

# SPECIFICATION FOR HARDWOOD PALLETS

## I. SIZE AND TYPE OF PALLET

Pallet shall be 48"X 48'; flush non-reversible, 4 stringer.

## II. TYPE AND QUALITY OF LUMBER

### A. Allowable Species

Lumber shall be sound, square edge, free of mold, decay, and noxious odors.

The following hardwood species may be used for stringers:

Beech	Hard Maple	Rock Elm
Birch	Hickory	White Ash
Eucalyptus	Oak (except Swamp Oak)	
Hackberry	Pecan	

In addition to the above list, the following hardwood species shall be used for deckboards:

Ash	Soft Elm	Tupelo
Butternut	Soft Maple	Walnut
Magnolia	Sweet Gum	Yellow Poplar
Red Alder	Sycamore	

### B. Moisture Content

Any degree of seasoning acceptable.

### C. Permissible Defects and Characteristics

#### Knots:

The diameter of sound knots shall be no greater than one-third the width of the piece in which they occur; there shall be no more than two such maximum diameter knots in any one piece. Loose or Hollow knots shall not exceed one-half the diameter of sound knots.

#### Splits, Shakes, and Checks:

Length of crack or grain separation must be no longer than two-thirds the width of the piece in end deckboards and no longer than twice the width of the piece in stringers and inside boards. Splits running through full thickness of the piece (not to be confused with nail splits) are permitted in any number, but when appearing in end-boards must be straddled by nails. Shakes are permitted in any piece of contained by nailing.

Season Check and splits that do not affect structural strength of pallets are permissible defects.

#### Wane:

Deckboards: ¼ width—2/3 thickness—unlimited in length

Stringer: 1/3 width of nailing faces—1/2 width of other faces—unlimited in length.

Wane within limits is permitted on any piece provided it is not on exposed edge of end deckboards.

Wane may appear on surface or edge of other pieces but in no cases are nails to be driven into or through wane. No more than one-half of the pieces in an individual pallet may contain wane.

#### Warp:

No individual piece on any one pallet shall deviate due to warp which is greater than the following percent of its measured dimension

Bow- 2%
Crook – 2%
Cup – 3%

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## Other Defects:

Pin-worm and grub- worm holes in pallet parts are permissible defects, providing that they do not affect the structural strength of the pallet. Infestation of lyctus powder-post beetles, termites and other wood-destroying insects are not permitted in pallet parts.

NO COMBINATION OF DEFECTS WHICH WILL MATERIALLY WEAKEN ANY PIECE OR PALLET SHALL BE ALLOWED.

## III. LUMBER PREPARATION

Stringers and deckboards shall be smooth sawn or surfaced to square edge, uniform dimensions. No bearded ends are permitted; all ends and edges shall be clean and square.

## IV. TYPE AND QUALITY OF FASTENER

2-1/4" x 0.110" hardened steel screw nail (or tempered), to bend not more than 28 degrees on the MIBANT Nail Tester or equal. Wire diameter 0.110", threaded O.D. body diameter 0.138", flat head nail diameter 9/32", or snag free head average diameter 21/64". Point shall be diamond (not longer than 5/32") or chisel provided that the width does not exceed wire diameter, Helically threaded with four flutes; helical angle of thread at the pitch diameter shall be 60 degrees plus or minus 5 degrees with a plane perpendicular to the axis.

## V. DIMENSIONS, SPACING, AND ARRANGEMENT

### A. Deckboards

Thickness: 13/16" to 15/16" range

Length: 47-7/8" to 48-1/8" range

### Top Deckboards

Extreme top end deckboards will be 5-5/8" minimum. All intermediate top deckboards may be random widths, and will be minimum 3-5/8". Maximum 3" spacing will be maintained.

### Bottom Deckboards

Bottom end deckboards shall be 5-5/8" to 6" range. Two outside boards in the center cluster shall be minimum 3-5/8". The center board shall be minimum 5-5/8". Spacing of center cluster of bottom deckboards shall not exceed 2-1/2". Deckboards shall be flush with outside of stringers. The center cluster of deckboards shall provide a minimum actual cumulative surface of 13".

### B. Stringer Dimensions and Placement

Stringer dimensions shall be width: 1-3/4" plus 1/4", minus 0; length: 48", plus or minus 1/8"; height: 3-3/4", plus 1/4", minus 0.

Center stringers shall be 6" apart and parallel to and equidistant between outside stringers.

## VI. ASSEMBLY

### A. Predrilling

Predrilling of deckboards shall be required when nails are hand driven. When predrilling is required, the outer ends of the deckboards shall be predrilled approximately 1/32" larger than the nail shank. When pallets are assembled by nailing machines, predrilling of deckboards is not required.

### B. Nailing

The number of nails which shall be employed at all bearing points for the various widths of deckboards is as follows:

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<u>Width of Deckboard</u>	<u>Number of Nails</u>
3-5/8" to 5-1/2" width	2 nails
5-5/8" to 7-1/2" width	3 nails
7-1/2" to 8" width	4 nails

Nails shall be staggered. Flat head nails shall be counter sunk at least 1/16" deep. Oval concave "snag free" head nails shall be driven flush with the deckboards.

## VII. WORKMANSHIP

- A. Protruding nail heads or points are not permitted. Bent over nails must be driven below surface of deckboards.
- B. Deviation in dimension of assembled pallets shall be limited to 3/8" out-of-square (3/4" difference in diagonals), plus or minus 3/16" in overall pallet Length or Width.
- C. No Combination of defects in workmanship, including nail splits, which will adversely affect the strength of the pallet to a material extent, will be permitted.

## VIII. IDENTIFICATION OF PALLETS

Each pallet shall be marked on the exterior surface of one outside stringer, with the manufacturer's logo.