

Packaging Eco-design Report

Sample Foods Co.

Prepared by:
Y.G. Packaging Solutions LLC
2024/01/01

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Executive Summary

Purpose

This is a sample of an eco-design report which is provided at the end of a Y.G. eco-design project. Information provided in this report is used purely as an example and does not pertain to any real-world packaging system. Certain sections containing sensitive information have been redacted.

The purpose of this document is to organize and communicate all relevant information related to Sample Foods' distribution packaging eco-design project. This includes all relevant background information, design changes, production information for the recommended designs, estimates of the financial and economic outcomes of eco-design, a goal attainment report, and all other information necessary for Sample Foods to implement the sustainable distribution packaging solutions provided in this report.

Goals and design objectives

Representatives from Sample Foods indicated the following **goals** related to distribution packaging:

1. Eliminate non-recyclable packaging materials by 2030
2. Increase recycled content of packaging from 15% to 30% by 2030
3. Reduce Scope I and III greenhouse gas emissions by 30% relative to 2019 baseline by 2030

In order to assist Sample Foods in making progress toward these goals, Y.G. Packaging Solutions established the following **design objectives** for this eco-design project:

1. Reduce the incidence of product damages in transit
2. Reduce the total embodied emissions of distribution packaging materials
3. Incorporate 100% recyclable packaging materials
4. Incorporate packaging materials with high recycled content

Design changes

The most significant design changes made to Sample Foods' distribution packaging system are summarized below:

1. [REDACTED]
2. [REDACTED]

1. [REDACTED]
 2. [REDACTED]
 3. [REDACTED]
[REDACTED]
- [REDACTED]
[REDACTED]
[REDACTED]

Outcomes

Estimates of the cumulative financial and environmental outcomes of this eco-design project across all SKUs within scope are provided below:

Table 1: Summary of outcomes of Sample Foods's eco-design project.

Item	Value	Unit
Cost savings	\$2,410,000	USD/year
Overall weighted environmental impact reduction	14.9	%
Reduction in packaging material	710	tons/year
Reduction in carbon emissions	80	tonnes CO ₂ -eq./year
Reduction in-transit product damage incidence	80	%
Increase in recycled content	56	% (mass)

Scope

The following SKUs were analyzed under the scope of this eco-design project:



Assessment

Pre-assessment

On 2023/12/01, Y.G. Packaging Solutions met with Sample Foods to discuss their goals related to sustainability and distribution packaging. The following goals were identified as relevant to this project:

1. Eliminate non-recyclable packaging materials by 2030
2. Increase recycled content of packaging from 15% to 30% by 2030
3. Reduce Scope I and III greenhouse gas emissions by 30% relative to 2019 baseline by 2030

Baseline assessment

Between 2023/12/06 and 2023/12/12, Y.G. Packaging Solutions collected information about the distribution packaging systems within scope of this project, including information about Sample Foods's current products, packaging components, equipment, and service environment.

Copies of the assessments are provided in full in the Appendix.

Design constraints

To ensure compatibility with Sample Foods's service environment, the following design constraints were set:

Secondary packaging

- [REDACTED]
- [REDACTED]

Tertiary packaging

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Other

- [REDACTED]

Overview of design changes

Secondary packaging

- [REDACTED]
- [REDACTED]

Tertiary packaging

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Other

- [REDACTED]

Production Information

Blueprints, BOMs, and production orders

Blueprints, bills of materials, and production orders for redesigned distribution packaging components are provided in the Appendix, organized by component type and SKU.

Procurement

Y.G. Packaging Solutions is connected to a network of packaging producers across North America. If you would like assistance with procurement packaging components at the most competitive prices, please write to us and we will be happy to assist you.

Changes to operations

In addition to procurement of redesigned packaging components, Sample Foods must make the following changes to ensure the expected performance levels of its distribution packaging are achieved:

- To prevent load shift between the unit loads and trailer floor during transport, ensure all unit loads are adequately braced within the trailer using dunnage. Dunnage may be provided by the carrier or by Sample Foods during loading.

Guidance on the appropriate use of dunnage for truck transport is provided in *Supplemental Reading* under “General packaging recommendations for LTL shipments.”

- 

Testing

Y.G. Packaging Solutions encourages the testing of all unit loads before their integration into your operation to ensure confounding factors are not impacting the performance of your distribution packaging systems. We cannot guarantee the real-world performance of components supplied by any third party without the verification provided by appropriate laboratory testing.

If you need access to specific testing services or do not know what tests you may need, please write to us and we will refer you to a packaging testing service provider. Information about the various ISTA testing standards and their applications can be found in the Supplemental Information section.

Environmental Impact Assessment

Scope

The inventory for the environmental impact assessment consisted of the following items:

- [REDACTED]
- [REDACTED]
- [REDACTED]

The following life cycle phases were included within the system boundary for the assessment:

- Embodied impacts of packaging materials
- Production of packaging components
- Downstream transportation of packaging components from Sample Foods to customers

Methodology

Life cycle inventories were constructed using the ecoinvent LCI database. Impact calculations followed [REDACTED]

Impacts were estimated as a project sum under baseline and eco-design scenarios. Impacts were measured across the following impact categories:

Table 2: Impact categories assessed under the environmental impact assessment.

Impact Category	Unit
Climate change	tonnes CO ₂ -eq.
Cumulative energy demand	GJ
Ecosystems	Species/year
Human health	Disability-adjusted life years
Resources	U.S. Dollars (\$)
Water depletion	Liters

Finally, results across all six impact categories were normalized using [REDACTED] to give a single, unitless “Total score,” allowing for direct comparison of baseline and eco-design scenarios across all impact categories.

Results

Table 3: Summary of results from environmental impact assessments of current and proposed packaging systems.

Category	Unit	Baseline	Eco-design	Change
Climate change	t CO ₂ -eq.	696	616	-11.5%
Energy demand	GJ	27780	22780	-18.0%
Ecosystems	Species/year	0.56	0.46	-17.9%
Human health	DALYs	2.54	2.24	-11.8%
Resources	\$	\$62,940	\$53,900	-14.3%
Water depletion	L	211,000	181,000	-14.2%
	Total score	1050	894	-14.9%

