



LoadSync™ Newsletter

Issue 1
June 2013

National Wooden Pallet and
Container Association

1421 Prince Street, Suite 340
Alexandria, VA 22314-2805
703.519.6104

www.palletcentral.com

The LoadSync Newsletter is intended to keep Users informed about issues related to LoadSync and its integration with The Pallet Design System®.

This LoadSync Newsletter was created by
John A. McLeod III
Director, The Pallet Design System®

In this issue:

Introducing <i>LoadSync</i>	1
Getting Started...	2
Specifying Pallet and Unit Load Handling Requirements in <i>LoadSync</i>	2-3
Specifying a General Load Type	4
Specifying a Unit Load	5
Specifying Support and Handling Conditions	6-7
Specifying Service Environment Conditions	8
Completing <i>LoadSync</i> Requirements File	8
Viewing <u>Summary</u> of <i>LoadSync</i> Requirements File	9
<i>LoadSync</i> Viewer Files	10

Introducing... *LoadSync*™ Software for Pallet Users Integrated with The Pallet Design System™

The *National Wooden Pallet and Container Association (NWPCA)* has developed new software that will enhance the **communication** of **pallet** and **unit load** design **information** between **wood pallet manufacturers** and their **customers**.

This software, called *LoadSync* is *integrated* with The **Pallet Design System (PDS)**.

In a *nutshell*....

...*LoadSync* enables **pallet users** to *easily* yet *completely* define their entire **pallet** and **unit load** handling **requirements**, save these requirements to a data file, and email the file to their **pallet** manufacturer.

The **pallet** manufacturer opens the requirements file in **PDS**, and can then design an efficient and cost-effective **pallet** which meets all the specified requirements and will **safely** support and protect the **customer's product**.

The **pallet** manufacturer can then create a viewer file which contains all the **information** provided on a **PDS** printout. This viewer file can be emailed to the **customer**, who can open this file in *LoadSync* and view the complete **pallet** specification, 2D and 3D drawings of the **pallet** and **unit load**, and the structural and durability analysis results (including **safe** load capacity, deflection under load, and expected service life).

Best of all, *LoadSync* is available at no cost! **Pallet manufacturers** that license **PDS** can contact their **customers** with information on *LoadSync* and provide a link to its download.



The **objective** of this *Newsletter* is to introduce *LoadSync* and enable **Users** to quickly and efficiently learn to use the software.



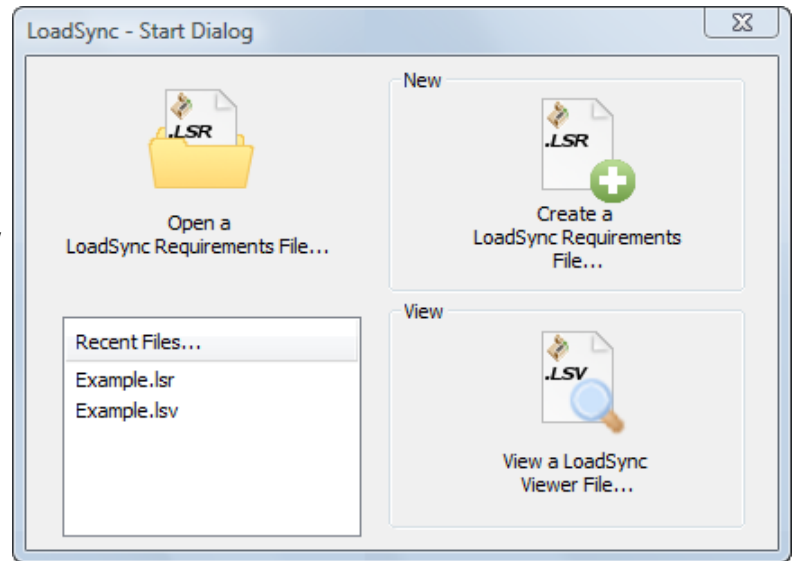
Getting Started...

When you start **LoadSync**, the **Start Dialog** will appear.

This provides initial quick access to either Open an existing **LoadSync** file, Create a new **LoadSync Requirements** File, or View a **LoadSync Viewer** File.

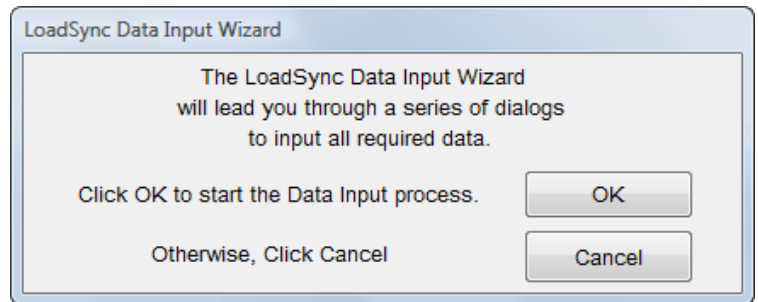
Two **Example** files are provided.

The next sections of this **Newsletter** provide a walk-through of the complete process of Creating a **LoadSync Requirements** File.



Specifying **Pallet** and **Unit Load** Handling Requirements in **LoadSync**

After selecting to Create a **LoadSync Requirements** File, the **LoadSync Data Input Wizard** will lead the **User** through the entire process of specifying all the required data.



