SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS-G-25667

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Glass, Monolithic, Aircraft Glazing

NOTICE

This document has been taken directly from U.S. Military Specification MIL-G-25667E, Amendment 1 and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-G-25667E, Amendment 1. Any part numbers established by the original specification remain unchanged.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualification requirements and associated qualified products lists are mandatory for DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this SAE technical document.

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1. SCOPE:

1.1 Scope:

This specification covers monolithic glass for use in aircraft glazing. (see 6.1.)

1.2 Classification:

Monolithic glass shall be furnished in the following types and classes, as specified by the procuring activity.

Type I. Ready-cut, commercial float or polished plate glass.
Type II. Ready-cut, color-clear polished plate glass.
Type III. Ready-cut, heat-absorbing polished plate glass.
Type IV. Ready-cut, low expansion borosilicate and sodium aluminum borosilicate polished plate glass (coefficient of expansion from 45 to 65 x 10^{-7} per degree centigrade (C) between 25° and 300°C).
Type V. Ready-cut, polished flat glass, chemically strengthened (coefficient of expansion from 70 to 95 x 10^{-7} per degree C).

NOTE: The characteristics of type V glass permit a variety of break patterns to be obtained. The specific production application will determine the process best suited for the intended use.

Class A. Flat.
Class B. Curved.

2. APPLICABLE DOCUMENTS:

The following publications, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

2.1 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

PPP-B-591 Boxes, Fiberboard, Wood-Cleated
PPP-B-601 Boxes, Wood, Cleated-Plywood
PPP-B-621 Boxes, Wood, Nailed and Lock-Corner

MIL-P-116 Preservation, Methods of
MIL-L-10547 Liners, Case, Waterproof

MIL-STD-129 Marking for Shipment and Storage
MIL-STD-130 Identification Marking of U.S. Military Property
MIL-STD-1186 Cushioning, Anchoring, Bracing, Blocking, and Waterproofing; With Appropriate Test Methods
FED-STD-406 Plastic, Methods of Testing

2.2 Uniform Classification Committee:

Available from Uniform Classification Committee, 202 Chicago Union Station, Chicago, IL 60606.

Uniform Freight Classification Rules

2.3 The Franklin Institute:

Available from Franklin Institute, Benjamin Franklin Parkway at 20th Street, Philadelphia, PA 19103. Orders should specify the title cited above, pages 583 through 617 of Journal Franklin Institute, Volume 230, 1940.)

Proposed Standard Solar-radiation Curves for Engineering Use

3. REQUIREMENTS:

3.1 Preproduction:

This specification makes provisions from preproduction inspection (see 4.3).

3.2 Material:

The material shall be specially selected aircraft glazing quality ground and polished glass, or equivalent. The glass blanks before grinding and polishing may be formed by any manufacturing process. Types I through IV glass may be annealed, semitempered, or fully tempered, as specified. Type V to be processed on the basis of specific product application. Glass shall be furnished in Class A or B as specified.

3.3 Stress:

Semitempered, fully tempered, glass shall have a minimum average stress or modulus of rupture equal to that of a reference sample meeting the requirements of the purchase order or applicable drawing when tested in accordance with 4.5.3. Unless otherwise specified (See 6.2), the average stress or modulus of rupture of reference samples shall be as follows:

a. 1/4-inch thick semitempered glass shall have an average stress within the limits of 1,400 to 1,900 mμ per inch center tension or flexural strength of 18,000 to 21,000 pounds per square inch (psi).

b. 1/4-inch thick fully tempered glass shall have a minimum average stress of approximately 2,800 mμ per inch center tension or a minimum flexural strength of 25,000 psi.

c. 0.085-inch thick chemically strengthened glass shall have an average stress of 1,400 to 4,200 mμ per inch center tension or flexural strength between 12,000 psi to 70,000 psi as required.

NOTE: Flexural strength will remain the same with different thicknesses, however, the center tension will vary with thickness.