

MIL-S-1812C  
4 September 1981  
SUPERSEDING  
MIL-S-1812B  
8 May 1967

## MILITARY SPECIFICATION

### SHELF, CARGO SUPPORT, PACKBOARD, PRESSED STEEL

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

#### 1. SCOPE

1.1 Scope. This specification covers one type and size of pressed steel packboard cargo support shelf (see 6.1).

#### 2. APPLICABLE DOCUMENTS

2.1 Issues of documents. 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-698	- Steel, Sheet and Strip, Low-Carbon
QQ-Z-325	- Zinc Coating, Electrodeposited, Requirements for
TT-E-485	- Enamel, Semi-Gloss, Rust-Inhibiting
TT-P-98	- Paint; Stencil, Flat
UU-P-268	- Paper, Kraft, Wrapping
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-T-45	- Tape, Gummed, Paper, Reinforced and Plain, for Sealing and Securing

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Natick Research and Development Laboratories, Natick, MA 01760 by using the self-addressed Standardization Document Improvement Proposal, (DD Form 1426) appearing at the end of this document or by letter.

FSC 8465

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STANDARDS

FEDERAL

FED-STD-595 - Colors

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection  
by Attributes

MIL-STD-129 - Marking for Shipment and Storage

MIL-STD-1188 - Commercial Packaging of Supplies and Equipment

DRAWING

US ARMY NATICK RESEARCH AND DEVELOPMENT LABORATORIES

3-1-13 - Shelf, Cargo Support, Packboard, Pressed Steel

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

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), the contractor shall furnish a sample for first article inspection and approval (see 4.3 and 6.4).

3.2 Materials (see 6.5).

3.2.1 Steel, low-carbon. Low-carbon steel specified on Drawing 3-1-13 shall be cold rolled sheet and strip conforming to QQ-S-698. Steel sheet shall be drawing quality, and steel strip shall be half-hard temper, as applicable.

3.2.2 Enamel. Enamel shall conform to TT-E-485, urea or melamine modified. The color shall be olive drab No. X24087 of FED-STD-595.

3.3 Construction. The shelf shall be constructed in accordance with the design, details and dimensions of Drawing 3-1-13. The shelf clips shall not take more than a 1/8-inch permanent set when tested as specified in 4.5.1.

3.4 Finish. After fabrication, the shelf shall be given a finish consisting of a phosphate treated zinc-plate conforming to class 2, type III of QQ-Z-325 followed by baked enamel specified in 3.2.2. After the bending test, any area of damaged finish shall be touched up as required.

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3.5 Marking for identification. Each shelf shall be legibly stenciled with the following information in accordance with Drawing 3-1-13:

- a. "PACKBOARD CARGO SUPPORT SHELF" and "U.S."
- b. The manufacturer's name, trade name, or trademark of such character as to be easily identifiable with the said manufacturer; the year of contract and contract number; all in characters 1/8 inch high. Stenciling shall be performed after the olive drab enamel is applied to the completely fabricated shelf and has thoroughly dried. Paint for stenciling shall be flat yellow color and shall conform to TT-P-98.

\* 3.6 Workmanship. The finished shelf shall conform to the quality of product established by this specification and shall be free of burrs, slivers, rough or sharp edges, and shall not be broken, cracked or malformed. Enamel shall level out to a uniform dry film thickness without runs, drops or areas of no film. The coating shall be free from imbedded foreign matter and shall show no evidence of peeling, flaking or blistering. The occurrence of defects shall not exceed the applicable acceptable quality levels.

#### 4. QUALITY ASSURANCE PROVISIONS

\* 4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor 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.

\* 4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

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

\* 4.3 First article inspection. When a first article is required (see 6.2), it shall be examined for the defects specified in 4.4.3.1 and 4.4.3.2 and tested for the characteristic specified in table II. The presence of any defect shall be cause for rejection of the first article.

\* 4.4 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

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\* 4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.4.2 In-process inspection. In-process inspection shall be made during zinc coating and phosphate treatment specified in 3.4 to establish that there is no deviation from indicated requirements. Whenever nonconformance is noted, correction shall be made to affected items and process.

4.4.3 End item inspection. The end item shall be inspected in accordance with 4.4.3.1, 4.4.3.2, and 4.4.3.3. The lot size shall be expressed in units of one shelf. The sample unit shall be one shelf.

