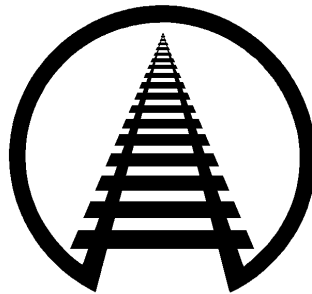


General Information Series No. 850

Unitizing – On Wood Pallets

(CCLG Part 1 (1/14); Section 5.1 (Revised))

Approved by
DAMAGE PREVENTION & FREIGHT CLAIM COMMITTEE
Association of American Railroads



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The General Rules relating to personal safety and the safe operation of trains, contained in AAR Circular Nos. 42-N and 43-G or supplements thereto, issued by the Association of American Railroads, **must be observed**.

These loading rules and/or practices apply to shipments transported in the USA, Canada and Mexico.

The loading methods in individual closed car loading publications issued by the Damage Prevention and Loading Services Section of the Association of American Railroads are minimum standards that have been evaluated and approved. These minimum standards offer practical guidelines on the subjects covered. Since these are minimum standards, it may be necessary to supplement these methods in some instances.

Securement standards in AAR closed car loading publications are intended for safe transit of the rail car from origin to destination and prevention of lading and equipment damage. These standards do not address unloading practices.

This approval may be withdrawn if the loads using these methods exhibit consistent load failure during actual shipments.

*Loading and bracing methods not presently approved may receive consideration for approval and publication under Section II - Evaluation of New Loading and Bracing Methods and Materials for Closed Cars, Trailers or Containers of **General Information Bulletin No. 2, “Rules and Procedures for Testing of New Loading and Bracing Methods or Materials”**. Submit requests to Closed Car Loading Rules Manager, dpls@aar.com.*

CAUTION: Car rocking motion caused by the lift equipment entering and/or exiting the rail car may cause unsupported packages or articles with a higher center of gravity to fall to the floor. Minimize access to the car. Exercise caution when inside a partially loaded car. Lift operators should stay on lift equipment, whenever possible, while inside a partially loaded car.

General

Cars must be inspected by shipper at loading point to verify that cars are in suitable condition. Car interiors must have, but are not limited to, sound roofs, sides, floors, and endwalls; and operable, snug-fitting doors. Any exception is cause for the car to be rejected.

It is important that boxcars are clean and free from protruding nails, brads, staples, temporary anchor plates, fragments of steel strap, old blocking etc. Some projections of lining or anchor devices may require covering with sheets of corrugated fiberboard taped in place.

Referenced paragraphs may be found in the Closed Car Loading Guide (CCLG) Part 1, *Minimum Loading Standards for Freight in General Purpose Boxcars*, January 2014.

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Unitizing

Unitizing shipping containers is an efficient means of handling, storing, loading, transporting, and unloading, which contributes to efficient utilization of carrier equipment. The following guidelines suggest ways to obtain the best stack stability in unit loads.

On Wood Pallets

1. Pallets can be of stringer, block, or similar design and constructed out of wood, plastic, or other suitable strength materials. Pallets or skids must of sufficient strength, construction, and size to support the shipping units during rail transportation.
2. Pallets have both top and bottom decks. Skids only have a top deck and no bottom deck. See Figure 1. References to pallets in this document includes the use of skids when using skids is appropriate based on the type of shipping unit.

