



## NOTICE TO THE TRADE

**DATE:** May 18<sup>th</sup>, 2020

**ATTENTION:** All Steamship Lines and Commodity Vendors Participating in P.L. 480 Title II Food Aid Shipments

**SUBJECT:** Vegetable Oil Palletization Requirements and Container Loading Guideline for Twenty Foot Dry Containers

This notice is to advise commodity vendors and ocean carriers that the following pallet specifications and container loading protocol is effective immediately for palletized vegetable oil loaded in 20' Dry Van containers.

### **Pallet Specifications:**

- 603 (4 liter) Cans Only
- Palletization and stretch wrapping required.
- Stretch wrap must be at least 90 gauge. Stretch wrap must include wrap around the pallet base to secure cargo to pallet, and be wrapped a minimum of 4 times, up to extreme top of pallet.
- Pallets to be of new manufacture, four way, 4 stringer and from mold-free lumber.
- Pallet base boards must be at least 17.5 mm thick, and of consistent thickness throughout.
- Pallets must be international heat treated and stamped/labeled.
- Pallet Size must be 38" x 44" (965 mm x 1,118 mm), with 56 cartons (tightly packed) per pallet, stacked 7 cartons wide by 8 carton layers high.
- Cartons to be stacked on the pallet as follows: Base layers #1 & 2 column stacked, Mid-layers #3 through 6 interlock stacked, and Top layers #7 & 8 column stacked.
- Cartons should maximize pallet footprint, no carton overhang permitted.
- Pallets to be stackable to a minimum of 2 pallets high.
- Cardboard Corner Supports (corner beads) required on each of the four corners lining the cartons on the pallet. Corner Supports shall extend from pallet deck through extreme top carton.

## **Pallet Layout:**

The pallet load plan is designed to maintain a carrying capacity of 3024 lbs (1372 kg).

[Attachment 1 Pallet Design System Version 6.1 \(Imperial Dimensions\)](#)

[Attachment 2 Pallet Design System Version 5.4 \(Metric Dimensions\)](#)

*The included drawings are a recommended design based on USAID testing. The Pallet Design System (PDS), must be used to verify the materials used for pallet construction meet the requirements listed in this document(s). The stacking shown in the diagram(s) does not reflect the column and interlocking stacking requirements under the protocol, as the software is unable to properly illustrate.*

## **Container Loading for Stowage in 20' Dry Van:**

- Twelve (12) Pallets of the above design should fit compactly in a common ISO 20' Dry Container.

Any questions concerning this Notice should be directed to the USAID Transportation Division and Division Chief Mr. Paul Vicinanza at [m.oaa.tcmaillistusaid@usaid.gov](mailto:m.oaa.tcmaillistusaid@usaid.gov).

