21 March 1963
SUPERSEDING
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MILITARY SPECIFICATION

BOX, PLASTIC, COMPARTMENTED, SMALL PARTS

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

1. SCOPE

1.1 Scope.- This specification covers the requirements for a transparent plastic box containing six compartments and provided with a hinged cover.

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

QQ-S-766	- Steel Plate, Sheet, and Strip-Corrosion Resisting.
PPP-B-566	- Boxes, Folding, Paperboard.
PPP-B-636	- Box, Fiberboard.
PPP-B-676	- Boxes, Setup.
PPP-F-320	- Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.

STANDARDS

MILITARY

MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129	- Marking for Shipment and Storage.

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

FSC 8115

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.

American Society for Testing and Materials

Book of ASTM Standards

D256-56 - Impact Resistance of Plastics and Electrical Insulating Materials.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race St., Philadelphia 3, Pa.)

3. REQUIREMENTS

* 3.1 Preproduction sample approval.- When specified (see 6.2), before production is commenced, one finished plastic box shall be submitted to or made ready for the contracting officer or his authorized representative for inspection as specified in 4.2. Approval of the preproduction sample authorizes the commencement of production, but does not relieve the supplier of the responsibility for compliance with all applicable provisions of this specification. The preproduction sample shall be manufactured in the same facilities to be used for the manufacture of the production items.

3.2 Materials.-

* 3.2.1 Plastic.- The finished box shall be fabricated from a transparent, colorless, plastic molding material such as cellulose acetate butyrate, cellulose acetate propionate, ionomer (rigid) or polyvinyl chloride (rigid), but not limited to these materials. The molding material shall have a minimum impact strength, at room temperature (73 ± 2°F and 50 ± 4 percent relative humidity), of 2 foot pounds per inch of notch when tested as specified in 4.3.1.1. Clean, clear, unburned plastic material (free from contamination) in the form of imperfect parts, sprues, runners or other scrap of the same composition as the virgin material and produced in the molding or finishing operation may be reground and mixed with the virgin material.

* 3.2.2 Hinges.- The hinges and hinge pins shall be fabricated of corrosion-resisting steel conforming to class 302 or 304, condition A of QQ-S-766. Alternatively, the hinges shall be made of integrally molded plastic hinge components on the body and cover of the box.

* 3.3 Design.- The finished plastic box shall be of a plain, rectangular design, consisting of a rigid body and a rigid cover equipped with suitable hinges and an integral locking device. The body of the box shall be divided into six equal compartments by means of five partitions. Alternatively, the corners of the body and the cover may be rounded to a radius not greater than 1/4 inch, resulting in slightly smaller end compartments in the body.

* 3.3.1 Construction.- The body, cover and the five partitions of the finished box shall be molded from the material specified in 3.2.1. The cover shall be hinged to the body by use of the material specified in 3.2.2. When two metal hinges are used, they shall be of a 1/2 inch nominal width and secured to the body and cover by means of suitable brass eyelets or suitable metal commercial anchoring devices molded into the cover and body of the box. When two integrally molded plastic hinges are used, they shall be of the same composition as the box and formed as part of the molding operation. Hinges may also be made by molding part of the hinge on the cover and part on the body and joining these components by means of hinge pins fabricated from the metal material specified in 3.2.2. The cover shall be secured in a closed position on the body by means of two integrally molded lock components formed in the plastic material of cover and body during the molding operation. The dimensions of the finished plastic box shall be as specified in table I.

TABLE I.- Dimensions (inches)

	Length	Width	Depth	Wall thickness
Box (outside-overall)	8.37 nominal	4.43 nominal	1.31 nominal	
Cover (outside)	8.37 nominal	4.43 nominal	.43 nominal	0.035 min.-0.090 max.
Body (inside)	---	4.17 min.	1.18 min.	0.035 min.-0.090 max.
Partitions (5)	---	4.17 min.	1.18 min.	0.040 min.-0.070 max.
Compartments (6)	4.17 min.	1.30 min.	1.18 min.	

3.3.1.1 Compartmentation.- The five equally spaced partitions used to divide the box into six equal compartments shall run the full inside width of the body and the top surface of each shall be flush with the top surfaces of the body. The partitions shall be either integrally molded into the body of the box during the molding operation, in which case tapers shall be permitted to facilitate molding, or fabricated of the same material as the box and each partition permanently fastened to the interior of the box by means of a solvent or a suitable cement. The dimensions of the partitions and the compartments between the partitions shall be as specified in table I.

3.3.1.2 Cover.- The cover, fabricated of the material specified in 3.2.1, shall be dimensioned as specified in table I. It shall be aligned so as to seat flush on the top surface of the body and partitions and provide a close match with the body of the box, within standard molding tolerances, when closed and locked to the body by means of the integrally molded locks.

