



Recommended Customer Tomato Bin Return Procedures

March 16, 2021

Damage to tomato bins during return transit is common, adding to costs across the supply chain. Stacking patterns and loading guidelines can vary by company, which can generate confusion among workers and logistical problems for the receivers. To address this issue, CLFP processor members developed the enclosed set of voluntary best practices that can be employed by buyers to minimize bin return damage, improve operating efficiency, and reduce costs to the mutual benefit of both buyers and processors. The guidelines provide detailed explanations, diagrams, and photographs and are based on years of experience with different bins and railcar sizes. Customers are encouraged to implement the recommended practices and work closely with their processor suppliers to address any questions or concerns.

California League of Food Producers

2485 Natomas Park Drive, Suite 550 | Sacramento, CA | 95833

P: (916) 640-8150 | F: (916) 640-8156 | www.clfp.com

INTRODUCTION

The 300 and 315-gallon wood and plastic reusable bins play a key role in the California Tomato Processing Industry’s efforts to increase the sustainability of packaging materials, and to hold down ingredient costs. The bins provide secondary packaging to contain Aseptic bags of product and are designed to be reused for several years. If handled roughly, these packaging materials will be more likely to have a reduced lifespan. In some cases, damaged components can be repaired, but in other cases, the packaging would need to be removed from circulation as it makes the bin susceptible to breakage or would provide a pathway for dirt or infestation within the secondary packaging. The goal of this procedure is to provide a standardized process for packing and returning Tomato bins, which enables safe processing at all points in the return process and ensures the longevity of the packaging materials. We have found that the use of best practices significantly increases the percentage of useable parts we receive, which benefits both Tomato Processors and our customers. Additionally, the recommended loading patterns can be used to maximize the number of bins returned per load to reduce shipping costs.

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CAUSES OF BIN PART DAMAGE

Some of the key causes of Bin Damage include:

- **Lack of Strapping** – stacks will shift in transit, bang against each other and become difficult to unload. Used strapping can be reused and retained by cutting out the overlap of the straps used to secure full tomato bins.
- **Improperly Applied Strapping** – Stacks should be strapped only around the (Stringer) side of the base. Strapping stacks of wood parts through the forklift opening of the pallet base can damage the Base Pad. Strapping tops too tightly can damage the tops.
- **Poor Stacking Patterns** – Haphazardly mixing parts on a stack create stacks that are less even, exert concentrated force onto weaker components, and increase the likelihood of collisions with neighboring stacks. These stacks are also more difficult to handle post-transit.
- **Poor Loading Patterns** – The suggested loading patterns consider how certain stacks interact with their neighbors, for example if stacks of Tops were placed next to other stacks of Tops, Bases, or Metals, they would be likely to rub against their neighbors and incur damage. The suggested pattern places Tops adjacent only to Plain stacks, which provide needed clearance.
- **Lack of Dunnage** – Immobilizing the load with Dunnage to prevent it from shifting and colliding with other stacks helps reduce shipping damage. If insufficient dunnage is used or does not reach the top stacks, shifting is more likely to occur. Used Dunnage (cardboard and Air Bags) can be used as a perfectly effective, economical, and sustainable option.



WOOD BIN BREAKDOWN AND RETURN

RECOMMENDED GENERIC SAFETY REQUIREMENTS

Note: These generic requirements reflect known potential hazards but are not an exhaustive list of all potential safety concerns for all situations. Customers should review and adapt safety practices to reflect their own processes and facilities.

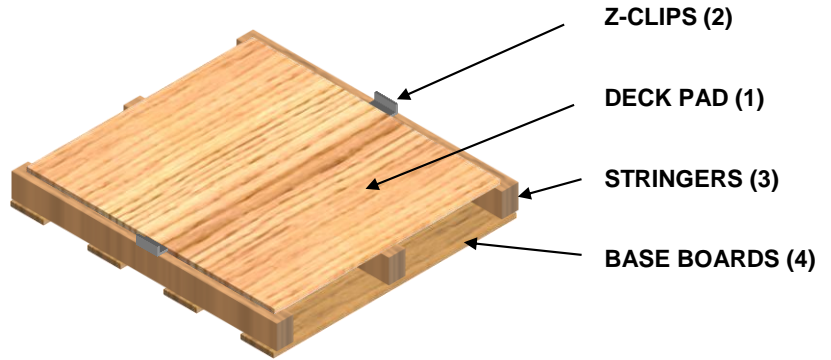
- Bin parts are typically handled with Forklifts. Exercise caution when working around forklifts. Only trained drivers should operate forklifts.
- Straps are under tension – wear eye protection when cutting the straps.
- Bin parts may have sharp edges - wear long sleeves and thick gloves to prevent cuts, scrapes, and splinters.
- Bin Parts are heavy - used proper lifting practices.

PROCESS

1. Retain dunnage from incoming loads of tomato products.
2. Carefully remove straps from an empty bin using a cutting tool. Cut out the joint at the overlap and retain for reuse. Support the bin components as they come apart and lay them flat on the pallet base.
3. Clean and / or scrape and clumps of tomato residue from the surfaces.
4. Create stacks of the various wood bin part types, as described below.
5. Strap the stacks and stage for shipment. Use two straps around the (Stringer) side of the pallet base.
6. When enough stacks of bin parts have been accumulated, load the Railcar / container per the appropriate pattern.
7. Insert and secure the load with the recommended dunnage.
8. Prepare a bill of lading for each load and email to the processor. Print a copy and attach to the load (in an envelope stapled to a stack at the door of the container or railcar).

