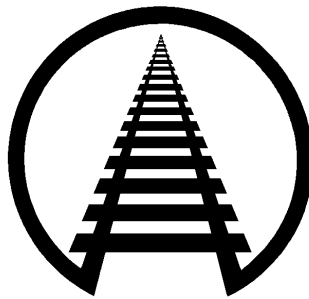


# General Information Series No. 854

## Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

(Cancels GIS 843; CCLG Part 8, section 8.4 (revised))

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



Issued  
October 2020

Published by  
Association of American Railroads/TTCI  
Damage Prevention and Loading Services  
55500 DOT Road  
Pueblo, CO

© 2020

## General Information Series No. 854

### Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

#### GENERAL RULES

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This approval may be withdrawn if the loads using these methods exhibit consistent load failure during actual shipments.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](mailto: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) and Closed Car Loading Guide Part 8, *Minimum Loading Standards for Bagged and Baled Commodities in Closed Car* (July 2014).

## General Information Series No. 854

### Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

#### 8.4 Paper Bales & Wood Pulp Bales

##### 8.4.1 Steel Strapping

**8.4.1.1** Use AAR approved 1¼ in. x 0.029 in. steel strapping as doorway protection in boxcar shipments of baled paper and wood pulp products. More detailed information regarding steel strapping is available in the [Closed Car Loading Guide, Part 1, "Minimum Loading Standards for Freight in General Purpose Boxcars."](#)

Note: For the latest updates of approved strapping, go to the TTCI Web site at:  
<http://www.aar.com/standards/OpenTop-approvals.html>

##### 8.4.2 Nonmetallic Strapping

**8.4.2.1** Approved nonmetallic strapping can be used as an alternative to steel strapping. Apply straps in the belt-loop or unitization application method as listed in Table No.1 based on grade of strapping and application method.

Only the nonmetallic strap listed on the [Nonmetallic Strap Substitution for Doorway Protection Product Performance Profile](#) is approved for use as a method of doorway protection. More detailed information regarding nonmetallic strapping is available in the [Closed Car Loading Guide, Part 1, "Minimum Loading Standards for Freight in General Purpose Boxcars."](#)

Note: For the latest updates of approved strapping, go to the TTCI Web site at:  
<http://www.aar.com/standards/OpenTop-approvals.html>

ASTM Type and Grade*	Size	Application
Type 1A, Grade 3	1¼ in. Wide	<b>Belt Loop Application</b>
Type 1A, Grade 4	1¼ in. Wide	<b>Belt Loop Application</b>
Type 1A, Grade 5	1½ in. Wide	<b>Belt Loop Application</b>
Type 1A, Grade 4	1¼ in. Wide	<b>Doorway Unitization</b>

\* See ASTM Standard D3950, Standard Specification for Strapping, Nonmetallic, for information on strapping type and grade, and testing procedures.

**Table No. 1** – Nonmetallic strapping application

**8.4.2.2** The straps are to be tensioned and joined using the correct buckle and tensioning tools in accordance with manufacturer's instructions. It is important that the buckle be applied properly to maintain strap tension.

##### 8.4.3 Doorway Straps Application

**8.4.3.1** Bales loaded in the doorway area can be individual bales or unitized into bundles. Strapping can be applied in either conventional application (steel straps) or belt-loop application (nonmetallic straps). See Figure No. 1.

- Individual bales: Use one strap per layer in the doorway.  
For alternative application method for individual bales see [paragraphs 8.4.5](#) and [8.4.6](#).
- Unitized bundles maximum 4 ft. in height – Use two straps spaced over the facing of the total unitized bundles. If unitized bundles are stacked in the doorway area - apply two straps per layer of the total unitized bundles.
- Unitized bundles over 4 ft. in height – Use one additional strap for every additional 2 ft. of unitized bundle height over 4 ft. Space straps evenly across the facing of the unitized bundles. If unitized bundles are stacked in the doorway area - apply straps as outlined based on height per layer of the total unitized bundles

Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

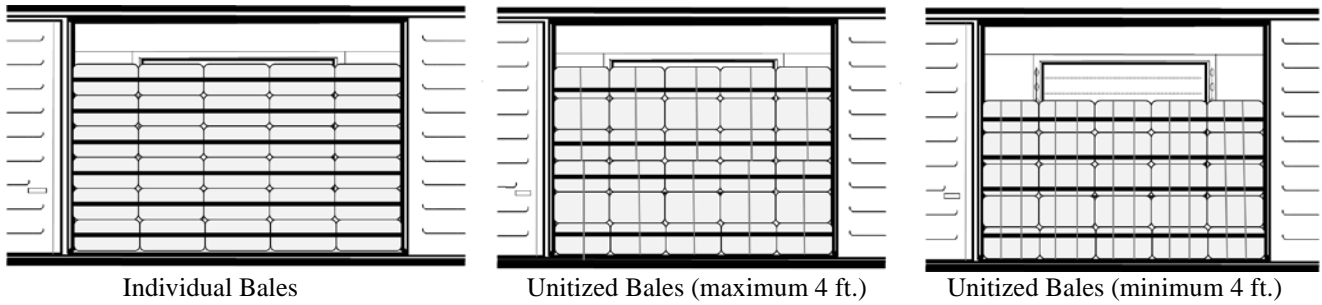


Figure No. 1 – Application of doorway strapping

8.4.3.2 Conventional Doorway Strap Application (Steel Strapping)

In conventional doorway strap application, steel straps are anchored to opposite doorposts and brought together under tension and joined with seals. See Figure No. 2.

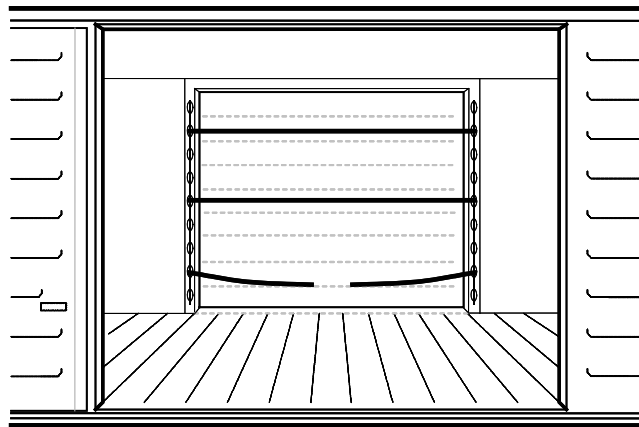


Figure No. 2 - Conventional doorway application

8.4.3.3 Belt Loop Application (Nonmetallic Strapping)

In a belt loop application, a nonmetallic strap is threaded through matching anchor points on opposite doorposts as one continuous strap and brought together and joined with a buckle and tensioned. See Figure No. 3. On the loading door, two straps and two buckles may be used to create the looped strap.

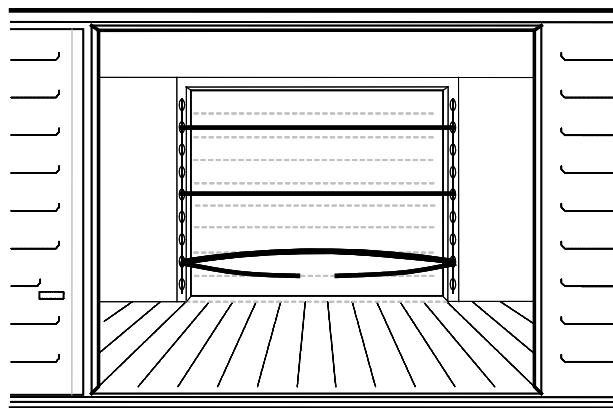


Figure No. 3 - Belt loop application

## General Information Series No. 854

### Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

#### 8.4.4 Doorway Unitization Application

##### 8.4.4.1 Doorway Unitization Application – Paper Bales

This application is limited to loads where the lengthwise doorway stacks fill the entire door opening. Use a minimum of two vertically oriented straps as shown for a single stack in the doorway area. If there is more than one stack completely in the doorway area, use two straps per stack. See Figure No. 4.

