

PALLET DESIGN SYSTEM Version 5.2

Pallet Specification Sheet

All dimensions in inches

Customer:

Company Name
Company Address

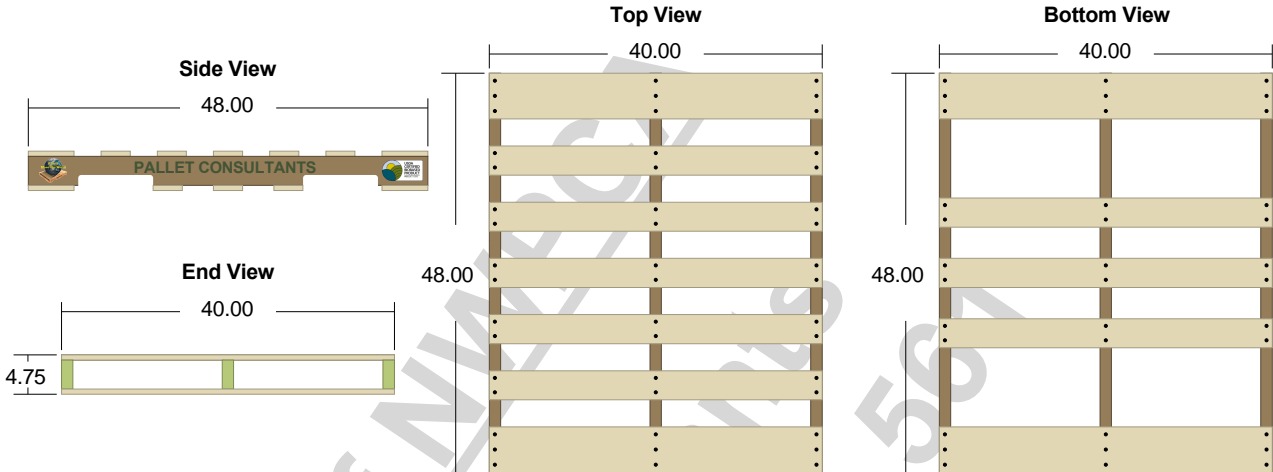
Prepared by:

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)



Components

Materials

Top Deck:

| Number | Thickness | Width | Length |
|--------|-----------|-------|--------|
| 5 | 0.625 | 3.500 | 40.00 |
| 2 | 0.625 | 5.500 | 40.00 |

Volume: 4.9 bd ft

Bottom Deck:

| Number | Thickness | Width | Length |
|--------|-----------|-------|--------|
| 3 | 0.625 | 3.500 | 40.00 |
| 2 | 0.625 | 5.500 | 40.00 |

Volume: 3.7 bd ft

Stringers:

| Number | Width | Height | Length |
|--------|-------|--------|--------|
| 3 | 1.375 | 3.500 | 48.00 |

Volume: 4.8 bd ft

Partial 4-way Entry Notch:

Depth: 1.250 Length: 9.00 Location: 6.00 Radius: 0.75

Fasteners:

| | |
|------------------|-------------------------|
| Fastener ID: | 2-1/4 x 11-1/2 Ga. SS |
| Fastener Type: | Helically Threaded Nail |
| Fastener 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 |
| MIBANT Angle: | 36 |
| FWC: | 2.58 |
| Total Number: | 84 |

New Lumber:

Lumber ID: Mixed Eastern Hardwoods

| Species Class | Grade | Lumber Mix |
|----------------------------------|---------------|------------|
| High Density Eastern Hardwoods | Standard &BTR | 50 % |
| Medium Density Eastern Hardwoods | Standard &BTR | 25 % |
| Low Density Eastern Hardwoods | Standard &BTR | 25 % |

Moisture Content (at manufacture and assembly): Green

Total New Lumber Volume: 13.5 bd ft

Spec Sheet Notes:

Information specific to Customer here

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Pallet Structural Analysis

Customer:

