

INCH-POUND

MIL-L-35078M

18 May 1990

SUPERSEDING

MIL-L-35078L

16 December 1985

MILITARY SPECIFICATION

LOADS, UNIT: PREPARATION OF SEMIPERISHABLE SUBSISTENCE ITEMS;
CLOTHING, PERSONAL EQUIPMENT AND EQUIPAGE;
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 general requirements for unitization and containerization of semiperishable subsistence items; clothing, personal equipment and equipage.

1.2 Classification. The unit loads shall be of the following types and classes as specified (see 6.2).

- Type I - Palletized unit load
- Class A - Strapped or film bonded
- Class B - Capped and strapped
- Class C - Sheathed, capped and strapped
- Class D - Shrouded, sheathed, capped and strapped

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

NO DELIVERABLE DATA REQUIRED BY THIS DOCUMENT

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- Type II - Containerized unit load
 - Class E - Capped and strapped (nonmetallic only) fiberboard box
 - Class F - Wood cleated or wirebound strapped (metallic only) plywood box
- Type III - Commercial loads
 - Class G - On commercial pallet
 - Class H - On commercial load base

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

- NN-P-71 - Pallets, Material Handling, Wood, Stringer Construction, 2-Way and 4-Way (Partial)
- QQ-S-781 - Strapping, Steel, and Seals
- PPP-F-320 - Fiberboard: Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes
- PPP-S-760 - Strapping, Nonmetallic (and Connectors)

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- MIL-P-15011 - Pallets, Material Handling, Wood, Post Construction, 4-Way Entry

(See supplement 1 for list of associated specification sheets.)

STANDARDS

FEDERAL

- FED-STD-101 - Test Procedures for Packaging Materials

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

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. 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 Pallets. Pallets shall conform to type V, class 1, size 2, grade A, group optional of NN-P-71 or type I, classes 1 or 2, style 1 of MIL-P-15011. Pallets conforming to NN-P-71 may have 3 stringers in place of the 4 specified.

3.2 Pads. Top and bottom pads, when specified in specification sheets, shall be fabricated from fiberboard conforming to class weather-resistant of PPP-F-320. Alternatively, bottom pads may be fabricated from 4 mil or thicker commercial polyethylene film. The pad shall be approximately the same size as the load base, except the top pad shall not extend beyond sides and ends of the load.

3.3 Consolidation box. Boxes shall be wood cleated plywood, wirebound plywood, double wall or triple wall fiberboard or wax impregnated fiberboard as specified hereinafter. The contents shall fit snugly in the box; the maximum void space shall be not more than five percent of the capacity. The maximum dimensions of the boxes and maximum net weight of contents shall be as shown in table I and the size shall be as specified (see 6.2).

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TABLE I. Maximum dimensions and net weight of contents of consolidation boxes

Size	Maximum outside dimensions inches			Maximum net weight of contents (pounds)	Box Material
	Length	Width	Height including base		
1	49	41	43	2600	Fiberboard
2	54	45	43	1600 or 2600	Wood cleated plywood or wirebound plywood box

3.4 Strapping. Strapping shall be metallic or nonmetallic as specified herein.

3.4.1 Metallic strapping. Metallic strapping shall be steel conforming to class 1, type I or IV, finish A of QQ-S-781. Strapping shall be minimum 3/4 inch wide by 0.025 inch thick. Crossties shall be of commercial construction and have a finish equal to the strapping. Edge protectors shall be commercial or made from minimum 3 inch by 3 inch V2s fiberboard. Crossties and edge protectors shall be used with steel straps for all loads except type II, class F and type III. When specified (see 6.2), the strapping on the end item load shall be tested for seal (joint) strength, and shall meet the requirement specified in QQ-S-781, when tested as specified in 4.2.3.1.

3.4.2 Nonmetallic strapping. Nonmetallic strapping shall conform to type II or III of PPP-S-760, having a minimum breaking strength of 900 pounds. Buckles shall not be used. Alternatively, nonmetallic strapping constructed of polyester plastic, meeting the physical and dimensional requirements specified above, shall be acceptable. When specified (see 6.2), the strapping on the end item load shall be tested for seal (joint) strength, and shall meet the requirement specified in PPP-S-760, when tested as specified in 4.2.3.1.

