Customer: GMA User

Prepared by: Hinchcliff Products Co.
13477 Prospect Rd.
Strongsville, OH 44136
Phone: 440-238-5200 Fax: 440-238-5202
E-Mail: sales@hinchcliffproducts.com
PDS License: 63 Printed: November 19, 2014

Pallet ID: 48x40 GMA
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)

Components

Top Deck:
Style: Deckboard Type: New Lumber
Number Thickness Width Length
5 0.630 3.500 40.00
2 0.630 5.500 40.00
Volume: 5.0 bd ft

Bottom Deck:
Style: Deckboard Type: New Lumber
Number Thickness Width Length
3 0.630 3.500 40.00
2 0.630 5.500 40.00
Volume: 3.8 bd ft

Stringers:
Type: New Lumber
Number Width Height Length
3 1.380 3.500 48.00

Fasteners:
Fastener ID: 2" Machine Nail
Fastener Type: Helically Threaded Nail
Fastener Length: 2.00
Thread Length: 1.33
Thread Diameter: 0.137
Wire Diameter: 0.120
Head Diameter: 0.281
Flutes: 4
Helixes: 8.0
Pitch: 0.166
Thread Angle: 57
MIBANT Angle: 28
FWC: 3.25
Total Number: 84

New Lumber:
Lumber ID: Mixed Hardwood
Species Class Grade Lumber Mix
High Density Eastern Hardwoods Standard &BTR 30%
Yellow Poplar Standard &BTR 10%
Eastern Oaks Standard &BTR 60%

Moisture Content (at manufacture and assembly): Green
Total New Lumber Volume: 13.6 bd ft

Spec Sheet Notes:

All output generated from the PDS software (including without limitation the designs, drawings, plans, specification sheets, data, analyses, information, materials or other output produced by or with the assistance of the Software (PDS Output) are protected by copyright and other intellectual property laws and cannot be reproduced without the prior written consent of NWPCA. Lessee may provide a copy of the Output, which must bear the Lessee’s watermark, to its manufacturer for the sole purpose of manufacturing the pallet for Lessee to sell or to its direct pallet customer for the sole purpose of selling pallets to that customer.
### Pallet Structural Analysis

**Customer:** GMA User  
**Pallet ID:** 48x40 GMA  
**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)  
**Service Environment:** Wet Environment (EMC > 19%)  

**General Load Type:** Uniformly Distributed - Full Pallet Coverage  
**Custom Load Specification:** Boxes, Interlock Stacked  
**Load Stabilizers:** Stretch Wrap  
**Load Weight Variability:** Low

---

#### Support Condition

| Side View | End View | Safe Maximum Load | Deflection at Maximum Load | User Specified Deflection Limit | Maximum Load for Deflection Limit | Critical Member |
|-----------|----------|-------------------|---------------------------|--------------------------------|----------------------------------|----------------|---|
| Racked Across Length  
2 Beam Support  
Span = 44.00  
21.00 | | 1757 lbs. | 0.53 in. | ---- | ---- | Center  
Stringer |
| 3 Beam Support  
21.00 | | 4571 lbs. | 0.19 in. | ---- | ---- | Interior  
Top Deckboard |
| Racked Across Width  
2 Beam Support  
Span = 36.00  
42.00 | | 2221 lbs. | 1.03 in. | ---- | ---- | Interior  
Bottom  
Deckbd |
| Forklift Support  
Enter and Lift from Pallet End | | 3500 lbs. | 0.42 in. | ---- | ---- | Interior  
Top Deckboard |
| Warehouse Storage  
Stacked 1 Unit Load High | | 6842 lbs. | 0.21 in. | ---- | ---- | Interior  
Top Deckboard |
| Stacked 2 Unit Loads High | | 4276 lbs. | 0.21 in. | ---- | ---- | Interior  
Top Deckboard |

---

#### Lateral Collapse Resistance

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

---

The recommendations from PDS are based on NWPCA's extensive 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 the 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.
Pallet Design System Version 5.1
Pallet Durability Analysis

Customer: GMA User
Prepared by: Hinchcliff Products Co.
PDS License: 63 Printed: November 19, 2014

Pallet ID: 48x40 GMA
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)

Pallet Damage Rate Analysis

The Pallet Damage Rate 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, Wet Environment (EMC > 19%)

<table>
<thead>
<tr>
<th>Pallet Components</th>
<th>Cycles Until Damage Level to Components Warrants Repair or Replacement</th>
<th>Cycles Until Damage Level to Connections Warrants Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Leadboards (2)</td>
<td>38.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Top InteriorBoards (5)</td>
<td>42.9</td>
<td></td>
</tr>
<tr>
<td>Bottom Leadboards (2)</td>
<td>16.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Bottom InteriorBoards (3)</td>
<td>&gt; 50</td>
<td>12.0</td>
</tr>
<tr>
<td>Exterior Stringers (2)</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Interior Stringers (1)</td>
<td>26.9</td>
<td></td>
</tr>
</tbody>
</table>
## Pallet Physical Property Analysis