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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 | | Safe Maximum Load | Deflection at Maximum Load | User Specified Deflection Limit | Maximum Load for Deflection Limit | Critical Member |
|---|----------|----------------------|----------------------------|---------------------------------|-----------------------------------|------------------------|
| Side View | End View | | | | | |
| <p>Racked Across Length 2 Beam Support</p> <p>Span = 44.00</p> | | 1671 lbs. | 0.44 in. | 0.40 in. | 1324 lbs. | Center Stringer |
| <p>Racked Across Width 2 Beam Support</p> <p>Span = 36.00</p> | | 1788 lbs. | 0.79 in. | 0.50 in. | 979 lbs. | Interior Bottom Deckbd |
| <p>Shelf Support</p> | | 4588 lbs. | 0.14 in. | ---- | ---- | Interior Top Deckboard |
| <p>Warehouse Storage Stacked 1 Unit Load High</p> | | 5403 lbs. | 0.17 in. | ---- | ---- | Interior Top Deckboard |
| <p>Stacked 5 Unit Loads High</p> | | 1501 lbs. per pallet | 0.17 in. | ---- | ---- | Interior Bottom Deckbd |
| <p>Lateral Collapse Resistance</p> <p style="text-align: center;">Low Medium Good Excellent</p> <p style="text-align: center;">↑ H/V = 1.91</p> | | | | | | |

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 Durability Analysis

Customer:

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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

| Pallet Components | Cycles To First Repair | Cycles To First Replacement | Number of Times Replaced | Limits Pallet Service Life | Relative Component Damage during Simulation |
|---------------------------|------------------------|-----------------------------|--------------------------|----------------------------|---|
| Top Leadboards (2) | 3 | 5 | 1 | Yes | |
| Top InteriorBoards (5) | | | | | |
| Bottom Leadboards (2) | 3 | 5 | 1 | Yes | |
| Bottom InteriorBoards (3) | | | | | |
| Exterior Stringers (2) | 4 | 9 | | | |
| Interior Stringers (1) | | | | | |

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Pallet Physical Property Analysis

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| | At Manufacture | At 25% MC | At 19% MC | At 15% MC | At 12% MC |
|------------------------------|----------------|-----------|-----------|-----------|-----------|
| Average Pallet Weight | 59 lbs. | 41 lbs. | 39 lbs. | 38 lbs. | 37 lbs. |



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

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Pallet Drawing - Side and End View