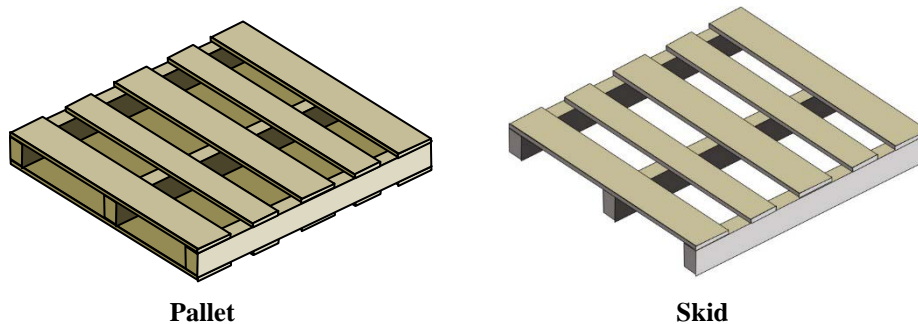


Figure 1 – Pallets or Skids

3. Ensure pallets are flat and level on both top and bottom surfaces. Pallets can be single-use or reusable. Reusable pallets must be of sufficient durability to be used multiple times without requiring repair.
4. Inspects pallets to ensure they are of sound construction with no delamination, no unsound or high frequency of knots, no excessive decay or wane, no splits or cracks that effect the component structure, no nail or fastener protrusions, and no missing or broken components or component sections including deckboards, stringers or stringerboards, or blocks.
5. Pallets are to meet the design and quality standards and tolerances set by the pallet manufacturer and relevant ASTM standards. Damaged pallets are to be repaired or removed from service. Repaired pallets and replacement components are to meet manufacturer's standards and tolerances.
6. Pallets can be two-way entry pallets with pallet handling entries on two opposite ends of the pallet, partial four-way pallets with pallet handling entries on two opposite ends of the pallet and limited entries on two sides of the pallet, and four-way entry pallets with pallet handling entries on all four sides of the pallet. Use four-way entry pallets in the doorway area to facilitate unloading. See Figure 2 for method of preparing two-way entry pallets for placement in the doorway are of the boxcar.

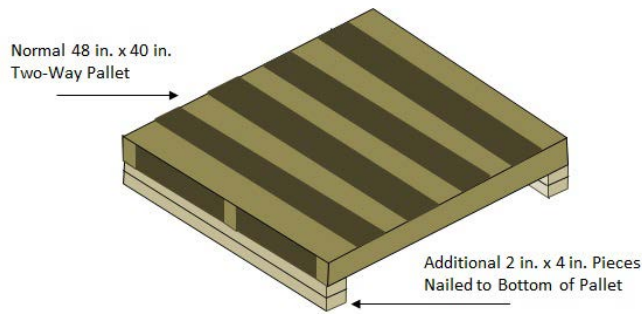


Figure 2 - Method of preparing a two-way pallet for placement crosswise in the doorway

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7. Wooden pallets constructed out of dense hardwoods are more durable and stronger than pallets constructed out of softwoods.
8. Pallets used for export shipments must meet the requirements of the International Standards for Phytosanitary Measures Publication No. 15 (ISPM 15) - Regulations of Wood Packaging Material in International Trade. Wood pallets must be made of debarked wood and heat treatment must meet the regulations and policies of the American Lumber Standards Committee (ALSC) - Wood Packaging Material (WPM) Program.
9. Stack boxes or bags in a bonded-block or other comparable unitizing method on the pallet. Bonded block stacking is intended for case goods and similarly dense products with strong internal stacking strength. Light cartons or similar products with little or no internal strength are intended to be straight or column stacked. If units consist of bags or bales, use adequate separator material between the product and the pallet. See Figure 3.

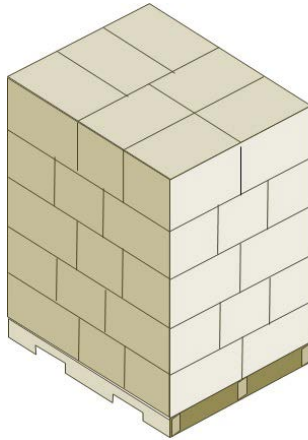


Figure 3 - Palletized cartons in bonded block pattern

10. The individual shipping units are to fill the footprint of the pallet with minimal pallet overhang (less than 1 in.).
11. No pallet underhang, lengthwise in the railcar, is permitted, except when filled with approved filler material. Space filled cannot exceed 8 inches. See Figure 4.

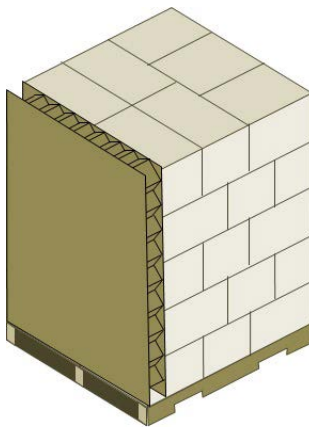


Figure 4 - Using lengthwise filler to fill pallet underhang

12. Lengthwise void fillers must be of uniform strength over the face of the void filler and capable of withstanding a load of 1,500 psf. The height and width of the void filler should be as near as possible to the dimensions of the palletized unit.

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13. Maintain vertical alignment of individual shipping units on pallets by using fillers, corrugated sleeves, corner protectors and strapping, stretch wrap, shrink wrap, stretch net, spot gluing, taping, or other proven methods. See Figure 5.

