

INCH-POUND

MIL-B-46506D  
AMENDMENT 7  
21 May 2002  
SUPERSEDING  
AMENDMENT 6  
04 January 1994

## MILITARY SPECIFICATION

### BOXES, AMMUNITION PACKING, WOOD, WIREBOUND

This amendment forms a part of MIL-B-46506D, dated 30 August 1984, and is approved for use by all the Departments and Agencies of the Department of Defense.

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#### 1.2 Classification

a. Change “Type 1” to “Type I”.

\* b. Grade A. Change as follows:

“Grade A – Preservative and heat treated boxes for the unrestricted overseas shipment or long term storage and handling of ammunition or explosive ammunition components.”

\* c. Add new grade as follows:

“Grade B – Heat treated, non-preservative treated boxes for overseas shipment and short term storage and handling of ammunition or explosive ammunition components.”

\* d. Grade C. Change as follows:

“Grade C – Boxes without preservative or heat treatment. For interplant shipment and for storage and handling under controlled conditions of ammunition or explosive ammunition or explosive ammunition components, for domestic shipment only.”

AMSC N/A

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2.1 SPECIFICATIONS, FEDERAL

Change “FF-N-105 – Nails, Wire; and Staples” to  
“FF-N-105 – Nails, Brads, Staples and Spikes; Wire, Cut and Wrought”  
Delete “NN-P-530 – Plywood, Flat Panel  
T-R-592 – Rope, Jute”  
Add “A-A-55057 – Panels, Wood/Wood Based; Construction and Decorative  
T-R-650 – Rope, Yarn and Twine, Bast Fiber”

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3.7 Other publications. Under “AMERICAN SOCIETY FOR TESTING AND MATERIALS”,  
add:  
“ASTM-A777 – Galvanized Round Steel Tying Wire, Standard Specification for “

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3.1.8.2 Alternative faceboards. Delete the second sentence and substitute: “Plywood shall conform to Type A of A-A-55057, Grade C-D with exterior glue Identification index 24/0.”

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3.5.1 Rope handles. First sentence: Delete “T-R-592” and substitute “T-R-650”. After the last sentence, add: “This length includes approximately six inches of rope (three inches under each cleat) that is routed under the cleats for attachment of the rope handle.”

3.6 Box identification. After the fifth sentence, add new sentence as follows:

“The letters “PC” shall be annotated on all boxes subjected to either the Cunapsol 5 (copper naphthenate) or the M-GARD W510 (copper naphthenate) preservative in accordance with 3.10.”

3.6.1 Webbing handles. End of first sentence. Change “MIL-W-17337C” to “MIL-W-17337”.

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3.8 End boards and end battens. Fifth sentence. Delete “Group B, NN-P-530” and substitute “Type A, A-A-55057”.

3.10 Preservative treatment. Delete the first paragraph and substitute:

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“3.10 Preservative treatment. Completely immerse Grade A boxes, individual or palletized or the finished wood parts thereof for a minimum of one minute in a solution of wood preservative.”

- a. PQ56 reduced with water down to 1.8 percent copper-8-quinolinolate as solution (see 6.7).
- b. An emulsion of wood preservative M-GARD W550 (zinc naphthenate) reduced with water down to 3 percent zinc as metal (see 6.8).
- c. An emulsion of M-GARD-W510 (copper naphthenate) reduced down with water to 2 percent copper as metal (see 6.15).
- d. A solution of Cunapsol 5 (copper naphthenate) reduced down with water to 2 percent copper as metal (see 6.16).

Alternatively, completely flood Grade A boxes, individual or palletized or the finished wood parts thereof, for a minimum of one minute in PQ56, M-GARD W550, M-GARD W510 or Cunapsol 5 preservative, as applicable. Completely inundate all interior or exterior surfaces (when finished wood parts are dipped) with preservative. Exercise care to assure complete coverage of all surfaces of the board. Immediately following the dip treatment, drain the wood products being treated for a period of not less than 5 minutes. If wood products are palletized, tip the pallet load on edge to facilitate thorough drainage. After the dip treatment, air dry the boxes for a period of 24 hours minimum providing through ventilation thus allowing full air circulation around all surfaces of the wood box. Accelerated drying in an oven or kiln is permitted providing oven or kiln does not exceed 160 degrees F. Air dry the boxes to a maximum moisture content of 18 percent when tested in accordance with 4.5.2 prior to shipment.”