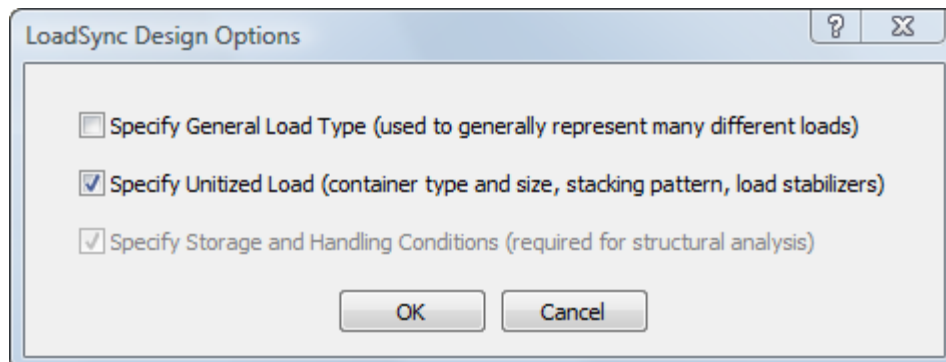
The **LoadSync Design Options** dialog enables **Users** to select between specifying a:

- **General Load Type** (which can be used to *generally* represent most loads on **pallets**)

or

- **Specific Unit Load** (container type and size, stacking pattern, and load stabilizers)

Specification of **Storage and Handling Conditions** is the default (and required).

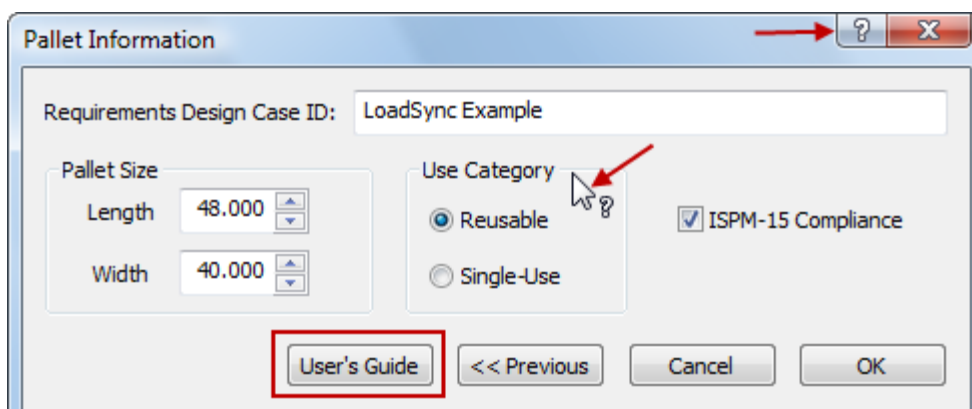


Specifying **Pallet** and **Unit Load Handling Requirements** in **LoadSync** (continued)


LoadSync enables **Users** to define their **pallet requirements** - **NOT** the **pallet design**.


Pallet Information which must be specified in **LoadSync** includes the **Pallet Size** (Length x Width), the **Use Category** (Reusable or Single-Use), and if **ISPM-15 Compliance** is required.

Requirements Design Case ID will be used as the default filename.




LoadSync provides **Users** two ways to access **Help**.

Each dialog has a **Help** icon in the upper right hand corner. 

After clicking this icon, the cursor will change. 

Users can then click on any field on the dialog, and a brief **Help Message** will be displayed.

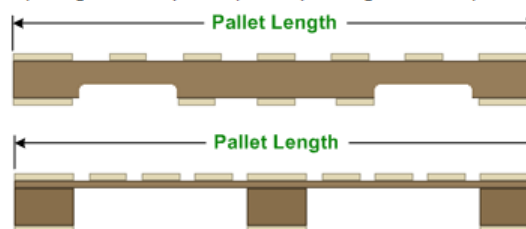
Users can also click on the  button to open the **LoadSync User's Guide** - which provides complete details on every aspect of using **LoadSync**.

For example,

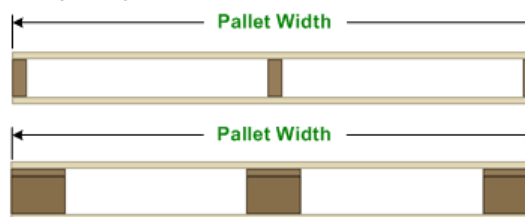
the **LoadSync User's Guide** explains how **Pallet Size** is determined, and the *important difference* between **Pallet Length** and **Pallet Width**.

It is *very important* that the **LoadSync User** understands this difference - as it will affect further specification of **support and handling conditions, unit load configuration**, and ultimately the **pallet design** created using **PDS**.

Pallet Length is the overall maximum pallet dimension, measured parallel to the Stringers (Stringer-class pallets) or Top Stringerboards (Block-class pallets).



