

MIL-R-12216C
20 December 1971
SUPERSEDING
MIL-R-12216B
2 June 1960

MILITARY SPECIFICATION

REFLECTOR, LIGHT: ALUMINUM, AND SHIELD, LIGHT: TELESCOPING, ALUMINUM

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

1. SCOPE

1.1 This specification covers a parabolic aluminum reflector and a collapsible aluminum shield for use on incandescent electric lamps.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

- | | |
|-----------|--|
| L-P-378 | - Plastic Sheet and Strip, Thin Gauge, Polyolefin. |
| PPP-B-601 | - Boxes, Wood, Cleated-Plywood. |
| PPP-B-636 | - Box, Fiberboard. |
| PPP-B-640 | - Boxes, Fiberboard, Corrugated, Triple-Wall. |

Military

- | | |
|-------------|---|
| MIL-T-704 | - Treatment and Painting of Materiel. |
| MIL-A-8625 | - Anodic Coatings, for Aluminum and Aluminum Alloys. |
| MIL-F-22191 | - Films, Transparent, Flexible, Heat Sealable for Packaging Applications. |

FSC 6210

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STANDARDS

Military

- | | |
|-------------|--|
| MIL-STD-105 | - Sampling Procedures and Tables for Inspection by Attributes. |
| MIL-STD-129 | - Marking for Shipment and Storage. |
| MIL-STD-130 | - Identification Marking of U.S. Military Property. |

DRAWINGS

ME

- | | |
|--------------|--------------|
| DL13217E7488 | - Shield. |
| DL13217E7489 | - Reflector. |

(Copies of specifications, standards, and drawings required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, ATTN: Tariff Publishing Officer, Room 202, Union Station, 516 West Jackson Boulevard, Chicago, Illinois 60606.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Association, Inc., ATTN: Tariff Order Section, 1616 P Street, NW, Washington, D. C. 20036.)

3. REQUIREMENTS

3.1 Description. The reflector and the shield shall be in accordance with Data Lists 13217E7489 and 13217E7488, respectively, and as specified herein.

3.1.1 Drawings. The drawings forming a part of this specification are engineering design drawings. No deviation from the prescribed dimensions

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or tolerances is permissible without prior approval of the contracting officer. Any data (e.g. shop drawings, layouts, flow sheets processing procedures, etc.) prepared by the supplier or obtained from a vendor to support fabrication and manufacture of the production item shall be made available, upon request, for inspection by the contracting officer or his designated representative.

3.2 First article (preproduction model). The supplier shall furnish a reflector and a shield for examination and testing within the time frame specified to prove prior to starting production that his production methods will produce reflectors and shields that comply with the requirements of this specification. Examination and tests shall be as specified in section 4 and shall be subject to surveillance and approval by the Government (see 6.3).

3.3 Reflector. The reflecting surface shall be anodized in accordance with MIL-A-8625, and shall have a minimum reflection factor of not less than 70 percent.

3.4 Shield. In the vertical extended position, the shield shall withstand a static load of four 5-pound weights uniformly applied around the periphery of the bottom of the shield without separation or other permanent deformation.

3.5 Treatment and painting.

3.5.1 Reflector. The exterior of the reflector shall be treated and painted in accordance with MIL-T-704, type A; color shall be black matte. Baked finishes will be permitted if the baking temperature does not exceed 250°F.

3.5.2 Shield. The exterior and interior surfaces of the shield shall be etched and finished with a black matte anodized treatment.

3.6 Identification marking. The reflector and the shield shall be identified in accordance with MIL-STD-130.

3.7 Workmanship. The reflector and the shield shall be free from defects, such as cracks, scratches, and other defects that could impair its operation or serviceability.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements

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specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspection. Inspection shall be classified as follows:

- (a) Preproduction inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).
- (c) Inspection of preparation for delivery (see 4.6).

4.3 Preproduction inspection.

4.3.1 Examination. The preproduction reflector and shield shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2 Tests. The preproduction reflector and shield shall be tested as specified in 4.5.2. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Sampling. Sampling for examination and test shall be in accordance with MIL-STD-105, inspection level S4.

4.4.2 Examination. Samples selected in accordance with 4.4.1 shall be examined as specified in 4.5.1. AQL shall be 1.5 percent defective.

4.4.3 Tests. Samples selected in accordance with 4.4.1 shall be tested as specified in 4.5.2. AQL shall be 1.5 percent defective.

4.5 Inspection procedures.

4.5.1 Examination. The reflectors and shields shall be examined for the following defects:

- 101. Nonconformance to the dimensions shown on the drawing.
- 102. Parts or components missing.
- 103. Misalignment of parts or components.
- 104. Materials or components not as specified.
- 105. Treatment and painting not as specified.
- 106. Identification markings not as specified.
- 107. Workmanship not as specified.

4.5.2 Tests.

4.5.2.1 Reflective efficiency. The reflective efficiency of the reflector shall be determined by the absorption of light of a reflected collimated beam or other suitable source. The loss of light in the process of reflection shall

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be determined by comparing the light reflected (in foot - candles) with the light projected (in foot - candles) upon the reflector surface and expressing the result as a percentage. A reflection factor of less than 70 percent shall constitute failure of this test.