4.4.3.1 Visual examination. The end item shall be examined for the defects listed in table I. The inspection level shall be II and the acceptable quality level (AQL) of 2.5 for major and 6.5 for total (major and minor combined) defects per hundred units.

TABLE I. Visual defects

Examine	Defect	Classification	
		Major	Minor
Finish	Not as specified.	X	
	Not color specified.		X
	Area of no film.	X	
	Not continuous or not smooth.		X
	Continuous runs, drops, or streaks.		X
	Foreign matter imbedded.		X
	Evidence of peeling, flaking, or blistering.	X	
Construction and workmanship	Burrs, slivers, rough or sharp edges.	X	
	Broken, cracked, or malformed.	X	
	Required hole missing.	X	
	Any operation omitted.	X	
Marking	Missing, illegible, misspelled, or not applied in specified manner or location.		X
	Not color specified.		X

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4.4.3.2 Dimensional examination. The end item shall be examined for conformance to the specified dimensions. Any nonconformance shall constitute a defect. The inspection level shall be S-2 and the AQL shall be 4.0 defects per hundred units.

- \* 4.4.3.3 End item testing. The completely fabricated shelf shall be tested in accordance with table II. The inspection level shall be S-3 and the AQL shall be 1.0 defects per hundred units.

TABLE II. End item tests

Characteristic	Requirement paragraph	Test method	Number determinations per sample unit	Results reported as
Flex test (permanent set)	3.3	4.5.1	2 (one, each clip)	Permanent set to nearest 1/64 inch

- \* 4.4.4 Packaging inspection. An examination shall be made to determine that preservation, packing, and marking comply with section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully packaged except that it need not be closed. Defects of closure listed below shall be examined on shipping containers fully packaged. 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 AQL shall be 2.5 defects per hundred units.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping or tape banding, and inadequate stapling. Bulged or distorted container.
Contents	Number of unit packs is more or less than required. Number of shelves per unit pack is more or less than specified. <u>1/</u>

1/ Examine one unit pack from each shipping container in the inspection sample.

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#### 4.5 Methods of inspection.

4.5.1 Bending test. Dimension "X" shall be measured when the shelf is in normal position as shown on Drawing 3-1-13. A 45 degree steel wedge with length and width dimensions not less than the maximum length and width of the clip, shall be used to flex the shelf. The wedge shall be inserted into each clip as far back as possible keeping one side of the wedge flush against the shelf body, thus making a total flexure of about 45 degrees, as shown on drawing. The wedge shall then be withdrawn and dimension "X" remeasured. The permanent set (difference between first and second measurements) shall be calculated to determine conformance with 3.3.

### 5. PACKAGING

5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Level A. Ten shelves shall be nested together and wrapped in one thickness of 30-pound basis weight kraft paper conforming to type I, grade B of UU-P-268. The wrap shall be secured with 2-inch minimum width tape conforming to type III, grade B of PPP-T-45.

5.1.2 Commercial. The shelves shall be preserved in accordance with MIL-STD-1188.

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

5.2.1 Level A packing. One hundred and fifty shelves, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC-L, V2s of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class-weather resistant, variety DW, grade VI5c of PPP-B-636. Each shipping container shall be closed in accordance with method III, water-proofed in accordance with method V and reinforced as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.4.

5.2.2 Level B packing. One hundred and fifty shelves, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC-L, type CF, variety SW or type SF, class domestic, grade 275 of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.4.

5.2.2.1 Weather-resistant containers. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.4.

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5.2.3 Commercial packing. Shelves, preserved as specified in 5.1, shall be packed in accordance with MIL-STD-1188.

5.3 Marking. In addition to any special marking required by the contract, unit packs and shipping containers shall be marked in accordance with MIL-STD-129 or MIL-STD-1188, as applicable.

## 6. NOTES

6.1 Intended use. The packboard cargo support shelf is intended for use with the plywood packboard (MIL-P-10941) for additional load support.

6.2 Ordering data. Procurement documents should specify the following:

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

6.3 Sample. For access to samples, address the procuring activity issuing the invitation for bids.

6.4 First article. When a first article sample is required, it shall be inspected and approved under the appropriate provisions of DAR 7-104.55. The first article should be a preproduction sample, initial production item, or other specific item described under the definition of a first article in the DAR. 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 procurement instruments regarding arrangements for inspection and approval of the first article.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the specification.

