

# PALLET DESIGN SYSTEM Version 5.4

## Pallet Specification Sheet

All dimensions in millimeters

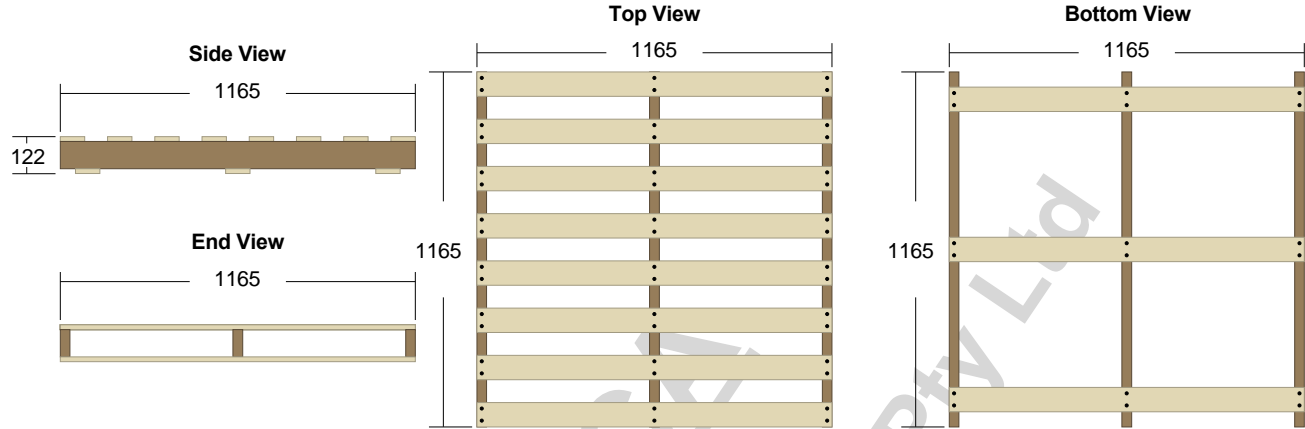
**Customer:**

**Prepared by:**

Express Pallets & Crates Pty Ltd  
PDS License: 790 Printed: November 29, 2018

**Pallet ID:** VP1165833BCR

**Classification:** 1165 x 1165, Stringer-Class, Double-Face Non-Reversible, 2-Way, Reusable, New Manufacture



### Components

### Materials

**Top Deck:**

Style: Deckboard Type: New Lumber

| Number | Thickness | Width | Length |
|--------|-----------|-------|--------|
| 8      | 16        | 80    | 1165   |

Volume: 0.0119 cubic meters

**Bottom Deck:**

Style: Deckboard Type: New Lumber

| Number | Thickness | Width | Length |
|--------|-----------|-------|--------|
| 3      | 16        | 80    | 1165   |

Volume: 0.0045 cubic meters

**Stringers:**

Type: New Lumber

| Number | Width | Height | Length |
|--------|-------|--------|--------|
| 3      | 32    | 90     | 1165   |

Volume: 0.0101 cubic meters

**Fasteners:**

|                  |                         |
|------------------|-------------------------|
| Fastener ID:     | 57x3.06                 |
| Fastener Type:   | Annularly Threaded Nail |
| Fastener Length: | 57                      |
| Thread Length:   | 38                      |
| Thread Diameter: | 3.3                     |
| Wire Diameter:   | 3.1                     |
| Head Diameter:   | 7.2                     |
| Rings:           | 46                      |
| Pitch:           | 0.8                     |
| MIBANT Angle:    | 35                      |
| FWC:             | 3.68                    |
| Total Number:    | 66                      |

**New Lumber:**

Lumber ID: Radiata Pine

| Species Class        | Grade   |
|----------------------|---------|
| Chilean Radiata Pine | Premium |

Moisture Content (at manufacture and assembly): Green

Total New Lumber Volume: 0.0265 cubic meters

**Spec Sheet Notes:**

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## Pallet Structural Analysis

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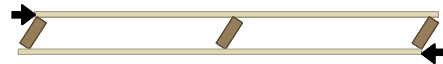
**General Load Type:** Uniformly Distributed - Full Pallet Coverage