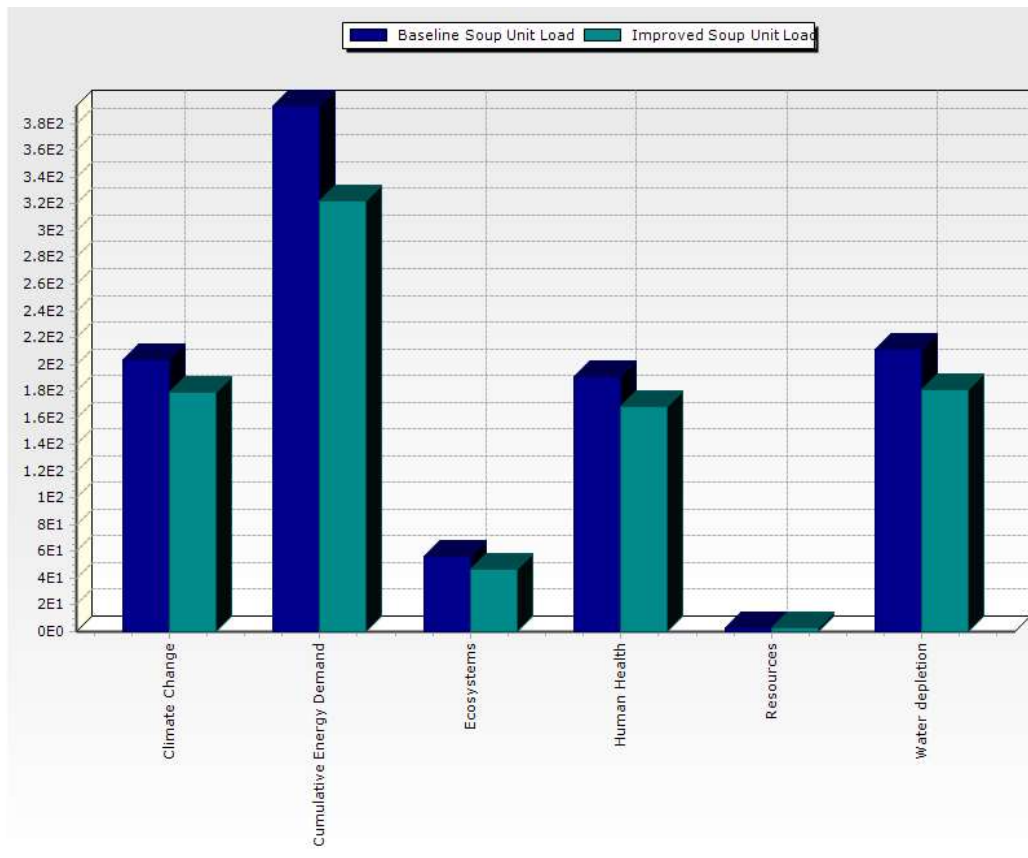


Figure 1: Estimated environmental impacts of current and proposed packaging systems.

Limitations

Life cycle inventory data are best estimates based on average values for the relevant product, process, and/or geography. Real-world impacts may deviate slightly from the LCA results generated for this eco-design project. The results are valid only for packaging components produced to the exact specifications provided in the Appendix to this report, and reflect conditions of use reported by Sample Foods during the Assessment phase of the project.

Results

Table 4: Summary of packaging system costs for current and proposed distribution packaging systems.

Category	Baseline	Improved	Change	%
Component	\$5,960,000	\$5,690,000	-\$270,000	-4.5%
Transportation	\$981,000	\$1,009,000	\$28,000	2.9%
Labor	\$166,600	133400	-\$33,200	-19.9%
Inventory	\$65,590	\$65,590	\$0	0.0%
Damages	\$2,669,000	\$531,000	-\$2,138,000	-80.1%
End-of-life	\$1	\$1	\$0	0.0%
TOTAL:	\$9,842,191	\$7,428,991	-\$2,413,200	-24.5%

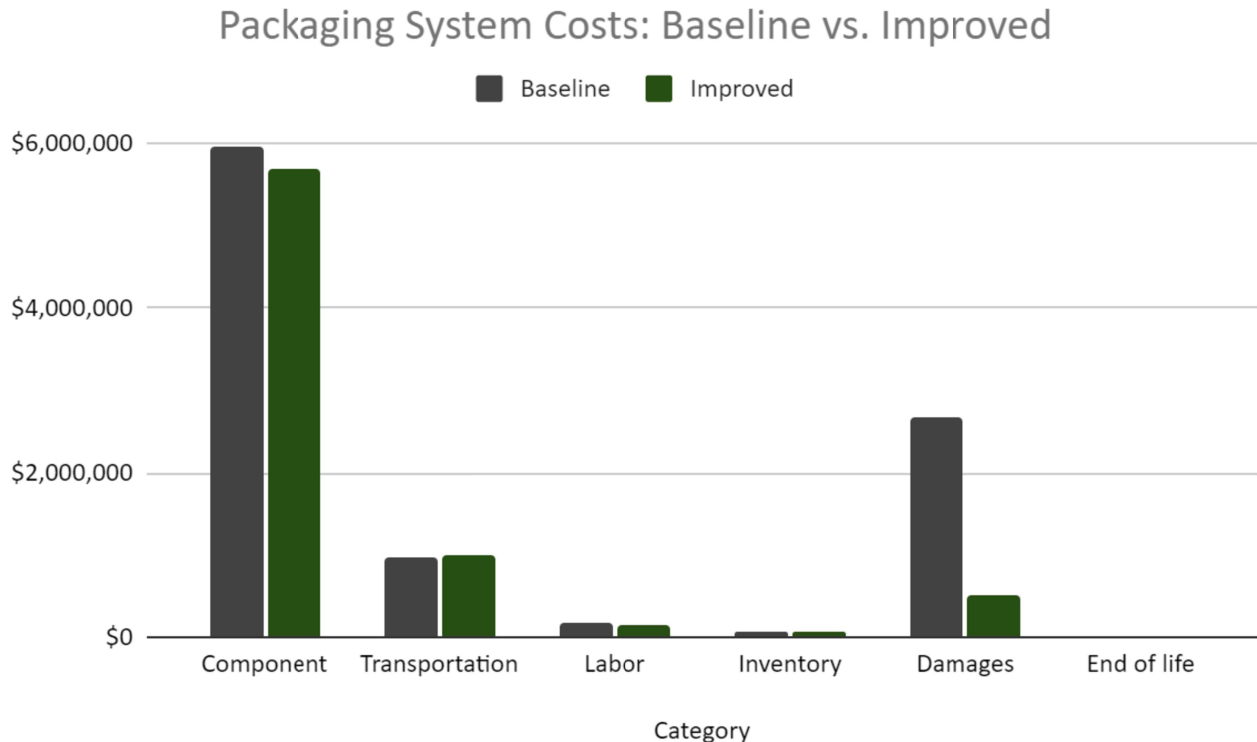


Figure 2: Comparison of costs by category among current and proposed packaging systems.

The most significant contributions to cost savings came from a reduction in in-transit damages and a reduction in packaging component costs.

Limitations

In order to reduce the burden of information on the customer, Y.G. Packaging Solutions makes use of assumptions in its cost estimates where reasonable. The table below lists the assumptions used to generate the cost estimates for this project:

Table 5: List of assumptions supporting Sample Foods' eco-design cost estimates.

Variable	Value	Source
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Estimates reflect current prices as of the project completion date. Price discrepancies will result in deviations between estimated costs and actual costs.

Goal Attainment

Review of pre-assessment goals:

Sample Foods and Y.G. Packaging Solutions established the following goals for this eco-design project during pre-assessment:

1. Eliminate non-recyclable packaging materials by 2030
2. Increase recycled content of packaging from 15% to 30% by 2030
3. Reduce Scope I and III greenhouse gas emissions by 30% relative to 2019 baseline by 2030

Contributions to goals

The table below details how this eco-design project contributes to Sample Foods’s packaging and sustainability goals:

Table 6: Contributions of eco-design to Sample Foods's packaging and sustainability goals.