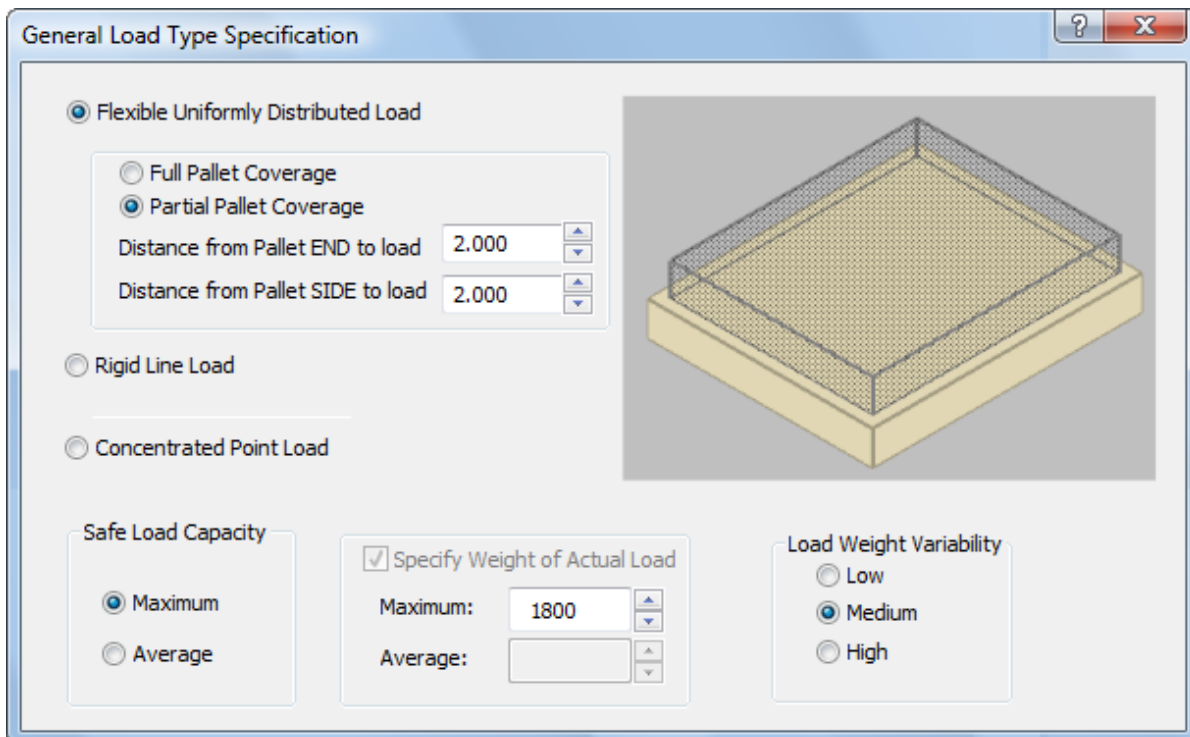
Pallet Width is the overall maximum pallet dimension, measured perpendicular to the Stringers (Stringer-class pallets) or Top Stringerboards (Block-class pallets).



Specifying a General Load Type

If the **General Load Type** Design Option was selected, the **General Load Type Specification** dialog will be displayed. The **pallet** is displayed as a **SOLID RECTANGLE** in **LoadSync**.

- The **Uniformly Distributed Load** *generally* represents most palletized loads. The weight from these loads is uniformly distributed over the **pallet** deck.
- The **Rigid Line Load** *generally* represents loads that contact the **pallet** in one or more narrow line.
- The **Concentrated Point Load** *generally* represents loads that contact the **pallet** over a very small area at one or more points.



You may select that either **Maximum** or **Average Safe Load Capacity** be reported.

- If the load weight on the **pallet** will always be the same (for example - always forty 50 lb. boxes), then you know the **Average** Load (2000 lb.)
- If the load weight on the **pallet** will vary (for example, a variable number of boxes or weights per box), then you should determine the **Maximum** Load the **pallet** will support.

Load Weight Variability indicates how much the weight on each **pallet** may vary.

If the **pallet** is used to support the same load each and every time, the variability is **Low**.

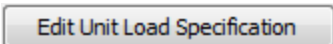
If the **pallet** is used to support loads ranging from cotton balls to cans of soup, the variability is **High**.

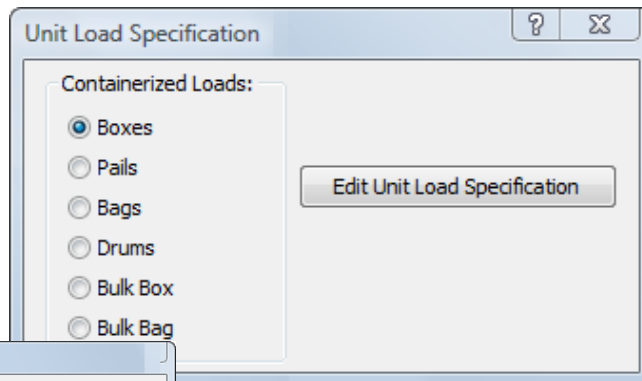
Technically:

- **Low** Weight Variability assumes a coefficient of variation of 10%.
- **Medium** Weight Variability assumes a coefficient of variation of 25%.
- **High** Weight Variability assumes a coefficient of variation of 45%.

Specifying a Unit Load

If the **Unit Load** Design Option was selected, the **Unit Load Specification** dialog will be displayed.

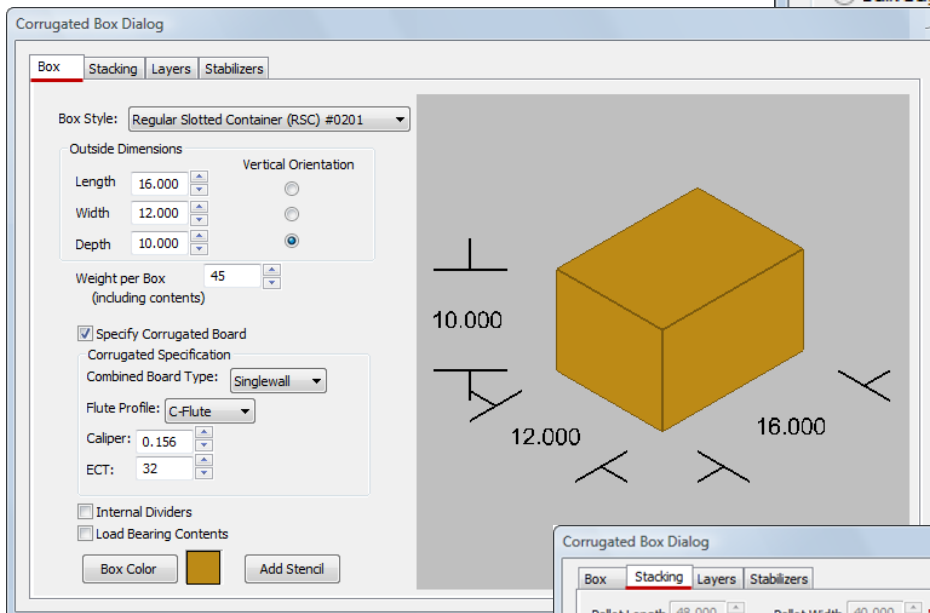
Select the type of **Containerized Load**, and then click 



On the Container page (**Box, Pail, Bag, Drum, Bulk Box, or Bulk Bag**), select the **style** of container, then specify the **outside dimensions** and **weight** per container.