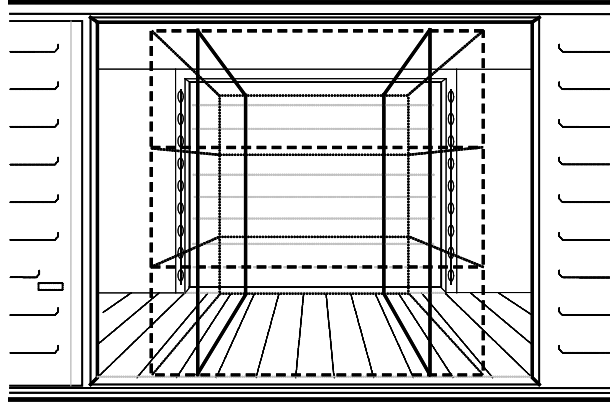


Figure No. 4 - Doorway unitizing application (paper bales)

##### 8.4.4.2 Doorway Unitization Application – Wood Pulp Bales

8.4.4.2.1 If bales in the doorway area are stacked to greater than 50% of the height of the doorframe, use two vertical steel or nonmetallic straps per row in the doorway area.

See Figure No. 5.

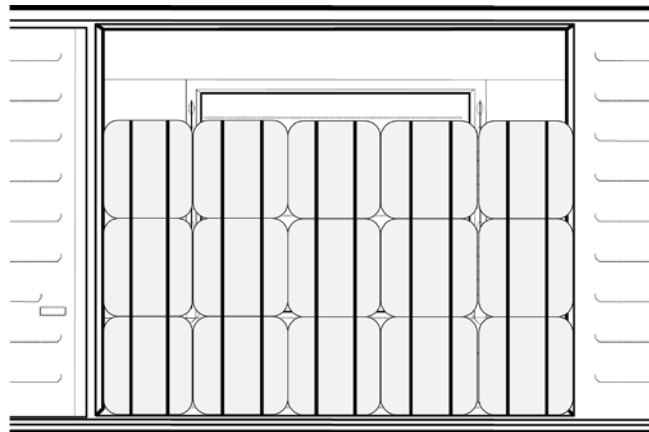
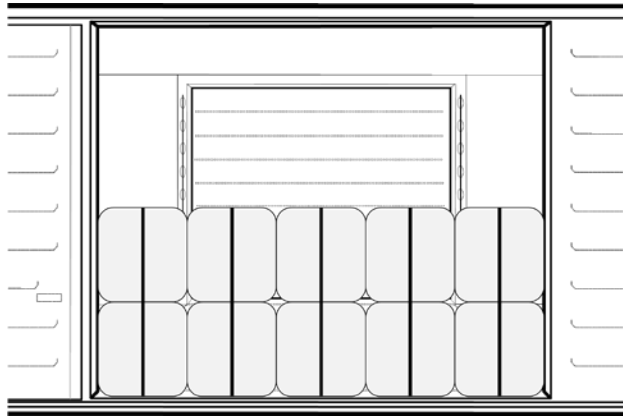


Figure No. 5 - Doorway unitizing application (wood pulp)

8.4.4.2.2 If bales in the doorway area are stacked to less than 50% of the height of the doorframe, use one vertical steel or nonmetallic strap per row in the doorway area. See Figure No. 6.

**Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars**



**Figure No. 6** – Doorway unitizing application (wood pulp)

**8.4.5 Doorway Protection for Individual Bales of Wood Pulp in Single Plug Door Boxcars**

This method of doorway protection for individual bale layers is applicable to wood pulp bales loaded in boxcars with single plug doors. Other bale types or boxcar door types are not suitable for this method of doorway protection.

1. Individual bales can be stacked to a maximum height of six stacked bales in the doorway area. Bale stacks are to be vertically aligned.
2. Bales are to be loaded centered in the doorway area and not contacting either doorway. The bale loading pattern and securement methods are to follow applicable loading methods.
3. Apply four straps of AAR approved Type 1A, Grade 5 nonmetallic strapping in the belt-loop application in each doorway. The four straps will be applied in-line with the top four doorway bale layers. See [paragraph 8.4.3.3](#). See Figure No. 3 and Figure No. 7.
4. The straps are to be tensioned and joined using the correct buckle (wire or ladder) and tensioning tools in accordance with manufacturer's instructions. It is important that the buckle be applied properly to maintain strap tension.



