



AEROSPACE MATERIAL SPECIFICATION

AMS-T-21595™**REV. A**Issued 1998-09
Revised 2022-09

Superseding AMS-T-21595

(R) Tapes, Pressure-Sensitive Adhesive, Masking,
Non-Staining for Aircraft Painting Applications

RATIONALE

This revision updates properties and test methods for pressure-sensitive adhesive tape and adds requirements for a qualified products list (QPL). The revision also reformats the specification to current SAE and G-8 guidelines.

1. SCOPE

1.1 Form

This specification establishes requirements for pressure-sensitive adhesive tape designed for masking and color separation during aircraft painting operations.

1.2 Application

The masking tapes covered by this specification are typically applied to aircraft surfaces to support aircraft painting procedures, but usage is not limited to such applications. The tapes are designed for use with all common finishes, but especially during application of polyurethane coatings such as MIL-PRF-85285, or topcoats qualified as a part of AMS3095 paint systems.

1.3 Classification

The masking tapes covered by this specification shall be classified as follows:

Type I - Paper, Creped

NOTE: Type I is recommended for masking flat, contoured, or riveted surfaces, and for general color separation applications. Type I is also recommended for masking large areas.

Type II - Paper, Flat (Discontinued)

NOTE: Type II is recommended for masking flat surfaces only. Type II is also recommended for masking large areas.

Type III - Plastic

NOTE: Type III is recommended for masking flat, contoured, or riveted surfaces, and for fine line color separation applications where color distinction is critical. Type III can also be used for general color separation applications.

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2022 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
http://www.sae.org

SAE WEB ADDRESS:

Full document details: SAE AMST21595A

For more information on this standard, visit
<https://www.sae.org/standards/content/AMST21595A/>

Documents

Document Sharing Hub

1.4 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 document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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.

AMS3095	Paint: High Gloss for Airline Exterior System
AMS4462	Aluminum Alloy, Sheet and Plate, Alclad, 4.4Cu - 1.5Mg - 0.60Mn (Alclad 2024, -T3 Sheet, -T351 Plate), Solution Heat Treated, Cold Worked and Naturally Aged
AMS-STD-595	Colors Used in Government Procurement

2.2 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 C1036	Standard Specification for Flat Glass
ASTM D3330	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
ASTM D3611	Standard Practice for Accelerated Aging of Pressure-Sensitive Tapes
ASTM D3652	Standard Test Method for Thickness of Pressure-Sensitive Tapes
ASTM D3759	Standard Test Method for Breaking Strength and Elongation of Pressure-Sensitive Tape

2.3 U.S. Government Publications

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

MIL-DTL-5541	Chemical Conversion Coatings on Aluminum and Aluminum Alloys
MIL-PRF-85285	Coating: Polyurethane, Aircraft, and Support Equipment
MIL-PRF-85582	Primer Coatings: Epoxy, Waterborne

2.4 PRI Publications

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

PD2000 PRI-QPL Program Requirements

PRI QPL-AMS-T-21595 Products Qualified Under AMS-T-21595

2.5 ISO/ANSI Accredited Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories

3. TECHNICAL REQUIREMENTS

3.1 Materials

The masking tapes shall consist of backing material coated on one side with a pressure-sensitive adhesive requiring no moisture, heat, or other special preparation prior to application.

3.1.1 Backing

The backing shall be uniform in texture and shall perform satisfactorily as a masking tape. The backing shall have sufficient strength to allow the tape to be unwound from the roll and to be removed from the masked surface after application of finishing materials without breakage or delamination. The finishing materials shall not penetrate the backing.

3.1.1.1 Backing for Type III

Surface of backing (non-adhesive side) shall have a matte finish to prevent paint flaking (flakeoff) during tape removal operation.

3.1.2 Adhesive

The adhesive shall be a pressure-sensitive, water-insoluble, and homogeneous layer on one side of the backing. The adhesive shall cause the tapes to adhere immediately and firmly to clean, dry surfaces to which the tape is generally applied during masking in finishing operations. There shall be no wrinkling, curling, breaking, or lifting of the tape during or after application. There shall be no separation of the adhesive from the backing upon unwinding the rolls or upon removal from surfaces after application of the finishing materials. There shall be no liner over the adhesive.

3.2 Finished Tape

3.2.1 Rolls

The masking tapes shall be uniformly and smoothly wound in rolls, with adhesive side in, on suitable cores having a minimum inside diameter of 3 inches (76 mm) with maximum allowable of +1/16 inch (1.6 mm). The cores shall have sufficient rigidity to prevent distortion of the roll under normal conditions of use. The tapes shall be in one continuous strip, except that any single roll may contain three splices, provided the percentage of spliced rolls in any shipment does not exceed a reasonable proportion based upon standard manufacturing practice. The length of tape per roll shall be at least 60 yards (55 m).

3.2.2 Width

Tape width options shall be 1/4 inch (6.2 mm), 1/2 inch (12.4 mm), 3/4 inch (19 mm), 1 inch (25 mm), 1-1/2 inches (3.8 cm), 2 inches (5.1 cm), or 3 inches (7.6 cm) with a tolerance of $\pm 1/32$ inch (0.8 mm).

3.2.3 Color

The masking tapes shall be opaque and may be any color commercially used by tape manufacturer.

3.2.4 Marking of Rolls

Each roll of tape shall be marked on the inside face of the core with the manufacturer's name, product code, the specification number. The lot number and/or expiration date may be added at the purchaser's discretion.

3.3 Quality

The adhesive shall be a smooth, uniform coating covering the entire area of one side of the tape. Edges of the tape shall be straight, true, and unbroken to provide sharp, distinct boundaries to the finished areas.

3.4 Properties

The masking tapes shall conform to the requirements shown in Table 1, determined in accordance with the specified test methods.

Table 1 - Properties

Paragraph	Property	Applicable to Types	Requirement	Test Method Paragraph
3.4.1	Thickness, Inch (mm), Maximum	I III	0.0080 (0.20) 0.0060 (0.15)	4.7.5.1
3.4.2	Tensile Breaking Strength, lb/in (N/cm) Width, Minimum	I III	20.0 (35.0) 10.0 (17.5)	4.7.5.2
3.4.3	Elongation Percent, Minimum	I III	8 100	4.7.5.3
3.4.4	Adhesion to Steel, oz/in (N/cm) Width, Minimum	I III	30 (3.3) 25 (2.7)	4.7.5.4
3.4.5	Adhesion to Steel After Aging, oz/in (N/cm) Width, Minimum	I III	25 (2.7) 20 (2.2)	4.7.5.5
3.4.6	Edge Seepage	I III	No more than ten seepage areas greater than 3/64 inch (4.8 mm) deep per specimen. No more than two seepage areas greater than 1/16 inch (1.6 mm) deep. Disregard any edge seepage noise caused by the hiding power stickers. No more than five seepage areas greater than 1/64 inch (0.4 mm) deep per specimen. No more than one seepage area greater than 1/16 inch (1.6 mm) deep. Disregard any edge seepage noise caused by the hiding power stickers.	4.7.5.6
3.4.7	Compatibility	I, III	No edge seepage, no penetration of finish through backing (bleeding), no tape color bleeding/staining of finish caused by adhesive or backing, color line sharp, no tearing of tape from edges, no delamination.	4.7.5.7
3.4.8	Removability	I, III	Tape removal to be a clean, simple operation, no tearing of tape from edges, no delamination, no adhesive transfer.	4.7.5.8
3.4.9	Adhesive Transfer	I, III	No adhesive transfer.	4.7.5.9