AEROSPACE MATERIAL SPECIFICATION

AMS3095™	REV. B
Issued 2001-02 Revised 2022-09 Superseding AMS3095A	

(R) Paint System: High Gloss for Aircraft Exterior

RATIONALE

This specification revision is necessary to clarify technical requirements and to place in standard G-8 specification format. It also satisfies the SAE Five-Year Review requirement.

1. SCOPE

1.1 Form

This specification establishes requirements for a high gloss paint system for use on commercial/business aircraft.

1.2 Application

The paint systems covered by this specification are typically applied to exterior surfaces of aluminum fuselage aircraft to protect against corrosion and to provide the required color schemes, but usage is not limited to such applications.

1.3 Classification

Specific classification of paint systems is not defined.

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.

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For more information on this standard, visit
https://www.sae.org/standards/content/AMS3095B/

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.

AMS1377	Remover, Paint Epoxy and Polyurethane Paint System, Non-Chlorinated Solvent
AMS3721	Tape for Organic Coatings Adhesion Testing
AMS4037	Aluminum Alloy, Sheet and Plate, 4.4Cu - 1.5Mg - 0.60Mn (2024; -T3 Flat Sheet, -T351 Plate), Solution Heat Treated
AMS4041	Aluminum Alloy, Sheet and Plate, Alclad, 4.4Cu - 1.5Mg - 0.60Mn (2024; -T3 Sheet/-T351 Plate with 1-1/2% Alclad), Solution Heat Treated, Cold Worked, and Naturally Aged
AMS-STD-595	Colors Used in Government Procurement
AS1241	Fire Resistant Phosphate Ester Hydraulic Fluid for Aircraft
AS9100	Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations
MA4872	Paint Stripping of Commercial Aircraft - Evaluation of Materials and Processes

2.2 ISO/ANSI Publications

Copies of these documents are available online at http://webstore.ansi.org/.

ISO 1513	Paints and Varnishes - Examination and Preparation of Test Samples
ISO 1514	Paints and Varnishes - Standard Panels for Testing
ISO 1518-1	Paints and Varnishes - Determination of Scratch Resistance - Part 1: Constant-Loading Method
ISO 1519	Paints and Varnishes - Bend Test (Cylindrical Mandrel)
ISO 2409	Paints and Varnishes - Cross-Cut Test
ISO 2431	Paints and Varnishes - Determination of Flow Time by Use of Flow Cups
ISO 2812-1	Paints and Varnishes - Determination of Resistance to Liquids - Part 1: Immersion in Liquids Other than Water
ISO 2812-2	Paints and Varnishes - Determination of Resistance to Liquids - Part 2: Water Immersion Method
ISO 2813	Paints and Varnishes - Determination of Gloss Value at 20 Degrees, 60 Degrees and 85 Degrees
ISO 3270	Paints and Varnishes - Temperatures and Humidities for Conditioning and Testing
ISO 4623-2	Paints and Varnishes - Determination of Resistance to Filiform Corrosion - Part 2: Aluminium Substrates
ISO 4628-2	Paints and Varnishes - Evaluation of Degradation of Coatings - Designation of Quantity and Size of Defects, and of Intensity of Uniform Changes in Appearance - Part 2: Assessment of Degree of Blistering
ISO 4628-8	Paints and Varnishes - Evaluation of Degradation of Coatings - Designation of Quantity and Size of Defects, and of Intensity of Uniform Changes in Appearance - Part 8: Assessment of Degree of Delamination and Corrosion around a Scribe or Other Artificial Defect

ISO 4628-10 Paints and Varnishes - Evaluation of Degradation of Coatings - Designation of Quantity and Size of Defects, and of Intensity of Uniform Changes in Appearance - Part 10: Assessment of Degree of Filiform Corrosion

ISO 6272-1 Paints and Varnishes - Rapid-Deformation (Impact Resistance) Tests - Part 1: Falling-Weight Test, Large-Area Indenter

ISO 6860 Paints and Varnishes - Bend Test (Conical Mandrel)

ISO 9227 Paints and Varnishes - Determination of Resistance to Neutral Salt Spray (Fog)

ISO 11890-1 Paints and Varnishes - Determination of Volatile Organic Compound (VOC) Content - Part 1: Difference Method

ISO 15528 Paints, Varnishes and Raw Materials for Paints and Varnishes - Sampling

ISO 16474-3 Paints and Varnishes - Methods of Exposure to Laboratory Light Sources - Part 3: Fluorescent UV Lamps

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

2.3 ANSI Accredited Publications

Copies of these documents are available online at http://webstore.ansi.org/.

