

INCH-POUND

MIL-DTL-19834C
w/ AMENDMENT 1
9 February 2011
SUPERSEDING
MIL-DTL-19834C
6 July 2006

DETAIL SPECIFICATION

PLATES, IDENTIFICATION OR INSTRUCTION, METAL FOIL, ADHESIVE BACKED GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers adhesive-backed metal foil identification or instruction plates, herein referred to as identification plates, for use as internal and external equipment identification or instruction (see 6.1).

1.2 Classification. Metal foil identification plates will be furnished in the following types, as specified (see 6.2)

- Type I - Aluminum foil, pressure sensitive adhesive-back, removable liner.
- Type II - Aluminum foil, solvent-activated adhesive-backed film.

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this standard. This section does not include documents cited in other sections of this standard 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 of documents cited in sections 3, 4, or 5 of this standard, 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 cited in the solicitation or contract.

FEDERAL SPECIFICATIONS

TT-P-1757	Primer Coating, Alkyd Base, One Component
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FEDERAL STANDARDS

FED-STD-141	Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing
FED-STD-191	Textile Test Methods
FED-STD-595/12197	Orange, Gloss
FED-STD-595/21105	Red, Semigloss
FED-STD-595/23655	Yellow, Semigloss
FED-STD-595/24084	Green, Semigloss
FED-STD-595/37038	Miscellaneous, Flat or Lusterless
FED-STD-595/37875	Miscellaneous, Flat or Lusterless

COMMERCIAL ITEM DESCRIPTIONS

A-A-3165	Lacquer, Gloss for Aircraft Use
A-A-59133	Cleaning Compound, High Pressure (Steam) Cleaner

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-A-8625	Anodic Coatings for Aluminum and Aluminum Alloys
DOD-P-15328	Primer (Wash), Pretreatment (Formula No. 117 For Metals) (Metric)
MIL-PRF-87937	Cleaning Compound, Aerospace Equipment

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-202	Test Method Standard Electronic and Electrical Component Parts
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(Copies of these documents are available online at <https://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents forms a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN SOCIETY FOR TESTING AND MATERIALS STANDARD (ASTM)

ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM D471	Standard Test Method for Rubber Property Effect of Liquids

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(Copies of this document are available from <http://www.astm.org> or ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

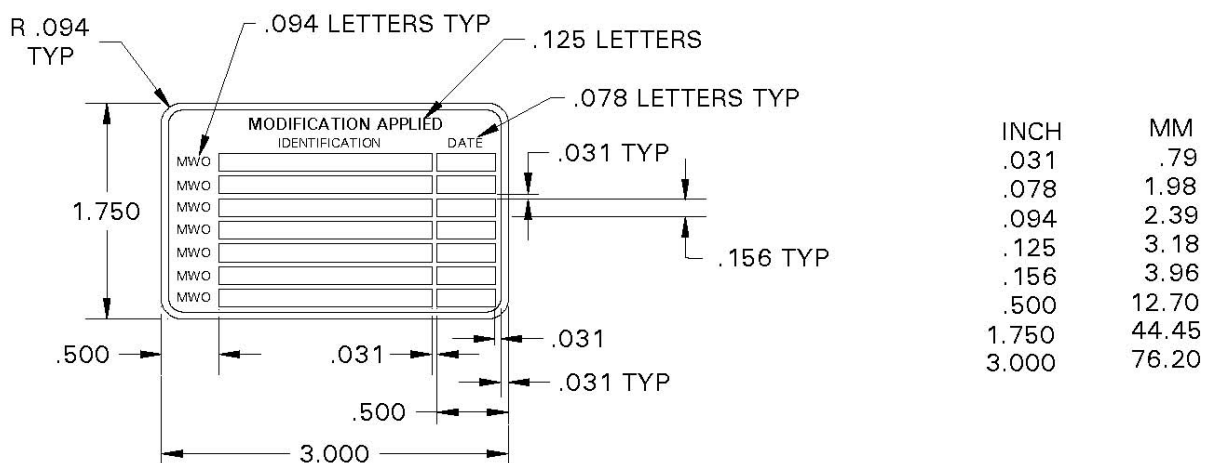
SAE AMS-QQ-A-250/5 Aluminum Alloy Alclad 2024, Plate and sheet-UNS A82024

(Copies of this document are available from <http://www.sae.org> or SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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 this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Individual identification plates. Individual identification shall be in accordance with figure 1 or as specified in the contract or order (see 6.2).



