



AEROSPACE MATERIAL SPECIFICATION

AMS3687™

REV. C

Issued 1974-03
Revised 1993-01
Stabilized 2016-11

Superseding AMS3687B

Adhesive Film, Humidity-Resistant, Epoxy
For Sandwich Panels, -55 to +95 °C (65 to +200 °F)

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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1. SCOPE:

1.1 Form: This specification covers a high-humidity-resistant, modified epoxy adhesive in the form of film supplied as rolls or sheets.

1.2 Application: Primarily for bonding aluminum-faced sandwich panels in the construction of light weight, portable shelters. The adhesive is useful over the temperature range -55° to +95°C (-65° to +200°F).

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

AMS 2825 - Material Safety Data Sheets

AMS 3106 - Primer, Adhesive, Corrosion-Inhibiting, -55° to +95°C (-67° to +203°F)

AMS 3911 - Fabrication of Sandwich Panels for Light Weight Portable Shelters

AMS 4037 - Aluminum Alloy Sheet and Plate, 4.4Cu - 1.5Mg - 0.60Mn (2024; -T3 Flat Sheet, -T351 Plate)

- 2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19120.

ASTM C297 - Tension Test of Flat Sandwich Constructions in Flatwise Plane
ASTM C393 - Flexure Test of Flat Sandwich Constructions
ASTM C480 - Flexure Creep of Sandwich Constructions
ASTM D1002 - Strength Properties of Adhesives in Shear by Tension Loading
(Metal-to-Metal)
ASTM D1780 - Conducting Creep Tests of Metal-to-Metal Adhesives
ASTM D1781 - Climbing Drum Peel Test for Adhesives
ASTM D3166 - Fatigue Properties of Adhesives in Shear by Tension Loading
(Metal/Metal)

- 2.3 U.S. Government Publications: Available from Commanding Office, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

- 2.3.1 Federal Specification:

QQ-A-250/4 - Aluminum Alloy 2024, Plate and Sheet

- 2.3.2 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packing and
Packaging of
MIL-STD-1472 - Human Engineering Design Criteria for Military Systems,
Equipment, and Facilities

3. TECHNICAL REQUIREMENTS:

- 3.1 Material: Shall be modified epoxy film supplied in sheets or rolls, consisting either entirely of adhesive material or of a carrier impregnated with adhesive, with a suitable nonadhering separator film on both surfaces. The adhesive film shall possess high-humidity resistance, shall be compatible with AMS 3106 corrosion-inhibiting primer, and shall not have a deleterious effect on the surfaces of materials being bonded.

- 3.1.1 Storage Life: Film shall meet the requirements of 3.2 when tested at any time up to 6 months from date of manufacture when stored at not higher than 7°C (45°F) and conditioned at 30°C ±2 (86°F ±4) for not less than 120 hr before being cured.

- 3.2 Properties: Film shall conform to the following requirements; tests shall be performed on the film supplied and in accordance with specified test methods, insofar as practicable:

- 3.2.1 Uncured Adhesive:

- 3.2.1.1 Tack: The adhesive shall be of moderate tack such that, when applied to a vertical surface of clean aluminum alloy sheet at 18° - 30°C (65° - 86°F), the film shall not sag or separate from the surface in less than 72 hours.