ANSI Z400.1/Z219.1 Hazardous Workplace Chemicals - Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation

2.4 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 D1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

ASTM D2244 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

ASTM D3960 Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings

2.5 U.S. Government Publications

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

FED-STD-141 Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing

MIL-PRF-85285 Coating: Polyurethane, Aircraft and Support Equipment

2.6 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-AMS3095 Products Qualified Under AMS3095

2.7 EN Publications

Available from European Standard Store Krimicka 134 318 13 Pilsen Czech Republic Tel: +420-377-921-379, www.en-standard.eu.

EN 9100 Quality Management Systems - Requirements for Aviation, Space and Defence Organizations

2.8 European Union Publications

Available from the European Commission, https://ec.europa.eu/info/index_en.

Commission Regulation (EU) No 453/2010 Annex II: Requirements for the Compilation of Safety Data Sheets

3. TECHNICAL REQUIREMENTS

3.1 Materials

The paint systems shall consist of a sequence of coating materials applied to exterior aircraft surfaces to achieve the performance requirements detailed in this specification. The minimum coating materials shall be a surface pretreatment, a primer coating, and a topcoat system that provides paint color and gloss. The topcoat system may be a single-stage monocoat material or a basecoat/clearcoat system. An intermediate coat, such as a selectively strippable coating, may also be included in the paint system. The manufacturer shall define the specific coating materials of the paint system. Composition of the coating materials is not specified except as follows:

3.1.1 Prohibited Materials

The manufacturer of the paint system shall certify that no cadmium or cadmium compounds, and no lead or lead compounds, have been intentionally added to the formulations of the paint system coating materials.

3.1.2 Toxicity

The paint system coating materials shall have no adverse effect on the health of personnel when used for their intended purposes in accordance with manufacturer's instructions and with appropriate handling procedures and precautions per the safety data sheets (4.8.2).

3.2 Quality

Individual components of the paint system coating materials, as received in original containers, shall be evaluated in accordance with ISO 1513. They shall be uniform in quality and condition, free from extraneous matter, and free from skinning, gelling, hard settlement, or objectionable properties that will prevent satisfactory application to produce a defect free film. There shall be no separation of ingredients that cannot be readily dispersed by hand mixing.

3.3 Viscosity

The viscosity of each applicable admixed coating material shall conform to the manufacturer specified viscosity range when measured in accordance with ISO 2431.

3.4 VOC Content

The volatile organic compound (VOC) content of each admixed coating material (when thinned to typical spraying consistency, if required) shall be reported in g/L (lb/gal) when measured in accordance with ASTM D3960 (calculate using Paragraph 10.2 and Appendices X2 and X3) and ISO 11890-1 (calculate using Method 3). Both values for each coating material shall be included in the qualification test report.

3.5 Application and Finish

The paint system shall show an even finish with good leveling, free from runs, sags, wrinkling, pin holing, streaking, or other defects when evaluated in accordance with 4.7.5.1.

3.6 Dry Time

The dry-to-tape time of each applicable coating material in the paint system shall meet the maximum dry-to-tape times as specified by the manufacturer when tested in accordance with 4.7.5.2. No adhesion loss shall be exhibited upon removal of the tape. No permanent marring or imprint shall be exhibited on the last applied coating of the paint system.

3.7 Properties

The paint system, when prepared and applied per 4.7.4, shall conform to the requirements shown in Table 1, determined in accordance with the specified test methods.