# PALLET DESIGN SYSTEM Version 6.1

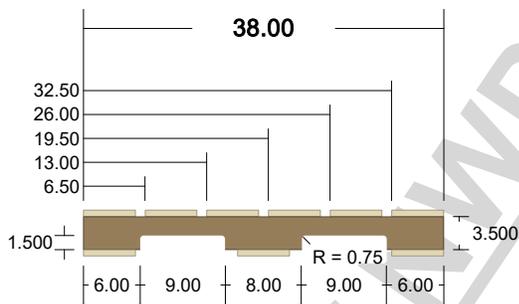
## 2-D Pallet Drawings

All dimensions in inches

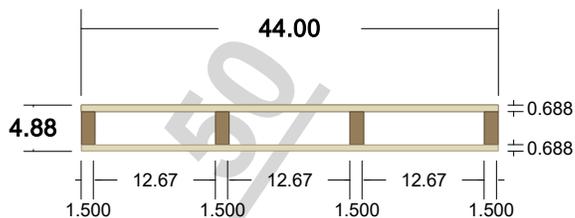
Pallet ID: US AID VO Pallet

Classification: 38.00 x 44.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

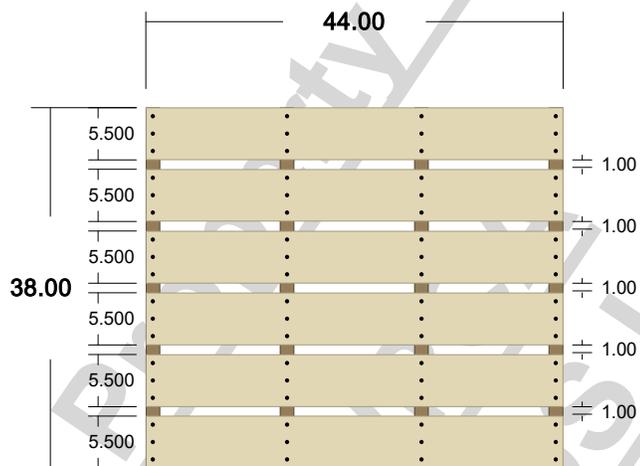
### Side View



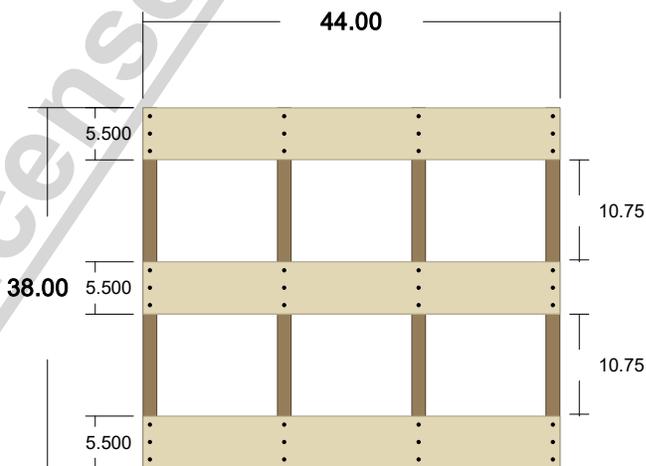
### End View



### Top View



### Bottom View



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.

Customer:

Prepared by:

National Wooden Pallet & Container Association  
PDS License: 50 Printed: March 19, 2020

# PALLET DESIGN SYSTEM Version 6.1

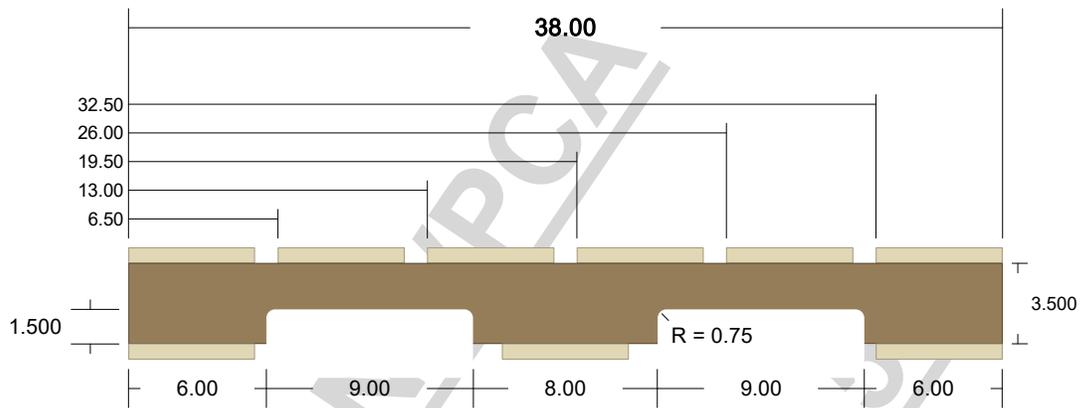
## Pallet Drawing - Side and End View

All dimensions in inches

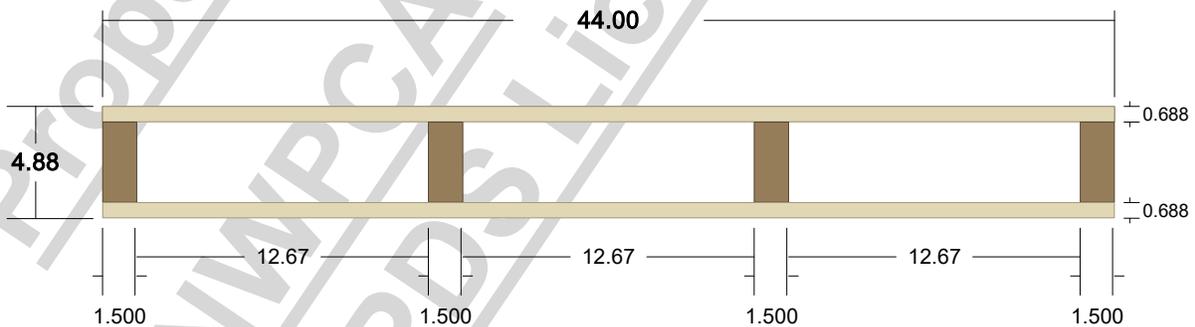
Pallet ID: US AID VO Pallet

Classification: 38.00 x 44.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

### Side View



### End View



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.