3.4 Performance.-

3.4.1 Box stability.- The finished plastic box, with cover closed and locked, shall have four point contact on the outer bottom surface and shall not wobble when tested as specified in 4.3.3.

* 3.4.2 Hinge and lock stability.- The hinges and the integral plastic locks of the completed box shall not crack, break or bend so as to affect performance, nor loosen or become separated from the body or cover when tested as specified in 4.3.3. The integral locks shall still keep the cover closed and locked upon completion of the test.

3.4.3 Impact resistance.- The finished plastic box shall not shatter, break, crack nor become deformed when tested as specified in 4.3.3.

* 3.5 Marking for identification.- The outside bottom of the finished plastic box shall be legibly marked with the manufacturer's name or readily identifiable trade mark.

3.6 Finish.- The surfaces of the finished plastic box shall be smooth, free from sharp edges, blisters, mold marks, prominent weld marks or sinks, holes, cracks, spray marks, flash, dirt and other defects that will affect the appearance or utility of the item.

3.7 Workmanship.- The finished plastic box shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels established herein.

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 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.

4.1.1 Certificates of compliance.- Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

* 4.2 Preproduction sample inspection.- When specified (see 3.1), the preproduction sample shall be examined for defects in 4.3.2.1, dimensions specified, and tested in accordance with 4.3.3.

4.3 Sampling for inspection.- Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.3.1 Component and material inspection.- In accordance with 4.1 above, components and materials shall be inspected and tested in accordance with all

requirements of referenced specifications, drawings and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase documents.

4.3.1.1 Component testing.- The molding material shall be tested for impact strength in accordance with Method A of ASTM D256-56. The sample unit shall be as specified in the above test method except that the thickness shall be 1/8 inch nominal. The sample size shall be five. Test results shall be reported as indicated in the test method. There shall be no evidence of failure of any sample unit to meet the requirement.

4.3.1.2 Certification.- Components and materials listed below may be accepted on the basis of a supplier's certificate of compliance for requirements specified in applicable paragraphs of this specification.

Component	Characteristic	Requirement paragraph
Plastic material	Composition	3.2.1
Plastic material	Impact strength	3.2.1

4.3.2 Examination of the end item.- The end item shall be examined for defects in applicable sub-paragraphs below and at the inspection levels and acceptable quality levels (AQL's) set forth in 4.3.2.4. Random samples shall be drawn from each lot of end items for examination of visual and dimensional defects. The lot size, for purposes of determining the sample size in accordance with MIL-STD-105, shall be expressed in units of one plastic box each for the examinations in 4.3.2.1 and 4.3.2.2. The sample unit shall be one finished plastic box.

4.3.2.1 Visual examination.- The finished plastic box shall be examined for defects in material, design, construction, appearance, workmanship and marking.

Examine	Defect
Color	Cover, body and partitions not colorless and transparent as specified.
Construction and workmanship	Top of cover, bottom of body and partitions not free of flash, rough or sharp edges. Plastic hinges not free of flash and sharp edges. Flash at other points exceeds 1/32 inch in length. Metal hinges and components not free of burrs or sharp edges. Body, cover and partition surfaces not smooth and uniform in texture. Body, cover or partitions warped, twisted, malformed, crazed, pitted, porous or bubbled, heat marked, cold seam or blister. Cover fails to seat properly on body in closed position. Any hole, crack, break, rupture, scratch or fracture in the cover, body partitions or hinges.

Examine	Defect
Construction and workmanship (cont'd)	Hinges not constructed of the material specified. Metal hinge components missing. Metal hinges not securely fastened to the cover and body. Box not complete with all specified parts. Box not divided into six compartments. Partitions missing. Individual partitions not securely fastened to inside of body.
Appearance	Oil, dirt, foreign matter on surfaces of the box. Chalked, burned, bloomed or scaly. Any scratch, dent, nick or chipped-out area on areas of the box affecting appearance.
Marking for identification	Missing, incomplete, or not legible.

4.3.2.2 Dimensional examination.- The finished plastic box shall be examined for defects in dimensions. Any dimension that does not conform to the requirements specified in table I shall be classified as a defect.

* 4.3.2.3 Examination of preparation for delivery requirements.- An examination shall be made to determine that packaging, packing and marking requirements of Section 5 of this specification are complied with. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully prepared for delivery, with the exception that it need not be sealed. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 and the acceptable quality level shall be 2.5 defects per 100 units.

Examine	Defect
Marking (exterior and interior)	Missing; incorrect; illegible; of improper size, location, sequence or method of application.
Materials	Any nonconforming component missing or damaged.
Workmanship	Inadequate application of components, such as incomplete closure of container flaps, loose strapping or taping. Bulged or distorted container.