STACKING PALLET BASES

PATTERN	HEIGHT
RAIL – 60' HC	7
RAIL – 50' HC	7
RAIL – 50' STD	5
OTR / INTERMODAL	5
SEA CONTAINER	5



1. Use a good Base for the foundation of the stack.
2. Stack additional Bases on top of the bottom base until the TOTAL number of bases corresponds to the stack height for the appropriate pattern in the above table. Be sure to orient the pallets in the same direction.
3. Apply 2 straps on the stringer sides of the Bases only (NOT through the forklift entry side).



STACKING TOPS

PATTERN	HEIGHT	BASES
RAIL – 60' HC	34	2*
RAIL – 50' HC	34	2*
RAIL – 50' STD	30	1
OTR / INTERMODAL	20	1
SEA CONTAINER	34	1

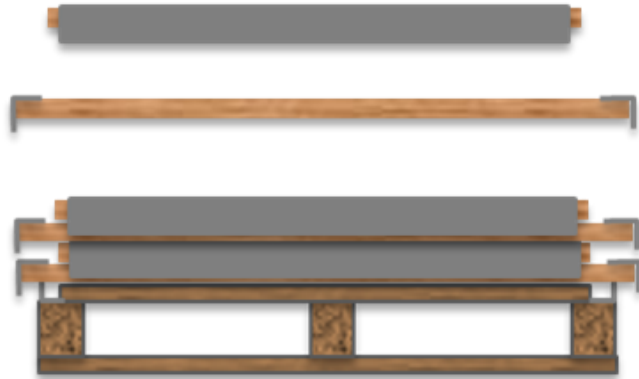


1. Use a good Base for the foundation of the stack.
2. Place the first Top on the Base, with the cleat-side facing up, flush with the Base.
3. Place additional Tops on the Base until the stack contains the specified number of Tops from the above table.
4. For Tops without cleats, stack them centered on the pallet, without any offsets.
5. *For the High-Cube Railcar Patterns, add an additional Base to the top of each Stack.
6. Apply 2 straps on the stringer sides of the Bases only (NOT through the forklift entry side). **Lightly tighten the straps, as the Tops will take damage if over-tightened.**



STACKING METALS

PATTERN	HEIGHT
RAIL – 60' HC	34
RAIL – 50' HC	34
RAIL – 50' STD	30
OTR / INTERMODAL	20
SEA CONTAINER	17 / 17



1. Use a good Base for the foundation of the stack.
2. Place the first Metal Side on the Base, with the corner irons overlapping the Z-Clips on the Base, as shown in the above diagram.
3. Place additional Metals on the Base until the stack contains the specified number of Metals from the above table. Rotate each side by 90-degrees as shown in the picture.
4. Apply 2 straps on the stringer sides of the Bases only (NOT thorough the forklift entry side).



FOR THE SEA CONTAINER ONLY:

Alternate adding a Plain Side, then a Metal Side (17 pairs total), with all the corner irons aligning with the forklift entry side of the Base. This mixed pallet ensures the stacks will fit within the width of the sea container. Strap as above.



STACKING PLAINS

PATTERN	HEIGHT
RAIL – 60' HC	34
RAIL – 50' HC	34
RAIL – 50' STD	30
OTR / INTERMODAL	20
SEA CONTAINER	17 / 17



1. Use a good Base for the foundation of the stack.
2. Place the Plain Sides on the Base until the stack contains the specified number of Plains from the above table. The sides should be oriented so the width of the plain extends fully across the Base Pad.
3. Apply 2 straps on the stringer sides of the Bases only (NOT thorough the forklift entry side).



FOR THE SEA CONTAINER ONLY:

Alternate adding a Plain Side, then a Metal Side (17 pairs total), with all the corner irons aligning with the forklift entry side of the Base. This mixed pallet ensures the stacks will fit within the width of the sea container. Strap as above.

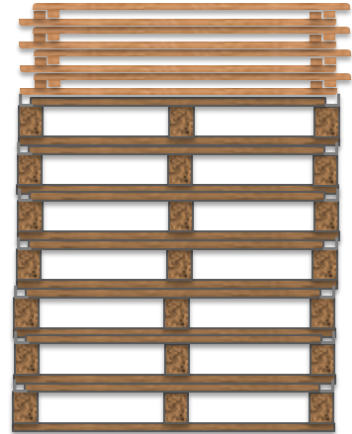


SPECIAL STACKS

We standardize the stack patterns as much as practical, but the physical constraints of some shipping configurations require the occasional use of partial stacks to ensure an even number bin parts can be returned in the correct proportions with each shipment and that the shipment is maximized to reduce shipping costs.

60' HC RAILCAR – BASE / TOPS STACK

One of these stacks is required for this pattern. This stack simply adds 8 Tops on top of a standard stack of 7 bases, and then is strapped (gently, to avoid Tops damage).



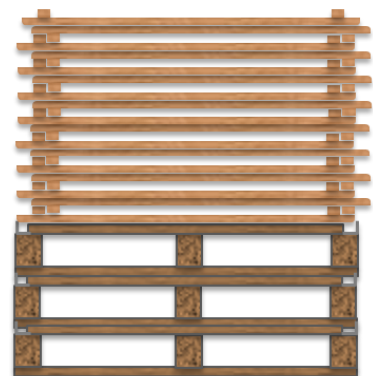
60' HC RAILCAR – METALS / PLAINS STACK

One of these stacks is required for this pattern. This stack is simply a short stack of 16 Metal Sides, prepared in the normal manner, with 16 additional Plain Sides added on top, then strapped.



