



AEROSPACE MATERIAL SPECIFICATION

AMS3277™

REV. K

Issued 1995-04
Revised 2019-02

Superseding AMS3277J

(R) Sealing Compound, Polythioether Rubber
Fast Curing for Integral Fuel Tanks and
General Purpose, Intermittent Use to 360 °F (182 °C)

RATIONALE

Adds Class C-12(48) and C-48(168) application times with corresponding requirements. Adds accelerated cure times for Class C. Removes Class A and B low temperature cure test requirements except for 1/4 and 1/2 application times. Changes the 14-day hardness requirement to 7 days. Updates Peel Strength requirements to include dry peels on AMS-C-27725 substrate. Clarify Low Temperature Curing and Low Temperature Tack-Free Time requirements. Added AMS2629 fuel exposure to the Low Temperature Flexibility test that was deleted in Rev. B. Changed a Tensile and Elongation 7-day heat exposure requirement from 300 °F (149 °C) to 285 °F (141 °C). Deleted Chalking as an Initial Acceptance Test. For Acceptance, Accelerated Storage, and Shelf-Life testing, changed aging of sealant in AMS2629 instead of AMS2629/3% salt water to be consistent with other Integral Fuel Tank Sealing Compound specifications.

1. SCOPE

1.1 Form

This specification covers polythioether rubber fuel resistant sealing compounds supplied as a two-component system which cures at room temperature.

1.2 Application

This product is intended for use in aircraft integral fuel tanks for repair of fillet and fastener seals and faying surface seals as well as initial sealing of faying surfaces, overcoating of fasteners, and sealing of seams and joints, for service from -80 to +320 °F (-62 to +160 °C), with short-term recurring exposures (approximately 6 hours) up to 360 °F (182 °C) but usage is not limited to such applications. This product is not recommended for use on aircraft windshields or canopies or other applications where crazing or degradation of plastic components may occur. Sealing compound must be applied at temperatures above 50 °F (10 °C) but will cure at lower temperatures.

1.2.1 Notice

This material is mixing ratio sensitive and will cure at temperatures as low as 20 °F (-7 °C). Normal mix/freeze operations used with polysulfide sealants are not adequate.

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1.3 Classification

Sealing compounds covered by this specification are classified as follows:

Type 1 - Sealing compound requiring an adhesion promoter for proper adhesion. An adhesion promoter is supplied with Type 1 material and must be applied prior to the sealing compound.

Type 2 - Sealing compound not requiring an adhesion promoter for proper adhesion.

1.3.1 Grades

The material shall be supplied in the following Grades.

Grade 1 - Cured specific gravity from 1.35 to 1.50 Max

Grade 2 - Cured specific gravity of 1.16 to 1.34 Max

Grade 3 - Cured specific gravity of 1.15 Max

NOTE: Grade 3 material should not be used for sealing of fay joints, and is not available in a Class C.

1.3.2 Classification

Both Type 1 and Type 2 sealing compounds may be supplied in the following classes:

Class A - Suitable for brush application. Available with the following application times:

A-1/4

A-1/2

A-1

A-2

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

B-1/4

B-1/2

B-2

B-4

B-6

B-12

Class C - Suitable for application by brush, extrusion gun, roller or spatula. Used for faying surface sealing only. Available with the following application time: Note: Grade 3 not available in Class C.

Notation: () Assembly time in hours

C-4(4)

C-12(48)

C-48(168)

1.4 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 International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2629	Fluid, Jet Reference
AMS3020	Oil, Reference, for "L" Stock Rubber Testing
AMS3021	Fluid, Reference, for Testing Di-Ester (Polyol) Resistant Material
AMS3276	Sealing Compound, Integral Fuel Tanks and General Purpose, Intermittent Use to 360 °F (182 °C)
AMS4045	Aluminum Alloy Sheet and Plate, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr 7075: (-T6 Sheet, -T651 Plate), Solution and Precipitation Heat Treated
AMS4911	Titanium Alloy, Sheet, Strip and Plate, 6Al - 4V Annealed
AMS5516	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 for Use to 250 °F (121 °C)
AS5127	Aerospace Standard Test Methods for Aerospace Sealants Methods for Preparing Aerospace Sealant Test Specimens
AS5127/1	Aerospace Standard Test Methods for Aerospace Sealants Two-Component Synthetic Rubber Compounds
AS5502	Standard Requirements for Aerospace Sealants and Adhesion Promoters

2.2 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

MIL-PRF-23377	Primer Coating, Epoxy High Solids
MIL-PRF-83282	Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base Metric, NATO Code Number H-537
MIL-PRF-85285	Coating, Polyurethane, Aircraft and Support Equipment
MIL-PRF-85582	Primer Coatings: Epoxy, Waterborne

2.3 PRI Publications

Available from Performance Review Institute, 161 Thorn Hill Road, Warrendale, PA 15086-7527, Tel: 724-772-1616, www.pri-network.org.

PD2103	Aerospace Quality Assurance, Product Standards, Qualification Procedure, Sealants
PRI-QPL-AMS3277	Products Qualified Under AMS3277

2.4 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D4214	Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films
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