Notes:

1. Dimensions are in inches.
2. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
3. Tolerances shall be $\pm .0156$ (.40 mm) inch.
4. "Modification applied" shall be on the top line and "identification" and "Date" on the second line as shown, using letters .12 and .08 high minimum respectively.
5. Background color shall be black in accordance with table II.

FIGURE 1. Individual identification plate.

3.2 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.3 Material.

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3.3.1 Aluminum. Identification plates shall be manufactured from a base material of high grade aluminum alloy 1100 conforming to ASTM B209 and the thickness requirement specified in 3.4.1.

3.3.2 Adhesive. Identification plates shall have a layer of pressure-sensitive adhesive on one side, protected by a film material for the type specified (see 1.2).

3.4 Design and dimensional requirements.

3.4.1 Standard dimensions. Identification plate dimensions shall depend on the size of the unit on which the identification plate is to be placed. Standard dimensions shall be as specified in table I for the size number specified (see 6.2). The thickness for all identification plates shall be .003 inch \pm .0005 inch without backing material.

3.4.2 Marking. Identification plate marking information shall be as specified in the individual contract or order or as approved by the command or agency concerned. Letters, numerals, and characters shall be permanent and legible. Letters shall be Gothic capitals; numbers and characters shall be of similar appearance. Manufacturing instructions for application shall be shown on the adhesive protective cover (see 6.2).

3.4.3 Radius of corners. Identification plates shall have corners rounded to a maximum radius of .125 inch.

TABLE I. Standard dimensions of identification plates.

Size number	Length	Width	Tolerance
	Inches	Inches	Inch
1	2	.75	\pm .010
2	2	1	\pm .010
3	2	2	\pm .010
4	3	1	\pm .010
5	3	2	\pm .010
6	3	3	\pm .010
7	4	1.50	\pm .010
8	4	2	\pm .010
9	4	3	\pm .010
10	4	4	\pm .010
11	5	2	\pm .010
12	5	3	\pm .010
13	5	4	\pm .016
14	5	5	\pm .016
15	6	2	\pm .016
16	6	3	\pm .016
17	6	4	\pm .016
18	6	5	\pm .016
19	6	6	\pm .016
20	7	2	\pm .016
21	7	3	\pm .016
22	7	4	\pm .016
23	7	5	\pm .016
24	7	6	\pm .016
25	7	7	\pm .016

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3.5 Performance.

3.5.1 Protective material. Identification plates shall be capable of being applied after removal of the backing material as specified in 4.5.

3.5.2 Abrasive resistance. When tested in accordance with 4.6.3, identification plate characters shall be clearly visible and legible after being subjected to 500 cycles of the abrasion machine.

3.5.3 Edge adhesion. When tested in accordance with 4.6.4, identification plates shall withstand two or more traverses of the knife at any point without damage. Damage is defined as any evidence of peeling or a nick at a side extending inward more than .016 inch, or any nick at a corner extending inward more than .062 inch. There shall be no indication of poor adhesive, such as nicking, tearing, or peeling of the identification plate in whole or in part from the test panel.

3.5.4 Cyclic exposure. When tested in accordance with 4.6.5, identification plate markings shall show no signs of cracking, flowing, or softening. Identification plates shall meet the requirements of 3.5.3.

3.5.5 Accelerated oxygen aging. When tested in accordance with 4.6.6, identification characters or colors shall show no signs of discoloration or fading.

3.5.6 Accelerated light and weather resistance. When tested in accordance with 4.6.7, identification plate characters shall be clearly legible. A slight fading that does not exhibit a deleterious effect on legibility may be permissible.

3.5.7 Salt spray resistance. When tested in accordance with 4.6.8, identification plate characters shall be clearly visible. Slight discoloration or fading that does not exhibit a deleterious effect on legibility may be permissible.

3.5.8 Water resistance. When tested in accordance with 4.6.9, applied identification plates shall show no signs of looseness, warping, cracking, corrosion, impairment of legibility, discoloration or any other indications of damage.

3.5.9 Fuel resistance. When tested in accordance with 4.6.10, applied identification plates shall show no signs of looseness, warping, cracking, corrosion, impairment of legibility, discoloration or any other indications of damage.

3.5.10 Cleaning resistance. When tested in accordance with 4.6.11, identification plates shall show no indication of deleterious effect or damage as a result of the test.

3.5.11 Temperature range. When tested in accordance with 4.6.12, identification plates shall withstand temperature extremes of -55°C and +105°C without deleterious effect. There shall be no signs of looseness, warping, corrosion, impairment of legibility, discoloration or any other indications of damage. Looseness attributed to deterioration of paint film to panel shall not be cause for rejection.

