

INCH-POUND

MIL-PRF-29598  
10 October 1996

## PERFORMANCE SPECIFICATION

## FILM, PROTECTIVE, LEADING EDGE (PRESSURE-SENSITIVE)

This specification is approved for use by all  
Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification establishes the requirements for rain erosion resistant films with a pressure-sensitive adhesive designed for exterior applications where protection from rain erosion and abrasion are desired. The films may be applied to flat, curved, or compound surfaces.

1.2 Classification.

1.2.1 Types. The films are supplied in the following types:

- Type I - Transparent, gloss, 0.014 inch thick, paper or plastic liner
- Type II - Transparent, matte, 0.014 inch thick, plastic liner
- Type III - Transparent, gloss, 0.018 inch thick, plastic liner
- Type IV - Black, matte, 0.018 inch thick, plastic liner
- Type V - Colored, matte, 0.014 inch thick, plastic liner
- Type VI - Colored, matte, 0.018 inch thick, plastic liner

1.2.2 Classes. Types V and VI are furnished in colors conforming to FED-STD-595 as follows:

Class 1 - Gray	Color No. 36320
Class 2 - Gray	Color No. 36118
Class 3 - Gray	Color No. 36251
Class 4 - Green	Color No. 34092

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 414100B120-3, Highway 547, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 9330

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

## SPECIFICATIONS

## FEDERAL

QQ-A-250/5 - Aluminum Alloy Alclad 2024, Plate and Sheet

## DEPARTMENT OF DEFENSE

MIL-H-5606 - Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance  
 MIL-T-5624 - Turbine Fuel, Aviation, Grades JP-4, JP-5, and JP-5/JP-8 ST  
 MIL-L-7808 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Number O-148  
 MIL-A-8243 - Anti-icing and Deicing-Defrosting Fluid  
 MIL-L-23699 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number O-156  
 MIL-H-83282 - Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Aircraft, Metric, NATO Code Number H-537  
 MIL-C-85570 - Cleaning Compound, Aircraft, Exterior

## STANDARDS

## FEDERAL

FED-STD-595 - Colors used in Government procurement

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(Unless otherwise indicated, copies of the above specifications, standards and handbooks are available from the DoDSSP - Customer Service, Standardization Documents Order Desk, 700 Robbins Avenue, Bldg. 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- |            |   |   |
|------------|---|---|
| ASTM-C501  | - | Relative Resistance to Wear of Unglazed Ceramic Tile by Taber Abraser, Standard Test Method for (DoD Adopted)   |
| ASTM-D882  | - | Tensile Properties of Thin Plastic Sheeting, Standard Test Method for (DoD Adopted)   |
| ASTM-D1938 | - | Tear Propagation Resistance of Plastic Film and Thin Sheeting by a Single-Tear Method, Standard Test Method for   |
| ASTM-D2240 | - | Rubber Property - Durometer Hardness, Standard Test Method for (DoD Adopted)  |
| ASTM-D2244 | - | Color Coordinates, Calculation of color Differences from Instrumentally Measured, Standard Test Method for (DoD Adopted)  |
| ASTM-D2457 | - | Specular Gloss of Plastic Films and Solid Plastics, Standard Test Method for (DoD Adopted)  |
| ASTM-D2520 | - | Complex Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials at Microwave Frequencies and Temperatures to 1650°C, Standard Test Method for (DoD Adopted) |
| ASTM-D3330 | - | Peel Adhesion of Pressure-sensitive Tape at 180° Angle, Standard Test Method for (DoD Adopted)  |
| ASTM-D3652 | - | Thickness of Pressure-sensitive and Gummed Tapes, Standard Test Method for (DoD Adopted)  |
| ASTM-D3715 | - | Quality Assurance of Pressure-sensitive Tapes, Standard Practice for (DoD Adopted)  |
| ASTM-G53   | - | Operating Light- and Water- Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials, Standard Practice for (DoD Adopted)                    |

(Application for copies should be addressed to American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in the document,

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however, supersedes applicable laws and regulations, unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Materials. The pressure-sensitive adhesive coated films shall be capable of performing in the temperature range of -65° to +275° F (-54° to +135° C).