**Figure No. 7** – Doorway protection for individual bales (wood pulp) in single plug door boxcars

## General Information Series No. 854

### Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

#### 8.4.6 Using an X-strap Replacement for a Single Layer Straps when a Doorpost Anchor is Not Available

This method of doorway protection for individual bale layers is applicable to wood pulp bales loaded in boxcars when a single doorpost anchor is not available. A single X-Strap set can be applied on each doorway. If doorpost anchors are not present in the railcar or multiple anchors are not available select another method of doorway protection. X-Straps may not be applied for the bottom or top layer of bales.

1. Bales are loaded as individual units in the doorway area and are not unitized into bundles. Bale stacks are to be vertically aligned.
2. Bales are loaded centered in the doorway area and not contacting either doorway. The bale loading pattern and securement methods follow applicable loading methods.
3. Use AAR approved Type 1 A, Grade 5 nonmetallic strapping in the belt-loop application. See [paragraph 8.4.3.3](#). See Figure 3.
4. Apply one strap belt-looped per layer in each doorway.
5. For the bale layer that a doorpost anchor is not available, on each side of the doorway, select either:
  - The doorpost anchors directly above and below the doorpost anchor that is not available (skip no more than one doorpost anchor between the top and bottom anchor), or
  - The side wall anchors that are approximately equal with or directly above or below the doorpost anchor that is not available (skip no more than one side wall anchor between the top and bottom anchor). Use the side wall anchors that are closest to the doorframe.
6. Thread the strap through the top selected anchor on the right side of the doorway and then through the bottom selected anchor on the left side of the doorway. Using the belt-loop method, connect the straps with an appropriate wire or ladder buckle.
7. Thread the strap through the top selected anchor on the left side of the doorway and then through the bottom selected anchor on the right side of the doorway. Using the belt-loop method, connect the straps with an appropriate wire or ladder buckle.
8. The straps will form an X directly in front of the bale layer with the doorpost anchor that is not available. Ensure that the angle of the X-strapping allows for the strapping to contact all bales in the layer. If the strapping angle is too large or steep, bales closer to the doorpost may not contact the X-strapping. See Figure 8.
9. All straps are to be tensioned and joined using the correct buckle (wire or ladder) and tensioning tools in accordance with manufacturer's instructions. It is important that the buckle be applied properly to maintain strap tension.