Table 1 - Properties

Paragraph	Property	Requirement	Test Method Paragraph
3.7.1	Gloss	90 gloss units, min (60 degrees geometry) 80 gloss units, min (20 degrees geometry)	4.7.5.3
3.7.2	Initial Color	ΔE^*_{ab}, max of 1.0 for all colors	4.7.5.4
3.7.3	Adhesion - Cross Hatch	Classification 0, max (paint system thickness, distance between parallel cuts, cutting tool/method used, and tape used shall be included in the qualification test report)	4.7.5.5
3.7.4	Flexibility - Reverse Impact	No cracking or loss of adhesion	4.7.5.6
3.7.5	Flexibility - Conical	No peeling, cracking, or damage	4.7.5.7
3.7.6	Flexibility - Cylindrical (Low Temperature)	No peeling, cracking, or damage	4.7.5.8
3.7.7	Water Resistance - Blistering	No blistering or other deterioration	4.7.5.9
3.7.8	Water Resistance - Adhesion	Classification 1, max	4.7.5.10
3.7.9	Water Resistance - Penetration	No penetration to the substrate	4.7.5.11
3.7.10	Fluid Resistance - Hydraulic Fluid	No blistering (slight staining acceptable); minor defect within 1.5 mm (0.062 inch) of scribe allowable; no penetration to the substrate	4.7.5.12
3.7.11	Corrosion Resistance - Filiform	3.2 mm (0.125 inch) max longest filament length (L) from scribe	4.7.5.13
3.7.12	Corrosion Resistance - Neutral Salt Spray	3.2 mm (0.125 inch) max corrosion width (c); no blistering observed, away from the scribe line, of size S(2) or greater	4.7.5.14
3.7.13	Artificial Weathering - Gloss Retention, 60 Degrees	80% min of initial value	4.7.5.15
3.7.14	Artificial Weathering - Color Retention	ΔE^*_{ab} four units max compared to initial value	4.7.5.16
3.7.15	Cleanability	Delta L, min 75% of initial value	4.7.5.17
3.7.16	Strippability	95% removal, min in 8 hours; for removal of selectively strippable coatings, no degradation of remaining coatings (manufacturer and product name of paint remover, number of applications, and time between applications shall be included in qualification test report)	4.7.5.18
3.7.17	Restoration	Conformance to 3.7.3, 3.7.7, 3.7.8, 3.7.9, and 3.7.10 (only required for paint systems with a selectively strippable coating)	4.7.5.19
3.7.18	Heat Stability	No peeling, cracking, or damage; color change is considered acceptable	4.7.5.20

3.8 Pot Life

The paint system shall conform to 3.7 after the manufacturer specified minimum pot life for each admixed coating material.

3.9 Shelf Life

Shelf life for each coating material shall be a minimum of 12 months from the date of packaging when stored in the original, unopened containers at a temperature between 5 °C (41 °F) and 35 °C (95 °F). Shelf life for monocoat or basecoat material shall be determined from date of packaging after the manufacturer's tinting process, if applicable.

3.9.1 Storage Stability

The paint system shall conform to 3.2, 3.3, 3.4, 3.5, 3.6, and 3.7 after the manufacturer specified shelf life for each coating material, when stored in the original, unopened containers.

4. QUALITY ASSURANCE PROVISIONS

4.1 Qualification of Paint Systems

Qualification is the process by which material properties of a paint system are verified through testing at a certified laboratory prior to inclusion on a qualified products list (QPL). All paint systems sold to this specification shall be listed, or approved for listing, on an approved QPL in accordance with PD2000. The QPL listing shall include the manufacturer's name and facility addresses associated with the paint systems, including manufacturing facilities consisting of tint lines that blend final topcoat system colors. Manufacturer tint line facilities that only provide final topcoat system colors shall be distinguished on the QPL as such (4.4.1.3).

4.1.1 Qualified Products List

PRI-QPL-AMS3095 is the approved QPL managed by the Performance Review Institute (PRI), 161 Thorn Hill Road, Warrendale, PA 15086-7527, phone (724) 772-1616, fax (724) 772-1699. Information pertaining to qualification of paint systems and associated manufacturing facilities may be obtained from PRI.

4.1.1.1 VOC content (3.4), pot life (3.8), and shelf life (3.9) for each coating material in the paint systems shall be reported on the QPL.

4.2 Quality System of Manufacturer

Before submitting a paint system for qualification to this specification for the purpose of being listed on the QPL, the manufacturer shall have a quality system in place at each associated manufacturing facility which holds a third-party accreditation to AS9100 or EN 9100.