3.2.1 Adhesive. The adhesive shall be pressure-sensitive, water-resistant, fuel-resistant, solvent-resistant, homogeneous, and coated in a smooth and evenly distributed layer on one side of the film backing. The adhesive shall adhere immediately and firmly to the clean dry surfaces when applied as recommended by the manufacturer. The adhesive shall be covered with a strippable protective liner (see 3.2.3).

3.2.2 Film backing. The plastic film backing shall be color-stable polyurethane designed to provide protection against rain erosion and abrasion. The film backing shall be capable of being heat formed to fit compound curves.

3.2.3 Liner. The adhesive shall be covered with a liner that shall strip easily and cleanly from the adhesive without adhesive transfer. Type I film shall be protected with a treated paper or plastic liner. Types II, III, IV, V and VI shall use a plastic liner that shall be capable of being heat formed. The plastic liner supplied with types II, III, IV and V shall be either slit in 1.0 inch (in.) (25.4 millimeters (mm)) increments parallel to the length of the roll or non-slit (see 6.2 and 6.5).

### 3.3 Finished film.

3.3.1 Rolls. The film shall be uniformly and smoothly wound in rolls, liner side out, on cores having an inside diameter of 3 in. +1/16, -0 in. The cores shall not distort under normal conditions of use. The film shall be in one continuous strip, except any single roll may contain up to three splices, provided the percentage of spliced rolls in any shipment does not exceed a reasonable proportion based on standard manufacturing practice. Each roll shall be marked in the core or on the edge of the core with numerals or letters indicating the month and year of manufacture. Additionally, the manufacturer's name and product designation shall be stamped in the core.

3.3.1.1 Length. The length of film on each roll shall be 36 yards.

3.3.2 Width. The film shall be supplied in widths up to not more than 48 in. (see 6.2). The width tolerance shall be  $\pm 1/16$  in.

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TABLE I. Film physical properties.

Property	Types I & II	Types III & IV	Type V	Type VI	Test Paragraph
Tensile, pounds/inch width, minimum					
Initial	80	95	80	160	4.6.1
After weathering (see 4.6.9)	35	50	60	120	4.6.1
Elongation, percent, minimum					
Initial	450	450	450	450	4.6.1
After weathering (see 4.6.9)	300	325	350	400	4.6.1
Abrasion resistance, grams max.					
Initial	<0.10	<0.10	<0.10	<0.10	4.6.2
After weathering	<0.15	<0.15	<0.15	<0.15	4.6.2
Hardness, Shore A	80	80	80	80	4.6.3
Thickness, in., minimum	0.0125	0.016	0.0125	0.025	4.6.4
in., maximum	0.0155	0.020	0.0155	0.030	4.6.4
Adhesion, ounce/inch width minimum					
Initial	20	20	20	20	4.6.5
After weathering (see 4.6.9)	140	140	140	140	4.6.5
After 24 hours immersion in distilled water	95	95	95	95	4.6.5
After 72 hours immersion in turbine fuel (MIL-T-5624)	18	18	18	18	4.6.5
After 72 hours immersion in hydraulic fluid (MIL-H-5606)	60	60	60	60	4.6.5
After 24 hours immersion in lubricating oil (MIL-L-7808)	55	40	55	40	4.6.5
After 24 hours immersion in deicing fluid (MIL-A-8243)	55	40	55	40	4.6.5
After 24 hours immersion in cleaning fluid (MIL-C-85570)	18	18	18	18	4.6.5
After 24 hours immersion in hydraulic fluid (MIL-H-82382)	60	60	60	60	4.6.5
After 24 hours immersion in lubricating oil (MIL-L-23699)	55	40	55	40	4.6.5
Adhesion to liner, ounce/inch width, maximum	10	10	10	10	4.6.5
Tear, pounds, minimum					
Initial	3.6	5.0	3.6	7.5	4.6.10
After weathering (4.6.9)	1.5	2.3	3.0	7.5	4.6.10

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3.3.3 Thickness. The thickness of the film, consisting of only the adhesive and backing, shall be within the limits specified in table I.

