### Components

#### Top Deck:
- **Style:** Deckboard
- **Type:** New Lumber

<table>
<thead>
<tr>
<th>Number</th>
<th>Thickness</th>
<th>Width</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0.625</td>
<td>3.500</td>
<td>40.00</td>
</tr>
<tr>
<td>2</td>
<td>0.625</td>
<td>5.500</td>
<td>40.00</td>
</tr>
</tbody>
</table>

**Volume:** 4.9 bd ft

#### Bottom Deck:
- **Style:** Deckboard
- **Type:** New Lumber

<table>
<thead>
<tr>
<th>Number</th>
<th>Thickness</th>
<th>Width</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.625</td>
<td>3.500</td>
<td>40.00</td>
</tr>
<tr>
<td>2</td>
<td>0.625</td>
<td>5.500</td>
<td>40.00</td>
</tr>
</tbody>
</table>

**Volume:** 3.7 bd ft

#### Stringers:
- **Type:** New Lumber

<table>
<thead>
<tr>
<th>Number</th>
<th>Width</th>
<th>Height</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1.375</td>
<td>3.500</td>
<td>48.00</td>
</tr>
</tbody>
</table>

**Volume:** 4.8 bd ft

- **Partial 4-way Entry Notch:**
  - **Depth:** 1.250
  - **Length:** 9.00
  - **Location:** 6.00
  - **Radius:** 0.75

### Materials

#### Lumber:
- **ID:** Mixed Eastern Hardwoods

<table>
<thead>
<tr>
<th>Species Class</th>
<th>Grade</th>
<th>Lumber Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Density Eastern</td>
<td>Standard &amp;BTR</td>
<td>50 %</td>
</tr>
<tr>
<td>Medium Density Eastern</td>
<td>Standard &amp;BTR</td>
<td>25 %</td>
</tr>
<tr>
<td>Low Density Eastern</td>
<td>Standard &amp;BTR</td>
<td>25 %</td>
</tr>
</tbody>
</table>

**Moisture Content:** (at manufacture and assembly): Green

### Fasteners:
- **ID:** 2-1/4 x 11-1/2 Ga. SS
- **Type:** Helically Threaded Nail
- **Length:** 2.25
- **Thread Length:** 1.25
- **Thread Diameter:** 0.124
- **Wire Diameter:** 0.112
- **Head Diameter:** 0.280
- **Flutes:** 4
- **Helixes:** 7.5
- **Pitch:** 0.167
- **Thread Angle:** 60
- **MISANT Angle:** 36
- **FWC:** 2.58

**Total Number:** 84

### New Lumber Volume:
- **Total:** 13.5 bd ft

### Spec Sheet Notes:
- **Information specific to Customer here**

---

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Customer: Company Name

Pallet ID: 48x40 GMA - Mixed Hardwoods
Classification: 48.00 x 40.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture
Pallet Treatments: ISPM-15 Compliance: Heat Treatment (HT)

General Load Type: Uniformly Distributed - Full Pallet Coverage
Custom Load Specification: Boxes, Interlock Stacked
Load Stabilizers: Horizontal Strapping, Vertical Strapping (parallel and perpendicular to Pallet Length)
Maximum Weight of Actual Load: 1000 lbs.
Load Weight Variability: Low
Service Environment: Dry Environment (EMC <= 19%)

### Support Condition

<table>
<thead>
<tr>
<th>Side View</th>
<th>End View</th>
<th>Safe Maximum Load</th>
<th>Deflection at Maximum Load</th>
<th>User Specified Deflection Limit</th>
<th>Maximum Load for Deflection Limit</th>
<th>Critical Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racked Across Length 2 Beam Support</td>
<td></td>
<td>1671 lbs.</td>
<td>0.44 in.</td>
<td>0.40 in.</td>
<td>1324 lbs.</td>
<td>Center Stringer</td>
</tr>
<tr>
<td>Racked Across Width 2 Beam Support</td>
<td></td>
<td>1788 lbs.</td>
<td>0.79 in.</td>
<td>0.50 in.</td>
<td>979 lbs.</td>
<td>Interior Bottom Deckbd</td>
</tr>
<tr>
<td>Shelf Support</td>
<td></td>
<td>4588 lbs.</td>
<td>0.14 in.</td>
<td>----</td>
<td>----</td>
<td>Interior Top Deckboard</td>
</tr>
<tr>
<td>Warehouse Storage Stacked 1 Unit Load High</td>
<td></td>
<td>5403 lbs.</td>
<td>0.17 in.</td>
<td>----</td>
<td>----</td>
<td>Interior Top Deckboard</td>
</tr>
<tr>
<td>Stacked 5 Unit Loads High.</td>
<td></td>
<td>1501 lbs. per pallet</td>
<td>0.17 in.</td>
<td>----</td>
<td>----</td>
<td>Interior Bottom Deckbd</td>
</tr>
</tbody>
</table>

### Lateral Collapse Resistance

- **Low**
- **Medium**
- **Good**
- **Excellent**

H/V = 1.91

---

The recommendations from PDS are based on the NWPCA's continuing program of laboratory and field research. They represent the best available engineering information compiled to date. However, the quality of workmanship, the input data, and the conditions in which pallets are used may vary widely. Therefore, the Association cannot accept responsibility for pallet performance or design as actually constructed. Wood pallets manufactured to this PDS design are for the sole purpose of storing and/or transporting material. Under no circumstance should any person stand, step, or lean upon them or otherwise use them for support.