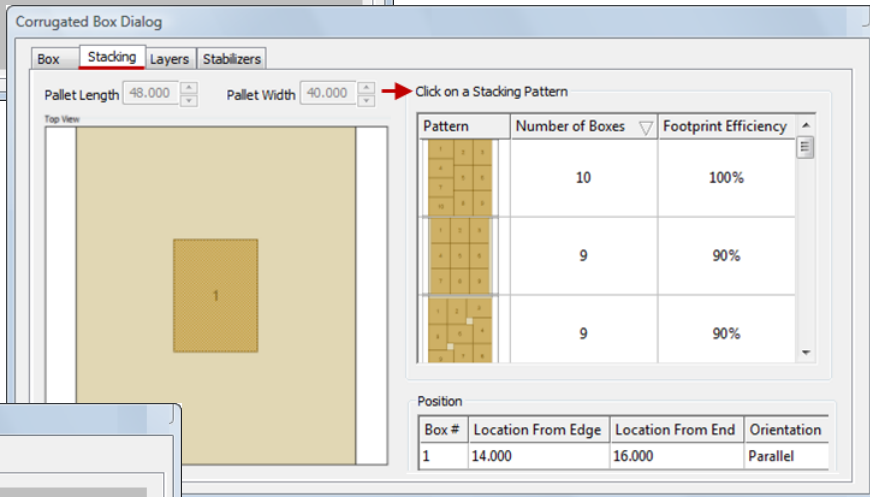
For **Boxes**, specifying the **Corrugated Board** is optional.

Container **color** is user-specifiable, and **stenciling** can be applied to boxes.



On the Stacking page, the **pallet** is displayed as a **SOLID RECTANGLE**.

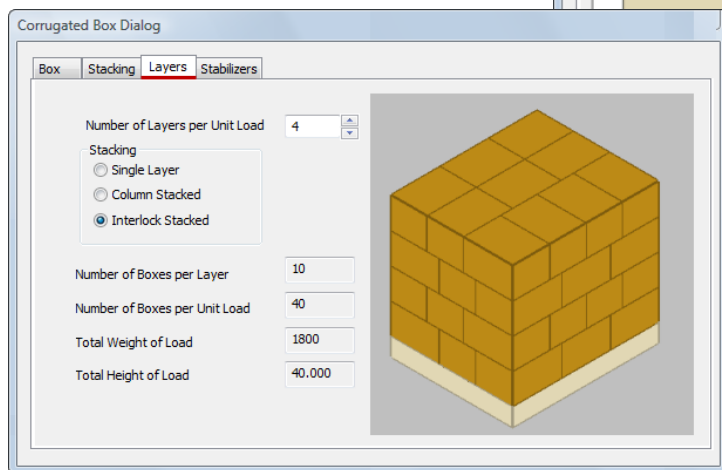
Click on the thumbnail image of a **Stacking Pattern** to select it. The **number** of containers (per layer) and **efficient use** of the rectangular footprint will be displayed.



On the Layers page, the **pallet** is again displayed as a **SOLID RECTANGLE**.

Specify the **Number of Layers** of Containers, and (if applicable to container type and Stacking pattern) whether **Column** or **Interlock** Stacked.

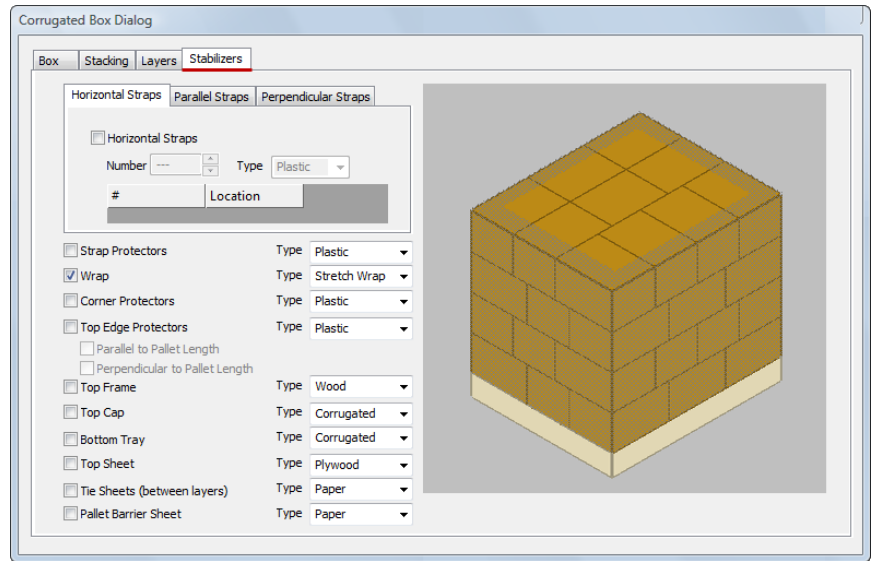
A summary of **Total Number** of Containers, plus **Total Weight** of Load and **Total Height** of Load (not including **pallet**) will be displayed.



Specifying a Unit Load (continued)

Finally, on the Stabilizers page, **load stabilizers** such as strapping, edge and corner protectors, or stretch wrap can be specified.

The **LoadSync User's Guide** provides complete details on specifying **Unit Loads** for all Container types.



