Double Layer Loads of Hazardous or Nonhazardous Materials Secured with Cordstrap® Barriers in a 20-ft Container
ILG Method I-4 HM
(Cancels GIS 779)

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

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GENERAL RULES

The General Rules relating to personal safety and the safe operation of trains, contained in AAR Circular Nos. 42-M 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This approval may be withdrawn if the loads using these methods exhibit consistent load failure during actual shipments.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 Director Damage Prevention and Loading Services, AAR/TTCI, 55500 DOT Road, Pueblo, CO 81001.

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

The following bracing method uses Cordstrap® barriers that are attached to the forward corner posts of a container with CornerLash® anchors.

Figure 4.53, General:

1. This load may contain up to 80 double-decked closed head steel or plastic drums loaded in a 4-4 pattern (with or without pallets) or a modified 4-3-4 pattern, intermediate bulk containers (IBC’s), or any palletized product which may be stacked two layers high. Palletized product must be secured to pallet by an approved method. Any combination of product mix is acceptable.

2. Use suitable vertical dividers between different product mix. When drums are loaded, this can be 1/4 in. plywood or equivalent.

3. The following layer separators have been evaluated and found acceptable for one-time use with this loading method. These separators were tested under simulated conditions, and their acceptance may be withdrawn if loads exhibit consistent load failures. If used with hazmat loads, these panels must be compatible with the contents of the lading.
4. Install CornerLash® strap anchors at the heights specified and thread Cordlash® 200LE Type 1A, Grade 7 strap through the anchors, extending out the container doors.

<table>
<thead>
<tr>
<th>Name</th>
<th>Thickness</th>
<th>Description</th>
<th>Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum Tite</td>
<td>3.0 mm, 3.2 mm</td>
<td>Eucalyptus hardboard</td>
<td>Lodge Lumber</td>
</tr>
<tr>
<td>Drum Sep</td>
<td>3.2 mm</td>
<td>Eucalyptus hardboard</td>
<td>Pasadena Skid and Pallet Inc.</td>
</tr>
<tr>
<td>Ship Tite 2</td>
<td>.375 in.</td>
<td>Corrugated (<em>not for use with corrosives</em>)</td>
<td>Allegheny Industrial Associates</td>
</tr>
<tr>
<td>Ship Tite 3</td>
<td>.625 in.</td>
<td>Corrugated (<em>not for hazmat use</em>)</td>
<td>Allegheny Industrial Associates</td>
</tr>
<tr>
<td>Ship Tite 5</td>
<td>3.2 mm</td>
<td>Corrugated</td>
<td>Allegheny Industrial Associates</td>
</tr>
<tr>
<td>Generic</td>
<td>3.0 mm</td>
<td>Eucalyptus hardboard</td>
<td>Greif</td>
</tr>
<tr>
<td>PlyVeneer®</td>
<td>3.0 mm</td>
<td>Wood veneer with a Kraft linerboard overlay</td>
<td>PlyVeneer Products</td>
</tr>
<tr>
<td>Tier 55</td>
<td>1.0 in., 0.50 in.</td>
<td>Corrugated</td>
<td>Damage Prevention Company</td>
</tr>
</tbody>
</table>

5. Use triple wall corrugated fiberboard or other suitable material such as buffer sheets between the lading and the straps in the doorway.
Figure 4.53, Sketches 1 & 2: Floor loaded drums
6. Interlace the straps around the last stacks of drums as shown in Sketches 1 & 2. Horizontally align the straps with lower drum rolling hoops and the upper drum rolling hoops or drum chimes. Join the straps using Dynablock® ladder-type buckles and tension with a Cordstrap CT50PN pneumatic tensioner.

**Figure 4.53, Sketch 1 - 80 drums in a modified 4-3-4 pattern**

- Horizontally align cornerlash anchors with upper drum rolling hoops on each layer
- 2 cornerlash strap anchors each corner
- Triple wall corrugated or other suitable material

**Figure 4.53, Sketch 2 - 80 drums in a 4-4 pattern**

- Horizontally align cornerlash anchors with upper drum rolling hoops on each layer
- 2 cornerlash strap anchors each corner
- Triple wall corrugated or other suitable material
Figure 4.53, Sketches 3, 4 & 5: Palletized drums

7. Palletized drums are loaded 4 to a pallet on CP3 or CP9 pallets measuring 44 7/8 in. (1,140 mm) in both dimensions. Stretch wrap drums to pallets. See Sketch 3.

Figure 4.53, Sketch 3 – drum pallet dimensions

8. The last two pallets of each stack and row are cross-strapped to make a tight connection between the last middle drums to the second to last side drums. This is done using two strap loops and a buckle. See Sketch 4. Alternately, apply adequate means to avoid protrusion of the middle drums, for example by tightly strapping the drums to the pallets.

Figure 4.53, Sketch 4 - drum unitizing to pallet
9. Secure the straps around the last stack of drums as shown in Sketch 5. The straps are horizontally aligned with the lower drum rolling hoops and the upper drum rolling hoops or upper drum chimes. Join the straps using Dynablock® ladder type buckles and tension with a Cordstrap CT50PN pneumatic tensioner.

Figure 4.53, Sketch 5 - 80 palletized drums

Figure 4.53, Sketches 6 & 7: IBC’s and mixed loads

10. Secure 2-in. x 4-in. lumber or other suitable material vertically to the corners of IBC’s for corner protection.

11. At the doorway, the straps are horizontally aligned at approximately 1/3 and 2/3’s of the height of the IBC’s or the palletized load as shown for IBC’s in Sketch 6. Join the straps using Dynablock® ladder type buckles and tension with a Cordstrap CT50PN pneumatic tensioner.

12. For all load types, use strap hangers or tape to maintain straps in position.
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Figure 4.53, Sketch 6 – IBC’s in 2 layers

Figure 4.53, Sketch 7 – mixed load, drums and IBC’s
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General Information Series Publications

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