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AEROSPACE MATERIAL SPECIFICATION

SAE AMS3642 REV. E

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Superseding AMS3642D

Plastic Moldings, Laminated, Thermosetting Resin Glass Cloth Reinforced Heat Resistant

RATIONALE

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

STABILIZED NOTICE

This document has been declared "Stabilized" by SAE AMS P, Polymeric Materials Committee, and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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1. SCOPE:

1.1 Form:

This specification covers a glass-cloth-reinforced thermosetting resin in the form of laminated, pressure-bag or matched-die moldings.

1.2 Application:

These moldings have been used typically for parts requiring thermal stability consistent with good mechanical properties when exposed to temperatures up to 260 °C (500 °F) continuously or up to 315 °C (599 °F) intermittently, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The applicable issue of referenced publications shall be the issue in effect on the date of the purchase order.

2.1 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 149	Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
ASTM D 150	A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials
ASTM D 256	Impact Resistance of Plastics and Electrical Insulating Materials
ASTM D 570	Water Absorption of Plastics
ASTM D 635	Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
ASTM D 638	Tensile Properties of Plastics
ASTM D 638M	Tensile Properties of Plastics (Metric)
ASTM D 695	Compressive Properties of Rigid Plastics
ASTM D 695M	Compressive Properties of Rigid Plastics (Metric)
ASTM D 790	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D 790M	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials (Metric)
ASTM D 792	Specific Gravity (Relative Density) and Density of Plastics by Displacement

2.2 U.S. Government Publications:

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

MIL-STD-2073-1	DOD Materiel, Procedures for Development and Application of Packaging Requirements

3. TECHNICAL REQUIREMENTS:

3.1 Material and Fabrication:

The product shall consist of layers of woven glass cloth impregnated with a thermosetting resin and molded to the required shape by pressure-bag or matched-die techniques.

3.1.1 Glass Cloth Reinforcement: Shall be a continuous-filament woven cloth. Prior to being impregnated with the resin, the cloth shall have been heat-cleaned followed by chemical treatment with a suitable glass cloth finish such as hydrolyzed aminotriethoxysilane. Mat or unidirectional (nonwoven) fabrics suitably treated may be used in noncritical areas, as required, for bosses, fill-ins, and corner reinforcements or as thickening agents.

3.1.2 Impregnating Resin: Shall be a heat-resistant, thermosetting resin formulated to meet the requirements of this specification.