SEA CONTAINER – BASES / TOPS STACK

One of these stacks is required for this pattern. This stack is a short stack of 3 Bases, prepared in the normal manner, with 17 additional Tops added on top, then strapped.



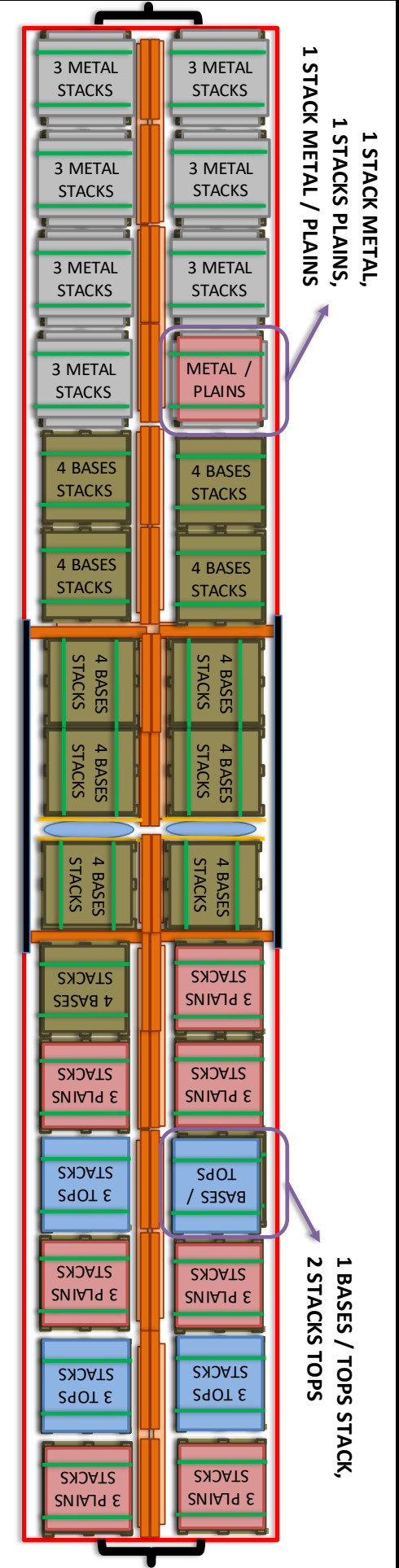
RECOMMENDED LOADING PATTERN

60' HIGH CUBED RAIL CAR

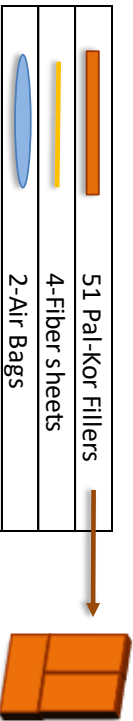
382 WOOD BINS

99,320 lbs.

45,052 kg



DUNNAGE:

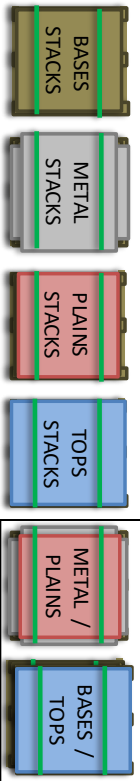


To fully protect the stacks, place one Pal-Kor Filler **HORIZONTALLY**, then place two Pal-Kor Fillers **VERTICALLY** on top of the horizontal unit.

Re-Use Dunnage retained from product loads. If Pal-Kor Fillers are not available, drop-down fillers can provide some protection against shifting loads.

STACK TYPE	COUNT OF STACKS	BASES PER STACK	METALS PER STACK	PLAINS PER STACK	TOPS PER STACK
BASES STACKS	44	7			
METAL STACKS	22	1	34		
PLAINS STACKS	22	1		34	
TOPS STACKS	11	2			34

SPECIAL STACKS



SPECIAL STACKS	COUNT OF STACKS	BASES PER STACK	METALS PER STACK	PLAINS PER STACK	TOPS PER STACK
METAL / PLAINS	1	1	16		
BASES / TOPS	1	2			8

TOTALS PER RAILCAR	DESCRIPTION	QUANTITY
382 BASES	To make the TOPS / BASES SPECIAL STACK, just add 8 TOPS on top of a standard 7-High Stack of Bases	8 TOPS
764 METALS	To make the METAL / PLAINS SPECIAL STACK, start with a 16-tall METAL STACK, then add 16 PLAINS.	16 PLAINS
764 PLAINS		16 METAL
382 TOPS		

