

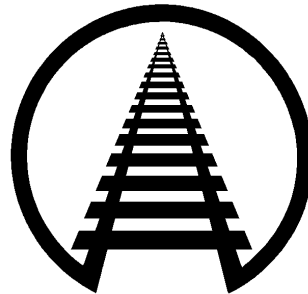


General Information Series No. 792

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This approval may be withdrawn if the loads using these methods exhibit consistent load failure during actual shipments.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

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

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.



Figure 4.53, Photo No. 1, CornerLash® strap anchor installed

5. Use triple wall corrugated fiberboard or other suitable material such as buffer sheets between the lading and the straps in the doorway.

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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.

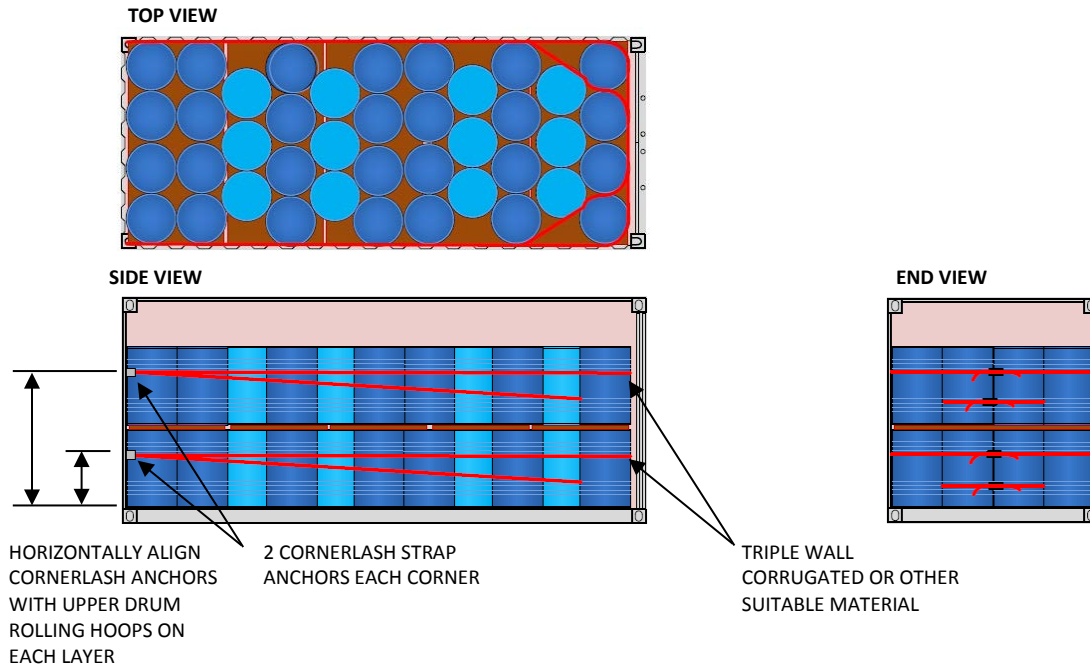


Figure 4.53, Sketch 1 - 80 drums in a modified 4-3-4 pattern

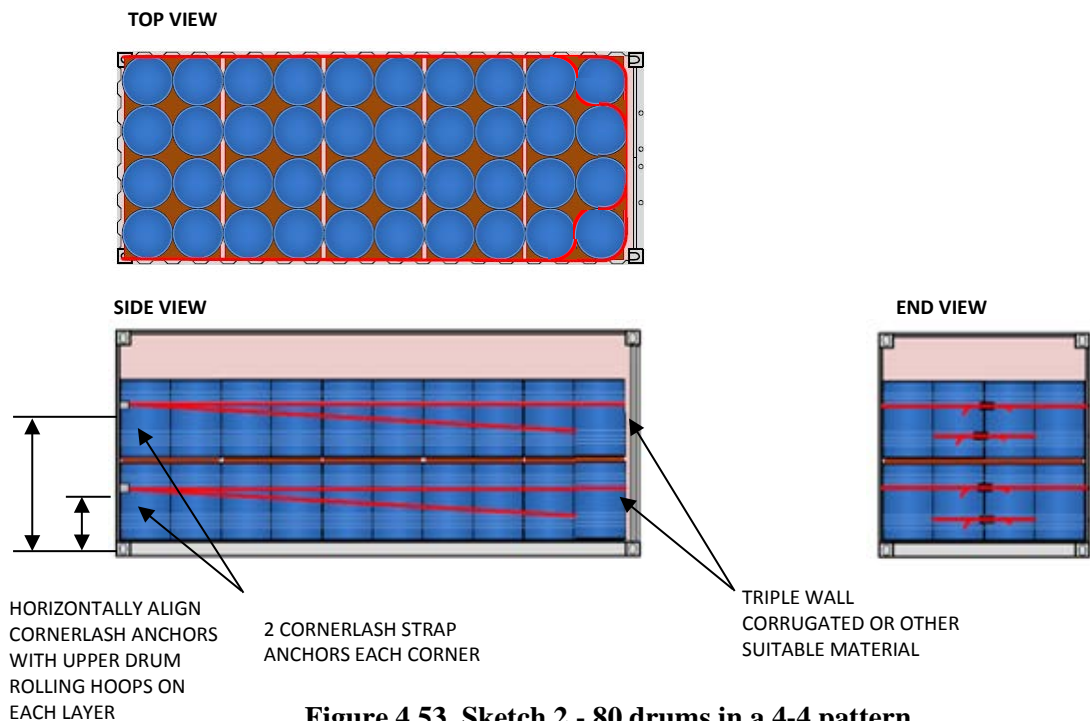


Figure 4.53, Sketch 2 - 80 drums in a 4-4 pattern

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Figure 4.53, Sketches 3, 4 & 5: Palletized drums

- 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.

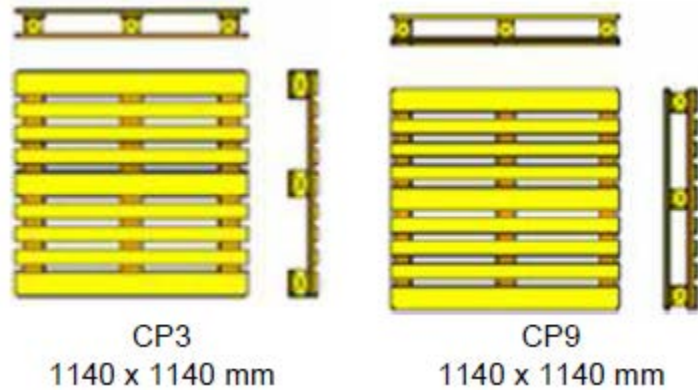


Figure 4.53, Sketch 3 – drum pallet dimensions

- 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.