3.5 Formation of load. Shipping containers in each palletized unit load or consolidation box shall be uniformly arranged in a pallet pattern shown on figures 1 and 2. When the size of the shipping container does not fit any of the pallet patterns of figure 1, the proposed pallet pattern shall be submitted to the contracting officer for approval. The overall dimensions of palletized loads shall not exceed 43 inches in length, 52 inches in width, and 43 inches in height (including pallet and cap when required), unless otherwise specified (see 6.2). A plus tolerance of 1 inch will be allowed for the height only. The shipping containers shall be stacked to form a compact

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squared load centered on the load base and shall be squared with all corners of the pallet with minimum overhang. The overhang or underhang shall be equalized with the sides or ends of the pallets. The shipping containers of each pallet load shall be interlocked by reversing the pattern in each course, except when the containers are of such dimensions as to prohibit interlocking patterns.

3.6 Marking. All unit loads shall be marked on two adjacent sides in accordance with MIL-STD-129 or as specified in the contract. Alternatively, when the required markings on one or more individual shipping containers are exposed on two adjacent sides of the unit load, a minimum 3 by 5-inch white label shall be applied on the same two adjacent sides of the load. The label shall be marked (letter size not less than 1/2 inch) with the quantity (number of units per load), gross weight, and cube. The values marked for gross weight and cube shall have a tolerance of ± 3 percent when tested as specified in 4.2.3.2.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

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

4.2.2 Unit load visual examination. The unit loads shall be examined for the defects listed in table II. The lot size shall be expressed in units of unitized or containerized unit loads. The sample unit shall be one unitized or containerized unit load. The inspection level shall be S-4 and the AQL, expressed in terms of defects per hundred units, shall be 4.0. In the event that the lot size is less than five, 100 percent inspection shall be performed.

TABLE II. Unit load visual defects

Examine	Defect
Pads (when applicable)	Material not as specified Missing
Pallets (when applicable)	Pallet size exceeded Components not as specified Stringers not slotted for straps as specified
Strapping (when applicable)	Missing, broken, or not as specified Nonmetallic strapping does not indent as specified Crosstie finish not as specified Crosstie and edge protectors missing when metallic strapping is used Fiberboard edge protectors not as specified Buckles used with nonmetallic strapping
Load formation	Not in accordance with pallet pattern Load dimensions exceeded (a plus tolerance of 1 inch is authorized for load height only) Load not squared Overhang or underhang not equalized Not interlocking as required (when applicable)
Consolidation box	Size not as specified Void space more than 5 percent of capacity Net weight greater than specified
Marking	Not as specified Missing, illegible, or incorrect

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4.2.3 Unit load testing.

4.2.3.1 Strapping seal (joint) testing. When specified (see 3.4.1 and 3.4.2), the seal (joint) strength of steel strapping seals shall be tested in accordance with Method 2044 of FED-STD-101, and the seal (joint) strength of nonmetallic strapping seals shall be tested in accordance with the breaking strength procedure of PPP-S-760. The sample shall be three seal (joint) specimens taken from the strapping on one unit load selected at random from the lot. Each strapping specimen shall be 48 inches in length and shall have the seal (joint) in the center. When the average breaking strength of the specimens is less than the requirement, it shall be cause for rejection of the lot.

4.2.3.2 Gross weight and cube testing. The unit load gross weight and cube may be established on an average basis, that is weigh and measure not less than five individual loads, or components thereof, and ascertain the average unit load weight and cube for marking purposes. Loads should be stacked (not more than three high) to permit normal compression and settling prior to measurement for cube determination. The lot shall be unacceptable if the average unit load weight and cube marked on the load is less than or exceeds 3.0 percent tolerance.

5. PACKAGING (not applicable)

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This specification is used in making up palletized, containerized, or commercial loads for shipment of semiperishable subsistence items; and of clothing, personal equipment and equipage. The following information is furnished to indicate the established levels of protection:

- a. Level A protection: Type I, class D load, type II, class F load.
- b. Level B protection: Type I, class A load; type I, class B load; type I, class C load; and type II, class E load.
- c. Level C protection: Type III, class G load and type III, class H load.