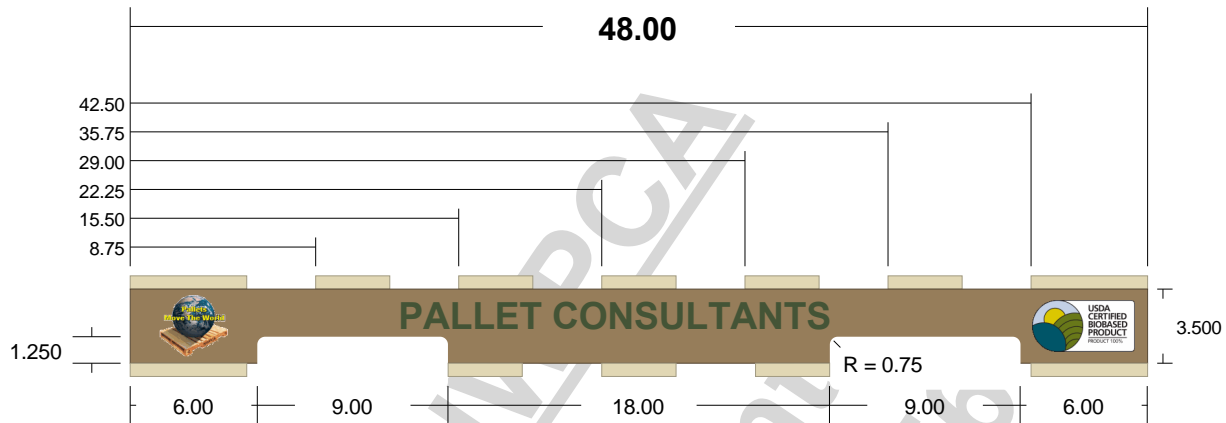
All dimensions in inches

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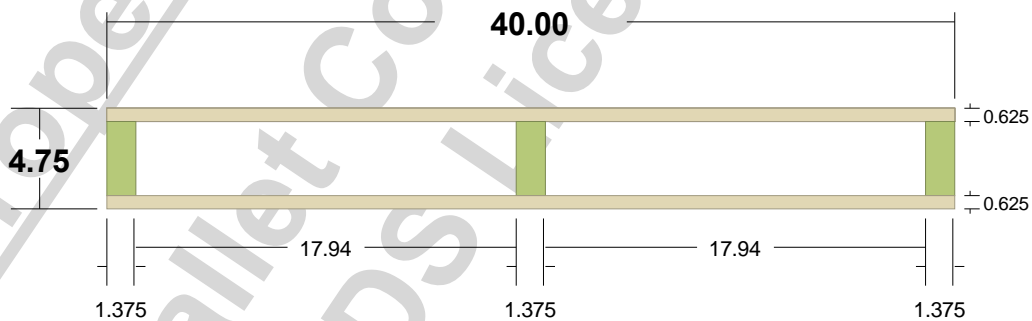
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Side View



End View



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Pallet Drawing - Top View

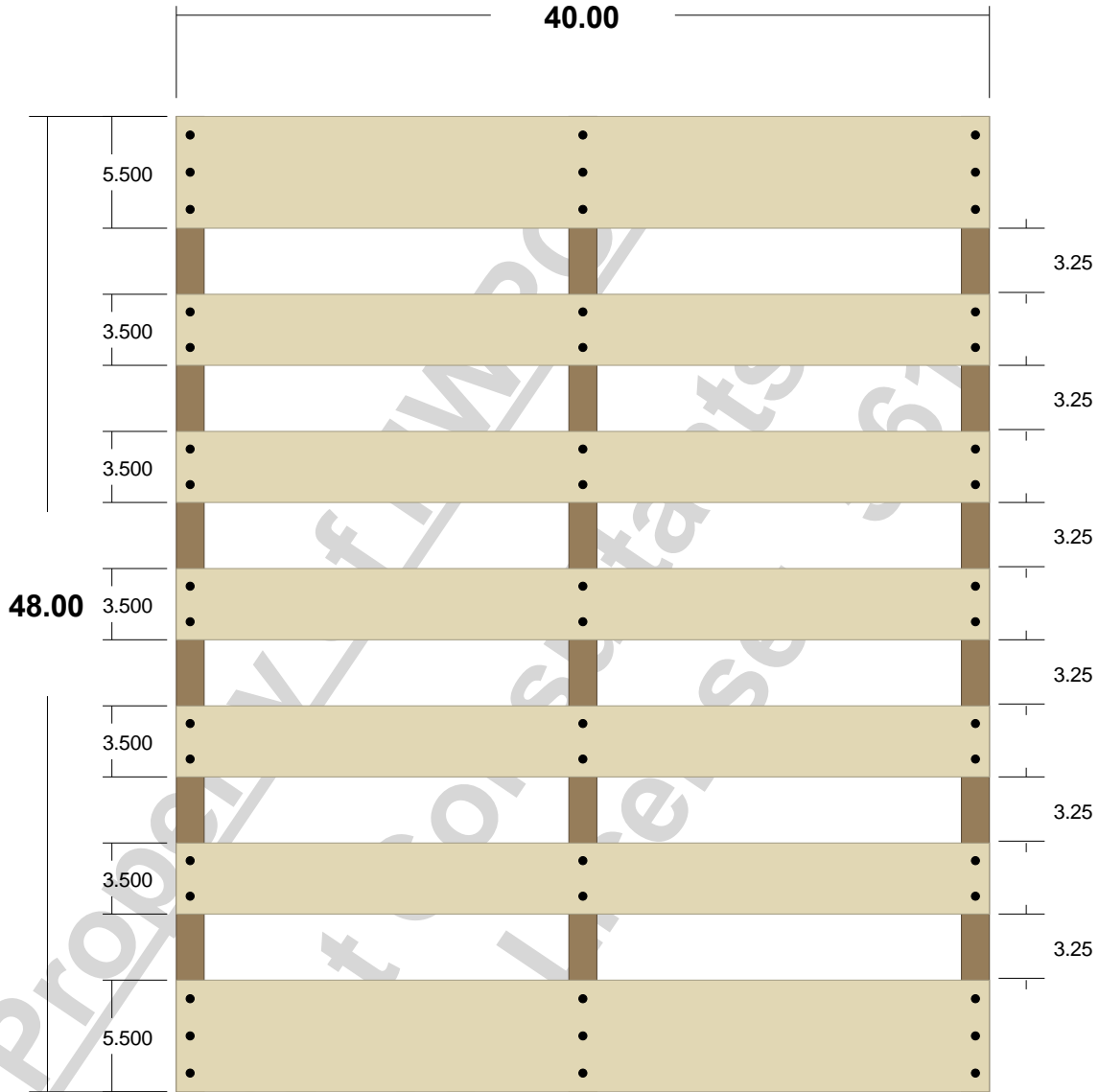
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Top View