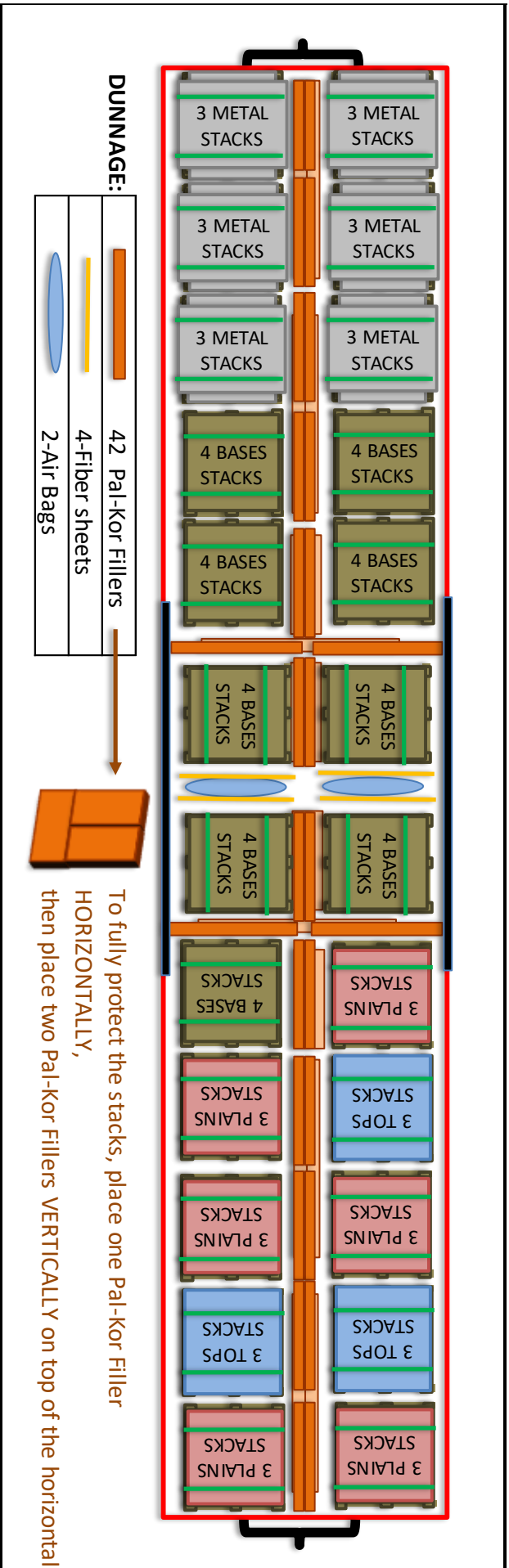
RECOMMENDED LOADING PATTERN

50' HIGH CUBED RAILCAR

306 WOOD BINS

79,560 lbs.

36,088 kg



DUNNAGE:



To fully protect the stacks, place one Pal-Kor Filler HORIZONTALLY, then place two Pal-Kor Fillers VERTICALLY on top of the horizontal

STACK TYPE



NOTE: Each TOPS STACK should be topped with a BASE as illustrated

COUNT OF STACKS	36	18	18	9
BASES PER STACK	7	1	1	2
METALS PER STACK		34		
PLAINS PER STACK			34	
TOPS PER STACK				34

TOTALS PER RAILCAR
306 BASES
612 METALS
612 PLAINS
306 TOPS



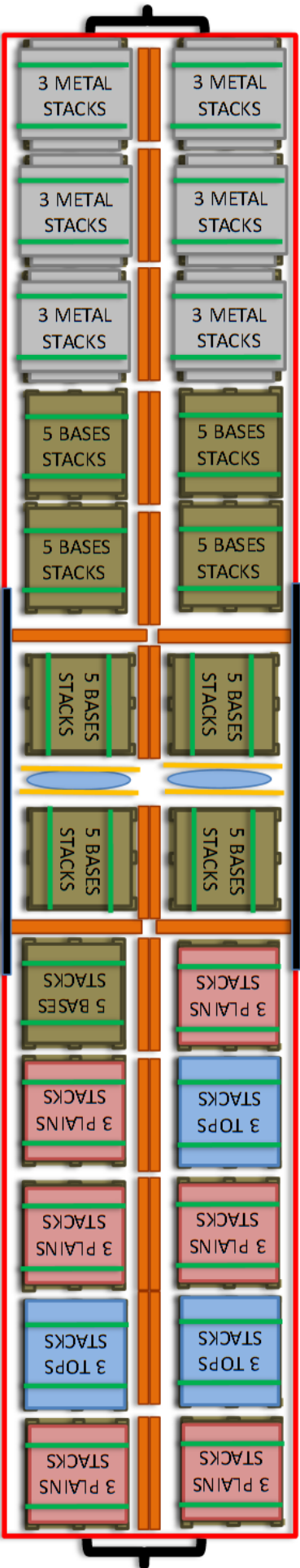
RECOMMENDED LOADING PATTERN

50' STANDARD RAILCAR




270 WOOD BINS

70,200 lbs.

31,843 kg



DUNNAGE:

	28 Pal-Kor Fillers
	4-Fiber sheets
	2-Air Bags



COUNT OF STACKS	45	18	18	9	TOTALS PER RAILCAR
BASES PER STACK	5	1	1	1	270 BASES
METALS PER STACK		30			540 METALS
PLAINS PER STACK			30		540 PLAINS
TOPS PER STACK				30	270 TOPS