Goal	Contribution
Eliminate non-recyclable packaging materials by 2030	Distribution packaging solution contains no non-recyclable materials
Increase recycled content of packaging from 15% to 30% by 2030	Recycled content of distribution packaging increased from 16% to 25% by mass
Reduce Scope I and III GHG emissions	Scope III emissions reduction of 80 tonnes/year

Supplementary Information

- [Glossary of packaging terminology](#)
- [General packaging recommendations for LTL shipments](#)
- [International Safe Transit Association guide to packaging testing standards](#)
- [GRI sustainability reporting standards for waste \(2020\)](#)

Appendix

This sample report includes production information for one distribution packaging system, to provide an example of the kind of information that is included in a full eco-design report. The following pages contain the types of production documents that will be produced for all distribution packaging systems within scope of a Y.G. Packaging Solutions eco-design project, resulting in many documents with a similar format. The information provided below is only an example and does not pertain to any real-world packaging system.

Overview/Summary

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

Address:

Date: 11/30.23

Box Information: Type - Box - RSC (0201)

Box Description: 33 - 26C - 35 , Single Wall, BMC ECT 29

Pallet Information:48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description:Partial 4Way, DoubleFace , Non-reversible, Flush

Unit Load Information: 48.0"L x 41.2"W x 48.85"H , Partial 4Way , Box

Unit Load Description: Column Stacked

Shipping Information: Mode - none

Shipping Description: none

Results / Summary

Box	Pallet	Unit Load	Shipping
Safe Stacking Load: 118.7 lbs Target Strength:325.0 lbs	Payload: 609.0 lbs	Payload: 609.0 lbs	Load Limit: 44000 lbs
Weight: 7.25 lbs	Weight: 46.6 lbs	Gross Weight: 656 lbs	Actual Load: 34116 lbs
		# of Boxes: 84	# of Boxes: 4368
			# of Unit Loads: 52
Predicted Strength 550.1 lbs	Maximum Safe Load: 2308 lbs		% Shipping Cube: 76 %

Disclaimer: The performance estimates of Best Load 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, White & Company, LLC cannot accept responsibility for pallet performance or design as actually constructed. Fasteners assumed to be compliant with ANSI/MHIA MH1 Pallets, Slip Sheets, and other bases for Unit Loads. Performance estimates from Best Load should be verified by testing of prototypes prior to implementation.

Unit Load Specifications

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

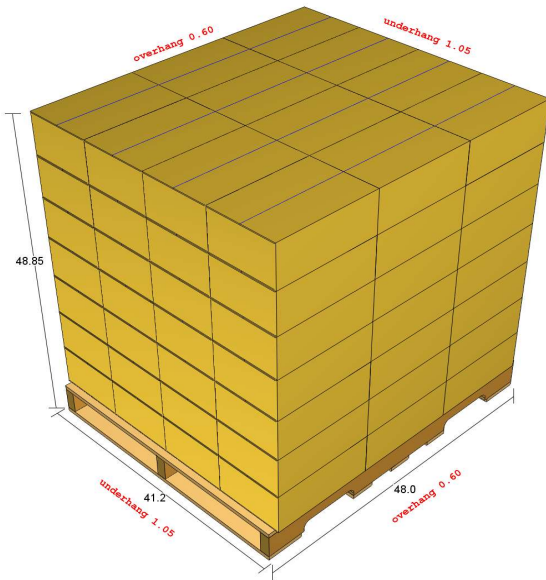
Analysis ID:

Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace , Non-reversible, Flush



Results

Total Weight:	656.1 lbs
Load On Pallet:	609 lbs
Boxes Per Unit Load:	84
Pallet Predicted Max Safe Load:	2308 lbs
Initial Average Unit Load Deflection:	0.304 in

Cost:

Distribution Package:	\$52.92
Pallet:	\$12.0
Stabilizers:	\$1.00
Total:	\$65.92

Factors

1.050 in Underhang 0.600 in Overhang

12 Boxes per Layer

Column Stacked 7 Layers

Box 2 Stacks

Load Stabilizers

Stretch Wrap

Disclaimer: The performance estimates of Best Load 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, White & Company, LLC cannot accept responsibility for pallet performance or design as actually constructed. Fasteners assumed to be compliant with ANSI/MHIA MH1 Pallets, Slip Sheets, and other bases for Unit Loads. Performance estimates from Best Load should be verified by testing of prototypes prior to implementation.

Box Specification

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

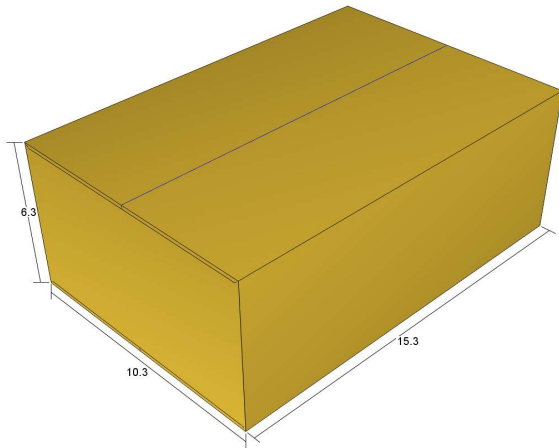
Company: Acme Foods

Analysis ID:

Address:

Date: 11/30.23

RSC (0201) Slotted Box without Divider



Filled Weight: 7 lbs

Empty Weight: 0.62 lbs

Board Area: 5.9 sq ft

Safe Stacking Load: 118.7 lbs

Target Compression Strength: 325 lbs

Predicted Compression Strength: 550.1 lbs

Safety Factor: 2.7

Outside Dimensions

Length: 15.3 in

Width: 10.3 in

Height: 6.3 in

Inside Dimensions

Length: 14.99 in

Width: 9.99 in

Height: 5.68 in

Box Cardboard: 33 - 26C - 35, Single Wall, BMC ECT 29

Caliper: 0.155 in

ECT: 34 lbs per in

Safety Factor Criteria

No Clamping

0.600 in Overhang

No Box Misalignment

Deckboards have 3 in gap

Humidity is 60-80%

Storage time is < 10 days

The Pallet is Column Stacked

Average Handling

Disclaimer: The performance estimates of Best Load 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, White & Company, LLC cannot accept responsibility for pallet performance or design as actually constructed. Fasteners assumed to be compliant with ANSI/MHIA MH1 Pallets, Slip Sheets, and other bases for Unit Loads. Performance estimates from Best Load should be verified by testing of prototypes prior to implementation.