3.6 Color style. The background and character color of the identification plate shall be in accordance with table II. When a color style for identification plates to be used on electronic equipment is not specified, color style III shall be used. Other colors may be used with the approval of the procuring activity. The surface shall be glossy or nonspecular, as specified (see 6.2).

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TABLE II. Color styles.

Style	Background		Characters	
	Color	FED-STD-595 Color Number	Color	FED-STD-595 Color Number
I	White	37875	Black	37038
II	Black	37038	White	37875
III	Black	37038	Natural	-
IV	Natural	-	Black	37038
V	Olive drab	24084	White	37875
VI	Red	21105	White	37875
VII	Yellow	23655	Black	37038
VIII	Red	21105	Natural	-
IX	Orange	12197	Natural	-

NOTE: When plates are designed with blank spaces or pads upon which additional marking will be added at a later time, the background and character color requirements do not apply to the pads or characters marked thereon.

3.7 Finish. Finish shall be such that identification plates shall conform to the requirements of this specification. If surfaces are anodized, they shall be anodized in accordance with type I or type II of MIL-A-8625 before adhesive is applied. The anodizing of the edge surfaces or surface under the adhesive of identification plates is optional. Whether anodized or not, name plate shall conform to abrasion test requirement.

3.8 Workmanship. Identification plates shall meet the design and dimensional requirements of this specification. All lines, numerals, and letters of finished identification plates shall be sharp and clear. All colors shall be uniform. Identification plates shall have smooth edges and shall be free of blisters, cracks, sharp corners, foreign matter or any other indications of defects (see 4.6.2).

4. VERIFICATION

4.1 Classification of inspections. The inspections 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 herein, all inspections shall be performed in accordance with the test conditions specified in the general requirements of MIL-STD-202.

4.3 First article inspection. First article inspection shall be performed at a laboratory or contractor's facility acceptable to the Government (see 6.3) on sample units produced with equipment and procedures normally used in production.

4.3.1 Inspection routine. First article inspection of identification plates shall consist of the examination and tests specified in table III on the samples as indicated therein, in the order shown.

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TABLE III. First article inspection.

Examination or test	Number of samples	Requirement Paragraph	Method paragraph
Examination	All	3.1, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.6, 3.7, and 3.8	4.6.2
Accelerated light and weather resistance - - - - -	2	3.5.6	4.6.7
Salt spray resistance - - - - -	2	3.5.7	4.6.8
Abrasion resistance - - - - -	2	3.5.2	4.6.3
Edge adhesion - - - - -	10	3.5.3	4.6.4
Cyclic exposure - - - - -	10	3.5.4	4.6.5
Accelerated oxygen aging - - - - -	2	3.5.5	4.6.6
Water resistance - - - - -	10	3.5.8	4.6.9
Fuel resistance - - - - -	20	3.5.9	4.6.10
Cleaning resistance - - - - -	10	3.5.10	4.6.11
Temperature range - - - - -	10	3.5.11	4.6.12

4.4.3 Failures. One or more failures shall constitute failure of this test.

4.4 Conformance inspection.

4.4.1 Sampling. Unless otherwise specified, sampling from each lot for examination and inspection shall be selected in accordance with table IV and shall be based on a zero acceptance sampling plan.

TABLE IV. Sampling plan for identification plates.

Lot size	Sampling size
1-13	100%
14-150	13
151-280	20
281-500	29
501-1,200	34
1,201-3,200	42
3,201-10,000	50
10,001-35,000	60
35,001-150,000	74
150,001-500,000	90
500,001- and over	102

4.4.1.1 Inspection lot. An inspection lot shall consist of all identification plates of the same size produced under essentially the same conditions and offered for inspection at one time.

4.4.2 Examination. The samples selected in accordance with 4.4.1 shall be examined for compliance with the examination requirements specified in table III of this specification.

4.4.3 Inspection. Conformance inspection shall consist of all the inspection specified in 4.6. If one or more sample units fail to pass the inspection, the sample shall be considered to have failed.

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4.4.4 Reject lots. Rejected inspection lots may be resubmitted for Government acceptance only if the manufacturer performs 100 percent inspection on the identification or instruction plates of the lot for those characteristics which were defective and resulted in rejection of the lot and removes all defective units and resubmits the lot for conformance inspection. Resubmitted lots shall be kept separate from new lots and shall be clearly identified as resubmitted lots.