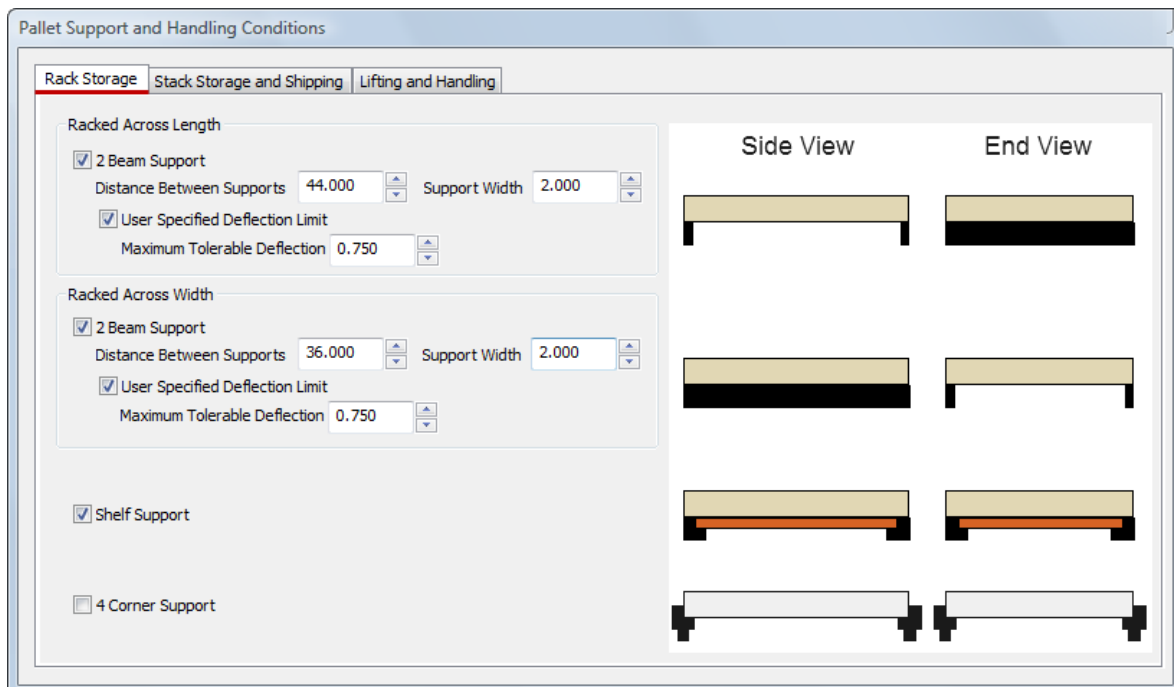
Specifying Support and Handling Conditions

The **Pallet Support and Handling Conditions** dialog provides separate pages to specify **Rack Storage**, **Stack Storage and Shipping**, and **Lifting and Handling** conditions.

Rack Storage support conditions include:

- **Racked Across Length** (indicates the **pallet** is supported **along its ends**)
- **Racked Across Width** (indicates the **pallet** is supported **along its edges**)
- **Shelf Support** (indicates the **pallet** is completely supported by **rigid shelving**)
- **4 Corner Support** (indicates the **pallet** is supported **only at its corners**)

If there is a known limit to the amount of deflection that can be tolerated (due to a fragile product or a deflection-sensitive handling system, this **Deflection Limit** can be specified.



Specifying Support and Handling Conditions (continued)

Stacked Storage and Shipping

indicates the **floor supports the bottom pallet** in a stack.
Loaded **pallets** can be **Stacked One** or **Multiple** units high.