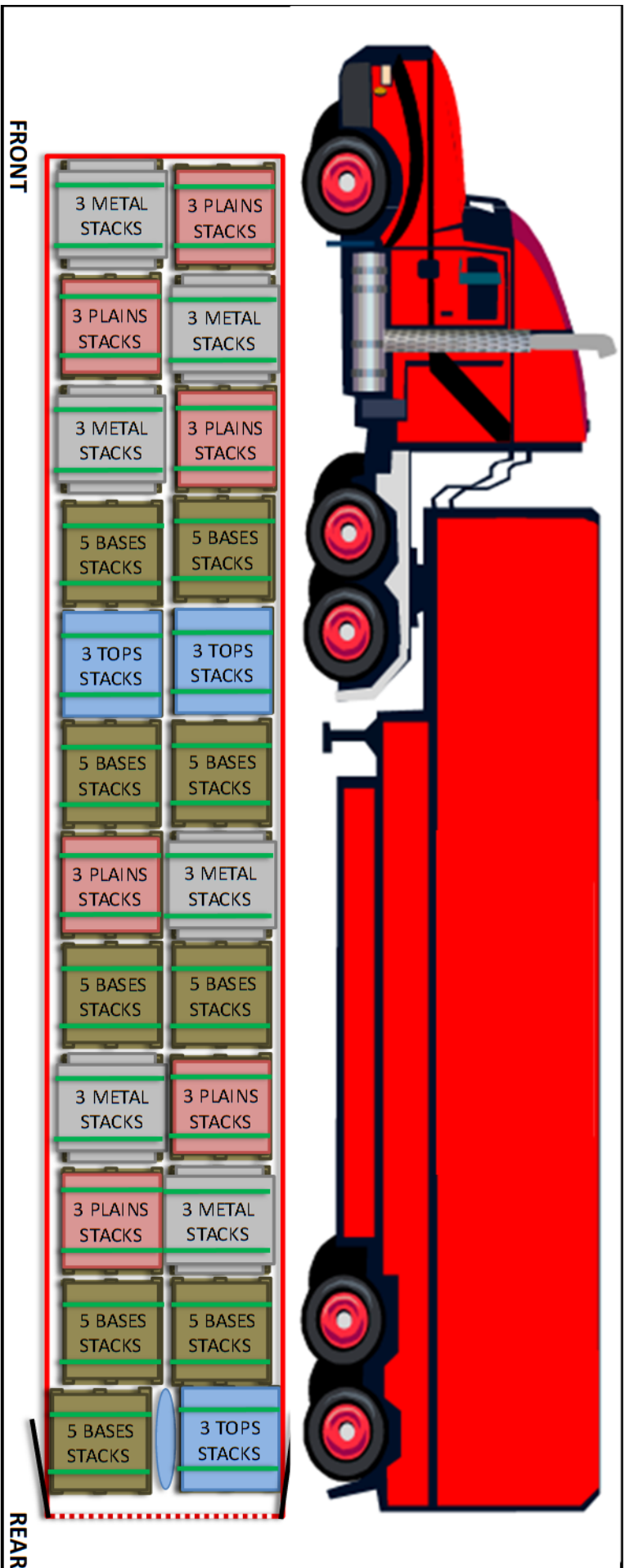
RECOMMENDED LOADING PATTERN

OTR TRUCK / INTERMODAL

160 WOOD BINS

41,600 lbs.

18,870 kg



STACK TYPE	COUNT OF STACKS
BASES PER STACK	5
METALS PER STACK	1
PLAINS PER STACK	20
TOPS PER STACK	1

TOTALS PER TRUCKLOAD
160 BASES
320 METALS
320 PLAINS
160 TOPS

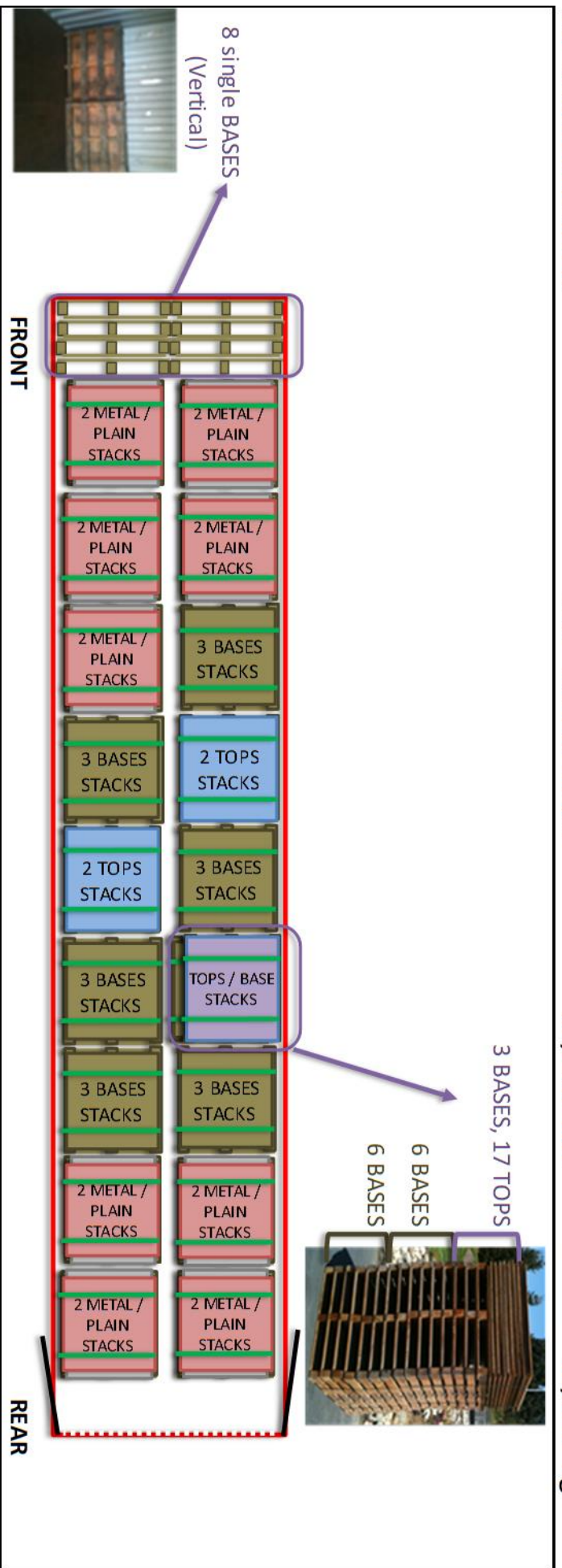
DUNNAGE:  1-Air Bag

RECOMMENDED LOADING PATTERN
40' SEA CONTAINER






153 WOOD BINS

39,780 lbs.