**Load Weight Variability:** Medium

**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 or Connection |
|--|----------|-------------------|----------------------------|---------------------------------|-----------------------------------|-------------------------------|
| Side View  | End View |                   |                            |                                 |                                   |                               |
| <p align="center"><b>Racked Across Length</b><br/><u>2 Beam Support</u></p> <p align="center">Span = 750</p> |          | 1038 kg           | 6 mm                       | ----                            | ----                              | Interior Top Deckboard        |
| <p align="center"><b>Warehouse Storage</b><br/><u>Stacked 1 Unit Load High</u></p>                           |          | 1387 kg           | 8 mm                       | 6 mm                            | NA                                | Interior Top Deckboard        |

### Lateral Collapse Resistance



Low

Medium

Good

Excellent

LCR Indicator = 1.51

### Pallet Design System (PDS)

Developed and owned by:

**National Wooden Pallet and Container Association (NWPCA)**

Research and development for early versions of PDS were conducted in cooperation with:  
 Center for Unit Load Design, Virginia Tech Department of Wood Science and Forest Products;  
 U.S.D.A. Forest Service and Forest Products Laboratory; APA - The Engineered Wood Association;  
 Software Technologies Laboratory, Virginia Tech Department of Industrial and Systems Engineering

The results from PDS are based on the NWPCA's continuing program of laboratory and field research. While the engineering outcomes reflected in the results are based on sound science, 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, and specifically disclaims any responsibility for such. Notwithstanding the history of the PDS system, users of the PDS system are strongly encouraged to undertake individual, unique analysis of the results as they then pertain to specific applications and the production process. 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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National Wooden Pallet and Container Association, 1421 Prince Street, Suite 340, Alexandria, Virginia 22314-2805, United States

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# PALLET DESIGN SYSTEM Version 5.4

## Pallet Physical Property Analysis

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|                              | At Manufacture | At 25% MC | At 19% MC | At 15% MC | At 12% MC |
|------------------------------|----------------|-----------|-----------|-----------|-----------|
| <b>Average Pallet Weight</b> | 16 kg          | 13 kg     | 12 kg     | 12 kg     | 12 kg     |



| Component         | Original Dimension | Shrinkage from Manufacture to 19% MC | Shrinkage from Manufacture to 15% MC |
|-------------------|--------------------|--------------------------------------|--------------------------------------|
| Top Deckboards    | 16 mm Thickness    | 0.3 mm (+/- 0.1 mm)                  | 0.4 mm (+/- 0.1 mm)                  |
|                   | 80 mm Width        | 1.5 mm (+/- 0.4 mm)                  | 2.2 mm (+/- 0.6 mm)                  |
| Stringers         | 90 mm Height       | 1.7 mm (+/- 0.4 mm)                  | 2.4 mm (+/- 0.6 mm)                  |
|                   | 32 mm Width        | 0.6 mm (+/- 0.2 mm)                  | 0.9 mm (+/- 0.2 mm)                  |
| Bottom Deckboards | 16 mm Thickness    | 0.3 mm (+/- 0.1 mm)                  | 0.4 mm (+/- 0.1 mm)                  |
|                   | 80 mm Width        | 1.5 mm (+/- 0.4 mm)                  | 2.2 mm (+/- 0.6 mm)                  |

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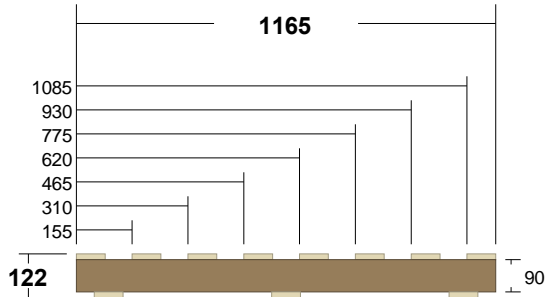
## 2-D Pallet Drawings