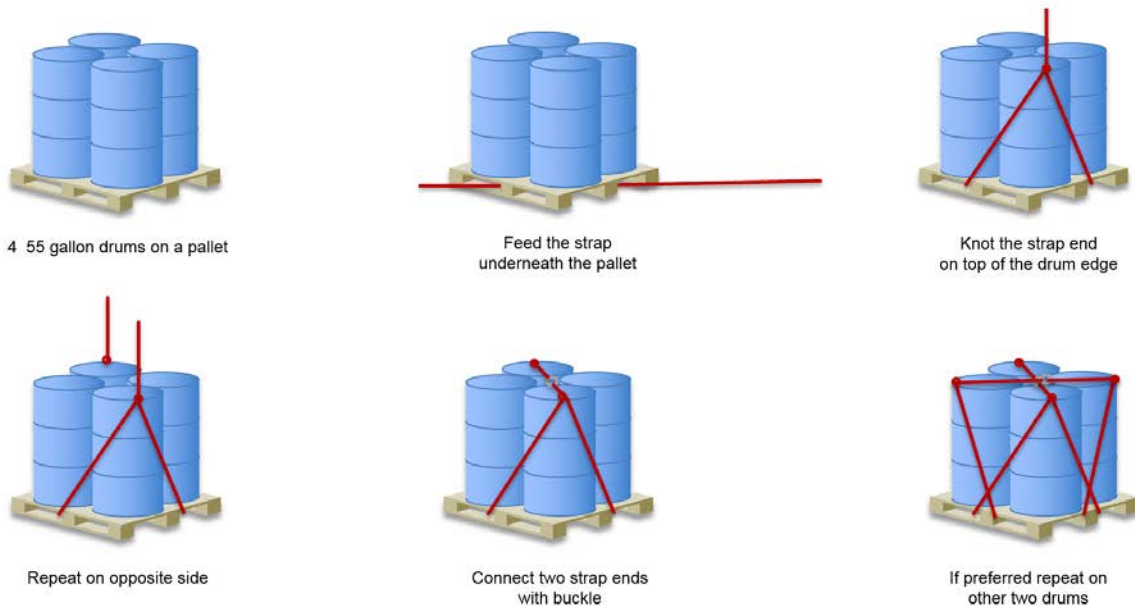


Figure 4.53, Sketch 4 - drum unitizing to pallet

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- 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.

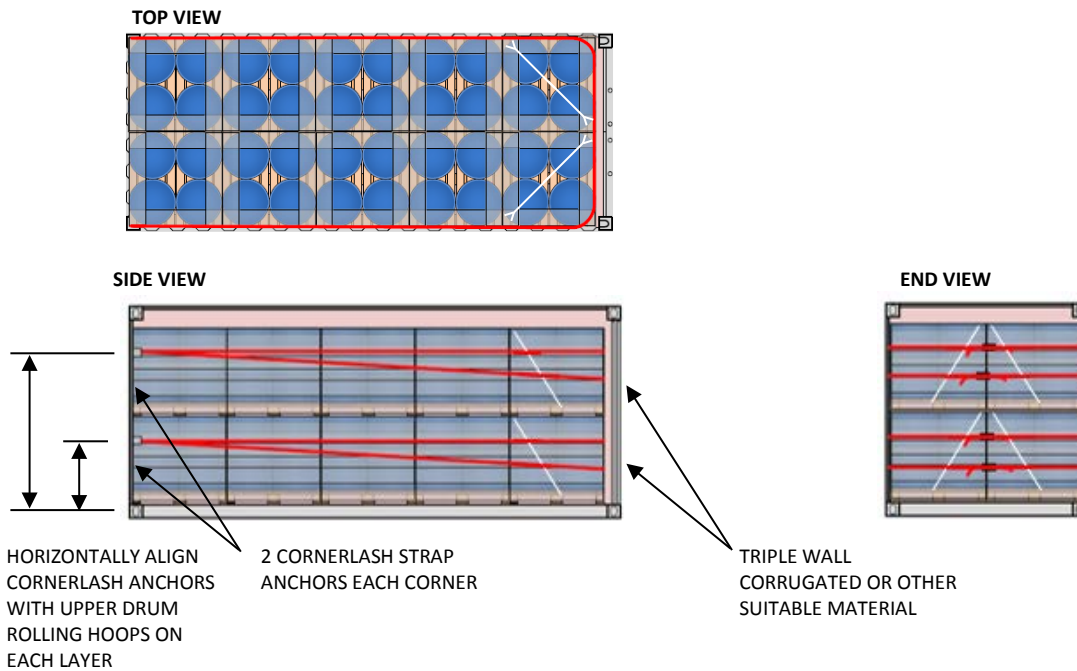


Figure 4.53, Sketch 5 - 80 palletized drums

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

- Secure 2-in. x 4-in. lumber or other suitable material vertically to the corners of IBC's for corner protection.
- 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.
- For all load types, use strap hangers or tape to maintain straps in position.