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After 3.10.2, add new subparagraph as follows:

“3.10.3 Presence of M-GARD W510 (copper naphthenate) or Cunapsol 5 (copper naphthenate) preservative. When treated with M-GARD W510 or Cunapsol 5 the box shall show evidence of discoloration when tested as specified in 4.5.7.”

\* After 3.13, add new paragraph as follows:

“3.14 Heat treatment (Grade A and B only). Boxes shall be fabricated from wood heat treated to a core temperature of 56 degrees Celsius for a minimum of 30 minutes or shall be heat treated to the same requirement after box fabrication. For Grade A boxes, heat treatment shall take place prior to preservation application. The box manufacturer shall be affiliated with an inspection agency accredited by the United States Department of Agriculture. Each box shall be marked to show conformance to the International Plant Protection Convention Standard. The

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quality mark shall be placed on both ends of the box between the end cleats and the mark shall show traceability to the original source of heat treatment.”

4.2.2.1 Assembly (Continuation). Add major defect as follows:

“122. Preservative treatment not completely dry. 0.40% 3.10 Visual”

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4.4.3.3 and 4.4.3.4: Delete in their entirety and substitute:

“4.4.3.3 Presence of wood preservative. (see 3.10), Major defect. Select a sample of 15 Grade A boxes at random for this test. Subject four individual boards (cleat, faceboard, endboard and batten) of each box to the test specified in 4.5.3, 4.5.4 or 4.5.7 as applicable. If one or more boards fail to meet the applicable requirement, the box shall be classed defective. Failure of any box to comply with the requirements shall be cause for rejection of the lot.”

\* After 4.4.3.6, add new paragraph as follows:

“4.4.3.7 Presence of heat treatment. (see 3.14), Major defect, Select a sample of 15 boxes at random for this test. If the heat treatment marking does not does not comply on one or more boxes, then the lot shall be rejected. Also examine the boxes for the presence of pests or evidence of infestation (e.g. worm holes). Any visual obvious infestation or evidence of infestation of any box in the sample lot shall be cause for rejection.”

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4.5.1 Load test of rope handles. Delete in its entirety and substitute the following paragraphs:

“4.5.1 Load test of rope handles. Pack the box with any suitable material until its gross weight is twice as great as its gross weight when packed with the item for which it was intended. If the resulting weight of the packed box is 250 pounds (lbs.) or less, follow 4.5.1.1. If the resulting weight is greater than 250 lbs. and not greater than 500 lbs., follow 4.5.1.2.

4.5.1.1 Rope handle load test (250 lbs. or less). Suspend the box freely for one minute, minimum, from each rope handle in turn. In the event that one or both handles fail the requirement, the box shall be classed defective.

4.5.1.2 Rope handle load test (for greater than 250 lbs. to 500 lbs., maximum). Suspend the box freely, for one minute minimum, from both rope handles (at once). In the event that one or both handles fail the requirement, the box shall be classed defective.”

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4.5.4 Presence of M-GARD W550 (zinc naphthenate emulsifiable) preservative. Delete in its entirety and substitute:

“4.5.4 Presence of M-GARD W550 (zinc naphthenate emulsifiable) preservative.

4.5.4.1 Materials and equipment. The material and equipment required are as follows:

a. Reagent. Dissolve 0.1 gram of dithizone (diphenylthiocarbazone) (see 6.13) in either 100 ml of methyl ethyl ketone or 100 ml of chloroform. (Note: This solution may be stored for long periods of time.)

b. Eye dropper. An ordinary glass tube eyedropper may be used.

4.5.4.2 Test procedure. Five drops of the solution shall be applied to the wood surface. The indicator will turn red when zinc (M-GARD W550) is present. The color green indicates that the preservative is not present. Both colors fade quickly in the presence of light.”

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After 4.5.6, add new paragraphs as follows:

“4.5.7 Presence of M-GARD W510 (copper naphthenate emulsifiable) or Cunapsol 5 (copper naphthenate) preservative.

4.5.7.1 Materials and equipment. The materials and equipment required are as follows:

a. Reagent. Dissolve 0.5 grams of chrome azurol “S” concentrate (see 6.12) and 5.0 gram sodium acetate in 80 ml, of distilled water and then dilute further to 500 ml total with distilled water.

b. Sprayer. A common manual (fly) sprayer type applicator shall be used.

4.5.7.2 Test procedure. Spray solution over surface of dried treated wood. A deep blue color reveals the presence of copper (from copper naphthenate).