All dimensions in millimeters

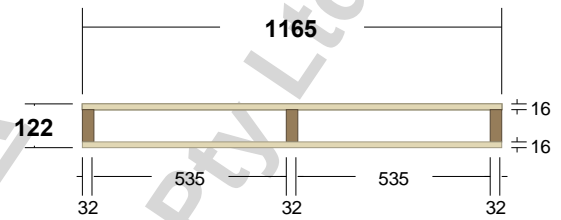
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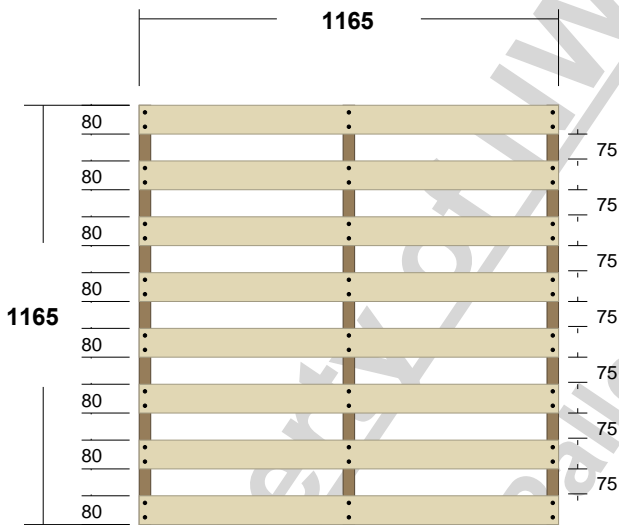
### Side View



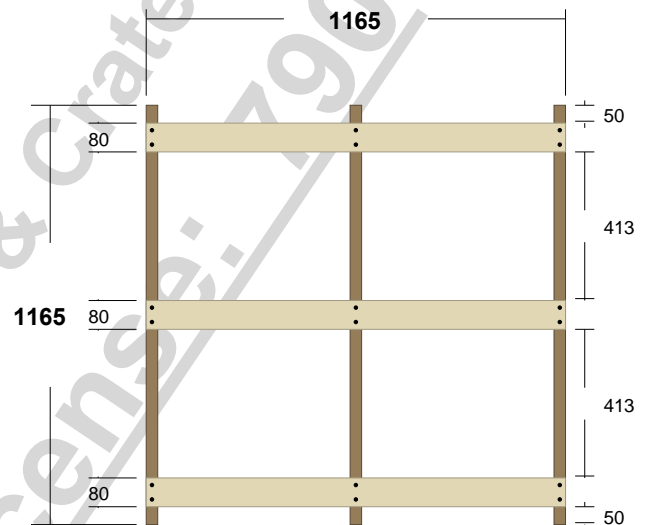
### End View



### Top View



### Bottom View



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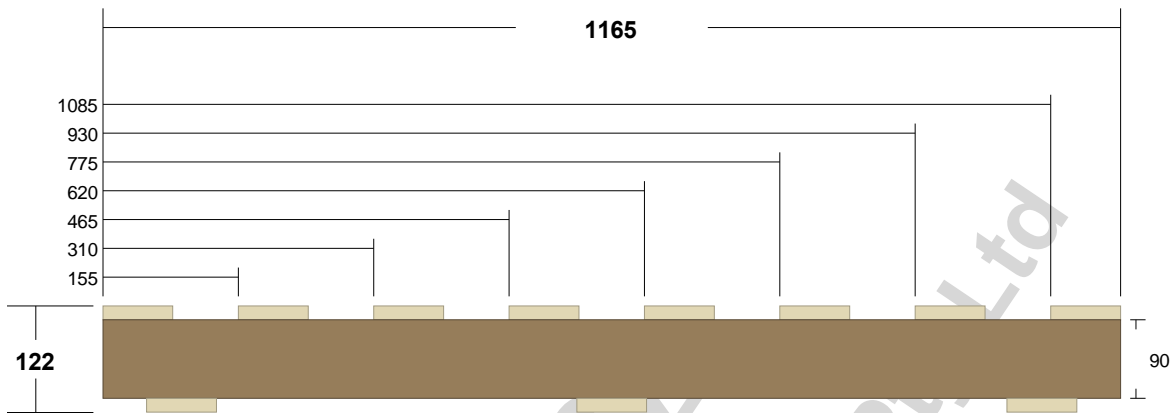
## Pallet Drawing - Side and End View