4.3 Responsibility for Testing

The manufacturer of the paint system shall supply all samples needed and shall be responsible for the performance of all required tests of this specification.

4.4 Classification of Tests

4.4.1 Qualification Tests

All technical requirements of this specification (see Section 3) are qualification tests. Conformance to these requirements shall be established prior to QPL approval. All qualification testing shall be carried out by a laboratory which is independent of the manufacturer and is accredited per ISO/IEC 17025 with a scope of accreditation that is approved by the G-8 Qualified Products Group (QPG).

4.4.1.1 Qualification tests shall be conducted using topcoat system colors per Table 2 and 4.4.1.2.

Table 2 - Colors used in qualification testing

Paragraph	Property	Gray	White	Red	Yellow	Blue
3.7.1	Gloss	✓				
3.7.2	Initial Color		✓	✓	✓	✓
3.7.3	Adhesion - Cross Hatch	✓				
3.7.4	Flexibility - Reverse Impact	✓				
3.7.5	Flexibility - Conical	✓				
3.7.6	Flexibility - Cylindrical (Low Temperature)	✓				
3.7.7	Water Resistance - Blistering	✓		✓	✓	✓
3.7.8	Water Resistance - Adhesion	✓		✓	✓	✓
3.7.9	Water Resistance - Penetration	✓		✓	✓	✓
3.7.10	Fluid Resistance - Hydraulic Fluid	✓		✓	✓	✓
3.7.11	Corrosion Resistance - Filiform	✓				
3.7.12	Corrosion Resistance - Neutral Salt Spray	✓				
3.7.13	Artificial Weathering - Gloss Retention 60 Degrees	✓		✓	✓	✓
3.7.14	Artificial Weathering - Color Retention	✓		✓	✓	✓
3.7.15	Cleanability	✓				
3.7.16	Strippability	✓				
3.7.17	Restoration	✓				
3.7.18	Heat Stability	✓				
3.8	Pot Life (3.7)	✓				
3.8	Pot Life (3.7.2, 3.7.13, 3.7.14)			✓	✓	✓
3.9.1	Storage Stability (3.2, 3.3, 3.4, 3.5, 3.6, 3.7)	✓				
3.9.1	Storage Stability (3.7.2, 3.7.13, 3.7.14)			✓	✓	✓

4.4.1.2 The topcoat system colors shall be as follows:

- Gray shall be AMS-STD-595 Color No. 16515.
- White shall be AMS-STD-595 Color No. 17925.
- Red shall be AMS-STD-595 Color No. 11350.
- Yellow shall be AMS-STD-595 Color No. 13655.
- Blue shall be AMS-STD-595 Color No. 15102.

4.4.1.3 Manufacturer tint line facilities that only provide final topcoat system colors shall be qualified separately from the standard coating material qualification (4.4.1.1). Qualification testing shall consist of viscosity (3.3), application and finish (3.5), gloss (3.7.1), initial color (3.7.2), and cross hatch adhesion (3.7.3). Testing shall be conducted for white, red, yellow, and blue colors (4.4.1.2) using one of the manufacturer's AMS3095 topcoat systems produced from the applicable tint line and the necessary AMS3095 qualified stainers used for achieving coating color. Testing may be carried out by the manufacturer's laboratory or a laboratory of the manufacturer's choosing.

4.4.2 Acceptance Tests

The technical requirements shown in Table 3 are acceptance tests. Conformance to these requirements shall be established on each batch of coating material that constitutes the paint system. Acceptance testing may be carried out by the manufacturer's laboratory or a laboratory of the manufacturer's choosing.

Table 3 - Acceptance tests

Paragraph	Property	Test Method Paragraph
3.3	Viscosity(1)	
3.5	Application and Finish	4.7.5.1
3.7.1	Gloss	4.7.5.3
3.7.2	Initial Color(2)	4.7.5.4

(1) Viscosity conducted on each applicable admixed coating material.
(2) Initial color test run on applicable batch color only, using ΔE^*_{ab}, max of 1.0.