### Customer:
GMA User

### Prepared by:
Hinchcliff Products Co.

### Pallet ID:
48x40 GMA

### 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)

### Average Pallet Weight

<table>
<thead>
<tr>
<th></th>
<th>At Manufacture</th>
<th>At 25% MC</th>
<th>At 19% MC</th>
<th>At 15% MC</th>
<th>At 12% MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet Weight</td>
<td>59 lbs.</td>
<td>43 lbs.</td>
<td>41 lbs.</td>
<td>39 lbs.</td>
<td>38 lbs.</td>
</tr>
</tbody>
</table>

### Dimensional Change due to Wood Drying

<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>0.630 in.</td>
<td>0.015 in. (+/- 0.005 in.)</td>
<td>0.022 in. (+/- 0.007 in.)</td>
</tr>
<tr>
<td>Width 3.500</td>
<td>0.084 in. (+/- 0.027 in.)</td>
<td>0.122 in. (+/- 0.039 in.)</td>
<td></td>
</tr>
<tr>
<td>Width 5.500</td>
<td>0.132 in. (+/- 0.043 in.)</td>
<td>0.191 in. (+/- 0.062 in.)</td>
<td></td>
</tr>
<tr>
<td>Height 3.500</td>
<td>0.084 in. (+/- 0.027 in.)</td>
<td>0.122 in. (+/- 0.039 in.)</td>
<td></td>
</tr>
<tr>
<td>Width 1.380</td>
<td>0.033 in. (+/- 0.011 in.)</td>
<td>0.048 in. (+/- 0.016 in.)</td>
<td></td>
</tr>
<tr>
<td>Stringers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height 3.500</td>
<td>0.084 in. (+/- 0.027 in.)</td>
<td>0.122 in. (+/- 0.039 in.)</td>
<td></td>
</tr>
<tr>
<td>Width 1.380</td>
<td>0.033 in. (+/- 0.011 in.)</td>
<td>0.048 in. (+/- 0.016 in.)</td>
<td></td>
</tr>
<tr>
<td>Bottom Deckboards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>0.630 in.</td>
<td>0.015 in. (+/- 0.005 in.)</td>
<td>0.022 in. (+/- 0.007 in.)</td>
</tr>
<tr>
<td>Width 3.500</td>
<td>0.084 in. (+/- 0.027 in.)</td>
<td>0.122 in. (+/- 0.039 in.)</td>
<td></td>
</tr>
<tr>
<td>Width 5.500</td>
<td>0.132 in. (+/- 0.043 in.)</td>
<td>0.191 in. (+/- 0.062 in.)</td>
<td></td>
</tr>
</tbody>
</table>
PALLET DESIGN SYSTEM Version 5.1
2-D Pallet Drawings

All dimensions in inches

Pallet ID: 48x40 GMA
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

Customer:
GMA User

Prepared by:
Hinchcliff Products Co.
13477 Prospect Rd.
Strongsville, OH 44136
Phone: 440-238-5200 Fax: 440-238-5202
E-Mail: sales@hinchcliffproducts.com
PDS License: 63 Printed: November 19, 2014

All output generated from the PDS software (including without limitation the designs, drawings, plans, specification sheets, data, analyses, information, materials or other output produced by or with the assistance of the Software (PDS Output) are protected by copyright and other intellectual property laws and cannot be reproduced without the prior written consent of NWPCA. Lessee may provide a copy of the Output, which must bear the Lessee’s watermark, to its manufacturer for the sole purpose of manufacturing the pallet for Lessee to sell or to its direct pallet customer for the sole purpose of selling pallets to that customer.
Pallet ID: 48x40 GMA
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)

Top View

Bottom View

Customer:
GMA User

Prepared by:
Hinchcliff Products Co.
13477 Prospect Rd.
Strongsville, OH 44136
Phone: 440-238-5200 Fax: 440-238-5202
E-Mail: sales@hinchcliffproducts.com
PDS License: 63 Printed: November 19, 2014
Customer: GMA User

Prepared by: Hinchcliff Products Co.
13477 Prospect Rd.
Strongsville, OH 44136
Phone: 440-238-5200 Fax: 440-238-5202
E-Mail: sales@hinchcliffproducts.com
PDS License: 63 Printed: November 19, 2014

Pallet ID: 48x40 GMA
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
Combined Board Type: Singlewall
Flute Profile: C-Flute
Caliper: 0.156
ECT: 32.000

Weight per Box: 20 lbs.
Number of Boxes per Layer: 9
Number of Layers per Unit Load: 4 Column Stacked
Number of Boxes per Unit Load: 36
Total Weight of Load: 720 lbs.
Total Height of Load: 40.000 in.

Load Stabilizers
Wrap Type: Stretch Wrap

All output generated from the PDS software (including without limitation the designs, drawings, plans, specification sheets, data, analyses, information, materials or other output produced by or with the assistance of the Software (PDS Output) are protected by copyright and other intellectual property laws and cannot be reproduced without the prior written consent of NWPCA. Lessee may provide a copy of the Output, which must bear the Lessee’s watermark, to its manufacturer for the sole purpose of manufacturing the pallet for Lessee to sell or to its direct pallet customer for the sole purpose of selling pallets to that customer.