\* 4.5.8 Presence of heat treatment. Visually inspect the heat treatment marking on each of the boxes for conformance to the applicable requirements, including content, legibility and location.”

5.2 Packing – Level C. First sentence. After “round steel straps”, add “in accordance with ASTM-A777, Class 1 or 2.”

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6.9 Inspection equipment design. Delete in its entirety and substitute:

“6.9 Submission of contractor inspection designs for approval. Submit copies of designs as required to: Commander, U.S. Army ARDEC, ATTN: SMCAR-QAR-I, Picatinny Arsenal, NJ 07806-5000. This address will be specified on the Contractor Data Requirements List, DD Form 1423 in the contract.”

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6.10 Second sentence. Change the address to: Commander, U.S. Army Armament Research, Development and Engineering Center (ARDEC), ATTN: SMCAR-QAR-Q, Picatinny Arsenal, NJ, 07806-5000.”

6.13 Change to read as follows:

“Dithizone. Dithizone (diphenylthiocarbazone) may be obtained from J.T. Baker Chemical Company, Phillipsburg, New Jersey 08865 or equivalent facility.”

Add new paragraph as follows:

“6.15 M-Gard W510. M-GARD W510, for 2 percent copper as metal, may be obtained from Mooney Chemicals Inc., 2301 Scranton Road, Cleveland, Ohio 44113-9988 or equivalent facility.

6.1.6 Cunapsol 5. Cunapsol 5, for 2 percent copper as metal, may be obtained from Chapman Chemical Company, P.O. Box 9158, Memphis, TN 38019 or equivalent facility.”

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Figure 1A. Delete in its entirety and substitute the included figure 1A.

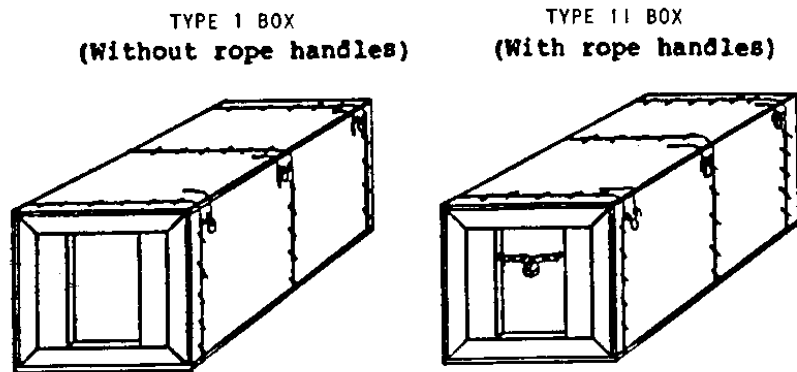
Delete Page “23” and substitute Page “24”.

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Figure 1. Delete in its entirety and substitute the included Figure 1.

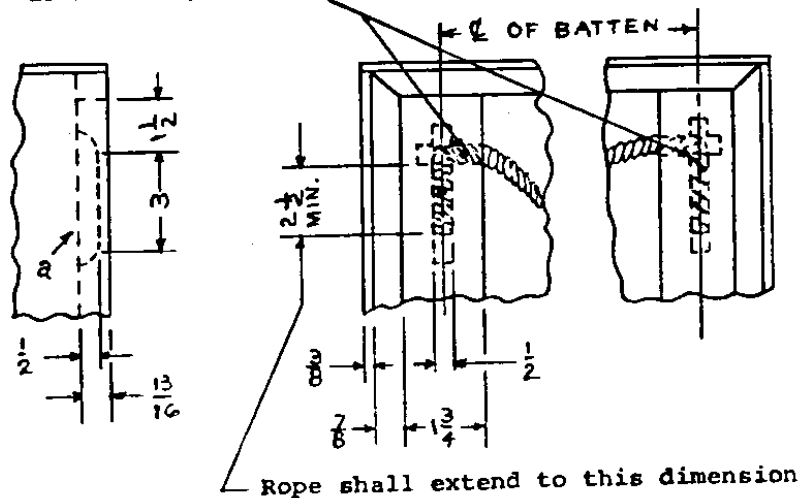
Delete Page “24” and substitute Page “23”.

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All boxes shall have top and bottom overlap (See 3.7.1) and Fig. 2

Two nails or two staples of size holding end boards to battens shall pass through center of rope as shown (See 3.9.2).