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Pallet Service Life Analysis

The Pallet Service Life Analysis simulates a series of forces and impacts applied to the pallet during each handling cycle. The frequency and severity of these impacts are estimates based on laboratory measurements, warehouse observations, and the Virginia Tech FasTrack Handling Cycle. The resistance to damage and the damage level requiring component repair or replacement are based on laboratory testing and the NWPCA Uniform Standard for Wood Pallets.

Service Environment Conditions:
Average Handling and Treatment, Medium-Duty Loads, Dry Environment (EMC <= 19%)

Predicted Service Life: 9 Cycles
Predicted Cycles until First Repair: 3

Results from Handling Cycle Simulation

<table>
<thead>
<tr>
<th>Pallet Components</th>
<th>Cycles To First Repair</th>
<th>Cycles To First Replacement</th>
<th>Number of Times Replaced</th>
<th>Limits Pallet Service Life</th>
<th>Relative Component Damage during Simulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Leadboards</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Top Interior Boards</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Bottom Leadboards</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Bottom Interior Boards</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior Stringers</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior Stringers</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Pallet Design System Version 5.2
## Pallet Physical Property Analysis

### Customer:
- **Company Name**

### Prepared by:
- **Pallet Consultants - Pallet Professional and NWPCA Member**
- **PDS License: 561**
- **Printed: September 14, 2017**

### Pallet ID:
- **48x40 GMA - Mixed Hardwoods**

### Classification:
- **48.00 x 40.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture**

### Pallet Treatments: **ISPM-15 Compliance:** Heat Treatment (HT)

<table>
<thead>
<tr>
<th>Component</th>
<th>Original Dimension</th>
<th>Shrinkage from Manufacture to 19% MC</th>
<th>Shrinkage from Manufacture to 15% MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Deckboards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>0.625 in.</td>
<td>0.014 in. (+/- 0.004 in.)</td>
<td>0.020 in. (+/- 0.006 in.)</td>
</tr>
<tr>
<td>Width</td>
<td>3.500 in.</td>
<td>0.078 in. (+/- 0.023 in.)</td>
<td>0.113 in. (+/- 0.033 in.)</td>
</tr>
<tr>
<td>Width</td>
<td>5.500 in.</td>
<td>0.123 in. (+/- 0.036 in.)</td>
<td>0.178 in. (+/- 0.052 in.)</td>
</tr>
<tr>
<td>Stringers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>3.500 in.</td>
<td>0.078 in. (+/- 0.023 in.)</td>
<td>0.113 in. (+/- 0.033 in.)</td>
</tr>
<tr>
<td>Width</td>
<td>1.375 in.</td>
<td>0.031 in. (+/- 0.009 in.)</td>
<td>0.044 in. (+/- 0.013 in.)</td>
</tr>
<tr>
<td>Bottom Deckboards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>0.625 in.</td>
<td>0.014 in. (+/- 0.004 in.)</td>
<td>0.020 in. (+/- 0.006 in.)</td>
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<td>0.178 in. (+/- 0.052 in.)</td>
</tr>
</tbody>
</table>

### Average Pallet Weight
- **59 lbs.**
- **41 lbs.**
- **39 lbs.**
- **38 lbs.**
- **37 lbs.**
Pallet ID: 48x40 GMA - Mixed Hardwoods
Classification: 48.00 x 40.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture
Pallet Treatments: ISPM-15 Compliance: Heat Treatment (HT)

Side View

End View

Top View

Bottom View

Prepared by:
Pallet Consultants - Pallet Professional and NWPCA Member
Atlanta | Jacksonville | Montgomery | New Orleans | Orlando
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Customer:
Company Name
Company Address

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Pallet Treatments: ISPM-15 Compliance: Heat Treatment (HT)

Top View

40.00

5.500

3.500

3.500

3.500

3.500

3.500

3.25

3.25

3.25

3.25

3.25

3.25

3.25

3.25

3.25

3.25

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Top View

Bottom View

Customer:
Company Name
Company Address

Prepared by:
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Atlanta | Jacksonville | Montgomery | New Orleans | Orlando
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## Pallet Design System Version 5.2

### Unit Load Specification and Drawings

**Customer:**
Company Name
Company Address

**Prepared by:**
Pallet Consultants - Pallet Professional and NWPCA Member
Atlanta | Jacksonville | Montgomery | New Orleans | Orlando
Ft Lauderdale | Savannah | Charlotte
PDS License:  561 Printed:  September 14, 2017

**Pallet ID:** 48x40 GMA - Mixed Hardwoods

**Classification:** 48.00 x 40.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

**Pallet Treatments:** ISPM-15 Compliance: Heat Treatment (HT)

---

### Container Type: Corrugated Box

**Box Style:** Regular Slotted Container (RSC) #0201

**Weight per Box:** 20 lbs.

**Number of Boxes per Layer:** 10

**Number of Layers per Unit Load:** 5 Interlock Stacked

**Number of Boxes per Unit Load:** 50

**Total Weight of Load:** 1000 lbs.

**Total Height of Load:** 50.000 in.

### Outside Dimensions:

- **Length:** 16.000
- **Width:** 12.000
- **Depth:** 10.000 *

### Load Stabilizers

- **Horizontal Straps**
  - Type: Plastic
- **Parallel Straps**
  - Type: Plastic
- **Perpendicular Straps**
  - Type: Plastic
- **Corner Protectors**
  - Type: Paperboard
- **Top Edge Protectors**
  - Type: Paperboard
- **Top Sheet**
  - Type: OSB

---

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