4.4.5 Disposition of sample units. Sample units which have been subjected to inspection shall not be delivered on the contract or purchase order.

4.5 Preparation of specimens.

4.5.1 Type I and type II identification plates shall be prepared and applied, in accordance with the manufacturer's instruction, to the panels specified in 4.5.2. The immersion time for type I identification plates shall be no greater than 3 minutes.

4.5.2 Test panels. Unless otherwise specified in 4.6, the following finishes or materials shall be used as bases for application of identification plates for each test:

- (a) Aluminum alloy Alclad 2024 conforming to SAE-AMS-QQ-A-250/5 or aluminum alloy 6061 per ASTM B209.
- (b) Aluminum alloy Alclad conforming SAE-AMS-QQ-A-250/5 and anodized in accordance with MIL-A-8625 and coated as follows: One coat of pre-treatment coating conforming to DOD-P-15328, dry 30 minutes; one coat zinc-chromate primer conforming to TT-P-1757, dry to 30 minutes, and two coats of sea blue lacquer conforming to A-A-3165 applied 30 minutes apart. After application of the last coat, panels shall be dried for a minimum of 18 hours before applying identification plates for test.
- (c) Smooth painted steel.
- (d) Phenolic sheet.
- (e) Glass.

4.5.2.1 The surfaces of the test panels shall be thoroughly cleaned and free of all contamination such as oil, grease, dirt, or any other foreign matter. The identification plates shall be applied to the clean surface of the test panels in accordance with the manufacturer's instructions and allowed to set for 96 hours before being subjected to the tests specified in 4.6.

4.6 Methods of examination and test.

4.6.1 Preparation for test.

4.6.1.1 Uncoated surfaces. For testing on uncoated surfaces materials, two identification plates shall be applied, as specified in 4.5.2.1, to each of test panels specified in (a), (d), and (e) of 4.5.2.

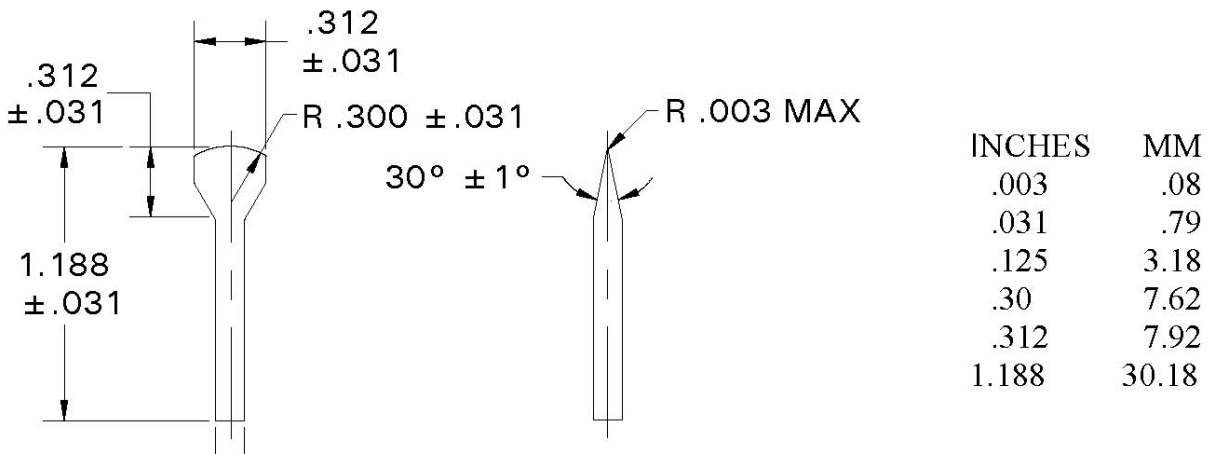
4.6.1.2 Coated surfaces. For testing on coated surfaces of materials, two identification plates shall be applied, as specified in 4.5.2.1, to each of the test panels specified in (b) and (c) of 4.5.2.

4.6.2 Examination. Identification plates shall be examined for compliance with the design, dimensional requirements, and workmanship specified herein (see 3.8).

4.6.3 Abrasion resistance. Using standard abrasion apparatus with CS-17 calibrase wheels and 1,000-gram loading, the abrasion test shall be performed as outlined in method 5306 of FED-STD-191.