All dimensions in millimeters

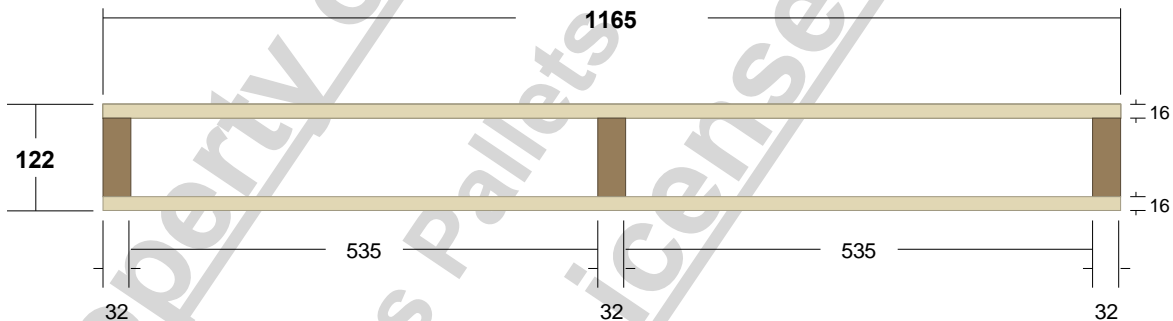
Pallet ID: VP1165833BCR

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### Side View



### End View



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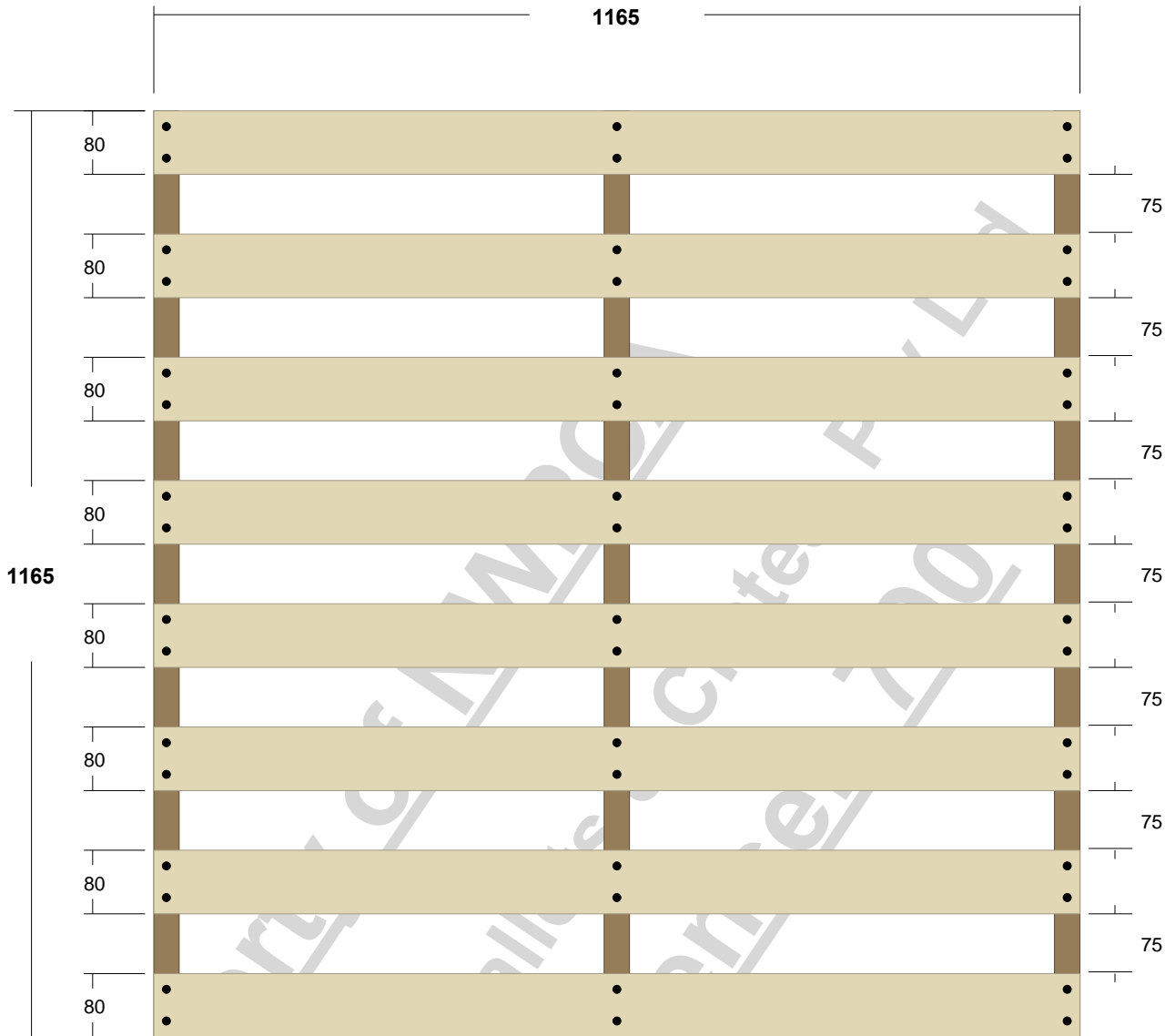
## Pallet Drawing - Top View