Customer:

Prepared by:

National Wooden Pallet & Container Association  
PDS License: 50 Printed: March 19, 2020

# PALLET DESIGN SYSTEM Version 6.1

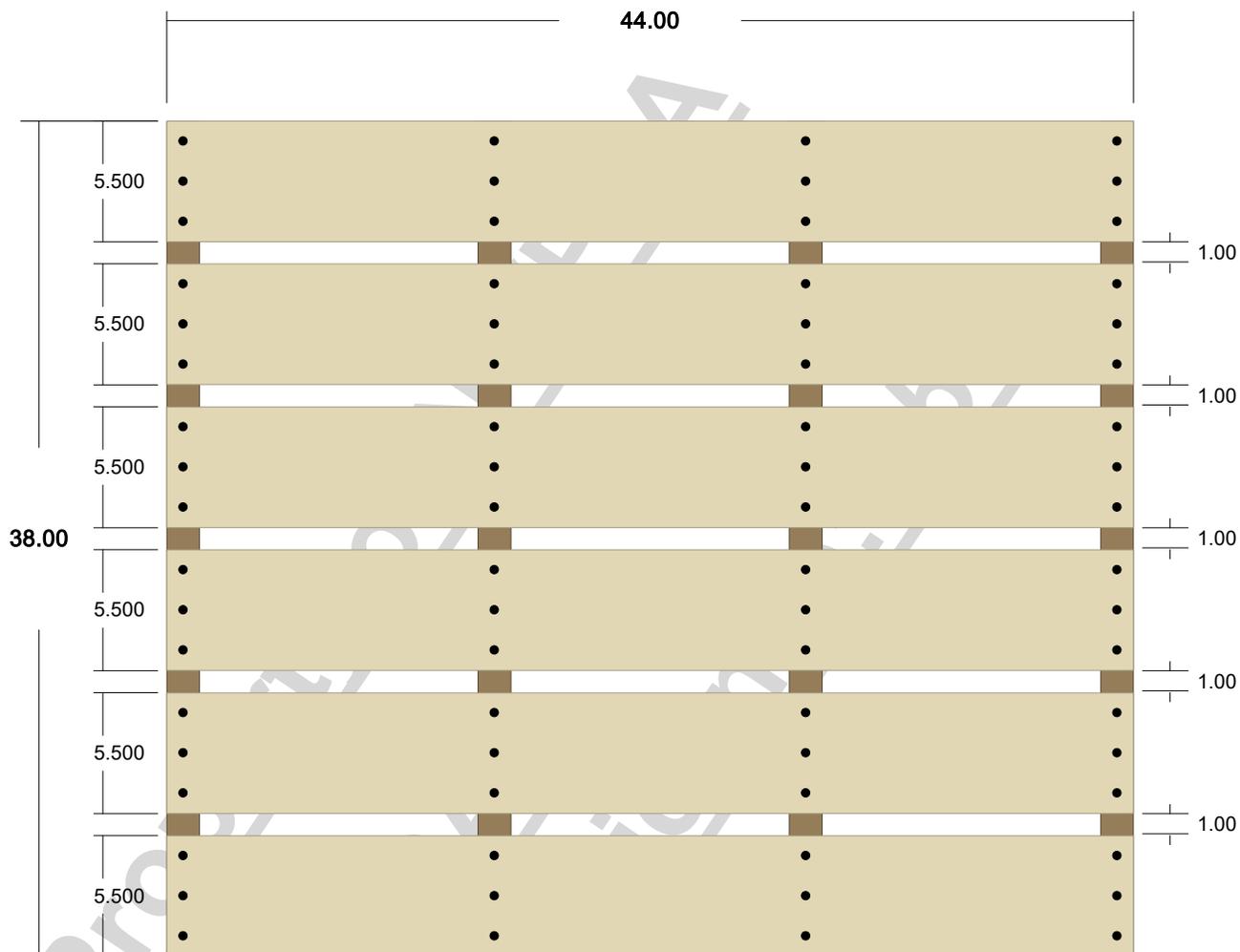
## Pallet Drawing - Top View

All dimensions in inches

Pallet ID: US AID VO Pallet

Classification: 38.00 x 44.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

### Top View



**Customer:**

**Prepared by:**

National Wooden Pallet & Container Association  
PDS License: 50 Printed: March 19, 2020