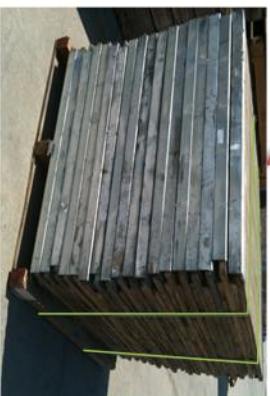
18,044 kg



NOTE: the METALS / PLAINS Stacks alternate PLAINS and METALS, with the METALS oriented to fit within the profile of the base so they will fit within the container.

STACK TYPE	20	18	4	1	8
 BASES PER STACK	6	1	1	3	1
 METAL / PLAIN STACKS		17			
 TOPS PER STACK		17			
 TOPS / BASE STACKS					
 Single BASES			34	17	

TOTALS PER CONTAINER
153 BASES
306 METALS
306 PLAINS
153 TOPS

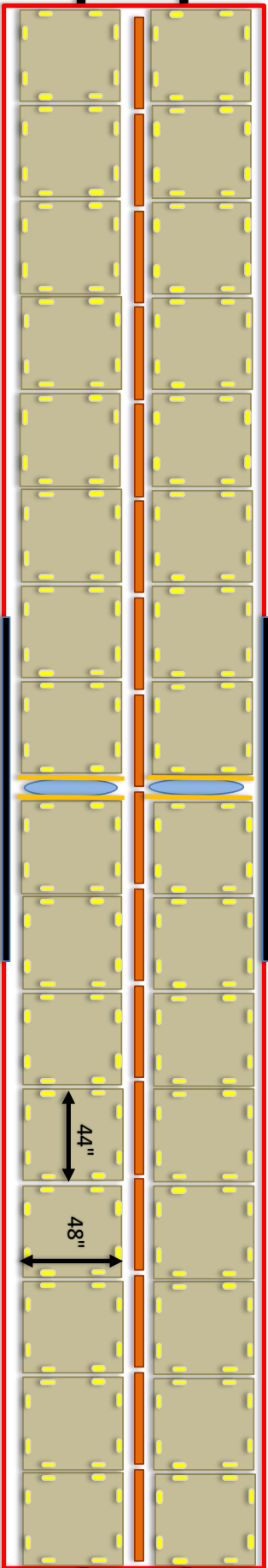


PLASTIC BIN COLLAPSING AND LOADING

1. Fold down the two short side panels (for the 300-Gal container, lift corner rods, then reinsert)
2. Fold down the long side panels.
3. Align the lid over the base so that the lid fits over the posts.
4. Stack the collapsed bins with the feet of the top container interlocking with the corresponding features of the lid below. Align the containers in the same orientation (short sides over short sides, etc.)
5. Use forklifts with (max) 44" long forks to move the stacks of bins. This will ensure the forks do not protrude through and damage other containers.
6. Load the Railcar or Truck / Container with the appropriate storage pattern from the following pages and apply the recommended dunnage to keep the load secured.
7. Only move containers by lifting flat from underneath. Do not slide or push containers with the forks, as this will cause damage.

RECOMMENDED LOADING PATTERN 60' HIGH CUBED RAIL CAR

224 PLASTIC BINS



Ensure the stacks are oriented as shown above (with the shorter side adjacent to the central aisle), to allow all 32 stacks to fit into the Rail Car.

DUNNAGE:

	24 Pal-Kor Fillers
	4-Fiber sheets
	2-Air Bags



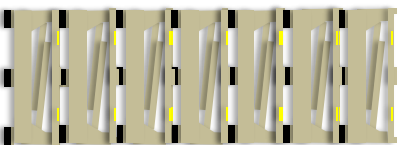
To fully protect the stacks, place one Pal-Kor Filler HORIZONTALLY, then place two Pal-Kor Fillers VERTICALLY on top of the horizontal unit.

Re-Use Dunnage retained from product loads. If Pal-Kor Fillers are not available, drop-down fillers can provide some protection against shifting loads.

Plastic Bins can be shipped 7-High within the 60' High-Cube Rail Car, with the stacks of 7 Bins unitized together with straps.

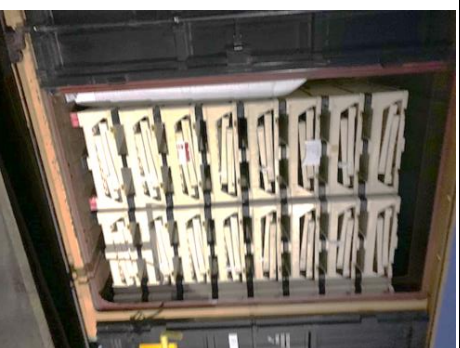
Bins / Stack	7
Number of Stacks	32
TOTAL Number of Plastic Bins	224

7-High Stacks



8-High Stacks

In some railcar configurations, with certain models of plastic bins, the car can be loaded with stacks of 8-bins high, providing an additional 32 units, or **256** total bin shipping capacity.



NOTES:

Ensure all Plastic Bins are oriented in the same direction.