3.3.4 Color. Types I, II, and III shall be transparent and shall remain transparent during their service life. Types V and VI shall be color coded by class and shall approximate the respective colors of FED-STD-595 with a maximum  $\Delta E$  of 3, as measured against the color standard card, using a colorimeter, CIELAB system illuminant D65 -10° as specified in ASTM-D2244. The color coding shall be as indicated in 1.2.2.

3.3.5 Surface finish.

3.3.5.1 Gloss. Types I and III shall have a minimum 60° specular gloss of 10 when tested as specified in ASTM-D2457.

3.3.5.2 Matte. Types II, IV, V and VI shall have a matte finish.

3.4 Electrical properties. Types I, II, and V shall have a dielectric constant of less than 3.1 and a loss tangent no greater than 0.025 at a frequency of 9.375 gigahertz (GHz) when treated by transmission-reflection in coax (see 4.6.6).

3.5 Rain erosion (Types I, II, III, IV, and V). The film shall exhibit no deterioration after a minimum of 90 minutes of exposure to the rain-erosion conditions specified in 4.6.7.

3.6 Rain erosion (Type VI). The film shall show no deterioration that affects serviceability after a minimum of 75 minutes of exposure to the rain erosion conditions specified in 4.6.8.

3.7 Physical properties. The film shall comply with the physical requirements in table I.

3.8 Workmanship. Workmanship shall be in accordance with the best commercial practice. The film shall be free from foreign matter and defects that may impair its serviceability or appearance. The adhesive shall be a smooth uniform coating (see 3.2.1), covering the entire area of one side of the backing. The edges of the film shall be straight, true, and unbroken.

#### 4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.3)
- b. Conformance inspection (see 4.4)

4.2 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified in the applicable test method or test paragraph in this specification.

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4.3 First article inspection. First article tests shall consist of all the inspections designated as first article in table II. First time suppliers to this specification shall perform the first article inspections (see 6.3).

4.3.1 First article sampling instructions. First article inspection samples shall consist of at least 2 rolls of film of the type and class being procured. Each roll shall be at least 2 inches wide. The samples shall be forwarded to the test facility designated by the procurer (see 6.2). Samples shall be marked with the following information:

Samples for first article inspection

MIL-PRF-29598, "Film, Protective, Leading Edge (Pressure-Sensitive)"

Manufacturer's name and address of plant of manufacture

Manufacturer's designation

Date of manufacture

Submitted by (name) (date) for first article inspection

4.4 Conformance inspection. Conformance inspection shall consist of end item visual examination (see 4.4.1), and physical property testing (see 4.4.2). The lot size, sampling for inspection, and the inspecting procedures shall be as specified in ASTM-D3715, except there shall be no defects.

TABLE II. Test methods.

Property	Test Method	Requirement Paragraph	First Article	Conformance
Tensile	4.6.1	3.8	X	X
Elongation	4.6.1	3.8	X	X
Abrasion Resistance	4.6.2	3.8	X	X
Hardness	4.6.3	3.8	X	X
Thickness	4.6.4	3.8	X	X
Adhesion				
Initial	4.6.5	3.8	X	X
After immersions	4.6.5	3.8	X	
Adhesion to liner	4.6.5	3.8	X	
Electrical properties	4.6.6	3.4	X	
Rain erosion				
Types I, II, III, IV, V	4.6.7	3.5	X	
Type VI	4.6.8	3.6	X	
Weathering	4.6.9	3.8	X	
Tear Resistance	4.6.10	3.8	X	
Gloss	4.6.11	3.3.5	X	X

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4.4.1 End item examination. Conformance end item examination shall be conducted in accordance with ASTM-D3715.

4.4.2 Physical property testing. Physical property tests shall be those designated quality conformance in table II. There shall be no failures.

4.5 Standard conditions. Unless otherwise specified in the applicable test method or paragraph, standard conditions shall be defined as  $75^{\circ} \pm 5^{\circ}\text{F}$  and relative humidity (RH) of  $50 \pm 5$  percent.