# PALLET DESIGN SYSTEM Version 6.1

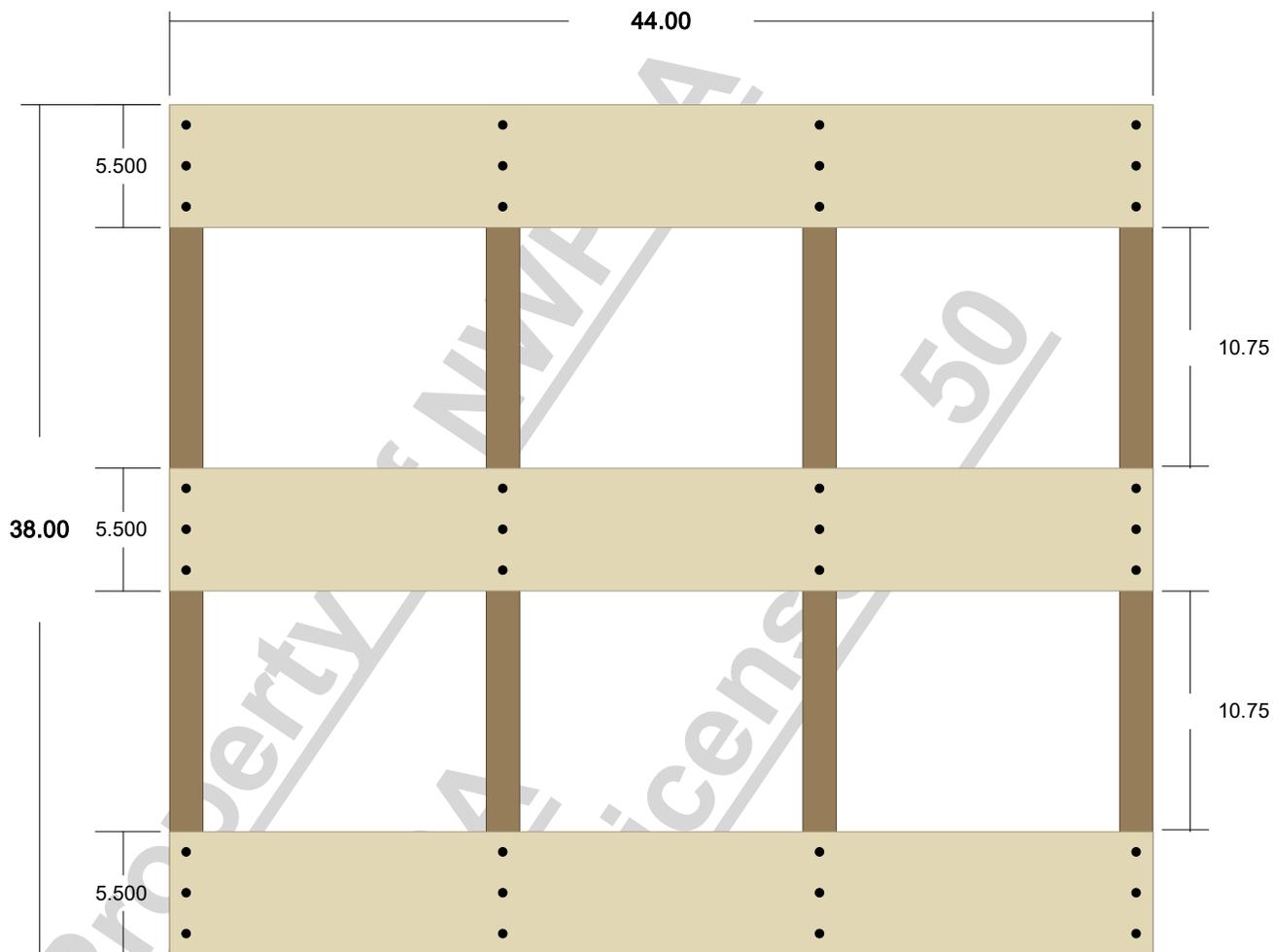
## Pallet Drawing - Bottom View

All dimensions in inches

Pallet ID: US AID VO Pallet

Classification: 38.00 x 44.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

### Bottom View



**Customer:**

**Prepared by:**

National Wooden Pallet & Container Association  
PDS License: 50 Printed: March 19, 2020

