23

1. Not possible with sectional-type containers

4.3.4.3 Tests are to be conducted in accordance with test methods outlined in this specification for acceptance tests. If the tests are being performed at the end of the stated shelf life to update the shelf-life of the sealing compound, and all tests are passed, the shelf life will be extended an additional three months. Up to three extensions will be allowed.

#### 4.4 Approval:

Shall be in accordance with AS5502 (4.4)

4.4.1 Purchaser Approval: Shall be in accordance with AS5502 (4.4.1)

4.4.2 Methods of Inspection: Shall be in accordance with AS5502 (4.4.2)

#### 4.5 Test Methods:

4.5.1 Standard Tolerances: Unless otherwise specified herein, standard tolerances of AS5127 (3.1) "Standard Tolerances" shall apply.

4.5.2 Standard Test Conditions: Standard laboratory conditions shall be as specified in AS5127 (4). Test specimens shall be prepared and immediately after completion of preparation, shall be placed under 77 °F (25 °C) and 50 ±5 % relative humidity to cure according to 4.5.8. Except as otherwise directed herein, tests shall be performed at conditions in accordance with AS5127 (4).

4.5.3 Standard Heat Cycle: When directed herein, the Standard Heat Cycle to which sealants shall be exposed shall be performed six times:

Standard Heat Cycle:

4 hours at 260 °F (127 °C), plus  
40 minutes at 320 °F (160 °C), plus  
1 hour at 360 °F (182 °C).

4.5.4 Preparation of Test Specimens: Test specimens shall be prepared in accordance with AS5127 (6).

4.5.4.1 Cleaning of Test Panels: Test panels shall be cleaned in with AS5127 (6).

4.5.4.2 Preparation of Peel Strength Test Panels: Test panel configuration shall be in accordance with AS5127/1 (8.) "Peel Strength Properties" and (8.1) "Peel Strength Testing" and as in Figure 22 "Five-Inch Peel Specimen Configuration".

4.5.5 Preparation of Sealing Compound: Sealing compound shall be prepared in accordance with AS5127/1 (4.) "Preparation of Sealing Compound" and subparagraphs (4.1) "Qualification Testing", (4.2) "Acceptance Testing", (4.3) "Quick-Freezing of Sealing Compound", and (4.4) "Thawing of Quick-Frozen Sealing Compound".

- 4.5.6 Application of Adhesion Promoter: AMS 4911, AMS 5516, AMS-C-27725, MIL-PRF-85285 and MIL-PRF-85582 panels shall be treated with AMS 3100 adhesion promoter in accordance with AS5127 (6.7) "Application of Adhesion Promoter".
- 4.5.7 Application of Sealing Compound: Unless otherwise specified herein, freshly mixed sealing compound shall be applied to test panels in accordance with AS5127 (6.8) "Application of Sealing Compound". For Class A material, a time equal to the application life shall be used between the three applications to permit release of solvents.
- 4.5.8 Curing of Sealing Compounds: Shall be in accordance with AS5127 (6.9) "Curing of Sealing Compounds." For Qualification testing, Classes A and B sealing compounds shall be cured for 14 days at Standard Conditions. For Acceptance testing, Classes A and B sealing compounds may be given an accelerated cure for 48 hours at Standard Conditions followed by 24 hours at 140 °F (60 °C). For Qualification testing and Acceptance testing of Class C sealing compounds, accelerated cure shall be 48 hours at Standard Conditions, followed by the number of hours listed in Table 5 at 140 °F (60 °C) according to the sealing compound designation.

TABLE 5 - Class C Accelerated Cure Times

Sealing Compound	Hours at 140 °F (60 °C)
Class C-2/2	24
Class C-8/24	24
Class C-12/24	24
Class C-48/168	168
Class C-96/336	336

## 4.6 Test Procedures:

Standard Test Methods are in accordance with AS5127 and AS5127/1. In the event of a conflict between the text of this document and AS5127 and/or AS5127/1, the text of this document takes precedence.

## 4.6.1 Resistance to Thermal Rupture:

- 4.6.1.1 Resistance to Thermal Rupture shall be conducted in accordance with AS5127/1 (7.2). The air circulating oven shall be preset at 250 °F (121 °C) and the clamp fixture shall be placed in the oven at 10 +1/-0 psi (69 +6.9/-0 kPa) for 30 minutes.

## 4.6.2 Low Temperature Flexibility:

4.6.2.1 Low temperature flexibility shall be conducted in accordance with AS5127/1 (7.6). At the end of the standard cure in accordance with 4.5.8, two panels shall be immersed in AMS 2629, Type I for 120 hours at 140°F (60 °C) followed by 60 hours at 160 °F (70 °C) and 6 hours at 180 °F (80 °C). At the completion of the fluid exposure, the specimen shall be removed from the fluid. All four specimens shall be removed from the fluid. All four specimens shall be exposed to the standard heat cycle as in 4.5.3, after which all four panels shall be immediately placed in a low temperature flexibility fixture and tested in accordance with AS5127/1 (7.6).

#### 4.6.3 Corrosion Test:

4.6.3.1 Cyclic Loading and Exposure Test: Corrosion testing shall consist of stressed aluminum assemblies and mixed metal panels undergoing exposure to a corrosive environment. Test shall be conducted in accordance with AS5127/1 (7.10) "Corrosion Stressed Assembly and Mixed Metals", with the following exceptions:

4.6.3.2 Preparation of Test Assembly: Test assemblies shall be in accordance with AMS 3265, Table 6 and with AS5127/1 (7.10) "Corrosion Stressed Assemblies and Mixed Metals".

TABLE 6 - Preparation Sequence of Corrosion Test Assemblies

Sequence Step	Assembly Preparation
	Two assemblies shall be prepared as follows:
1	Approximately 0.005-inch (0.13-mm) sealing compound shall be applied to one side of each panel by spatula. After one to two hours, the coated sides of the panels shall be mated.
2	Threaded fasteners, shown in AS5127/1 (Figure 17), shall be installed wet with sealing compound, then inserted into the freshly mated panels and torqued to $40 \pm 5$ inch pounds ( $4.6 \pm 0.58 \text{ N}\cdot\text{m}$ ).
3	Sealing compound shall be applied by gun to the butt joint. Using a spatula, cover over and around the fastener head, backs (nuts) and all edges.
4	Brush sealing compound over the entire assembly to a thickness of 0.005 to 0.007 inches (0.13 to 0.18 mm).
5	Cure the assembly in accordance with AS5127 (6.9).
6	After curing, scribe one half of the front side of each assembly as shown in Figure 18 of AS5127/1 "Mixed Metal Assemblies"

4.6.3.3 Mixed Couple: All sealant classes shall be subjected to mixed couple corrosion testing. Two test panels of each type assembled, as indicated in AMS 3265 Table 7, cleaned in accordance with 4.5.4.1, and configured as shown in AS5127/1, Figure 18 shall be used for each sealant class.