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Pallet Drawing - Bottom View

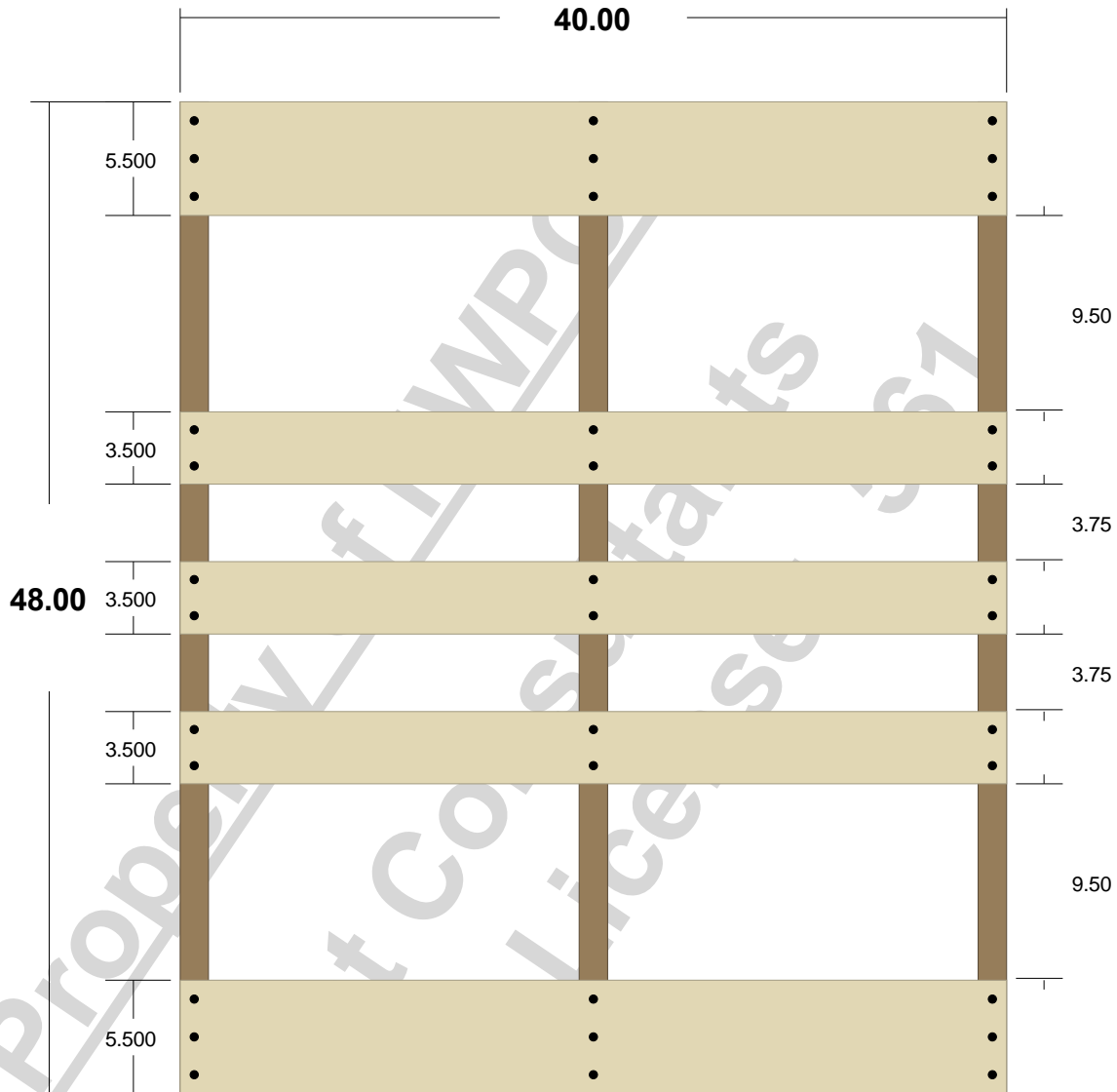
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Bottom View