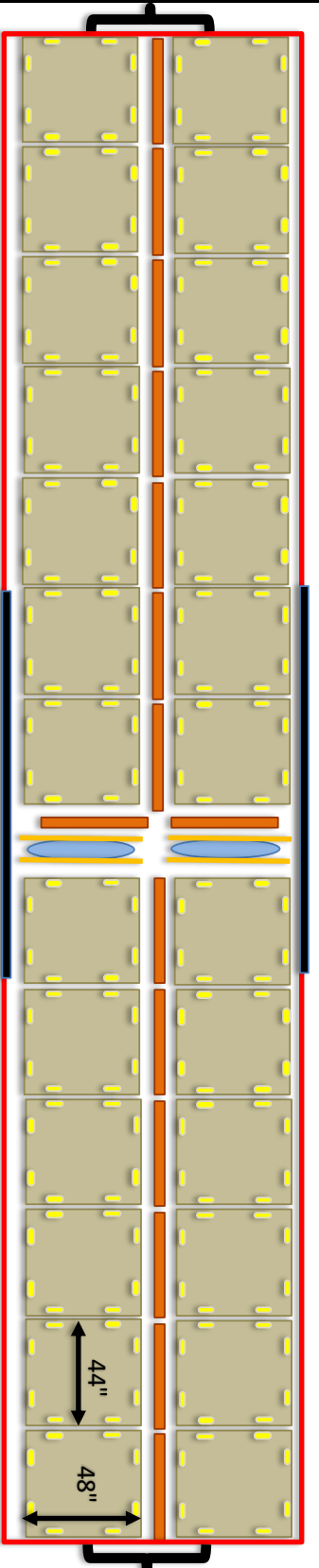
Each collapsed bins should be topped with a lid, fitting securely over the posts of the collapsed bin.

All bins in the stack should be properly aligned with the bin feet interlocked into the corresponding nesting features of the lid below.

RECOMMENDED LOADING PATTERN




50' HIGH CUBED RAIL CAR

182 PLASTIC BINS



Ensure the stacks are oriented as shown above (with the shorter side adjacent to the central aisle), to allow all 26 stacks to fit into the Rail Car.

DUNNAGE:

	22 Pal-Kor Fillers
	4-Fiber sheets
	2-Air Bags



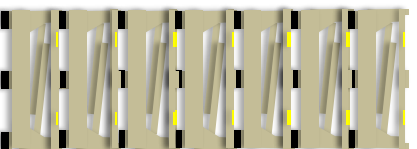
To fully protect the stacks, place one Pal-Kor Filler HORIZONTALLY, then place two Pal-Kor Fillers VERTICALLY on top of the horizontal unit.

Re-Use Dunnage retained from product loads. If Pal-Kor Fillers are not available, drop-down fillers can provide some protection against shifting loads.

Plastic Bins can be shipped 7-High within the 50' High-Cube Rail Car, with the stacks of 7 Bins unitized together with straps.

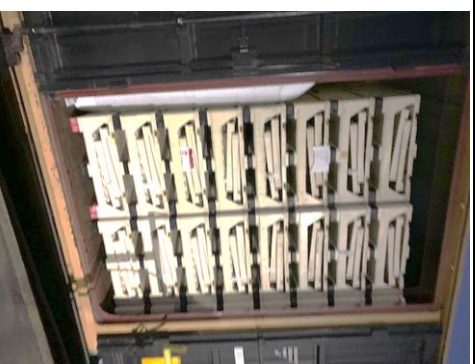
Bins / Stack	7
Number of Stacks	26
TOTAL Number of Plastic Bins	182

7-High Stacks



8-High Stacks

In some railcar configurations, with certain models of plastic bins, the car can be loaded with stacks of 8-bins high, providing an additional 26 units, or **208** total bin shipping capacity.



NOTES:

Ensure all Plastic Bins are oriented in the same direction.

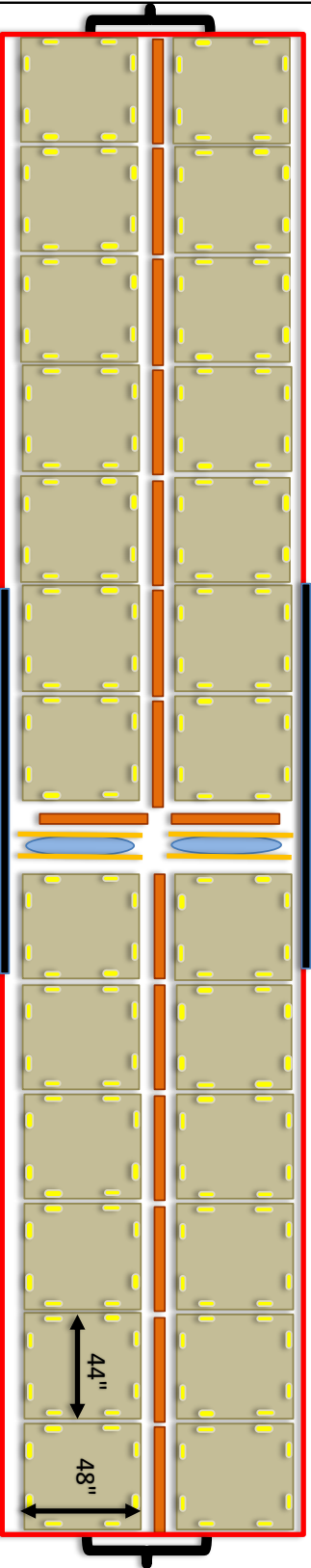
Each collapsed bins should be topped with a lid, fitting securely over the posts of the collapsed bin.