4.6 Test methods.

4.6.1 Tensile and elongation. The tensile and elongation shall be determined as described in ASTM-D882, except that jaws other than those in the method are permitted to be used. The sample size shall be 1.0 by 6.0 inches. The jaw separation shall be 3.0 inches and the cross head rate shall be 5.0 inches per minute.

4.6.2 Abrasion resistance. The abrasion resistance shall be determined as specified in ASTM-C501 except the abrasive wheel shall be H-18, the weight shall be 1000 grams and the number of cycles shall be 1000. The film specimens shall be applied to a steel plate designed to fit the Taber Abraser being used.

4.6.3 Hardness. Hardness shall be determined in accordance with ASTM-D2240 for conformance with the requirements in table I. The specimens shall be at least 0.25 inch thick and made by stacking plies of film to obtain the necessary thickness.

4.6.4 Thickness. Thickness shall be determined in accordance with ASTM-D3652 for conformance with the requirements in table I.

4.6.5 Adhesion (immersion) tests. Specimens of the film shall be applied and tested in accordance with ASTM-D3330, method A, "Single-coated tapes," with the exception that the test panel shall be Alclad aluminum alloy 2024, conforming to QQ-A-250/5, with dimensions of 2.0 by 5.0 inches. The film shall be applied to the panels to determine initial adhesion and adhesion to the liner. In addition, the film shall be applied to the panels and the panels shall then be immersed in the fluids listed in table III. Remove the specimens after the required immersion time and allow to drain. Pat dry with an absorbent tissue and test for adhesion no more than 12 hours after removal of the panels from the fluid. The adhesion values shall conform to table I.

4.6.6 Electrical properties. The electrical property tests as required in 3.4 shall be conducted by transmission-reflectance in coax as specified in ASTM-D2520.

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TABLE III. Immersion fluids and time duration.

Fluids	Specification	Duration (hours) <u>1/</u>
Distilled water		24
Turbine fuel, JP-5	MIL-T-5624	72
Hydraulic fluid	MIL-H-5606	72
	MIL-H-83282	72
Lubricating oil	MIL-L-7808	24
	MIL-L-23699	24
Deicing fluid	MIL-A-8243	24
Cleaning compound	MIL-C-85570	24

1/ Immersion temperature for MIL-L-7808 oil shall be 200° ±2° F. All other immersion temperatures shall be at standard conditions (see 4.5).

4.6.7 Rain erosion (Types I, II, III, IV, and V). The film, mounted on a glass-epoxy composite airfoil according to manufacturer's recommended instructions, shall be exposed in the rain erosion test system as found at Wright-Patterson Air Force Base (University of Dayton). Air foil configuration shall be as shown on figures 1 and 2. The speed shall be 500 miles per hour (mph), rain at 1 inch/hr. with a mean drop size of 2 mm. Six specimens shall be exposed for not less than 90 minutes. Upon removal, examine for conformance to 3.5.

4.6.8 Rain erosion (Type VI). The film, mounted to a glass epoxy composite air foil according to manufacturer's recommended instructions, shall be exposed in the rain erosion test system as found at Wright-Patterson Air Force Base (University of Dayton). Air foil configuration shall be as shown on figures 1 and 2. The speed shall be 500 mph, rain at 1 inch/hr. with a mean drop size of 2 mm. Six specimens shall be exposed for not less than 75 minutes. Upon removal, examine for conformance to 3.6.

4.6.9 Weathering. Five specimens of the film shall be exposed to 40 cycles of accelerated weathering as described in ASTM-G53. The QUV cycle used shall be 8 hours of UV at 70°C and 4 hours at 50°C and RH of 100 percent. The specimens shall be prepared prior to exposure as specified in the appropriate test. The films shall be tested to determine compliance with the requirements of table I.

4.6.10 Tear resistance. Tear resistance shall be tested in accordance with ASTM-D1938 for conformance with table I.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's

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packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use.