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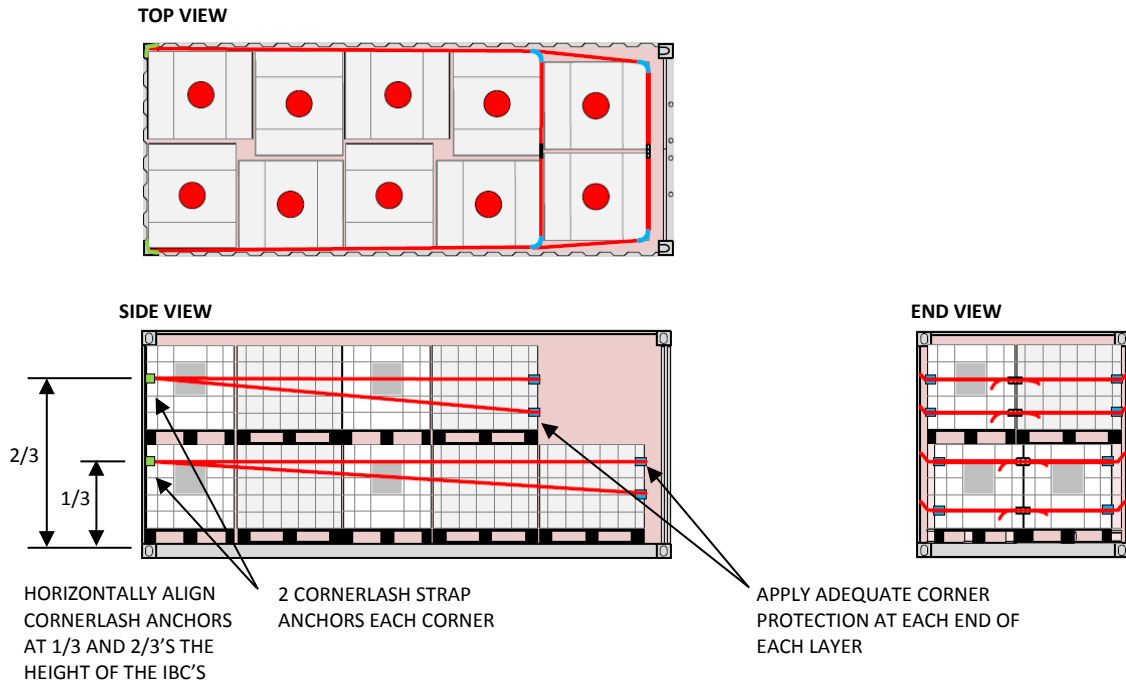