All dimensions in millimeters

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### Top View



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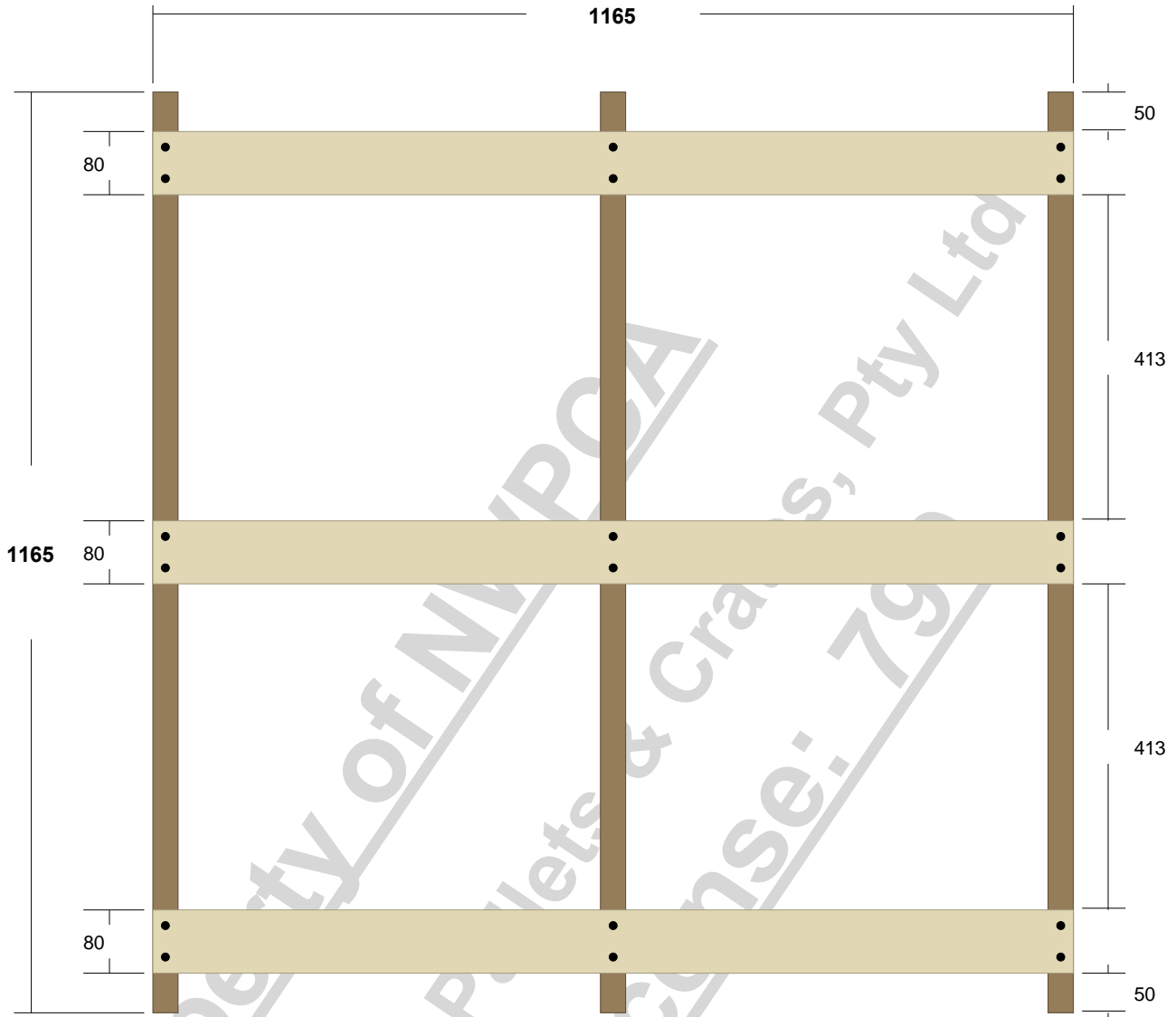
## Pallet Drawing - Bottom View