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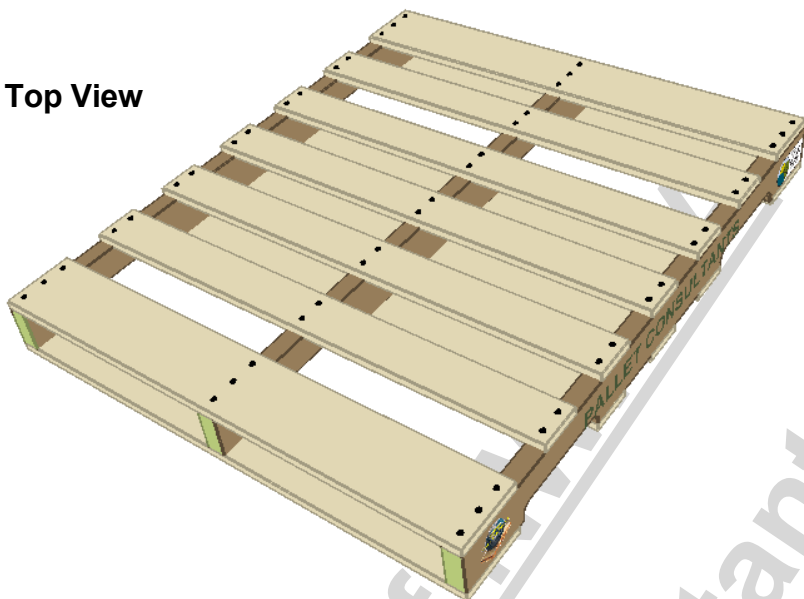
3-D Pallet Drawings