Figure 4.53, Sketch 6 – IBC's in 2 layers

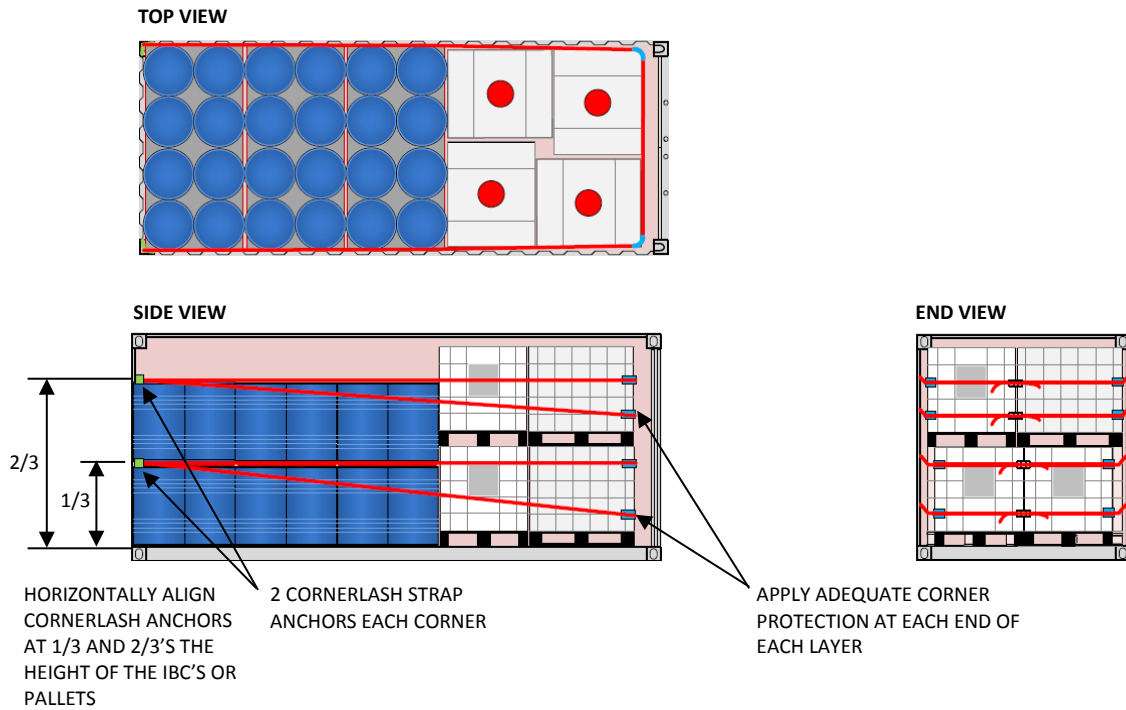


Figure 4.53, Sketch 7 – mixed load, drums and IBC's

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Double Layer Loads of Hazardous or Nonhazardous Materials Secured with Cordstrap® Barriers in a 20-ft Container (Intermodal Loading Guide Method I-4 HM)