4.5.2.2 Shield strength. The shield shall be extended to its full length and suspended vertically in the normal use position from a lamp-holder or with the top segment otherwise securely fixed. Four 5-pound weights shall be suspended without impact at uniform intervals from the flange of the bottom section of the shield for 5 minutes. The weights shall then be removed and the shield telescoped. Failure to telescope correctly, or any evidence of separation or other permanent deformation shall constitute failure of this test.

4.6 Inspection of preparation for delivery.

4.6.1 Quality conformance inspection of pack.

4.6.1.1 Unit of product. For the purpose of inspection, a completed pack prepared for shipment shall be considered a unit of product.

4.6.1.2 Sampling. Sampling for examination shall be in accordance with MIL-STD-105.

4.6.1.3 Examination. Samples selected in accordance with 4.6.1.2 shall be examined for the following defects. AQL shall be 2.5 percent defective.

- 108. Materials and containers not as specified for level A or B. Each incorrect material or container shall be considered one defect.
- 109. Reflectors not nested and separated as specified for level A or B.
- 110. Collapsed shields not wrapped as specified for level A or B.
- 111. Reflectors or shields packaged together in quantities exceeding 20 pounds for level A or B.
- 112. Contents not cushioned as specified for level A or B.
- 113. Box not waterproof sealed as specified for level A.
- 114. Reflectors or shields packed together in quantities exceeding 200 pounds for level A.
- 115. Strapping not zinc coated for level A.
- 116. Gross weight or size exceeds the box limitations for level B.
- 117. Marking missing, illegible, incorrect, or incomplete.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B, or C as specified.

5.1.1 Level A. The reflectors shall be nested, with a separator of plastic conforming to L-P-378 or MIL-F-22191 placed between each reflector.

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The collapsed shields shall be individually wrapped with either of the materials specified herein. Reflectors or shields in quantities not to exceed 20 pounds shall then be packaged in a close-fitting box conforming to PPP-B-636, W5C, style optional. The contents shall be cushioned within the box in a manner to prevent movement or damage. The box shall be closed and waterproof sealed with tape as specified for slotted style boxes in accordance with the appendix to the box specification.

5.1.2 Level B. The reflectors and shields shall be packaged as specified in 5.1.1 for level A except the box shall be type CF, class domestic, variety SW, grade 125, style optional. Box closure shall be in accordance with the appendix to the box specification.

5.1.3 Level C. The reflectors or shields shall be packaged in a manner to afford protection against damage from the supplier to the initial destination.

5.2 Packing. Packing shall be level A, B, or C as specified.

5.2.1 Level A. The reflectors or shields packaged as specified in 5.1, shall be packed together in a close-fitting box conforming to PPP-B-601, overseas type, style optional. The gross weight of each box shall not exceed 200 pounds. The box shall be closed and strapped in accordance with the appendix to the box specification. Strapping shall be zinc coated.

5.2.2 Level B. The reflectors or shields, packaged as specified in 5.1, shall be packed together in a close-fitting box conforming to PPP-B-640, class 2, style optional, or conforming to PPP-B-636, V3c. The gross weight or size of each box shall not exceed the limitations of the applicable box specification. Box closure and strapping shall be in accordance with the appendix to the applicable box specification.

5.2.3 Level C. The reflectors or shields, packaged as specified in 5.1, shall be packed to assure carrier acceptance and safe delivery to destination at the lowest ratings in fiberboard containers complying with Uniform Freight Classification rules or National Motor Freight Classification rules.

5.3 Marking. Packages and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The reflectors and shields are intended to be used in conjunction with conventional incandescent electric lamps to illuminate under normal and blackout conditions the interiors of tents, shelters, dugouts, and other similar field installations. They are components of Light Set, General Illumination; 25 Outlet.

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6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Time frame required for submission of preproduction model (see 3.2)
- (c) Level of packaging and level of packing required (see 5.1 and 5.2).
Level B packaging is intended to provide economical but limited protection and should be specified only when it is determined the reflectors or shields will be held in covered storage.

6.3 Preproduction model. Any changes or deviations of production reflectors or shields from the approved preproduction model during production will be subject to the approval of the contracting officer. Approval of the preproduction model will not relieve the supplier of his obligation to furnish reflectors or shields conforming to this specification.

Custodians:

Army - ME
Air Force - 82

Preparing activity:

Army - ME
Project No. 6210-0295

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 22-R255
INSTRUCTIONS: This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.		
SPECIFICATION <u>MIL-R-12216C, Reflector, Light: Aluminum, and Shield, Light: Telescoping, Aluminum</u>		
ORGANIZATION _____		
CITY AND STATE _____	CONTRACT NUMBER _____	
MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO (If "yes", in what way?)		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers attach to form and place both in an envelope addressed to preparing activity.)		
SUBMITTED BY (Printed or typed name and activity - (Optional))		DATE

FOLD

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U. A. ARMY MOBILITY EQUIPMENT COMMAND
RESEARCH, DEVELOPMENT AND ENGINEERING DIRECTORATE
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