# PALLET DESIGN SYSTEM Version 6.1

## Unit Load Specification and Drawings

All dimensions in inches

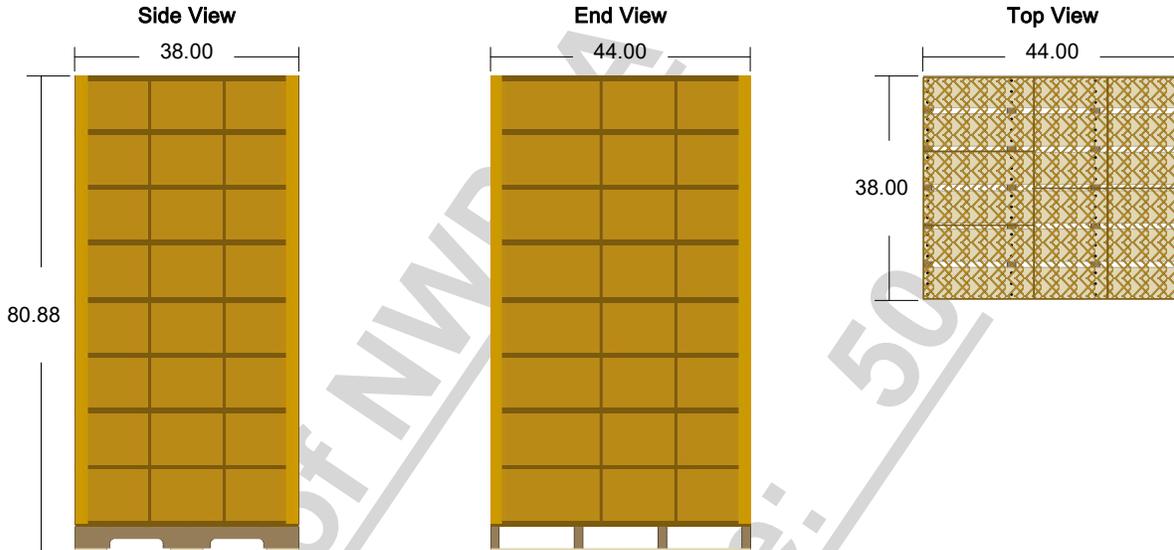
Customer:

Prepared by:

National Wooden Pallet & Container Association  
PDS License: 50 Printed: March 19, 2020

Pallet ID: US AID VO Pallet

Classification: 38.00 x 44.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture



### Container Type: Corrugated Box

Box Style: Regular Slotted Container (RSC) #0201

Outside Dimensions:

Length: 18.750

Width: 12.500

Depth: 9.500 \*

Weight per Box: 54.0 lbs.

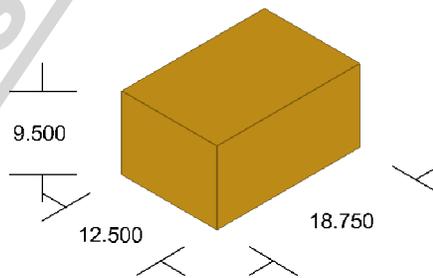
Number of Boxes per Layer: 7

Number of Layers per Unit Load: 8 Column Stacked

Number of Boxes per Unit Load: 56

Total Weight of Load: 3024.0 lbs.

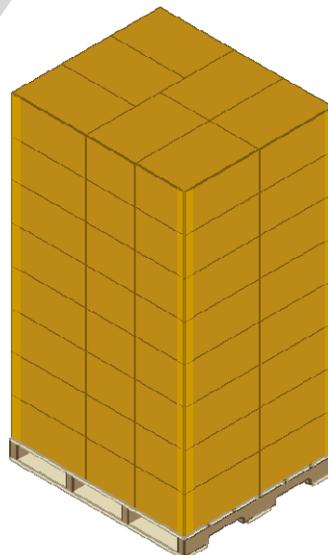
Total Height of Load: 76.000 in.