6.1.1 Type I. Designed for protection of leading edges of wings, horizontal and vertical stabilizers and other forward facing surfaces of aircraft and missiles from rain erosion and other forms of abrasion. The film can be applied to bare and painted surfaces.

6.1.2 Types II and IV. Designed for the same applications as Type I film, except they are also designed for use where non-reflective characteristics are required.

6.1.3 Type III. Designed for the same applications as Type I film, it can be heat formed to fit radomes and missile nose cones.

6.1.4 Type V. Designed for the same applications as Type I and II films and where a color match is desired.

6.1.5 Type VI. Designed for the same applications as Type III and where a color match is desired.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this specification.
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2 and 2.3).
- c. Type required (see 1.2.1).
- d. Class required (for Type V or VI, only) (see 1.2.2).
- e. Type of liner (slit or non-slit) (see 3.2.3)
- f. Length required (see 3.3.1.1).
- g. Width required (see 3.3.2).
- h. Packaging requirements (see 5.1).
- i. Whether first article inspection is required (see 3.1).

6.3 First-time suppliers. First time suppliers who have not previously supplied film to MIL-PRF-29598 and wish to have their material tested may do so at their own expense. The attention of contractors is called to this requirement. Manufacturers are urged to have the products

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that they propose to offer to the federal government tested so that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. It is recommended that inquiries pertaining to the testing of products be addressed to the Naval Air Systems Command, AIR-4.3.4, 1421 Jefferson Davis Highway, Arlington, VA 22243 (see 4.3).

6.4 Material Safety Data Sheets. Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets prepared in accordance with FED-STD-313 (Material Safety Data Sheets, Preparation and Submission of). The pertinent Government mailing addresses for submission of data are listed in FED-STD-313.

6.5 Part or Identifying Number (PIN). Military part numbers for cataloging purposes under this specification may be coded as follows:

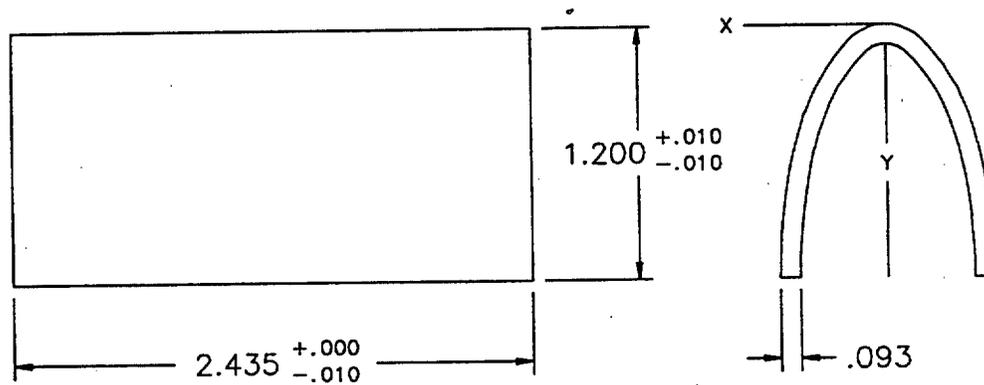
M29598 - X - X - X - X

Class (Types V and VI only) (see 1.2.2)  
 "L" for plastic liner, "P" for paper liner  
 Slit liner = 1, non-slit liner = 2  
 Type, numeric 1 through 6, (see 1.2.1)  
 Specification number

6.6 Subject term (key word) listing.

Abrasion resistant  
 Adhesive  
 Erosion, rain  
 Immersion  
 Liner  
 Tape  
 Weathering

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% CHORD	(Y) ORDINATE	(X) ABSCISSA
0.00	0.00	0.000
1.25	0.05	0.158
2.50	0.30	0.218
5.00	0.20	0.296
7.50	0.30	0.350
10.00	0.40	0.390
15.00	0.60	0.446
20.00	0.80	0.478
25.00	1.00	0.485
30.00	1.20	0.500