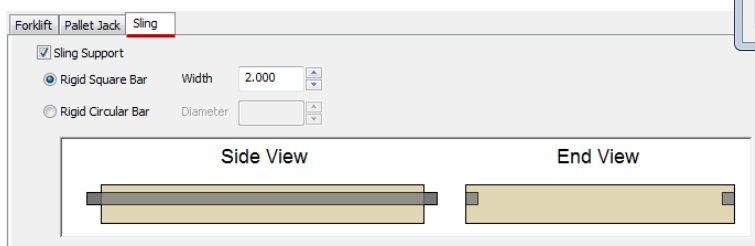
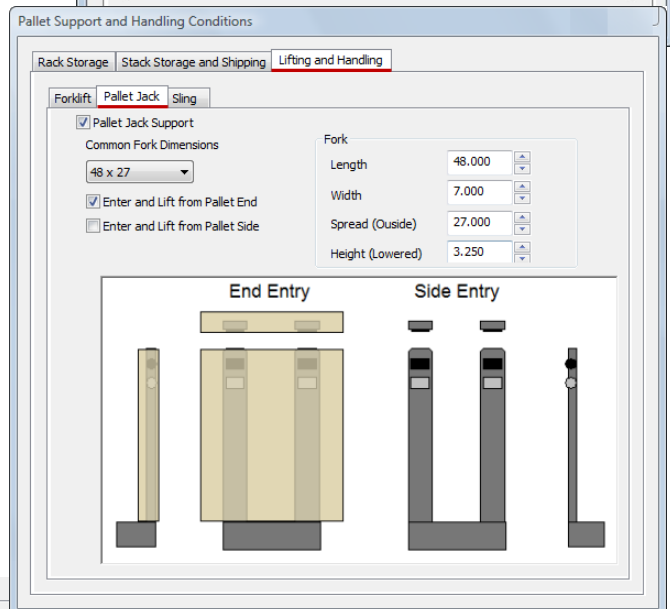
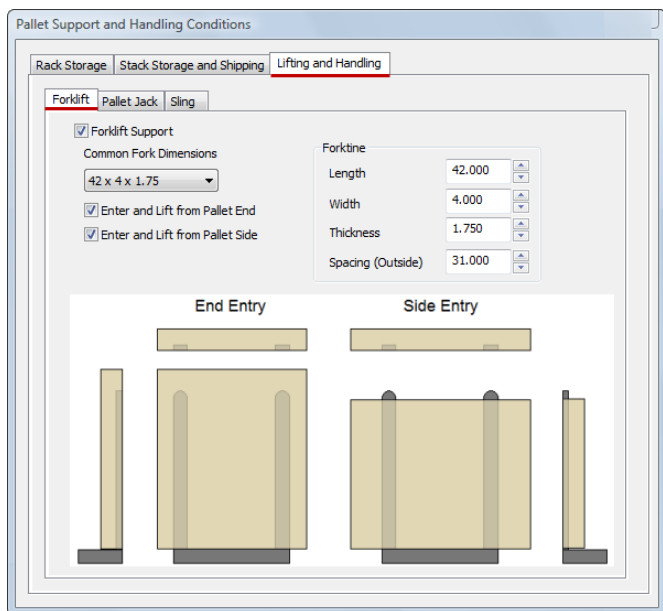
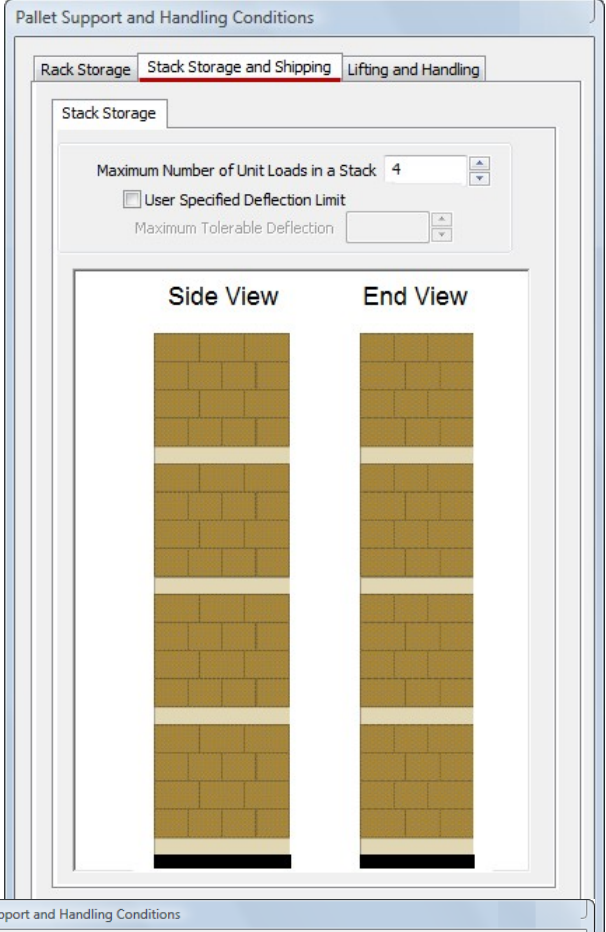
Lifting and Handling conditions include
Forklift, **Pallet Jack**, and **Sling** support.

Common Fork Dimensions are provided but can be edited.

Entering and Lifting from Pallet End is the default.
Entering and Lifting from Pallet Side will require a 4-Way Entry pallet design - and should be specified only if required.

If **Side Entry** is required for **Forklifts**, *either* a block-class or a stringer-class pallet with notches are options.

However, if **Side Entry** is required for **Pallet Jacks**, a block-class pallet will likely be required.



Sling Support condition indicates the **pallet is supported under the top deck** by rigid bars. This support will require a **pallet** design with a "wing".



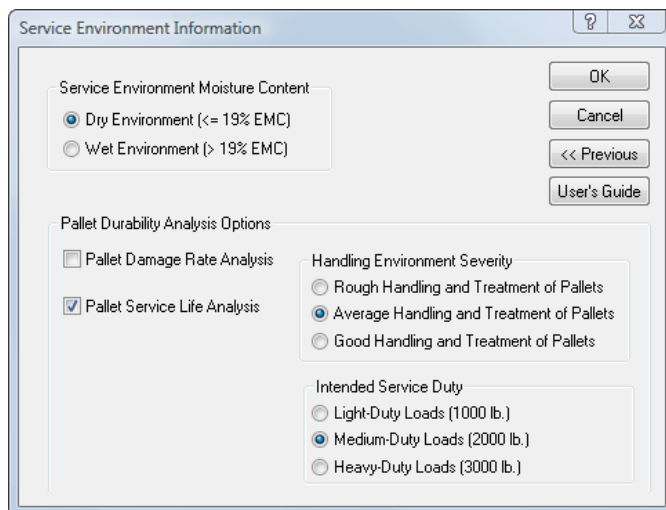
Specifying Service Environment

Most shipping and handling environments are classified as a **Dry Service Environment**, in which the **pallet** is NOT continuously exposed to liquid water or extremely high humidity, and the **wood** will reach an Equilibrium Moisture Content (**EMC**) of 19% or less.

Some shipping and handling environments are classified as a **Wet Service Environment**, in which the **pallet** is frequently or continuously exposed to liquid water or extremely high humidity.

If a **Pallet Durability Analysis** is requested, the **Handling Environment Severity** and the Intended **Service-Duty** must be specified:

- **Handling Environment Severity** reflects the general handling and treatment of **pallets** in their service environment.
- **Intended Service-Duty** reflects the *approximate unit load* weight and determines the weight to be used in the handling cycle simulation.



Completing *LoadSync* Requirements File

Finally, any **Notes or Additional Information** the **LoadSync User** would like to provide the **pallet** designer can be added.

Input of this **requirements** design case in **LoadSync** is *now complete!*

The **User** will be prompted to **save** the file, which by default will use the **Requirements Design Case ID** as the **File name**.