Shipping Specification

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

Address:

Date: 11/30.23

Pallet Information:48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description:Partial 4Way, DoubleFace , Non-reversible, Flush

Shipping Container Dimensions
none

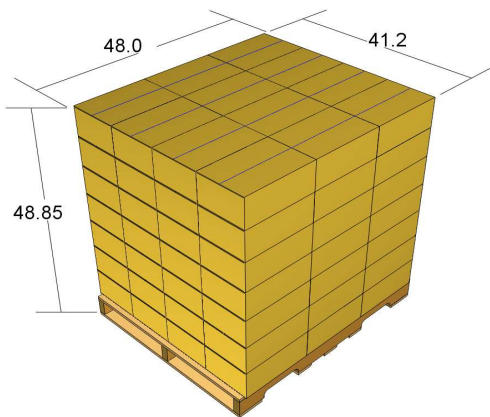


Results

Weighed Out:	No
%Volume:	88 %
# of Unit Loads:	60
Boxes per Trailer:	5040
LoadLimit:	44000.0 lbs
Net Total Weight in Trailer:	39364.4 lbs

Cost:

Distribution Packaging:	\$3,175.20
Pallets:	\$720.0
Stabilizers:	\$60.00
Total:	\$3955.2



Load Stabilizers

Stretch Wrap

Sustainability

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

Address:

Date: 11/30.23

Box Information: Type - Box - RSC (0201)

Box Description: 33 - 26C - 35 , Single Wall, BMC ECT 29

Pallet Information:48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description:Partial 4Way, DoubleFace , Non-reversible, Flush

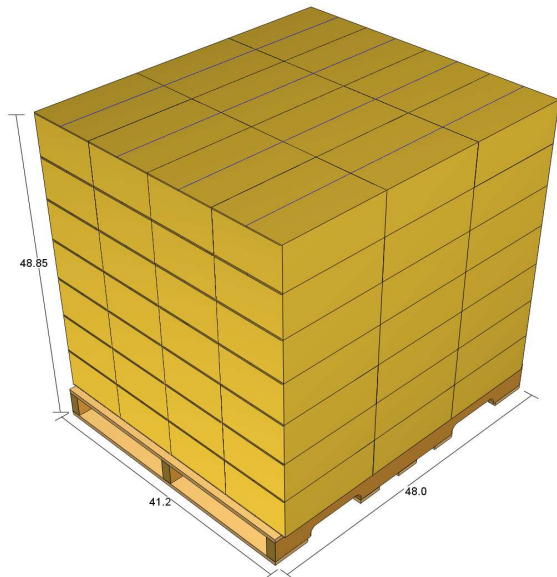
Unit Load Information: 48.0"L x 41.2"W x 48.85"H , Partial 4Way , Box

Unit Load Description: Column Stacked

Shipping Information: Mode - none

Shipping Description: none

Sustainability



Results:

Volume of Unit Load: **55.91 cu ft**

Total Weight of the Unit Load: **656.1 lbs**

Weight of Packaging Materials per Unit Load

PE: **0.5 lbs**

Box Corrugated Paperboard: **52.40 lbs**

Pallet Solid Wood: **46.6 lbs**

Weight of the Distribution Packaging in the Unit Load: **99.5 lbs**

Ratio of Distribution Packaging Weight to Unit Load Weight: **15.1 %**

Shipping Container Utilization

Total Weight of Distribution Packaging: **5968.6 lbs**

Total Weight of Unit Loads: **39364 lbs**

Unit Load to Shipping Volume Ratio: **88 %**

Unit Load Weight to Load Limit Ratio: **89 %**

Pallet Specifications

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

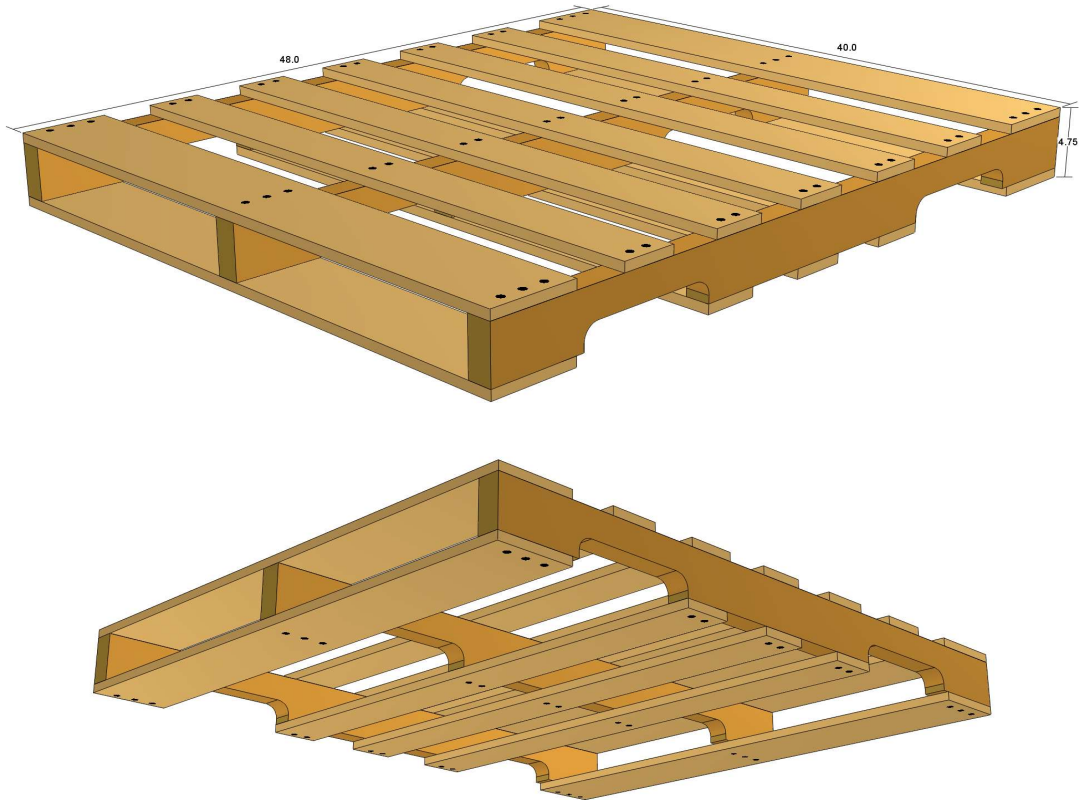
Analysis ID:

Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace , Non-reversible, Flush



Components

Top Deckboards(in)				Bottom Deckboards(in)			
Board	Thickness	Width	Length	Board	Thickness	Width	Length
2	0.625	5.5	40.0	2	0.625	5.5	40.0
5	0.625	3.5	40.0	3	0.625	3.5	40.0
Stringers (in)				Lumber			
Notch: Partial 4way				13.9 bd ft one species class			
Depth:	Deckboard Length:	Location:	Radius:	100% Southern Pine (SYP)			
1.5	9.0	6.0	1.0	Standard & Better grade			
Boards	Height	Width	Length	Partial Air Dried 30%			
3	3.5	1.5	48.0				
Total number of nails: 84				No Treatment			

Notes:

- | | |
|----------|----------|
| 1. _____ | 3. _____ |
| 2. _____ | 4. _____ |

Pallet Analysis

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

Address:

Date: 11/30.23

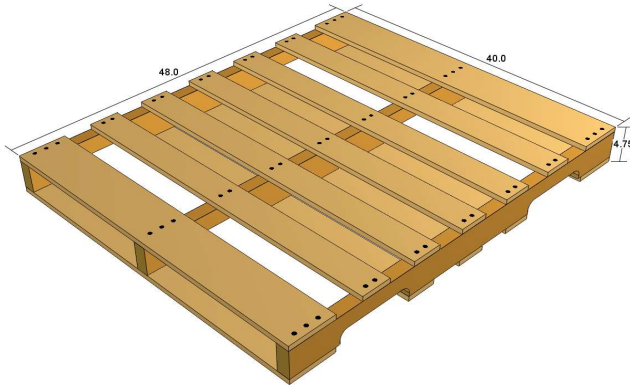
Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace, Non-reversible, Flush