Examine	Defect
Content	Number of boxes per shipping container is more or less than required.

4.3.2.4 Inspection levels and acceptable quality levels (AQL's).- The inspection levels for determining the sample size, and the acceptable quality levels (AQL's) expressed in defects per 100 units, shall be as follows:

Examination paragraph	Inspection level	AQL
4.3.2.1	I	2.5
4.3.2.2	S-2	2.5

* 4.3.3 Testing of the end item.- Testing of the finished plastic box shall be performed in accordance with table II for the characteristics shown therein. The sample unit shall be two finished boxes. The inspection sampling plan shall be in accordance with the following:

Lot size (lot unit)	Sample size (sample unit)
800 or less	2
801 up to and including 22,000	3
22,001 and more	5

The lot size shall be expressed in units of one box each. The lot shall be unacceptable if one or more sample units fail to meet any requirement specified.

TABLE II.- Testing of the end item

Characteristic	Requirement paragraph	Test method paragraph	Requirements applicable to sample unit	Number determinations per sample unit	Results reported as
Box stability	3.4.1	4.4.1	X	1	Pass or fail
Hinge and lock stability	3.4.2	4.4.2	X	1	Pass or fail
Impact resistance	3.4.3	4.4.3	X	1	Pass or fail

4.4 Test methods.-

* 4.4.1 Box stability.- The finished box, with its cover closed and locked and a 1/2 pound weight placed in the center of the top surface of the cover, shall be placed on a flat, smooth surface. The box shall seat firmly on all four points

of contact on the outer bottom surface without more than a 1/64 inch wobble as determined by means of a suitable feeler gauge.

* 4.4.2 Hinge and lock stability.- Starting with the cover of the plastic box in the closed position, locked by the integral locks, the cover of the box shall be opened 180° so that the cover shall be parallel with the body, then closed again into the locked position. This operation shall be repeated a total of 100 times.

* 4.4.3 Impact resistance.- The plastic box shall be loaded with one ounce of lead shot in each of the six compartments and the cover then closed and locked. The box shall then be dropped three times from a height of 2 feet onto a flat concrete surface so as to land squarely on the bottom of the box. In addition to the requirements specified in 3.4.3, the cover shall not open during these tests. Then the loaded box shall be firmly closed by means of a strip of adhesive tape around the center of the box and it shall be dropped from a height of 2 feet four times, once on each corner of the bottom of the box, onto a flat concrete surface.

5. PREPARATION FOR DELIVERY

5.1 Packaging.- Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A.- Each plastic box shall be packaged in a snug-fitting folding or setup paperboard box conforming to variety 1, style III, type A, class a of PPP-B-566; or type I, variety 1, class a, style optional, of PPP-B-676, respectively. Inside dimensions of each box shall approximate 8-1/2 inches in length, 4-1/2 inches in width and 1-3/8 inches in depth. Approximate dimensions are furnished as a guide only. Each box shall be closed in accordance with the appendix of the applicable box specification.

5.1.2 Level C.- Plastic boxes shall be packaged to afford adequate protection against physical damage during shipment from the supply source to the first receiving activity. The supplier may use his standard practice when it meets this requirement.

5.2 Packing.- Packing shall be level A, B or C as specified (see 6.2).

5.2.1 Level A.- Ninety-six plastic boxes, packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC, grade V2s of PPP-B-636. Level A packages shall be packed flat, three in length, four in width, and eight in depth within a shipping container. Inside dimensions of the shipping container shall approximate 26-1/4 inches in length, 19 inches in width and 12 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed, waterproofed, and reinforced with strapping or tape banding in accordance with the appendix of the container specification.

5.2.2 Level B.- Ninety-six plastic boxes, packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. Level A packages shall be packed flat, three in length, four in width, and eight in depth within a shipping container. Inside dimensions of the shipping container shall approximate 26-1/4 inches in length, 19 inches in width, and 12 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed in accordance with method II as specified in the appendix of the container specification.

5.2.2.1 When specified (see 6.2), the shipping container shall be grade V3c or V3s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with the appendix of the box specification. The shipping container material may also be grade V4s of PPP-F-320.

5.2.3 Level C.- Plastic boxes, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. Containers shall be in accordance with rules or regulations of carriers applicable to the mode of transportation.

5.3 Marking.- In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use.- The plastic box is intended for use in Military field chests, kits and assemblies to contain readily visible small parts.

6.2 Ordering data.- Procurement documents should specify the following:

a. Title, number and date of this specification.
b. When a preproduction sample is required (see 3.1).
c. Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
d. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

* 6.3 The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) 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 suppliers are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

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