6.6 Changes from previous issue. 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 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.

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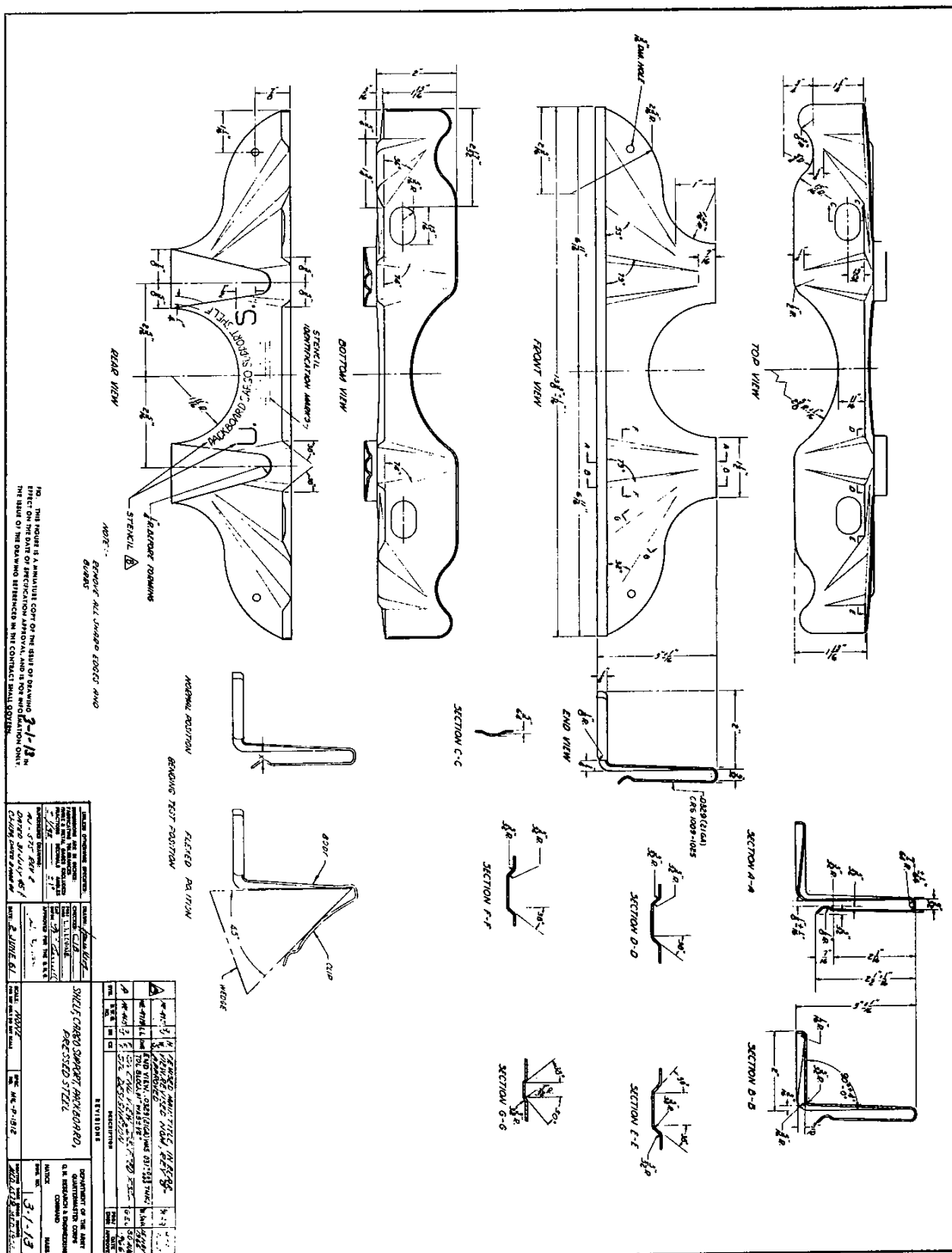
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## DOCUMENT IDENTIFIER (Number) AND TITLE

MIL-S-1812C Shelf, Cargo Support, Packboard, Pressed Steel

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