### Load Stabilizers

Corner Protectors

Type: Paperboard



# PALLET DESIGN SYSTEM Version 5.4

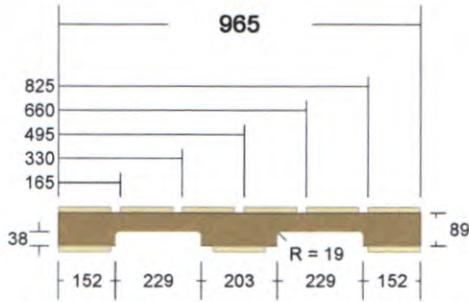
## 2-D Pallet Drawings

All dimensions in millimeters

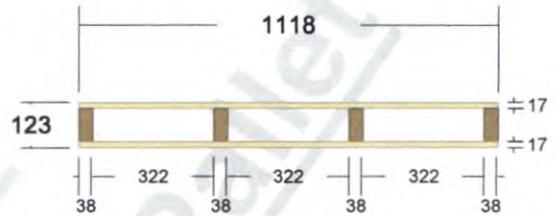
Pallet ID: 38 x 44

Classification: 965 x 1118, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

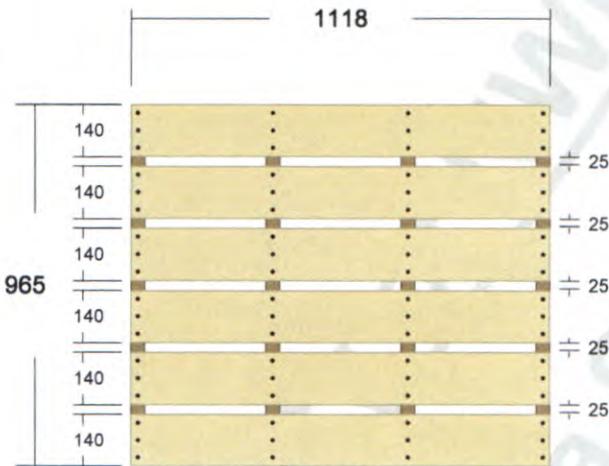
**Side View**



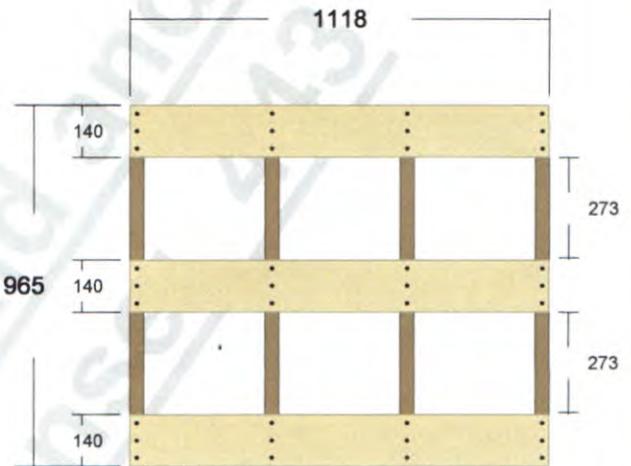
**End View**



**Top View**



**Bottom View**



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.