Deckboard Lumber Top: 100% SYP

Bottom: 100% SYP

Stringer Lumber: 100% SYP



Analysis Summary

Required Payload 610 lbs

Predicted Maximum Safe Load: 2308 lbs

Load Variability: Low

Analysis

Storage and Handling Conditions	Predicted Maximum Safe Load (lbs)	Initial Average Deflection (in)	Critical Members
Racked Across Length Span = 40.0	2308	0.24	Stringer
Forktine Parallel to Pallet Length	6311	0.30	Top Deckboard
Forktine Perpendicular to Pallet Length	3712	0.20	Stringer
Stacked 2 High	3401	0.11	Top Deckboard
Stacked 1 High	5669	0.11	Top Deckboard

Forktine spacing = 22.0, length = 48.0, and width = 4.0

Disclaimer: The performance estimates of Best Load 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, White & Company, LLC cannot accept responsibility for pallet performance or design as actually constructed. Fasteners assumed to be compliant with ANSI/MHIA MH1 Pallets, Slip Sheets, and other bases for Unit Loads. Performance estimates from Best Load should be verified by testing of prototypes prior to implementation.

2D Drawings

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

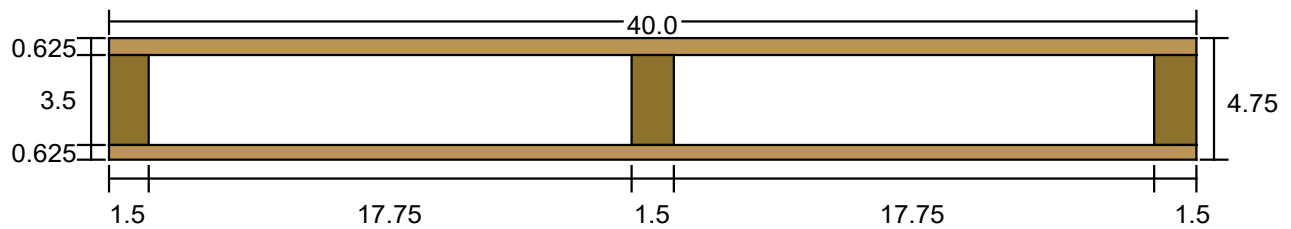
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Date: 11/30.23

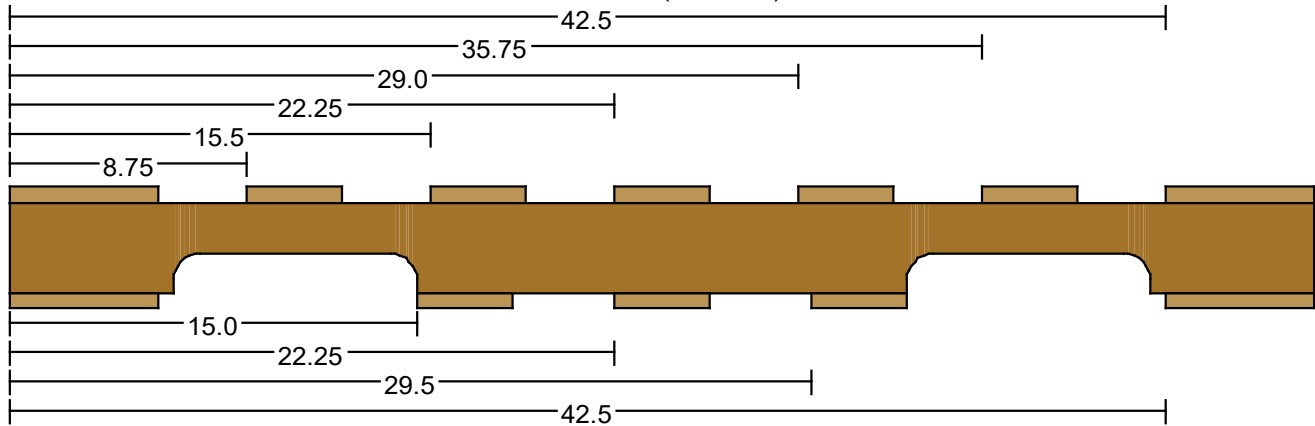
Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace, Non-reversible, Flush

End View (in inches)



Side View (in inches)



2D Drawings

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

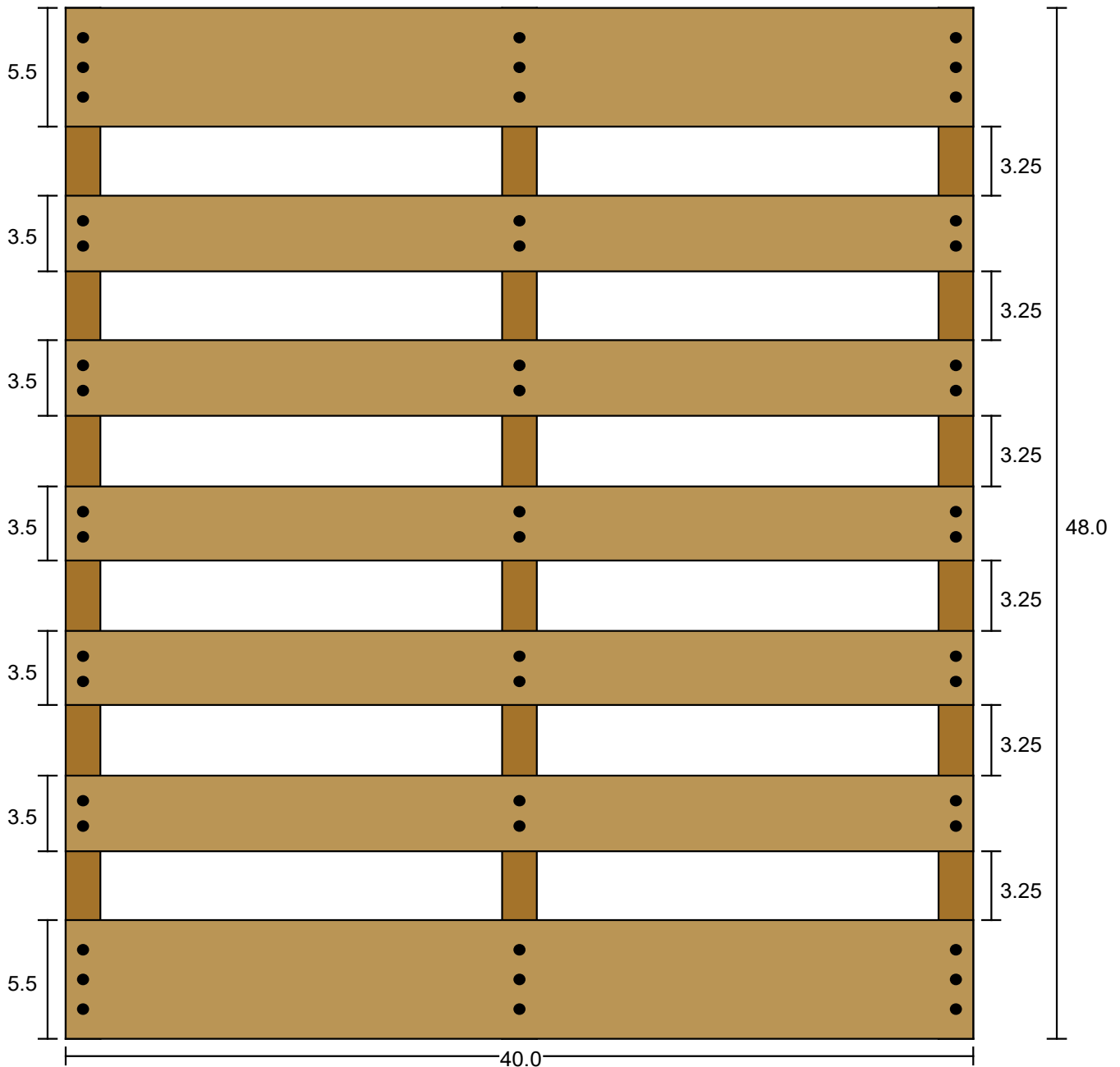
Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace, Non-reversible, Flush