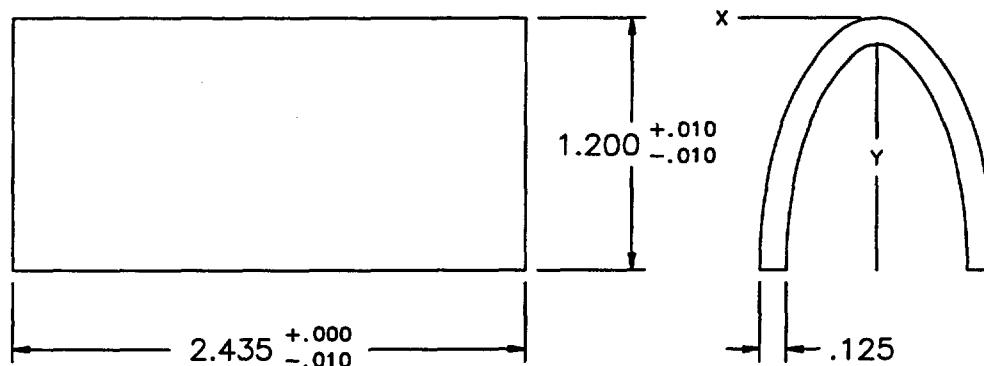
ALL DIMENSIONS IN INCHES

COATINGS APPLIED TO THIS AIRFOIL CONFIGURATION  
AVERAGE 0.010 - 0.020-INCH IN THICKNESS WITH A  
MAXIMUM THICKNESS LIMITED TO 0.055-INCH.

MAXIMUM WEIGHT OF THE SPECIMEN IS 123 GRAMS

FIGURE 1. Leading edge airfoil specimen - configuration 1.

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(X) - CHORD LENGTH = .000° AT LEADING EDGE

(W) - TOTAL WIDTH OF AIR FOIL SYMMETRICAL ABOUT THE CENTER LINE

(X) INCHES	(W) INCHES
0.000	0.000
0.050	0.086
0.100	0.133
0.200	0.205
0.300	0.265
0.400	0.317
0.500	0.362
0.600	0.403
0.700	0.439
0.800	0/471
0.900	0.499
1.000	0.524
1.200	0.550

COATINGS APPLIED TO THIS AIRFOIL CONFIGURATION  
AVERAGE 0.010 - 0.015 INCH IN THICKNESS WITH A  
MAXIMUM THICKNESS LIMITED TO 0.040-INCH.

MAXIMUM WEIGHT OF THE SPECIMEN IS 200 GRAMS.

FIGURE 2. Leading edge airfoil specimen - configuration 2.

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CONCLUDING MATERIAL

Custodians:

Army - MR

Navy - AS

Air Force - 99

Preparing activity:

Navy - AS

(Project 9330-1212)

Review activities:

Army - AL, AV

Navy - SH

Air Force - 11, 84

DLA - GS

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.  
 NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

**I RECOMMEND A CHANGE:**

1. DOCUMENT NUMBER  
MIL-PRF-29598

2. DOCUMENT DATE (YYMMDD)  
961010

3. DOCUMENT TITLE

**FILM, PROTECTIVE, LEADING EDGE (PRESSURE-SENSITIVE)**

4. NATURE OF CHANGE (*Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.*)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (*Last, First, Middle Initial*)

b. ORGANIZATION

c. ADDRESS (*Include Zip Code*)

d. TELEPHONE  
(*Include Area Code*)  
(1) Commercial:

7. DATE SUBMITTED  
(YYMMDD)

(2) DSN:  
(*If Applicable*)

8. PREPARING ACTIVITY

a. NAME  
COMMANDER  
NAVAL AIR WARFARE CENTER  
AIRCRAFT DIVISION

b. TELEPHONE NUMBER (*Include Area Code*)  
(1) Commercial (908) 323-1281 (2) DSN 624-1281

c. ADDRESS (*Include Zip Code*)  
CODE 414100B120-3  
HIGHWAY 547  
LAKEHURST, NJ 08733-5100

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:  
Defense Quality and Standardization Office, 5203 Leesburg Pike,  
Suite 1403, Falls Church, VA 22041-3466  
Telephone (703) 756-2340 DSN 289-2340