All bins in the stack should be properly aligned with the bin feet interlocked into the corresponding nesting features of the lid below.

RECOMMENDED LOADING PATTERN




50' STANDARD RAIL CAR

156 PLASTIC BINS



Ensure the stacks are oriented as shown above (with the shorter side adjacent to the central aisle), to allow all 26 stacks to fit into the Rail Car.

DUNNAGE:

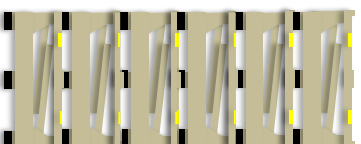
	15 Pal-Kor Fillers
	4-Fiber sheets
	2-Air Bags

Re-Use Dunnage retained from product loads. If Pal-Kor Fillers are not available, drop-down fillers can provide some protection against shifting loads.

Plastic Bins can be shipped 6-High within the 50' Standard Rail Car, with the stacks of 6 Bins unitized together with straps.

Bins / Stack	6
Number of Stacks	26
TOTAL Number of Plastic Bins:	156

6-High Stacks

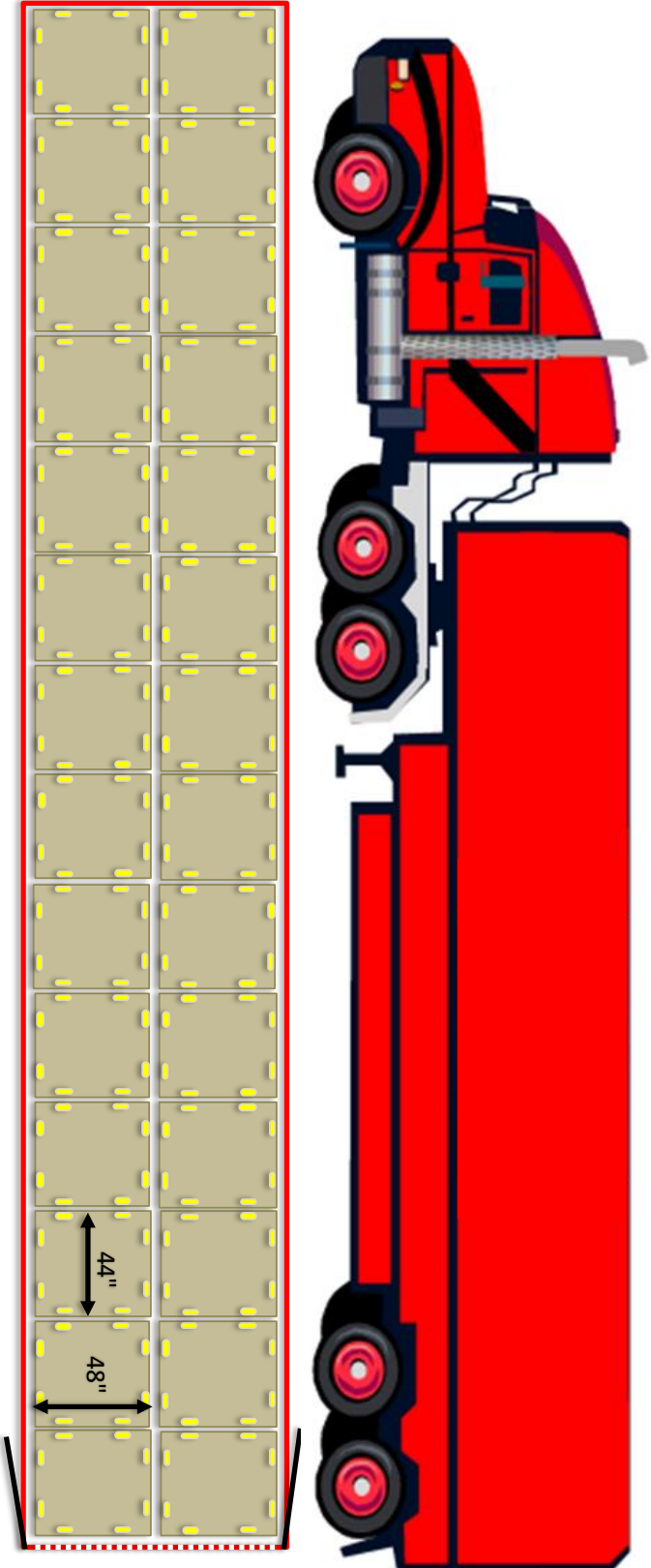


NOTES: Ensure all Plastic Bins are oriented in the same direction.

Each collapsed bins should be topped with a lid fit securely over the posts of the collapsed bin. All bins in the stack should be properly aligned with the bin feet interlocked into the corresponding nesting features of the lid below.

**RECOMMENDED LOADING PATTERN
OTR TRUCK / INTERMODAL**

168 PLASTIC BINS

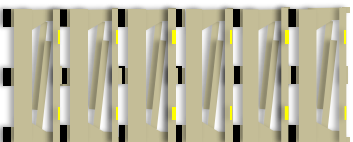


Ensure the stacks are oriented as shown above to allow all 28 stacks to fit into the Truck.

Plastic Bins can be shipped 6-High within the OTR Truck.

Bins / Stack	6
Number of Stacks	28
TOTAL Number of Plastic Bins	168

6-High Stacks



NOTES:

Ensure all Plastic Bins are oriented in the same direction. Each collapsed bin should be topped with a lid fit securely over the posts of the collapsed bin.

All bins in the stack should be properly aligned with the bin feet interlocked into the corresponding nesting features of the lid below.