Top View (in inches)



2D Drawings

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

Analysis ID:

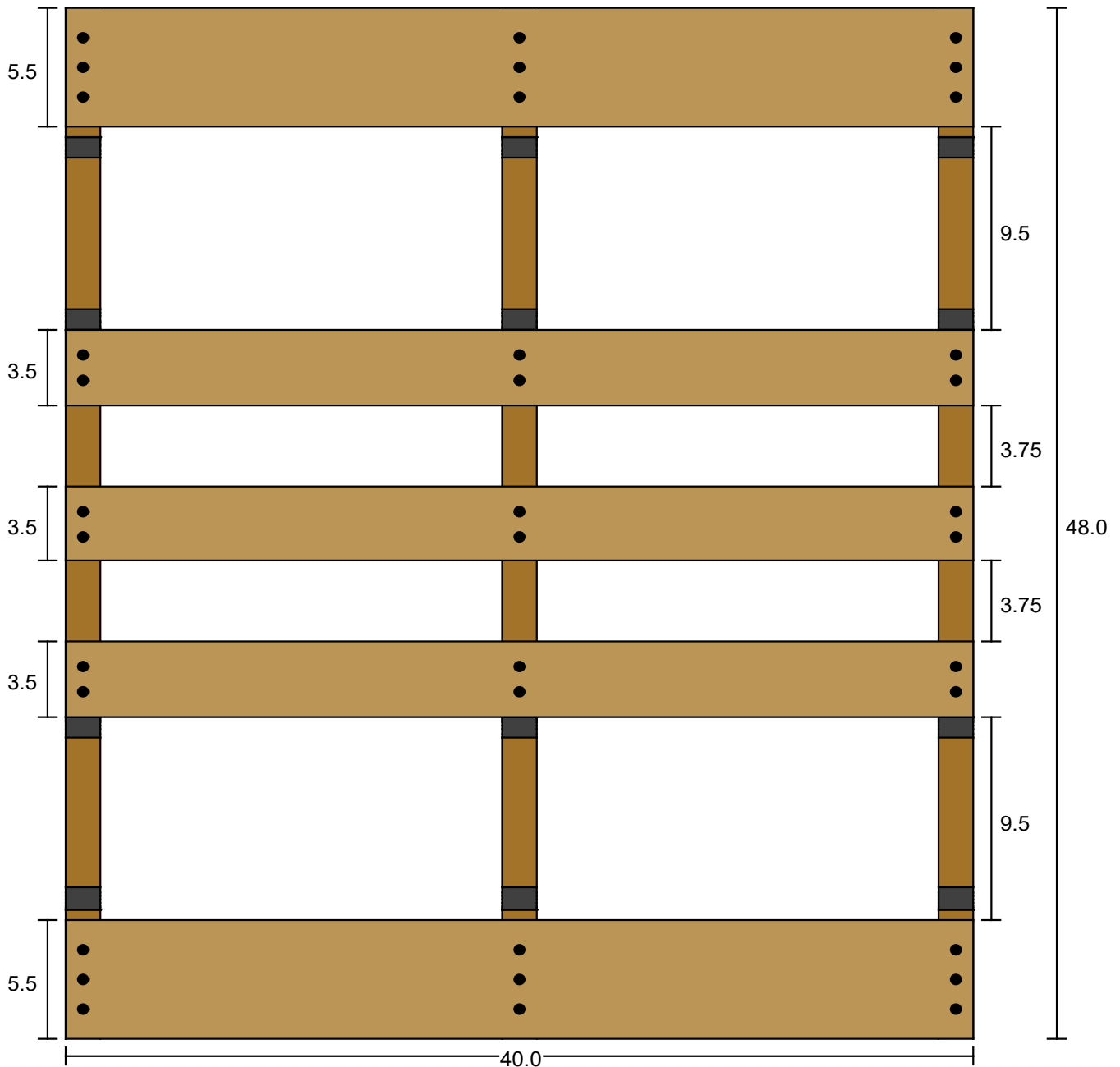
Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace, Non-reversible, Flush

Bottom View (in inches)



Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

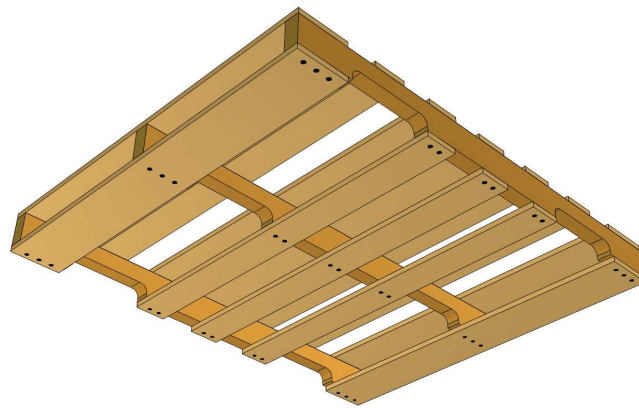
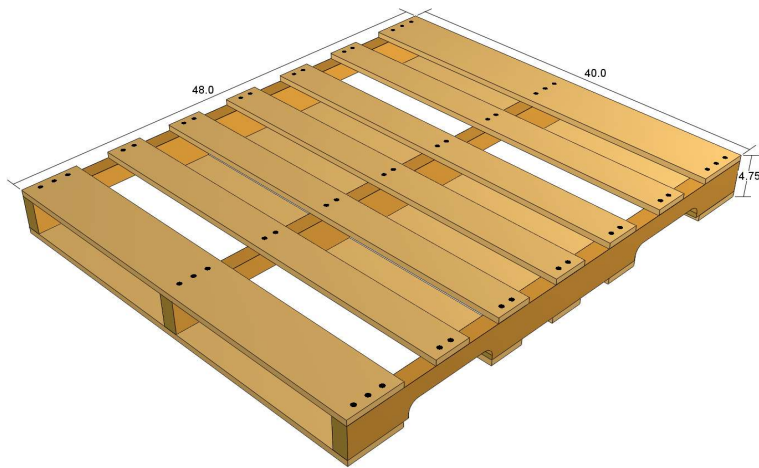
Analysis ID:

Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace , Non-reversible, Flush



Style: Single-Use, Partial 4Way
DoubleFace Non-reversible

Lumber: Acceptable Lumber Species:
100% Southern Pine

Min Part Grade: Standard & Better

Max Moisture Content: 30%

Nails: (Total number of nails 84)

Length:

Gauge:

Type:

Point:

* or equivalent

Dimensional Tolerance:

Out of Square deviation 1/4"

(1/2" Difference in diagonals).