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4.6.4 Edge adhesion. The edge adhesion shall be determined by repeatedly sliding a standard knife blade along the surface to which the identification plate has been applied until it contacts the specimen edge and rides up onto the surface of the identification plate. The knife blade shall be as specified for the Graham-Linton hardness tester or equivalent (see figure 2). The knife shall be held with its handle inclined at an angle of 40 degrees to the specimen surface and with the tangent to the midpoint of the cutting edge, parallel to the specimen edge. A 1 pound effective load shall be applied to the knife in a direction normal to the identification plate surface. This test shall be performed at each of the corners and at least one point on each side of the identification plate (see 3.5.3).



NOTES:

1. Dimensions are in inches.
2. Metric equivalents (to the nearest .01 mm) are given for information only and are based upon 1 inch = 25.4 mm.

FIGURE 2. Knife blade for edge adhesion test.

4.6.5 Cyclic exposure. Identification plates shall be exposed to eight cycles of the following conditions: 16 hours at 105°C, 6 hours in 20 percent salt (NaCl) spray at room temperature and 2 hours at -40°C. The edge adhesion test (see 4.6.4) shall be conducted at the end of the 8th cycle on all identification plates except those applied to Phenolic material.

4.6.6 Accelerated oxygen aging. Identification plates mounted on glass only, shall be subjected to 96 hours oxygen bomb-aging at 300 pounds per square inch (psi) and 70°C as outlined in method 5852 of FED-STD-191 to determine conformance with 3.5.5.

4.6.7 Accelerated light and weather resistance. Identification plates mounted on phenolic panels only shall be exposed to light from the flaming carbon arc of an accelerated weathering unit for 200 hours and intermittently sprayed with tap water as outlined in method 5804 of FED-STD-191 to determine conformance with 3.5.6.

4.6.8 Salt spray resistance. Identification plates mounted on phenolic panels only shall be exposed to a 20 percent (NaCl) spray at 95°F for 200 hours as outlined in method 606.1 of FED-STD-141 to determine conformance with 3.5.7.

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4.6.9 Water resistance. Identification plates applied to painted and unpainted test panels, prepared as specified in 4.5, shall be totally submerged in tap water for a period of 12 hours. The plates shall then be examined for conformance with 3.5.8.

4.6.10 Fuel resistance. Identification plates shall be applied to painted and unpainted test panels prepared as specified in 4.5. After 72 hours, the plates shall be immersed half their width in hydrocarbon test fluid conforming to ASTM D471 for 1 hour at room temperature. The plates shall be examined immediately after removal and after 24 hours of air drying (see 3.5.9).

4.6.11 Cleaning resistance. Identification plates shall be applied to painted and unpainted test panels, prepared as specified in 4.5, shall be capable of withstanding the effects of cleaning agents employed in A-A-59133 and MIL-PRF-87937, applied by cold steam process, hose, brush, and hand-wipe for a period of 1 minute (see 3.5.10).

4.6.12 Temperature range. Identification plates applied to painted and unpainted test panels, prepared as specified in 4.5, shall be subjected to temperature extremes of -55°C and +105°C for 3 hours at each temperature. Immediately after each temperature conditioning period, the identification plates shall be removed from the chamber and examined for conformance with 3.5.11.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirement shall be as specified in the contract or order (see 6.2). When packaging of material is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contracting 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 and type II Identification plates are intended for use on coated or uncoated smooth metallic surfaces, phenolic or glass surfaces within the temperature range from -55°C to +105°C.

6.1.2 Navy. For Navy equipment, type I material should be used. The use of type II material requires the approval of the procuring activity.

6.1.3 Air Force. For Air Force electronic test equipment, identification plates, in accordance with this specification will not be used in applications where equipment nomenclature identification name plates are required. Only type I of this specification may be used for other identification purposes in this equipment.

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6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Type (see 1.2).
- (c) Figure 1 or size number and design, and arrangement of marking information (see 3.1).
- (d) Figure 1 or, color or colors of plates required and whether specific colors of numerals, whether surface shall be glossy or nonspecular (see 3.6).
- (e) When first article is required (see 3.2).
- (f) Packaging requirements (see 5.1).

6.3 First article. When a first article is required, it should be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a production sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in all acquisition instruments regarding arrangements for selection, inspection, and approval of the first article.

6.4 Subject term (key word) listing.

Adhesive film
Aluminum foil, type I
Aluminum foil, type II
Pressure sensitive foil

6.5 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:

Army – AR
Navy – AS
Air Force – 69

Preparing activity:
DLA – IS

(Project 9905-2011-001)

Review activities:

Army – CR, EA, GL, MI
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