

AEROSPACE MATERIAL SPECIFICATION



AMS 3726/2A

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Superseding AMS 3726/2

Shims, Filled Resin Compound Precatalyzed Sheet

1. SCOPE:

1.1 Form:

This specification covers a filled, resinous, thermosetting, precatalyzed compound in the form of sheet capable of being applied and cured in place between the surfaces of mechanically fastened (joined) structures.

1.2 Application:

This product has been used typically as a molded shim during assembly of aircraft components and parts, but usage is not limited to such applications. The compound covered by this detail specification requires storage in the frozen condition until just prior to installation.

2. APPLICABLE DOCUMENTS:

See AMS 3726.

3. TECHNICAL REQUIREMENTS:

3.1 Basic Specification:

The complete requirements for procuring the product described herein shall consist of this document and the latest issue of the basic specification, AMS 3726.

3.2 Material:

Shall be a precatalyzed epoxy or modified epoxy-base polymer supplied in sheet form. The thickness, width, and length of the sheets shall be as specified.

3.2.1 Storage Life: The product shall meet the requirements of this specification at any time up to six months from date of receipt by purchaser when stored below -37 °C (-35 °F) in the original unopened containers.

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3.3 Cured Properties:

Shall be as shown in Table 1.

TABLE 1

| Paragraph | Property | Requirement | Method of Testing |
|-----------|---|---|-------------------|
| 3.3.1 | Hardness, Durometer D or equivalent, minimum average | 92 | ASTM D 2240 |
| 3.3.2 | Specific Gravity, maximum | 1.60 | ASTM D 792 |
| 3.3.3 | Coefficient of Linear Thermal Expansion, maximum average -62 to +93 °C (-80 to +199 °F) | 5.4×10^{-5} mm/mm per °C (3.0×10^{-5} inch/inch per °F) | ASTM D 696 |
| 3.3.4 | Lap Shear Strength, minimum average | 2000 psi (13.8 MPa) | ASTM D 1002 |
| 3.3.5 | Lap Shear Residual Strength, Exposed, minimum average | | |
| 3.3.5.1 | Salt Spray, 30 days at 50 °C ± 1 (122 °F ± 2) | 1500 psi (10.3 MPa) | ASTM B 117 |
| 3.3.5.2 | Condensing Humidity, 30 days at 60 °C + 1 (140 °F ± 2) | 1700 psi (11.7 MPa) | ASTM D 1151 |
| 3.3.5.3 | JP-4 Fuel, 7 days at 60 °C ± 1 (140 °F ± 2) | 1800 psi (12.4 MPa) | ASTM D 3165 |
| 3.3.6 | Strain Compatibility, Tensile, Constant Amplitude Cycling | | |
| 3.3.6.1 | Aluminum alloy | 20 cycles without failure at -55 °C ± 1 (-67 °F ± 2) | 4.5.2 |
| 3.3.6.2 | Graphite-epoxy laminate | 20 cycles without failure at -55 °C ± 1 (-67 °F ± 2) | 4.5.3 |
| 3.3.7 | Flatwise Compressive Strength, minimum | 30.0 ksi (207 MPa) stress without failure | 4.5.4 |
| 3.3.8 | Shim-Torque Test, breakaway torque, individual bolt, minimum | 50% of initial applied torque | 4.5.5 |