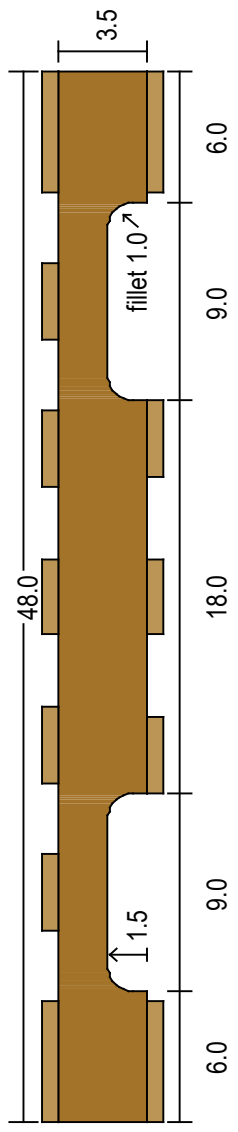
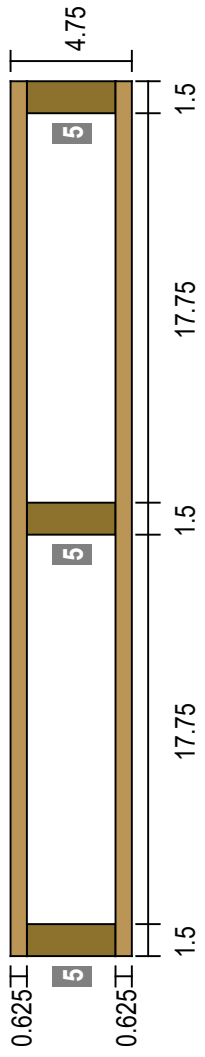
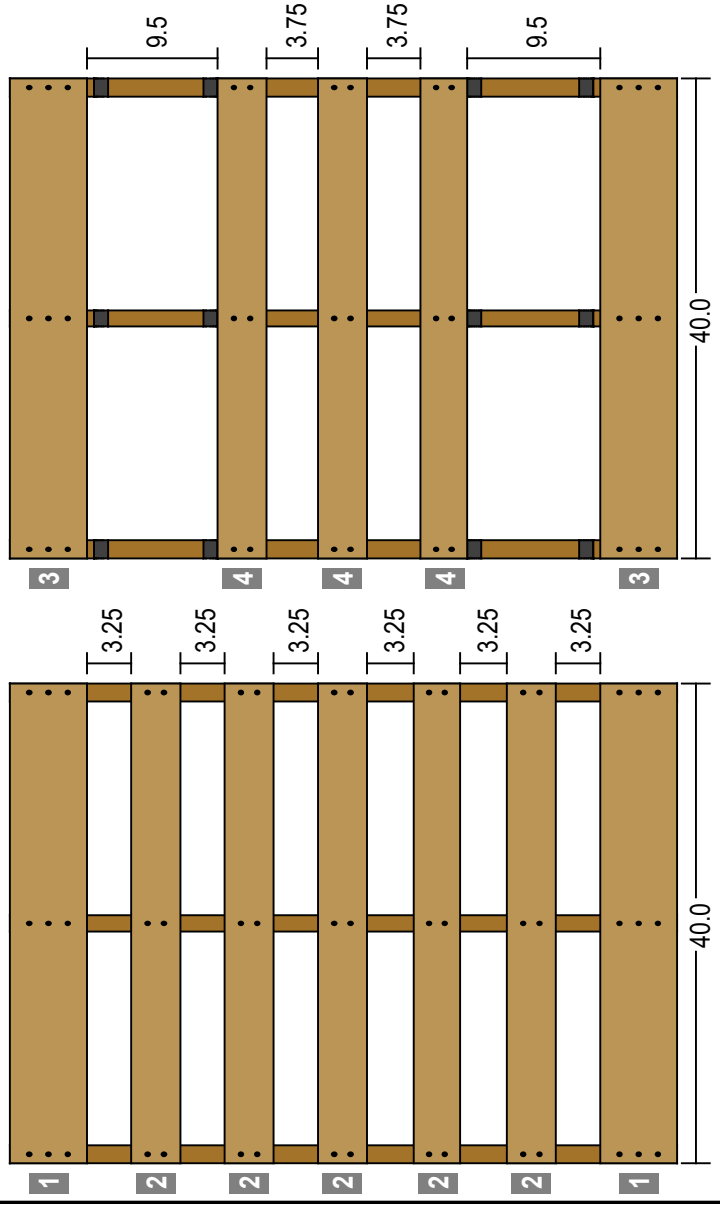
Overall Length & Width deviation + or - 3/16"

Overall pallet height deviation + or - 1/8"

Pallets shall lie flat at all points within 1/2"

Notes: (lengths in inches)

- 1.
- 2.
- 3.
- 4.



Top Deckboards		Bottom Deckboards		Stringers	
Item Qty.	Dimensions	Item Qty.	Dimensions	Item Qty.	Dimensions
1	40.0L x 5.5W x 0.625T	3	40.0L x 5.5W x 0.625T	5	48.0L x 1.5W x 3.5H
2	40.0L x 3.5W x 0.625T	4	40.0L x 3.5W x 0.625T		

Approved

Version No.

ID.

Drawing No.