4.5 Sampling and Testing

Shall be as follows:

4.5.1 For Qualification Tests

Samples shall consist of approximately two 5 L kits (or two 1 gallon kits) of each coating material from a single production batch taken in accordance with ISO 15528. The materials shall be furnished in containers of the type to be used in filling contract orders. Samples shall be identified as follows and forwarded to the laboratory responsible for testing:

AMS3095B PRODUCT DESCRIPTION (e.g., pretreatment, primer, intermediate coat, topcoat system)
MANUFACTURER'S PRODUCT IDENTIFICATION
COLOR
NAME OF MANUFACTURER
ADDRESS OF MANUFACTURING FACILITY
BATCH NUMBER
DATE OF MANUFACTURE
DATE OF EXPIRATION
SUBMITTED BY (NAME) (DATE) FOR QUALIFICATION TESTS IN ACCORDANCE WITH AMS3095B

4.5.2 For Acceptance Tests

Samples shall consist of sufficient quantities of each coating material taken at random from each batch in accordance with ISO 15528 to perform the required tests. A batch shall be the quantity of coating material run through a mill or mixer at one time.

4.5.2.1 A statistical sampling plan, acceptable to purchaser, may be used in lieu of sampling as in 4.5.2.

4.6 Approval, Reapproval, and Recertification

Approval of qualification test results, reapproval, and recertification of qualification for QPL listing shall be in accordance with PD2000, unless otherwise specified herein. Data shall be reviewed by the G-8 QPG.

4.6.1 Approval

Manufacturer shall submit qualification test data to PRI for approval by the G-8 QPG. Qualification will be valid until such time that the conditions in 4.6.2 or 4.6.3 occur, or unless qualification is withdrawn per the conditions set forth in PD2000.

4.6.1.1 Interim Approval

The G-8 QPG will grant interim approval for paint systems that conform to all qualification requirements except storage stability (3.9.1) prior to submittal of storage stability data. The interim approval shall be in effect until the G-8 QPG verifies the storage stability data, at which time full qualification will be granted. The G-8 QPG may cancel the interim approval if the manufacturer fails to provide the storage stability data in a timely manner.

4.6.2 Reapproval

Manufacturer shall use ingredients, manufacturing procedures, processes, and methods of inspection on production coating materials that are the same as those used on the qualification samples. If necessary to make any change in product formulation, raw materials, basic methods of processing, or plant site, manufacturer shall submit for reapproval by the G-8 QPG a statement of the proposed changes in ingredients and/or processing and, when requested, sample coating materials. Production coating materials made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.6.2.1 A review of the submitted changes may result in reapproval without testing, reapproval after partial requalification testing, or reapproval after full requalification testing.

4.6.3 Recertification

Recertification of qualification is required every five years. Recertification consists of a letter certifying that there have been no changes in the material ingredients, manufacturing processes, or site of production for each paint system component since qualification, and that the paint system meets all of the requirements of this specification. In addition, cross hatch adhesion (3.7.3), reverse-impact flexibility (3.7.4), filiform corrosion resistance (3.7.11), and neutral salt spray corrosion resistance (3.7.12) per 4.4.1 shall be carried out by the manufacturer's laboratory or a laboratory of the manufacturer's choosing. The recertification test plan and proposed laboratory shall be approved by the G-8 QPG prior to testing. The 5 year recertification window starts from the date that interim approval is granted, if applicable, or the date of full qualification, if there is no interim approval.

Recertification of manufacturer tint line facilities that only provide final topcoat system colors (4.4.1.3) is required every 5 years. Recertification consists of a letter certifying that there have been no changes in the tint line materials, tinting processes, or tint line facility site since qualification of the tint line facility.

4.7 Test Methods

Testing shall be as follows:

4.7.1 Standard Test Conditions

Unless otherwise specified herein, standard test conditions for temperature and relative humidity are defined in ISO 3270. All test specimens shall be cured and tested under these conditions.

4.7.2 Standard Tolerances

Standard tolerances shown in Table 4 shall be applied throughout the test methods.

Table 4 - Standard tolerances

Measurement Units	Tolerance
Temperatures	±1 °C (±2 °F)
Days	±2 hours
Hours	±5 minutes
Minutes	±10 seconds
Millimeters (Inches)	±0.25 mm (0.010 inch)

4.7.3 Preparation of Test Panels

4.7.3.1 Description of Test Panels

All test panels shall conform to Table 5 requirements. Panels shall be cut to the required dimensions prior to chemical treatment. Three panels shall be required for each test (per applicable panel designation).