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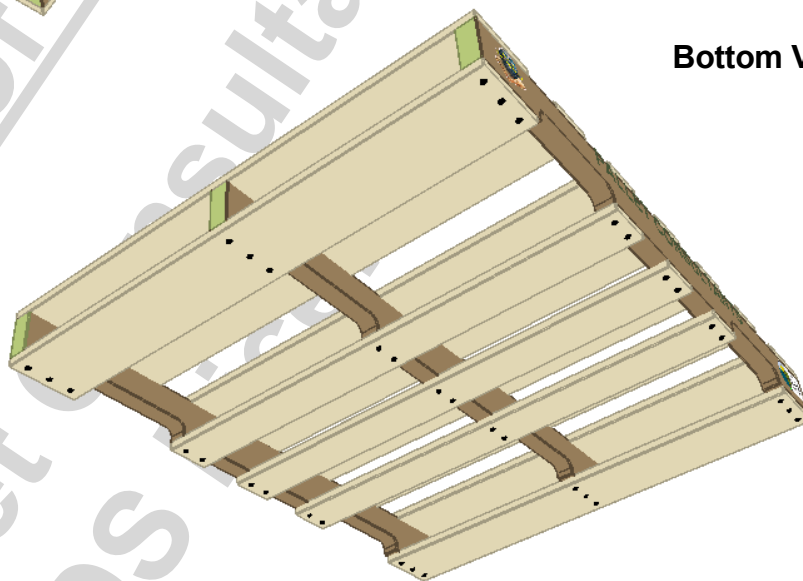
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Top View



Bottom View



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Unit Load Specification and Drawings

All dimensions in inches, weights in lbs.

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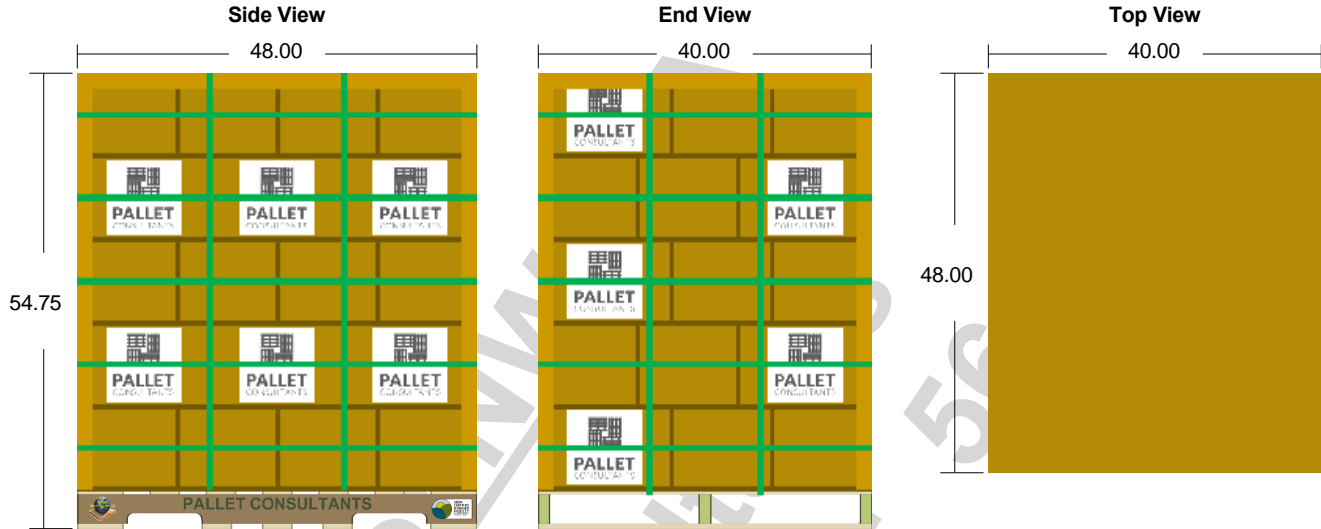
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Container Type: Corrugated Box

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.

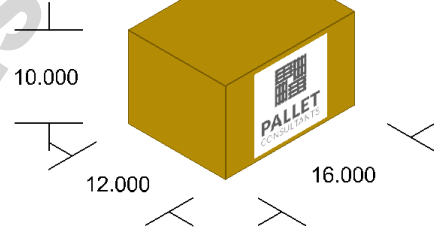
Total Height of Load: 50.000 in.

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