Note the File name **extension** of **.Isr** (**L**oad**S**ync **R**equirements).

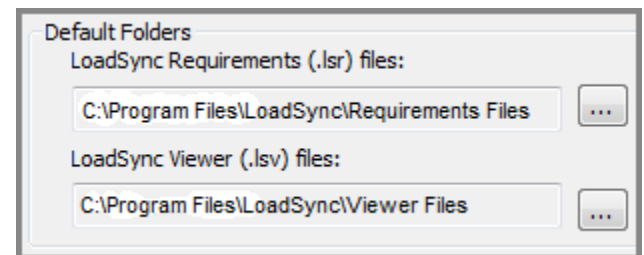
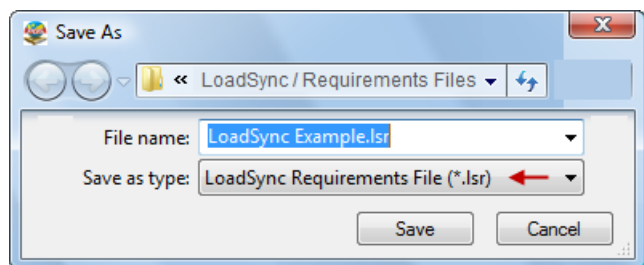
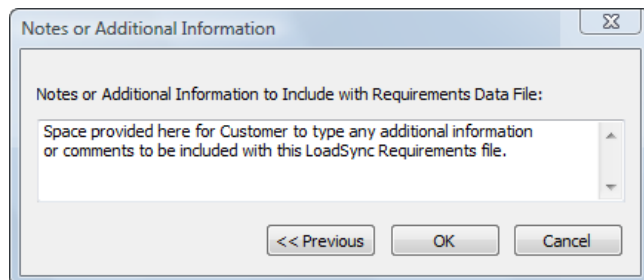
By *default*, **LoadSync** saves **Requirements** files in the **C:\Program Files\LoadSync\Requirements Files** folder.

To send this file to your **pallet manufacturer**, attach the **requirements** file to an email.

The *default* folder for **Viewer** files (see page 10) is **C:\Program Files\LoadSync\Viewer Files**.

You may wish to save **Viewer** files returned by your **pallet manufacturer** to this folder.

LoadSync enables **Users** to specify the *default* folders to use for files via the **Edit >> Options** menu:





Viewing Summary of *LoadSync* Requirements file

Once input of the requirements design case is complete, a **Summary of Unit Load Handling Requirements** is displayed. An identical **Summary** will be displayed when the file is opened in **PDS**. The **Created by: Company Name of LoadSync User** watermark is embedded in the file.

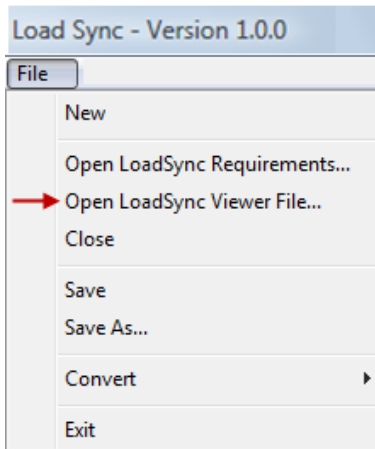
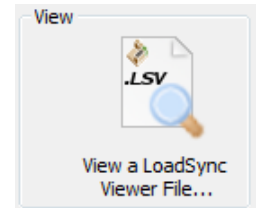
LoadSync Version 1.0 (integrated with The Pallet Design System) Summary of Unit Load Handling Requirements		All dimensions in inches, weights in lbs.																													
Customer: Company Name of LoadSync User 1234 Street Name City, State 12345 (123)-456-7890 puser@companyname.com Requirements Design Case ID: LoadSync Example Pallet Size: 48.00 x 40.00 Use Category: Reusable ISPM-15 Compliance		Notes and Additional Info: Space provided here for Customer to type any additional information or comments to be included with this LoadSync Requirements file.																													
Unit Load Specification Container Type: Corrugated Box Box Style: Regular Slotted Container (RSC) #02 Outside Dimensions: Length: 16.000 Width: 12.000 Depth: 10.000 * * oriented vertically Weight per Box: 45 lbs. Number of Boxes per Layer: 10 Number of Layers per Unit Load: 4 Number of Boxes per Unit Load: 40 Total Weight of Load: 1800 lbs. Total Height of Load: 40.000 in. Interlock Stacked Load Stabilizers Wrap Type: Stretch Wrap		<table border="1"> <thead> <tr> <th>Support Condition</th> <th>User Specified Deflection Limit</th> </tr> </thead> <tbody> <tr> <td> Racked Across Length 2 Beam Support </td> <td>0.75 in.</td> </tr> <tr> <td> Racked Across Width 2 Beam Support </td> <td>0.75 in.</td> </tr> <tr> <td> Shelf Support </td> <td>---</td> </tr> </tbody> </table>		Support Condition	User Specified Deflection Limit	Racked Across Length 2 Beam Support 	0.75 in.	Racked Across Width 2 Beam Support 	0.75 in.	Shelf Support 	---																				
Support Condition	User Specified Deflection Limit																														
Racked Across Length 2 Beam Support 	0.75 in.																														
Racked Across Width 2 Beam Support 	0.75 in.																														
Shelf Support 	---																														
Stack Storage: Maximum Number of Unit Loads in a Stack: 4 Side View: End View:		Handling Conditions: Forklift Support: Enter and Lift from End Enter and Lift from Side Pallet Jack Support: Enter and Lift from End <table border="1"> <thead> <tr> <th colspan="4">Forklift:</th> <th colspan="3">Fork:</th> </tr> <tr> <th>Length</th> <th>Width</th> <th>Thickness</th> <th>Spacing (outside)</th> <th>Length</th> <th>Width</th> <th>Height (Lowered) Spread (outside)</th> </tr> </thead> <tbody> <tr> <td>42.000</td> <td>4.000</td> <td>1.750</td> <td>31.000</td> <td>48.000</td> <td>7.000</td> <td>3.250 27.000</td> </tr> <tr> <td colspan="2">End Entry</td> <td colspan="2">Side Entry</td> <td colspan="2">End Entry</td> <td>Side Entry</td> </tr> </tbody> </table>		Forklift:				Fork:			Length	Width	Thickness	Spacing (outside)	Length	Width	Height (Lowered) Spread (outside)	42.000	4.000	1.750	31.000	48.000	7.000	3.250 27.000	End Entry		Side Entry		End Entry		Side Entry
Forklift:				Fork:																											
Length	Width	Thickness	Spacing (outside)	Length	Width	Height (Lowered) Spread (outside)																									
42.000	4.000	1.750	31.000	48.000	7.000	3.250 27.000																									
End Entry		Side Entry		End Entry		Side Entry																									
Durability: Service Life Analysis Average Handling and Treatment, Medium-Duty Loads, Dry Environment (EMC <= 19%)																															