Table 5 - Test panel plan

Panel Designation	Panel Size	Substrate
A	0.8 x 100 x 150 mm (0.03 x 4 x 6 inches)	2024-T3 clad per AMS4041
B	0.8 x 100 x 150 mm (0.03 x 4 x 6 inches)	2024-T3 per AMS4037
C	0.8 x 300 x 300 mm (0.03 x 12 x 12 inches)	2024-T3 clad per AMS4041

4.7.3.2 Cleaning of Test Panels

All test panels shall be degreased as follows: remove protective oil or grease and other contaminations by solvent washing according to ISO 1514. Lightly abrade with fine grade non-woven sanding pad or equivalent and rinse with solvent. Use a wipe on, wipe off method. Allow to dry for a minimum of fifteen minutes.

4.7.4 Preparation of Test Specimens

4.7.4.1 Preparation of Materials

All materials utilized in test specimen preparation shall be prepared according to manufacturer's instructions.

4.7.4.2 Application of Coating Materials

Apply the paint system surface pretreatment, primer, intermediate coat (if applicable), and topcoat system in accordance with the manufacturer's instructions. Unless otherwise specified herein, the coated panels shall be cured for seven days at standard conditions by suspending or placing in a vertical position with free access to air.

4.7.4.3 Scribing

Scribing of test specimens, when applicable, shall utilize the scribe position and shape described in ISO 4623-2. Scribing shall be accomplished using an engraving machine.

4.7.5 Test Procedures

4.7.5.1 Application and Finish

Panels (C) per Table 5 shall be evaluated in accordance with FED-STD-141 Method 4331.2.

4.7.5.2 Dry-to-Tape Time

Panels (A) per Table 5 shall be tested in accordance with the following instructions. A 10 cm (4 inch) strip of AMS3721 masking tape (not older than 12 months from date of manufacture) shall be applied to each test panel and pressed down with four double passes of a roller weighing no less than 2.0 kg (4.5 pounds). The tape shall remain on the test panel for no less than 1 hour. The tape shall be removed by pulling it with a steady moderate pull back on itself as close to a 180 degree angle as possible. Evaluation for adhesion loss or permanent marring/imprint shall take place within 2 hours after the removal of the tape.

4.7.5.3 Gloss

Panels (A) per Table 5 shall be tested in accordance with ISO 2813 and the following instructions. Measure gloss using both 60 degree and 20 degree glossmeter geometries.

4.7.5.4 Initial Color

Panels (A) per Table 5 shall be tested in accordance with ASTM D2244 and the following instructions. Calculate L* a* b* coordinate values for each of the colors listed in 4.4.1.2 on both test panels and the applicable reference color standards. Compare color of test panels and reference color standards by calculating ΔE^*_{ab} for each color using the two sets of L* a* b* coordinate values.

4.7.5.5 Adhesion - Cross Hatch

Panels (A) per Table 5 shall be tested in accordance with ISO 2409 and the following instructions. Ensure that the appropriate spacing between cuts is utilized per the coating system thickness. After cuts are made, Procedure A.2 shall be employed to remove loose paint prior to evaluation (using AMS3721 masking tape not older than 12 months from date of manufacture). Evaluate cross hatch area per Table 1 in ISO 2409.

4.7.5.6 Flexibility - Reverse Impact

Panels (A) per Table 5 shall be tested in accordance with ISO 6272-1 and the following instructions. The pass-fail test option shall be employed. A 1000 g (2.2 pounds) weight shall be dropped from a height of 92 cm (36.2 inches) onto the panels, coated face down. Evaluate panels for cracking or loss of adhesion.

4.7.5.7 Flexibility - Conical

Panels (A) per Table 5 shall be tested in accordance with ISO 6860 and the following instructions. The pass-fail test option shall be employed. During examination, disregard the first 12 mm (0.5 inch) from the small end of the mandrel. Evaluate panels for peeling, cracking, or damage.