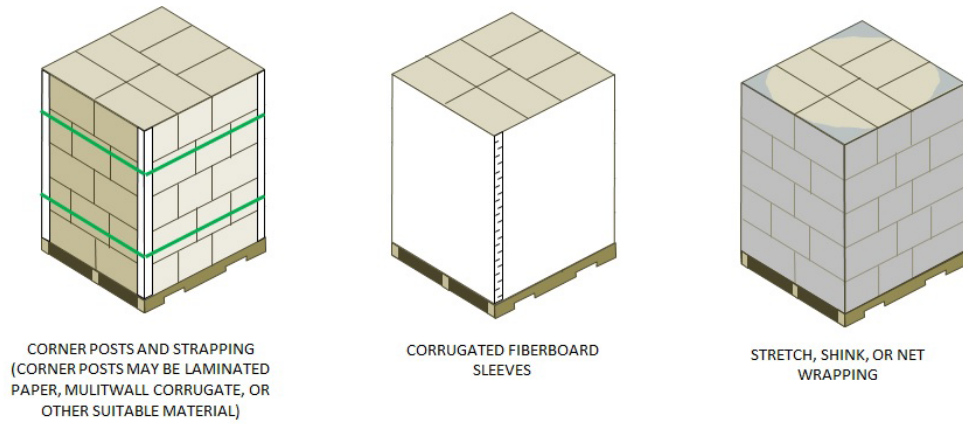


Figure 5 - Vertical alignment of unitized containers

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- 754** Wood Bins Braced by Disposable Inflatable Dunnage Bags and Lengthwise Fillers (CCLG Part 7) (10/16)
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- 760** Incomplete Layers of Plywood Secured in Boxcars with Nonmetallic Straps (CCLG Part 3) (2/17)
- 765** Wood Bins Braced by Disposable Inflatable Dunnage Bags and Shock-Gard® Lengthwise Void Fillers (CCLG Part 7) (7/17)
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- 784** Cased Goods Secured by S.A.M. D.I.D. Bags (ILG Method F-4) (5/18)
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- 791** DRUM-PAK® Dunnage for Open Head Drums in Cushioned Boxcars (CCLG Part 7) (6/18)
- 794** Peat Moss, Bagged or Baled, in Cushioned Boxcars (CCLG Part 8) (8/18)
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- 800** 54 in. Diameter Paperboard on End Using Rubber Mats (ILG Method E-22) (12/18)
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- 811** Plastic Intermediate Bulk Containers with Disposable Inflatable Dunnage Bags - Horen (CCLG Part 7) (6/19)
- 814** Bales of Wood Pulp in Boxcars (CCLG Part 8) (6/19)
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- 829** 39 in. Diameter Paper Rolls in 50 ft. Cushioned Boxcars Using Vertical Airbags (CCLG Part 2) (12/19)
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- 833** Double Layer Loads of Hazardous or Nonhazardous Materials Secured with Cordstrap® Barriers in a 20-ft Container (ILG Method I-4) (4/20)
- 834** Hazardous or Nonhazardous Loads Secured with Cordstrap® Barriers in 40-ft Containers (ILG Method I-5) (4/20)
- 835** Double Layer Loads of Nonhazardous Materials Secured with HFLASH RHS Securement System in a 20-ft Container (ILG Method I-7) (4/20)
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- 838** Unitizing with Stretch Wrap or Film, Stretch Wrap Roping, Shrink Netting or Shrink Film (CCLG Part 1; CCLG Part 6) (6/20)
- 839** Contour Pad Application with Roll Paper (CCLG Part 2) (6/20)
- 840** 79 in. Diameter Paper Rolls Loaded in 60 ft. Cushioned Boxcars with 16 ft. Double Plug Doors Secured with Double-S Straps (CCLG Part 2) (6/20)
- 841** 60 in. Diameter Roll Paper Loaded in 60 ft. Cushioned Boxcars with 12 ft. Plug Doors (CCLG Part 2) (6/20)
- 842** 52 in. Diameter Roll Paper Loaded in 50 ft. Cushioned Boxcars with Plug Doors. (CCLG Part 2) (6/20)
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- 844** 46 in. Diameter Roll Paper Loaded in 50 ft. Cushioned Boxcars with Plug Doors. (CCLG Part 2) (7/20)
- 845** Roll Paper in Boxcars with Doorway Rolls on Risers and Rubber Mats (CCLG Part 2) (7/20)
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847 50 in. Diameter Roll Paper in 50 ft. Boxcars – 21 & 22 Floor Spots (CCLG Part 2) (7/20)

848 Securing Incomplete Layers of Paper Rolls (CCLG Part 2) (7/20)

849 72 in. Diameter Paper Rolls Loaded in 60 ft. Cushioned Boxcars with 16 ft. Double Plug Doors Secured with Double-S Straps (CCLG Part 2) (7/20)

850 Unitizing – On Wood Pallets (CCLG Part 1) (8/20)