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6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type and class (see 1.2).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- d. Size of consolidation box for type II loads (see 3.3).
- e. When a test for seal (joint) strength of strapping is required (see 3.4.1 and 3.4.2).
- f. When height of palletized load is other than specified (see 3.5).

6.3 Verification testing. Verification testing is always applicable when the type and class unit load cited in 6.1a for Level A protection is specified in the acquisition document.

6.4 Subject term (key word) listing.

Containerization
Packaging
Packing
Palletization
Unitization

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - GL
Navy - SA
Air Force - 50

Preparing activity:

Army - GL
(Project PACK-0920)

Review activities:

Army - MD
Navy - MS
Air Force - 45
DP - SS

User activity:

Navy - MC

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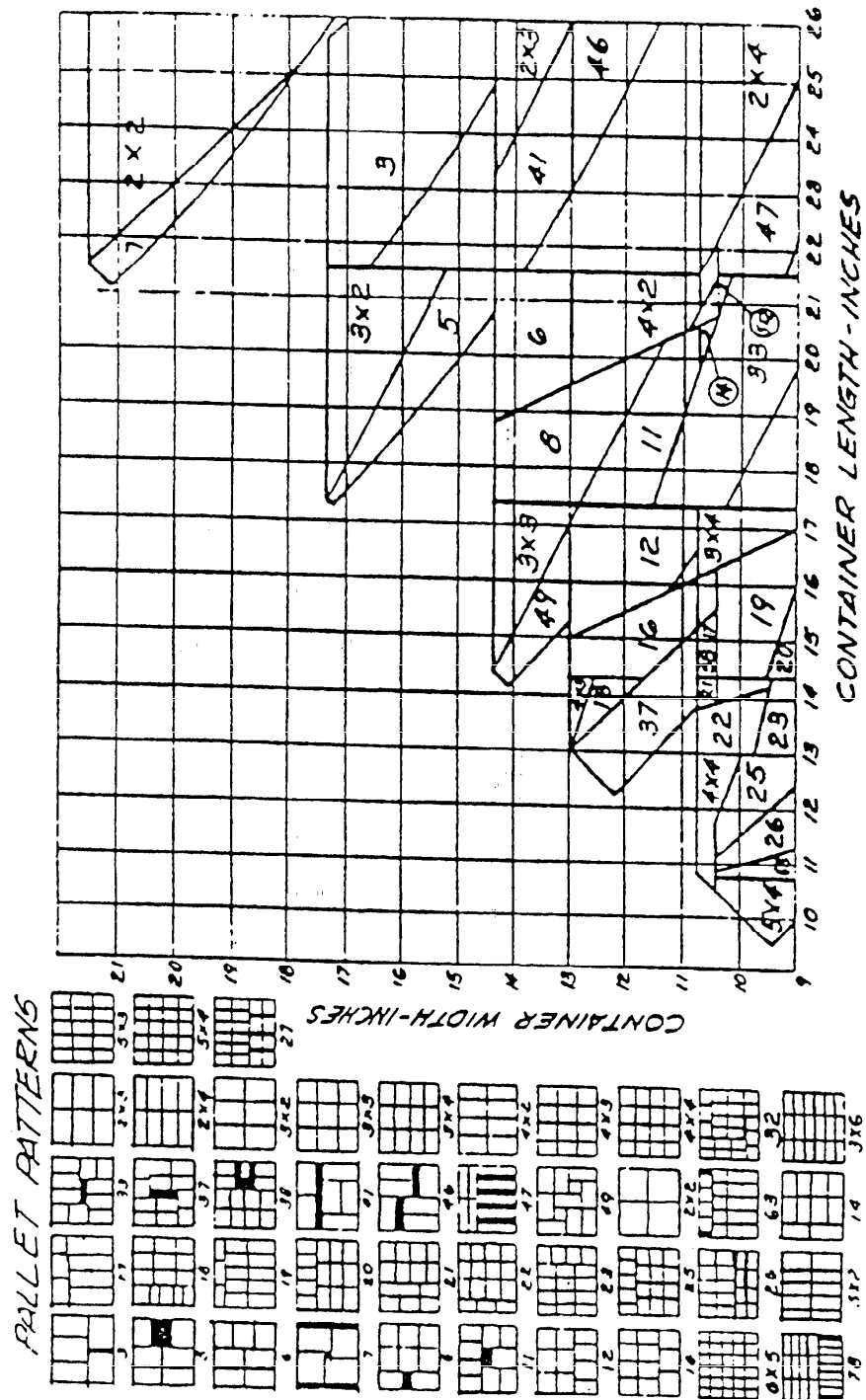