4.7.5.8 Flexibility - Cylindrical (Low Temperature)

Panels (A) per Table 5 shall be tested as follows. The panels and a 100 mm diameter mandrel jig (see Figure 1) shall be conditioned for 24 hours at -55 °C ± 2 °C (-67 °F ± 4 °F). While at this temperature, one panel end shall be held in the slotted position and the other end bent rapidly around the curved position of the jig with the side coated with the material on the exterior of the radius. Remove panel from jig and repeat for additional panels. Evaluate panels for peeling, cracking, or damage using normal, corrected vision.

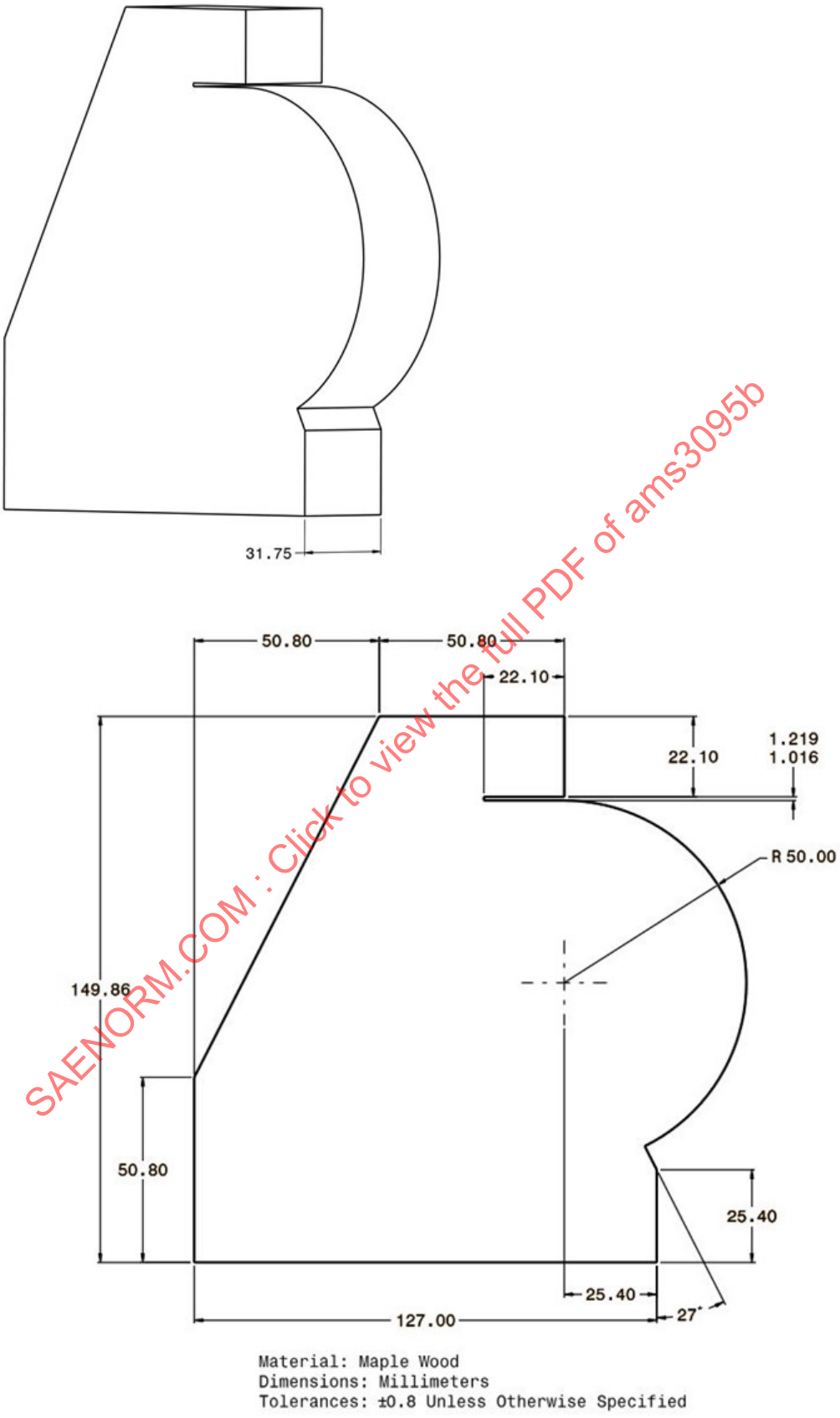

Figure 1 - 100 mm diameter mandrel jig