General Information Series Publications

- 749 50 in. Diameter Roll Paperboard in 50 ft. Cushioned Boxcars with Horizontal Airbags (8/16)
- 750 Double Layer Loads of 55 Gallon Closed Head Steel Drums Secured with Cordstrap® Barriers in a 20-ft Container (Intermodal Loading Guide Method I-4HM) (8/16)
- 752 Large Diameter Paper Rolls in 60 ft. Cushioned Boxcars with Anchored Straps (10/16)
- 753 60 in. Diameter Roll Paperboard in 60 ft. Boxcars with Doorway Stacks on Risers (10/16)
- 754 Wood Bins Braced by Disposable Inflatable Dunnage Bags and Lengthwise Fillers (CCLG Part 7, Section 6.3 Revised 10/16)
- 755 55-Gallon Steel Drums on Pallets Secured with Cordstrap® Barriers in 40-ft ISO Containers (Nonhazardous Materials only) (Intermodal Loading Guide Method I-6) (new 11/16)
- 757 46 in. to 57 in. Diameter Roll Paper on End Using Rubber Mats (Revised Intermodal Loading Guide Method E-21) (1/17)
- 758 58 in. Diameter Roll Pulpboard with an Incomplete Second Layer Loaded On End (Former Pamphlet No. 39, Method 11) (2/17)
- 759 Revision to Paragraph 2.5, Distribution of Weight Crosswise in Cars, CCLG Part 10, Primary Metals (2/17)
- 760 Incomplete Layers of Plywood Secured in Boxcars with Nonmetallic Straps, CCLG Part 3, Plywood (2/17)
- 761 37 in. Diameter Plastic Stretch Wrapped Kraft Rolls Loaded in a Single Layer in 60 ft. Cushioned Boxcars Using Rubber Mats and Lengthwise Filler Panels (3/17)
- 763 Roll Paperboard in Boxcars with Doorway Stacks on Risers and Rubber Mats (6/17)(Cancels GIS 762)
- 764 Non-metallic Strap Substitution for Steel Strap as Doorway Protection in Boxcars (Cancels GIS 756) (06/17)
- 765 Wood Bins Braced by Disposable Inflatable Dunnage Bags and Shock-Gard® Lengthwise Void Fillers (7/17)
- 766 45 in. Diameter Roll Paper in 60 ft. Cushioned Boxcars with Double Plug Doors (8/17)
- 768 Gearboxes Mounted on Sleds in 20 ft. Long ISO Containers (9/17)
- 769 42 in. Diameter Roll Paper in 60 ft. Cushioned Boxcars Using Rubber Mats and Airbags (CCLG Part 2, 8.3.2.6)(9/17)
- 770 48 in. Diameter Roll Paper in 50 ft. Cushioned Boxcars Using Horizontal Airbags (CCLG, Part 2, Section 8) (9/17)
- 771 50 in. Diameter Roll Paper in 50 ft. Cushioned Boxcars Using Sidewall Fillers and Horizontal Airbags (CCLG, Part 2, Sections 5.6.10 & 8.2.4.4 Revised)(10/17)
- 772 81 in. Diameter Roll Paperboard in 50 ft. Standard Draft Gear Boxcars with Sliding Doors (CCLG Part 2, Section 8.2.8.1) (10/17)
- 773 42 in. Diameter Roll Paper in 50 ft. Cushioned Boxcars with 12 ft. Doors (CCLG Part 2, Section 8.2.2.5) (12/17)
- 774 48 in. Diameter Roll Paper in 60 ft. Cushioned Boxcars with 16 ft. Double Doors (CCLG Part 2, Section 8.3.4.5) (12/17)
- 775 54 in. Diameter Paperboard on End Using Rubber Mats (New Intermodal Loading Guide Method E-22)(January 2018)
- 776 45 in. Diameter Roll Paper in 50 ft. Cushioned Boxcars with 12 ft. Doors (CCLG Part 2, Section 8.2.3.8) (2/18)
- 777 Double Layer Loads of 76-55 Gallon Drums Secured with Ty-Gard DS™ Barriers in 20-ft Containers (Intermodal Loading Guide Method B-9)(3/18)
- 778 Split Loads of 58 in. Diameter Roll Pulpboard on End Using Rubber Mats when Stowed in Trailers Having Large Metal Plates Approximately 9 ft. in Length at the Nose (Intermodal Loading Guide Method E-22)(4/18)
- 780 Loads Secured with Cordstrap® Barriers in 40-ft Containers (ILG Method I-5HM) (3/18) Cancels GIS 745
- 781 Wood Bins Braced by Disposable Inflatable Dunnage Bags and BIN-PAK™ or M-PAK® Lengthwise Void Fillers (4/18)
- 782 Plastic Intermediate Bulk Containers with Disposable Inflatable Dunnage Bags and Lengthwise Void Fillers – Schoeller Allibert (CCLG Part 7, Section 6.2)(4/18)
- 783 Cased Goods Secured by Tuff Wrap™ D.I.D. Bags (Intermodal Loading Guide Method F-4 New)(4/18)
- 784 Cased Goods Secured by Rothschenk S.A.M. D.I.D. Bags (Intermodal Loading Guide Method F-4 New)(5/18)
- 785 Intermodal Loads Secured with TyGard DS™ (Intermodal Loading Guide Method B-9 New)(5/18)
- 786 Aluminum Coils on Platforms/Skids Loaded on Rubber Mats & Secured by Two Floor Anchored Web Straps & Supplemental Securement Straps (CCLG Part 9, Section 8.6) (6/18)
- 787 Universal Storage Containers Loaded in 53 ft. Intermodal Containers (ILG Method H-15 New)(6/18)
- 788 60 in. Diameter Roll Paperboard in 60 ft. Cushioned Boxcars with 12 ft. Wide Plug Doors (CCLG Part 2, 8.3.7.2)(6/18)
- 789 Split Loads of 58 in. Diameter Roll Pulpboard on End Using Rubber Mats when Stowed in Trailers Having Large Metal Plates Approximately 9 ft. in Length at the Nose (Intermodal Loading Guide Method E-19 Revised)(6/18)
- 790 58 in. Diameter Roll Paperboard in 50 ft. Cushioned Boxcars with 12 ft. Wide Plug Doors (CCLG Part 2, 8.2.5.8 Revised)(6/18)
- 791 DRUM-PAK® Dunnage for Open Head Drums in Cushioned Boxcars (CCLG Part 7, Section 6.9) (6/18)
- 792 Double Layer Loads of Hazardous or Nonhazardous Materials Secured with Cordstrap® Barriers in a 20-ft Container (ILG Method I-4) (8/18) (Cancels GIS 779)