All dimensions in millimeters

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### Bottom View



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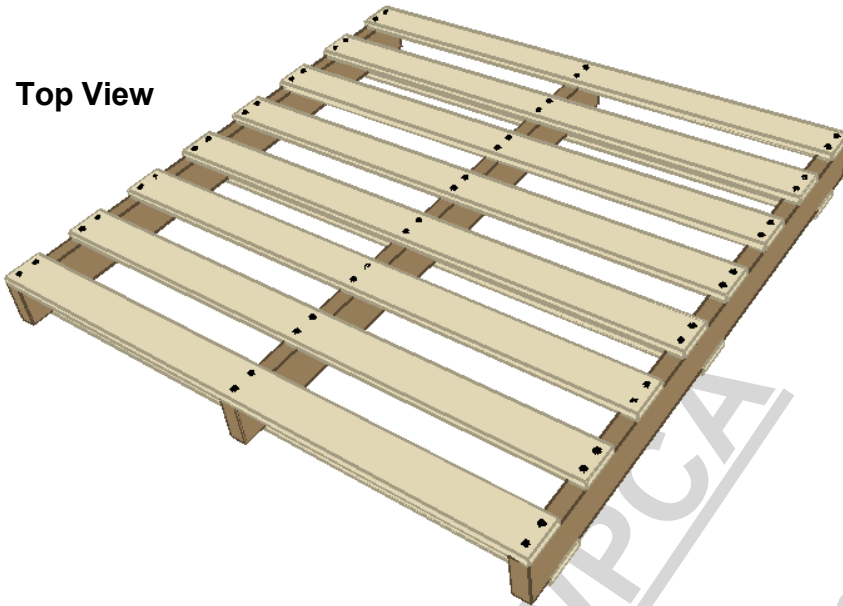
## 3-D Pallet Drawings

All dimensions in millimeters

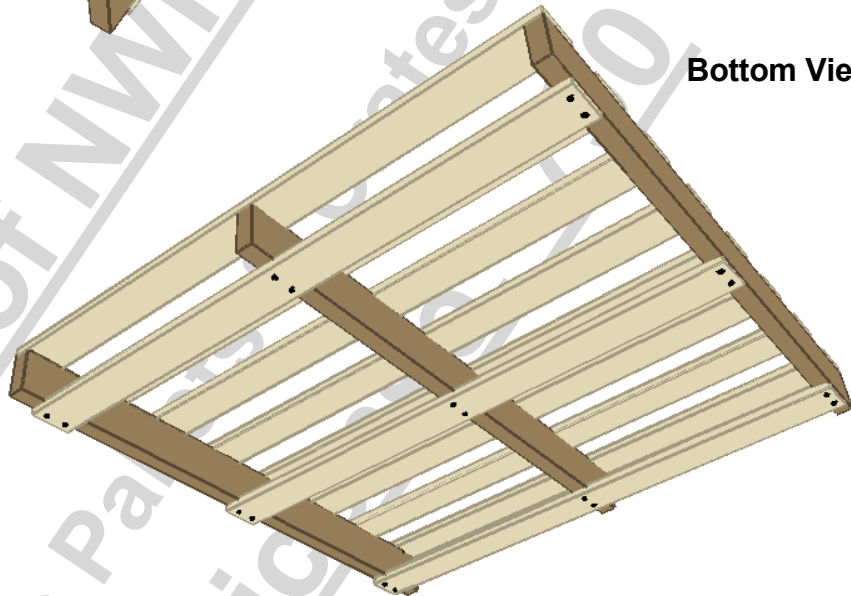
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Top View



Bottom View



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