NOTES:

- Routing dimensions shall be 1/2 " when 1/2" & 7/16" diameter rope is specified and 5/8" diameter when 5/8" diameter rope is required.
- Cleat width, 13/16" or 1-1/8", as specified by class of box.
- See para. 3.3.2 for staple spacing of blank. On ends first nail or staple shall be 3/4" to 1 inch from end of batten. (see Figure 2)

FIGURE 1. Type of wirebound boxes.  
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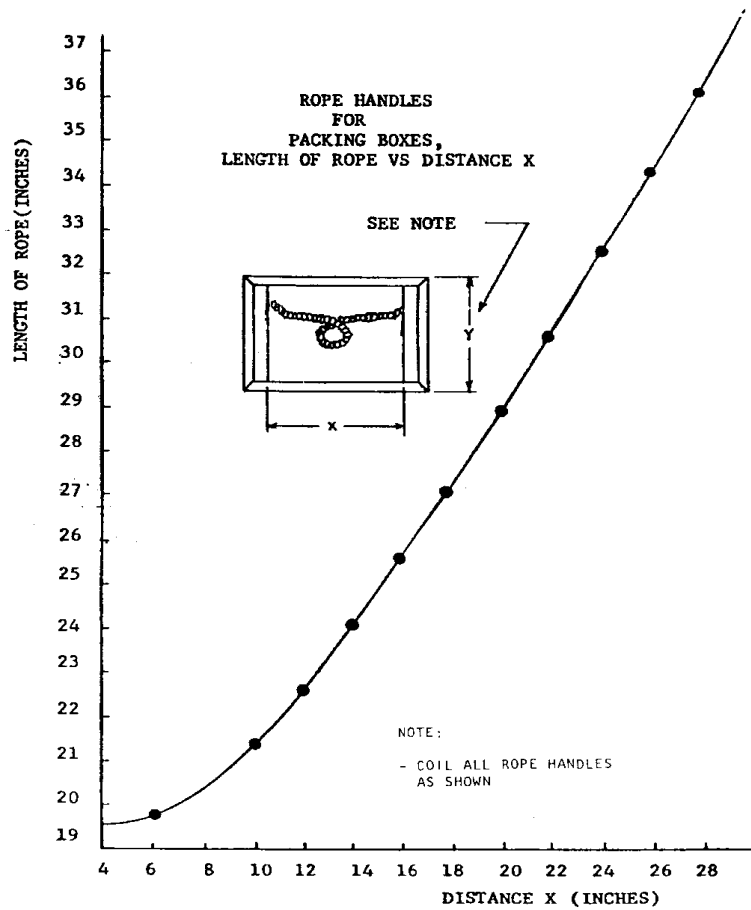


FIGURE 1A. Rope handles for packing boxes.

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Delete "Type I, Class 1 Box" and substitute "Type I, Class 2 Box". Also, change "Figure 3" to "Figure 4" and change "Page 27" to "Page 28".

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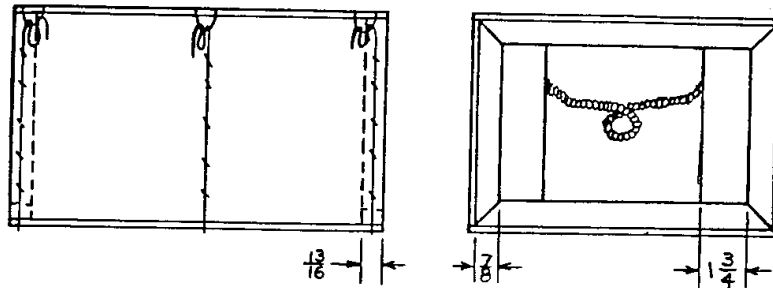
Delete "Type I, Class 2 Box" and substitute "Type I, Class 1 Box". Also, change "Figure 4" to "Figure 3" and change "Page 28" to "Page 27".



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Figure 5. Delete in its entirety and substitute as follows:



NOTES:

- See Figures 1 and 2 for construction of box.
- Unless otherwise specified, all face boards shall be  $\frac{3}{8}$ " thick, all cleats shall be  $\frac{13}{16}$ " x  $\frac{7}{8}$ " and all battens on ends shall be  $1\frac{3}{4}$ " x  $\frac{13}{16}$ ".
- See para. 3.5.1 for rope handle requirements. See Figure 1A for length of rope.

FIGURE 5. Type II, Class 1 box

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Figure 8. Middle of page. Change "See Note D" to "See Note d".

The margins of this amendment are marked with an asterisk or vertical line to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment 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 the document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

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(Project 8140-0220)