**Customer:**  
Palmer

**Prepared by:**  
Pasadena Skid & Pallet  
5202 Red Bluff Rd  
PDS License: 443

Printed: February 20, 2020

# PALLET DESIGN SYSTEM Version 5.4

## Unit Load Specification and Drawings

All dimensions in millimeters

### Customer:

Palmer

### Prepared by:

Pasadena Skid & Pallet

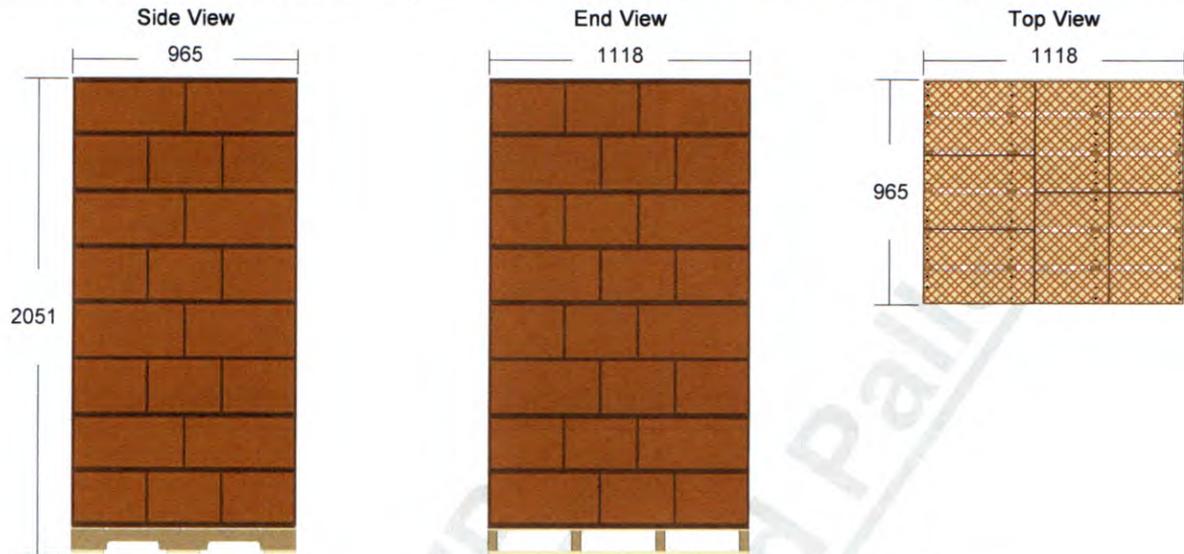
5202 Red Bluff Rd

PDS License: 443

Printed: February 20, 2020

Pallet ID: 38 x 44

Classification: 965 x 1118, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture



### Container Type: Corrugated Box

Box Style: Regular Slotted Container (RSC) #0201

Weight per Box: 24 kg

Number of Boxes per Layer: 7

Number of Layers per Unit Load: 8 Interlock Stacked

Number of Boxes per Unit Load: 56

Total Weight of Load: 1344 kg

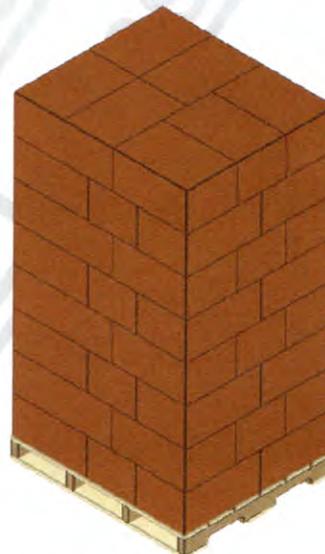
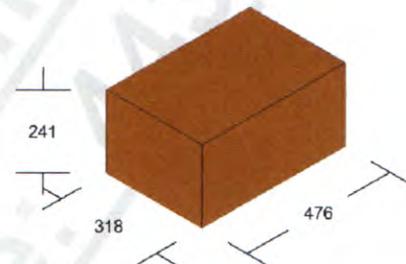
Total Height of Load: 1928 mm

#### Outside Dimensions:

Length: 476

Width: 318

Depth: 241 \*



# PALLET DESIGN SYSTEM Version 5.4

## Pallet Structural Analysis

**Customer:**  
Palmer

**Prepared by:**  
Pasadena Skid & Pallet  
PDS License: 443 Printed: February 20, 2020

Pallet ID: 38 x 44

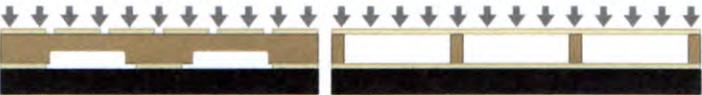
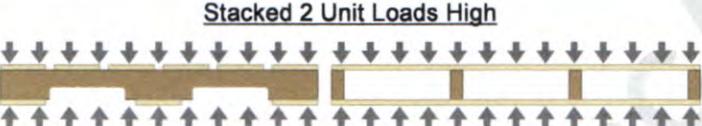
Classification: 965 x 1118, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

General Load Type: Uniformly Distributed - Full Pallet Coverage

Custom Load Specification: Boxes, Interlock Stacked

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					
<b>Warehouse Storage</b> <b>Stacked 1 Unit Load High</b> 		6532 kg	4 mm	6 mm	NA	Interior Stringer
<b>Stacked 2 Unit Loads High</b> 		4082 kg per pallet	4 mm	6 mm	NA	Interior Stringer

### Lateral Collapse Resistance



Low Medium Good Excellent

LCR Indicator = 3.46

### 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.

Pallet Design System - Version 5.4 (C) Copyright 1985-2018

National Wooden Pallet and Container Association, 1421 Prince Street, Suite 340, Alexandria, Virginia 22314-2805, United States