The **User** can **edit** any of the **requirements** file information by selecting from the **LoadSync Edit** menu.

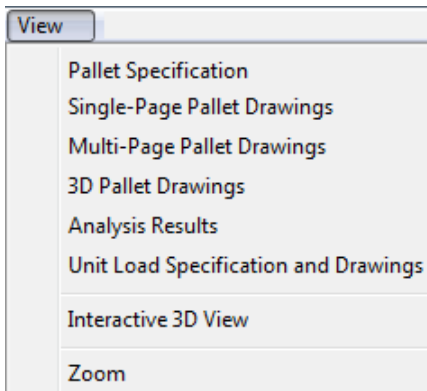
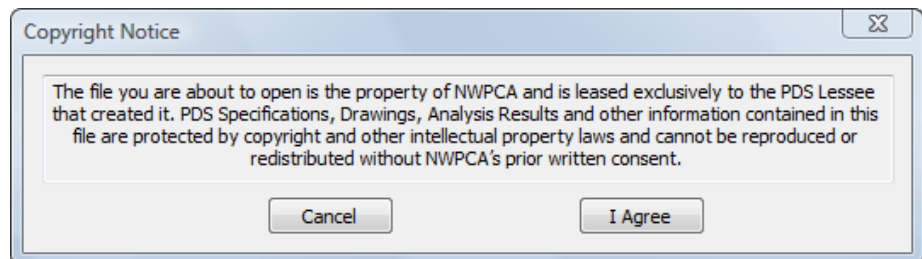
- Customer Information → Edit Customer Address
- Design Options → Edit LoadSync Requirements Design Case options
- Pallet Information → Edit LoadSync Requirements Design Case pallet size, use category, and ISPM-15 compliance
- Conditions of Pallet Use
 - General Load Specification → Edit information on General Load Type (only enabled if selected as Design Option)
 - Unit Load Specification → Edit Unit Load Specification (only enabled if selected as Design Option)
 - Pallet Support Conditions → Edit information on how Pallet will be supported and handled
 - Pallet Service Environment → Edit information on service environment and Service Life Analysis
- Notes or Additional Information → Edit Notes or Additional Information to be included with LoadSync Requirements data
- Company Name → Edit Company Name (displayed as Customer and on Watermark)

LoadSync Viewer Files

After receiving a **LoadSync Viewer** file created in **PDS** by the **pallet** manufacturer, the **LoadSync User** can **open** it by selecting this option on the **LoadSync Start Dialog** (see *page 1*) or by selecting **Open LoadSync Viewer File** from the **LoadSync File** menu.



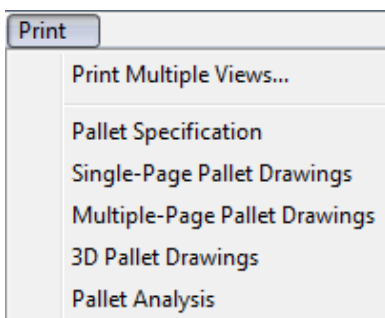
Before being able to **View** the contents of the file, the **LoadSync User** will see the following **Copyright Notice**, and must click the **I Agree** button in order to proceed. Otherwise, the file will be closed and cannot be viewed. This is intended to protect the **pallet** design work created by the **PDS User**.



After opening a **Viewer** file, **LoadSync** displays separate **Views** of the **Pallet Specification, Drawings, Analysis Results, and Unit Load Specification**.

You can select the **View** from the **LoadSync View** menu.

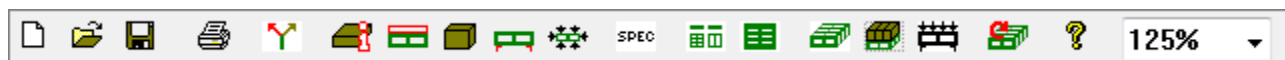
The availability of each **View** is dependent on the **Design Options** and which **Views** were included by the **pallet** manufacturer when creating the **LoadSync Viewer** file.



You can select to **Print** any or all of the available **Views** from the **LoadSync Print** menu.

Printing is only enabled if this option was selected by the **pallet** manufacturer when creating the **LoadSync Viewer** file.

As an alternative to the **LoadSync** menus, the **LoadSync Toolbar** provides quick access to **viewing** or **printing** information in **Viewer** files - or **editing** information in **Requirements** files.



The **LoadSync User's Guide** provides complete details on the **Toolbar** and all aspects of using **LoadSync**.