FIGURE-1 PATTERN SELECTION CHART

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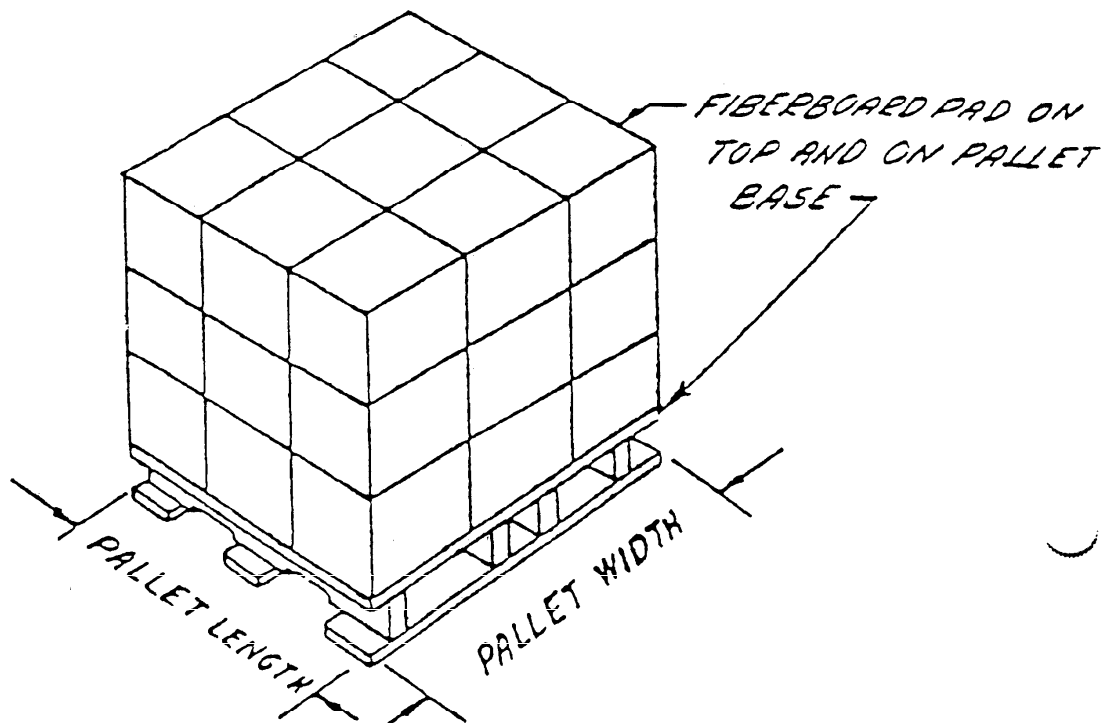


FIGURE-2 TYPE-I, PALLETIZED LOAD
(WITHOUT STRAPS)

10-1-254F

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-L-35078M	2. DOCUMENT DATE (YYMMDD) 18 May 1990
3. DOCUMENT TITLE LOADS, UNIT: PREPARATION OF SEMIPERISHABLE SUBSISTENCE ITEMS; CLOTHING, PERSONAL EQUIPMENT AND EQUIPAGE; GENERAL SPECIFICATION FOR			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME U.S. Army Natick RD&E Center		b. TELEPHONE (Include Area Code) (1) Commercial 508-651-5221 (2) AUTOVON 256-5221	
c. ADDRESS (Include Zip Code) Commander, U.S. Army Natick RD&E Center ATTN: STRNC-ES Natick, MA 01760-5014		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	