<http://www.palletcentral.com>

All Rights Reserved

# PALLET DESIGN SYSTEM Version 5.4

## Pallet Physical Property Analysis

**Customer:**  
Palmer

**Prepared by:**  
Pasadena Skid & Pallet  
PDS License: 443 Printed: February 20, 2020

Pallet ID: 38 x 44  
Classification: 965 x 1118, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture

Average Pallet Weight	At Manufacture		At 15% MC	At 12% MC
	19 kg		19 kg	18 kg

Width Shrinkage  
Thickness Shrinkage

### Dimensional Change due to Wood Drying

Component	Original Dimension	Shrinkage from Manufacture to 19% MC	Shrinkage from Manufacture to 15% MC
Top Deckboards	17 mm Thickness 140 mm Width		0.1 mm (+/- 0.0 mm) 1.2 mm (+/- 0.3 mm)
Stringers	89 mm Height 38 mm Width		0.8 mm (+/- 0.2 mm) 0.3 mm (+/- 0.1 mm)
Bottom Deckboards	17 mm Thickness 140 mm Width		0.1 mm (+/- 0.0 mm) 1.2 mm (+/- 0.3 mm)



# PALLET DESIGN SYSTEM Version 5.4

## Pallet Specification Sheet

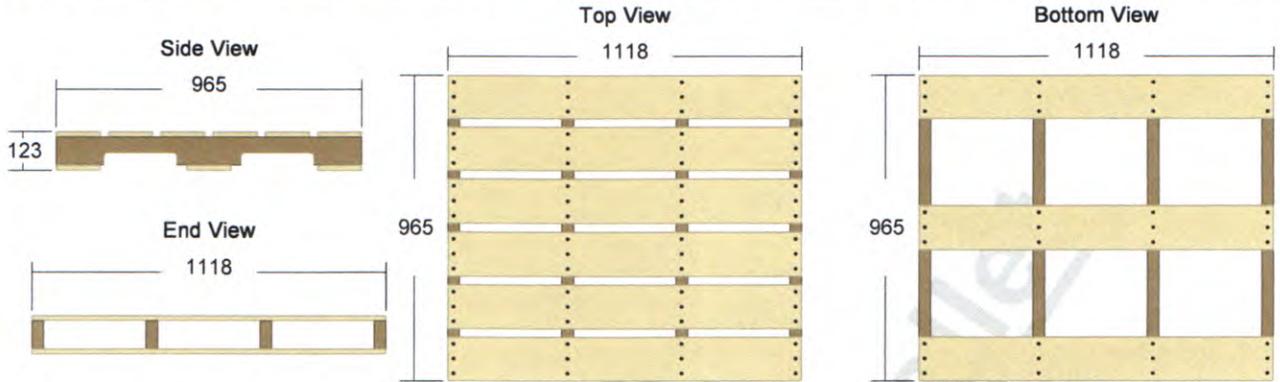
All dimensions in millimeters

**Customer:**  
Palmer

**Prepared by:**  
Pasadena Skid & Pallet  
5202 Red Bluff Rd  
PDS License: 443 Printed: February 20, 2020

Pallet ID: 38 x 44

Classification: 965 x 1118, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Reusable, New Manufacture



### Components

#### Top Deck:

Style: Deckboard Type: New Lumber  

Number	Thickness	Width	Length
6	17	140	1118

 Volume: 0.0160 cubic meters

#### Bottom Deck:

Style: Deckboard Type: New Lumber  

Number	Thickness	Width	Length
3	17	140	1118

 Volume: 0.0080 cubic meters

#### Stringers:

Type: New Lumber  

Number	Width	Height	Length
4	38	89	965

 Volume: 0.0131 cubic meters  
 Depth: 38 Length: 229 Location: 152 Radius: 19

### Materials

#### Fasteners:

Fastener ID:  
 Fastener Type: Annularly Threaded Nail  
 Fastener Length: 57  
 Thread Length: 38  
 Thread Diameter: 3.0  
 Wire Diameter: 2.8  
 Head Diameter: 7.1  
 Rings: 29  
 Pitch: 1.3  
 MIBANT Angle: 36  
 FWC: 3.94  
 Total Number: 108

#### New Lumber:

Lumber ID: KD Pine  

Species Class	Grade
Southern Yellow Pine	Utility &BTR

 Moisture Content (at manufacture and assembly): Kiln Dry - 19%  
 Total New Lumber Volume: 0.0370 cubic meters

### Spec Sheet Notes: