

INCH-POUND

MIL-L-14362G
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 SUPERSEDING
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MILITARY SPECIFICATION

LUMBER: UNITIZING AND LOADING OF

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

1. SCOPE

1.1 Scope. This specification covers the unitization and loading of lumber, including railroad ties and crossarms, for shipment (see 6.3).

1.2 Classification. Unitization and loading of lumber shall be in accordance with level A, level B, or level C packing as specified (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specification and standards. The following standards 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).

STANDARDS

MILITARY

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

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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: USA Belvoir Research, Development, and Engineering Center, ATTN: SATBE-TSE, Fort Belvoir, VA, 22060-5606 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 5510

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2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the document which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 3950 - Strapping, Nonmetallic (and Joining Methods).
- D 3953 - Strapping, Flat Steel and Seals.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 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 Anti-stain treatment. When specified (see 6.2), all softwood lumber except western cedars and redwood, and all hardwood lumber that is subject to staining (see 6.4) shall be anti-stain treated. The treating solution shall be water based with the composition, concentration and application as specified by the chemical manufacturer, and shall not appreciably change the color of the wood. Solutions containing chlorinated phenols and mercury are not permitted.

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

3.2.1 Level A.

3.2.1.1 Unit assembly. A unit shall contain only one thickness, width, and length of lumber except as otherwise specified herein. When lumber is ordered in random widths, more than one width may be included in a unit. To complete loading of remnant quantities of a shipment, a maximum of three different lengths may be combined in a unit. When two or more lengths are included in a unit, the longest length shall be on the bottom of the unit with the next longer lengths on top of the longest. The unit shall be straight and even on the bottom, sides and at least one end. Pieces shall not be butted end-to-end in any unit (see figure 1).

3.2.1.2 Unit size. Unless otherwise specified (see 6.2), individual units shall not exceed 47-1/2 (47.50) inches in width and 25-3/4 (25.75) inches in height. For domestic shipment only, the unit height may extend to 49 inches (see figure 1). For unit loads prepared for containerization, the maximum allowable width shall be as specified by the containerizing activity, or 45 inches if not specified.

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3.2.1.3 Strapping. Strapping shall be applied girthwise to the unit and tensioned to minimize all voids within the unit to the maximum extent possible. On units 6 feet long or less, end straps shall be located 1 foot from each end ± 4 inches. On units over 6 feet long, end straps shall be located 2 feet from each end ± 4 inches. Intermediate straps shall be applied so that adjacent straps are not more than six feet apart. When a unit is composed of different lengths and none of the intermediate straps are located within 16 inches from the free end of any one piece of lumber, then additional strapping shall be applied within 16 inches of the free end. Intermediate straps may be repositioned 12 inches in either direction to meet those requirements. Strapping shall be: (a) flat, heavy duty steel in accordance with ASTM D 3953, type 1 or 2, minimum $3/4$ inch wide, with a minimum breaking strength of 2,000 pounds, or (b) extra heavy duty polyester cord in accordance with ASTM D 3950, type 1A, minimum $3/4$ inch wide, with a minimum breaking strength of 1,830 pounds. Strapping shall be coated finish (organic) or zinc-coated (galvanized), grade optional. Strap connectors or seals shall have a minimum of 75 percent joint efficiency and shall be applied and tensioned in accordance with manufacturers instruction.

3.2.1.4 Edge protectors. Edge protectors shall be used on all edges under the strapping of softwood and hardwood lumber units, 4 inches thick or less (see figure 1). Fiberboard edge protectors shall not be used for select or finish grade softwood lumber or standard grades of hardwood lumber.

3.2.1.5 Cross strips. In units containing more than 4 tiers of lumber in height, cross strips $3/4$ (.75) inch to 1 inch thick and a minimum of 2- $1/2$ (2.50) inches wide shall be placed midway the depth of the unit across its' width under each strap location (see 3.2.1.3). The cross strips shall not extend beyond the width of the unit, nor shall the cross strips be more than 2 inches shorter than the package width (see figure 1).

3.2.1.6 Waterproof wrap. An opaque, commercial fiber stranded reinforced breathable waterproof wrap shall be applied after initial strapping has been accomplished and shall be positioned so as to completely cover the top, ends, and sides of each unit, leaving the bottom exposed. The ends shall be folded and fastened in a manner that will ensure the wrap will remain fastened and in place during shipment. All edges and ends shall be tacked or stapled to ensure wrap will stay in place during shipment. Fastening devices on ends of units shall be a minimum $3/4$ (.75) inch in length.

3.2.2 Level B. Lumber shall be packed as specified in 3.2.1, except a standard commercial grade of opaque waterproof wrap may be used in lieu of that specified in 3.2.1.6. Non-porous polyethylene or similar material is not acceptable. Straps may be spaced eight feet apart (maximum).

3.2.3 Level C. Lumber shall be packed as specified in 3.2.1, except wrapping of the units is not required. Straps may be spaced eight feet apart (maximum). Lumber shall be protected to the first point of destination in accordance with any practice used by the lumber producing industry, that will assure material arrives in condition as specified by the contract.

3.2.4 Moisture content restrictions. Moisture content shall be as specified in the contract or purchase order and shall apply at the time of shipment, as well as at the time of dressing if dressed lumber is involved and at the time of delivery, regardless of mode of transportation or level of protection.

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3.3 Loading.

3.3.1 Lumber products six feet and over in length on open-top conveyances.

Units six feet and over in length loaded on open-top conveyances shall have floor bearing and unit separation pieces, minimum three inches thick (actual), running across the width of the unitized load. These separators shall be placed on the floor of the conveyance and between each unitized load. Floor bearing pieces and unit separators shall be located $1/5$ (.20) to $1/4$ (.25) the unit length from each end for lengths 16 feet and less and one additional piece at the mid point for lengths over 16 feet.

3.3.2 Loading in closed type conveyances. Units shall be loaded in accordance with the applicable carrier rules and regulations.

3.4 Marking. Unless otherwise specified (see 6.2), marking shall be in accordance with MIL-STD-129. In addition, for overseas shipments, the number of pieces per bundle and the quantity in board feet (BF) shall be clearly marked on the side of each unitized load of lumber adjacent to MIL-STD-129 marking. Lumber shipments made under this specification shall not require bar code marking unless specified by the ordering activity (see 6.2).

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 contractors 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.

4.2.1 Unit of product. For the purpose of inspecting bundled lumber, a unit as specified in 3.2.1.1 shall constitute a unit of product.

4.2.2 Sampling. Sampling for inspection shall be performed in accordance with MIL-STD-105, inspection level II.

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4.2.3 Examination. Samples selected in accordance with 4.2.2 shall be examined as specified in 4.3.1. Presence of one or more defects shall be cause for rejection.

4.3 Inspection procedure.

4.3.1 Examination. Lumber shall be examined for the defects listed in table I (see 6.5).

TABLE I. Classification of defects.

Defect	Applicable requirement paragraph		
	A	B	C
101. Anti-stain treatment not applied when required.	3.1	3.1	3.1
102. More than one thickness, width and one length of lumber in a unit assembly, except when random widths or remnant quantities are ordered.	3.2.1.1	3.2.1.1	3.2.1.1
103. Units not straight and even on top, bottom, sides and at least one end as specified.	3.2.1.1	3.2.1.1	3.2.1.1
104. Lengths of lumber butted end-to-end within a unit.	3.2.1.1	3.2.1.1	3.2.1.1
105. Width of unit not within the limits specified.	3.2.1.2	3.2.1.2	3.2.1.2
106. Height of unit not within the limits specified.	3.2.1.2	3.2.1.2	3.2.1.2
107. Strapping not as specified, missing, broken, or incorrectly located.	3.2.1.3	3.2.1.3, 3.2.2	3.2.1.3, 3.2.3
108. Edge protectors not furnished when required.	3.2.1.4	3.4.1.4	3.2.1.4
109. Edge protectors, not as specified, missing or incorrectly located.	3.2.1.4	3.2.1.4	3.2.1.4
110. Cross strips not as specified or not located correctly.	3.2.1.5	3.2.1.5	3.2.1.5
111. Waterproof wrap, when required, not as specified, incorrectly applied or missing.	3.2.1.6	3.2.2	3.2.3
112. Material incorrectly loaded on or in conveyance.	3.3.1, 3.3.2	3.3.1, 3.3.2	3.3.1, 3.3.2
113. Marking incorrect, missing, or illegible.	3.4	3.4	3.4

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5. PACKAGING

(This section is not applicable to this specification.)

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 establishes the appropriate materials and methods for unitizing and loading lumber for both domestic and overseas shipments.

6.1.1 Degrees of protection. The following provides a guide for the selection of the appropriate degree of protection for lumber shipment:

- a. Level A. Level A provides maximum protection and should be designated for dry or seasoned lumber anticipating overseas shipment, numerous handling operations and open storage. Length of storage is undefined.
- b. Level B. Level B provides limited protection for both overseas and domestic lumber shipments where multiple handling is expected and limited covered storage is available.
- c. Level C. Level C should be designated for either domestic or overseas shipments of common grades of lumber for immediate use.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of the specification.
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- c. Level of packing required (see 1.2 and 3.2).
- d. When anti-stain treatment is required (see 3.1 and 6.4).
- e. When a special unit size is required (see 3.2.1.2).
- f. When marking other than as specified is required (see 3.4).

6.3 Definition.

6.3.1 Lumber. For the purpose of this specification, "lumber" is defined as a manufactured product derived from a softwood or hardwood log including, but not limited to boards, dimension lumber, timbers, crossarms or ties which may be rough, surfaced or worked to a pattern. Molding and hardwood flooring are excluded from this specification.

6.4 Anti-stain treatment applicability. Under certain circumstances, such as overseas shipments or extended periods of storage, an anti-stain treatment may be necessary for unseasoned lumber to inhibit the penetration of undesirable stains. The need for such treatment (see 3.1), shall be specified on the order (see 6.2).

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6.5 Subject term (key word) listing.

Anti-stain treatment
Cross strips
Edge protectors
Open-top conveyances
Random widths
Strapped units
Waterproof wrap

6.6 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 - ME
Air Force - 99

Preparing activity:
Army - ME

Review activities:
Army - SM
Air Force - 84
DLA - CS

Agent: DLA-CS

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FIGURE 1. Example: Requirements for U.S. Government shipment.

The contract requirements take precedence and may contain other requirements.

Only one length per unit except for remnant quantities.

NOTE: When two or more lengths are unitized in one unit, the longest will be on the bottom and stair-stepped up to the shortest on top. Not more than 3 lengths per bundle.

Minimum strapping requirements (see 3.2.1.3)

Level A	Levels B and C
10' and less ... 2 Straps	12' and less ... 2 Straps
11' thru 16' ... 3 Straps	13' thru 20' ... 3 Straps
17' thru 22' ... 4 Straps	21' thru 28' ... 4 Straps
23' thru 28' ... 5 Straps	etc.
etc.	

NOTE: Strapping shall be 3/4" (.75") wide minimum, placed 2 feet from each end, and have a minimum breaking strength of 1,830 pounds or 2,000 pounds, as applicable (see 3.2.1.3).

Unit sizes (see 3.2.1.2)

Domestic: Height 49" maximum, width 47-1/2" (47.50") maximum.

Overseas: Height 25-3/4" (25.75") maximum, width 47-1/2" maximum.

Edge protectors (see 3.2.1.4).

Edge protectors are required for all softwood and hardwood lumber, 4" and less in thickness.

Cross strips (see 3.2.1.5).

Cross strips 3/4" (.75") to 1" thick by 2-1/2" (2.50") wide minimum, shall be under each strap location, placed midway the depth of the unit.

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.

RECOMMEND A CHANGE:

1. DOCUMENT NUMBER

MIL-L-14362G

2. DOCUMENT DATE (YYMMDD)

921215

3. DOCUMENT TITLE

Lumber: Unitizing and Loading Of

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
(if applicable)
(2) AUTOVON

7. DATE SUBMITTED

8. PREPARING ACTIVITY

a. NAME

Carolyn B. Johnson

b. TELEPHONE (Include Area Code)

(1) Commercial
(703) 704-3468(2) AUTOVON
654-3468

ADDRESS (Include Zip Code)

US Army Belvoir RDE Center
ATTN: SATBE-TSE
Fort Belvoir, VA 22060-5606

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