Lumber Cut List

Best Load Version 4.2.0k

Prepared By: Y.G. Packaging Solutions LLC

Company: Acme Foods

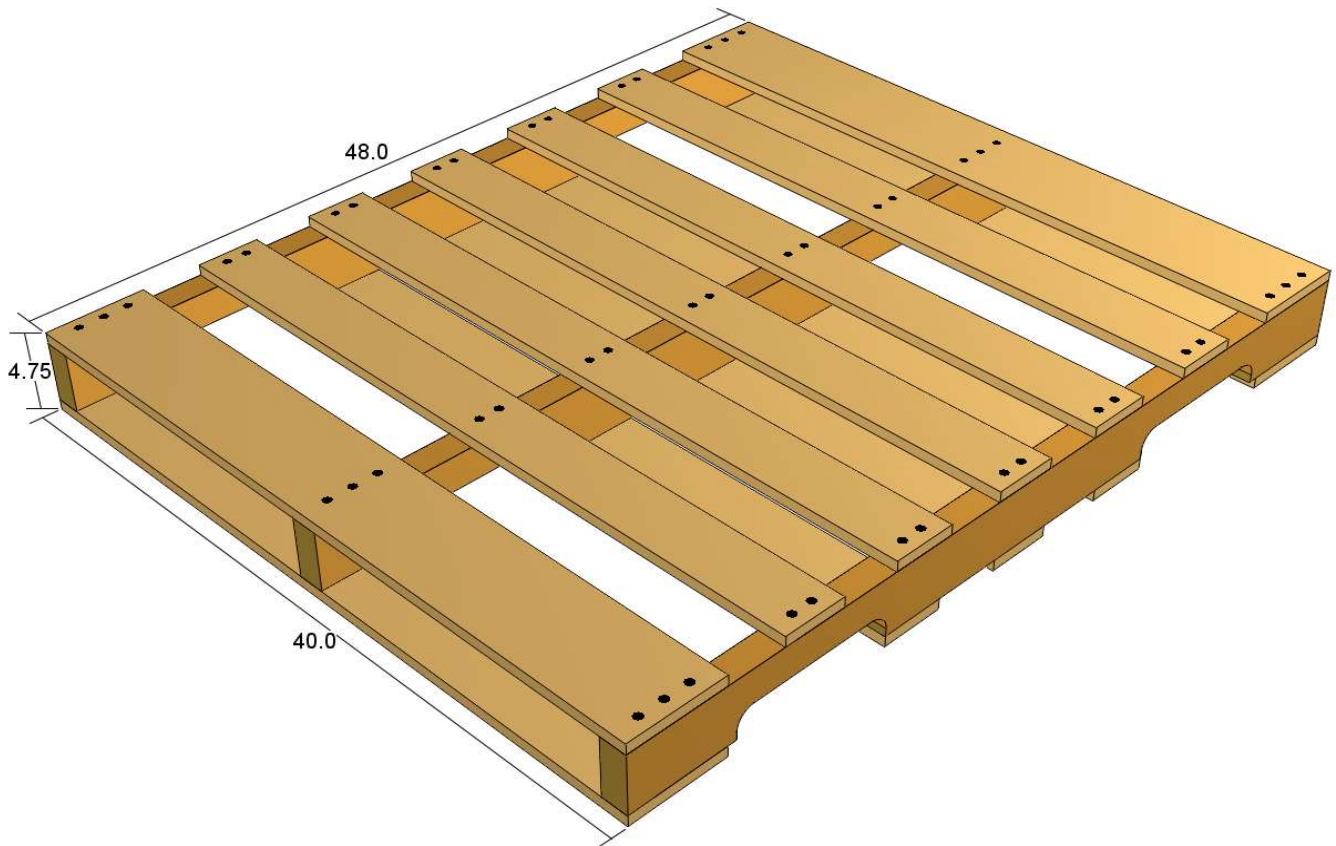
Analysis ID:

Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace , Non-reversible, Flush



Identification:

Cut List for 1 Pallet

dimensions in inches

Component	Width	Thick	Length	Species	Grade	MC	Count	Total bd ft volume
Deckboards	5.5	0.625	40.0	SYP	Standard & Better	30%	4	3.8
Deckboards	3.5	0.625	40.0	SYP	Standard & Better	30%	8	4.9
Stringers	3.5	1.5	48.0	SYP	Standard & Better	30%	3	5.3
Total							15	13.93

Total number of nails:84

No Treatment

Fastener Description

Best Load Version 4.2.0k

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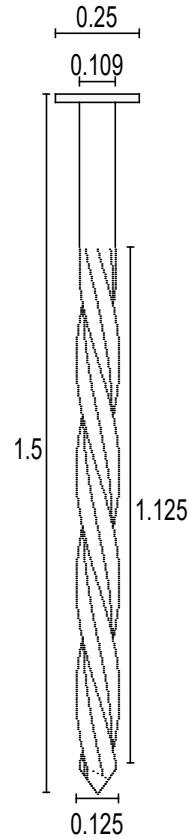
Address:

Date: 11/30.23

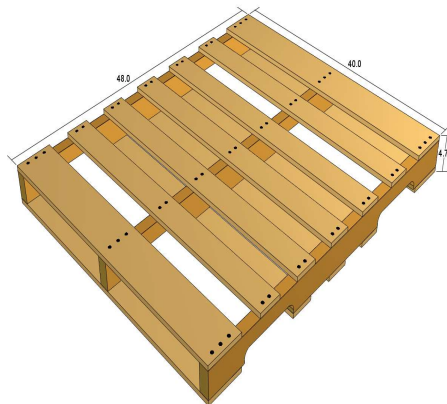
Pallet Information: 48.0 in L x 40.0 in W, Weight - 46.6 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace , Non-reversible, Flush

Helically Threaded Nail	
Wire Diameter:	0.109 in
Thread Diameter:	0.125 in
Head Diameter:	0.25 in
Thread Length:	1.125 in
Nail Length:	1.5 in
Helix Count:	5.6
MIBANT Angle:	53.0
Thread Angle:	66.0
Flute count:	4
Blunt-Diamond Point	
Fastener Shear Index	48
Fastener Withdrawal Index	76



Total Fastener Count = 84



Pallet Durability Analysis

Best Load Version 4.2.0k

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Analysis ID:

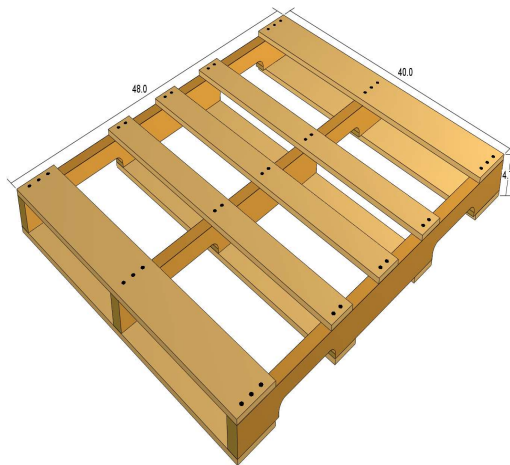
Address:

Date: 11/30.23

Pallet Information: 48.0 in L x 40.0 in W, Weight - 40.3 lbs, Single-Use, New

Pallet Description: Partial 4Way, DoubleFace , Non-reversible, Flush

Helically Threaded Nail	
Wire Diameter:	0.109 in
Thread Diameter:	0.125 in
Head Diameter:	0.25 in
Thread Length:	1.125 in
Nail Length:	1.5 in
Helix Count:	5.6
MIBANT Angle:	53.0
Thread Angle:	66.0
Flute count:	4
Blunt-Diamond Point	
Fastener Shear Index	48
Fastener Withdrawal Index	76



The average pallet of this design should be functional without repairs for: **1 supply chain cycle.**
If properly repaired, the average pallet of this design should be replaced after: **1 supply chain cycle.**

The predictions of pallet durability are based on the USDA Forest Service, "Pallet Exchange Program" research project, the procedure in ASME MH1 - 1997 "Pallets, Slip Sheets, and Other Bases for Unit loads" Part 6, Determination of Durability of Wood Pallets and Related Structures, and research conducted at the William H Sardo Jr. Pallet and Container Research Laboratory, Virginia Tech, Blacksburg, Virginia.

It is assumed the pallet will be handled 15 times during each cycle and the damage levels that require repair are as described in ANSI MH1, 2016 "Pallets, Slip Sheets, and other Bases for Unit Loads, Part 3 Wood Pallets"