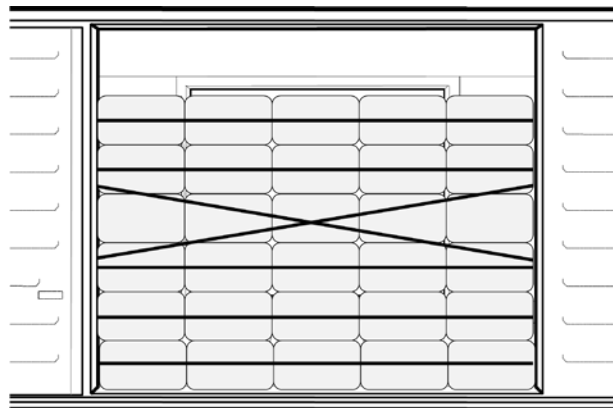


Figure No. 8 – Doorway protection with X-Strap replacement

## General Information Series No. 854

### Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars

#### General Information Series Publications

- 754** Wood Bins Braced by Disposable Inflatable Dunnage Bags and Lengthwise Fillers (CCLG Part 7) (10/16)
- 755** 55-Gallon Steel Drums on Pallets Secured with Cordstrap® Barriers in 40-ft ISO Containers (Nonhazardous Materials only) (ILG Method I-6) (11/16)
- 759** Revision to Paragraph 2.5, Distribution of Weight Crosswise in Cars (CCLG Part 10) (2/17)
- 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)
- 768** Gearboxes Mounted on Sleds in 20 ft. Long ISO Containers (ILG Method E-23) (9/17)
- 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 (ILG Method E-23) (3/18)
- 781** Wood Bins Braced by Disposable Inflatable Dunnage Bags and BIN-PAK or M-PAK Lengthwise Void Fillers (CCLG Part 7) (4/18)
- 782** Plastic Intermediate Bulk Containers with Disposable Inflatable Dunnage Bags and Lengthwise Void Fillers – Schoeller Allibert (CCLG Part 7) (4/18)
- 783** Cased Goods Secured by Tuff Wrap™ D.I.D. Bags (ILG Method F-4) (4/18)
- 784** Cased Goods Secured by S.A.M. D.I.D. Bags (ILG Method F-4) (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) (6/18)
- 787** Universal Storage Containers Loaded in 53 ft. Intermodal Containers (ILG Method H-15) (6/18)
- 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)
- 795** Coiled Metal on Platforms/Skids in Boxcars (CCLG Part 9) (8/18)
- 797** 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 (ILG Method E-19) (11/18)
- 798** Intermodal Loads Secured with TyGard DS™ (ILG Method B-9) (11/18)
- 799** 46 in. to 57 in. Diameter Roll Paper on End Using Rubber Mats (ILG Method E-21) (12/18)
- 800** 54 in. Diameter Paperboard on End Using Rubber Mats (ILG Method E-22) (12/18)
- 803** Stretch Film Roping of Steel Coils and Coil Loading Methods for Railroad Shipments (CCLG Part 9) (12/18)
- 810** Reinforced Longitudinal Void Fillers for Plastic, Metal or Wood Intermediate Bulk Containers with Tomato Products (CCLG Part 7) (4/19)
- 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)
- 817** Case Goods Secured by Stopack Max Blocker D.I.D Bags (ILG Method F-5) (9/19)
- 822** Palletized or Crated Auto Parts Secured by Web Strap Assemblies in 53 ft. Containers (ILG Method H-16) (9/19)
- 823** Plywood and Similar Panels Products – Loading Doorway Areas (CCLG Part 3) (10/19)
- 824** Case Goods Secured by Stopack Blocker D.I.D Bags (ILG Method F-6) (10/19)
- 825** Loading Bundled Ingots with Open Doorways (CCLG Part 10) (10/19)
- 826** Building Brick in Closed Cars – Incomplete Layer Securement – Woodpack Walls (Litco) (CCLG Part 5) (11/19)
- 827** Drum Layer Separators for Intermodal Shipments (Hazardous or Nonhazardous) (ILG Methods: B-3; B-8; B-9 (GIS 798); G-2; G-3; I-1; I-2; I-3; & I-4 (GIS 792)) (11/19)
- 828** 44 in. Diameter Paper Roll in 50 ft. Cushioned Boxcars Using Horizontal Airbags (CCLG Part 2) (12/19)
- 829** 39 in. Diameter Paper Rolls in 50 ft. Cushioned Boxcars Using Vertical Airbags (CCLG Part 2) (12/19)
- 831** Metal Intermediate Bulk Containers with Disposable Inflatable Dunnage Bags and Lengthwise Void Fillers – Goodpack USA (CCLG Part 7) (3/20)
- 832** 47 in. Diameter Roll Paper Loaded in 60 ft. Cushioned Boxcar with Plug Doors. (CCLG Part 2) (4/20)
- 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 HLASH RHS Securement System in a 20-ft Container (ILG Method I-7) (4/20)
- 836** Wood Bin Containers for Shipping Liquid or Paste Products in Boxcars (CCLG Part 7) (5/20)
- 837** 54 in. Diameter Roll Paper Loaded in 50 ft. Boxcars (CCLG Part 2) (5/20)
- 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)
- 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)



## **General Information Series No. 854**

### **Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars**

#### **General Information Series Publications**

- 846** Securing Incomplete Layers of Paper Rolls (CCLG Part 2) (7/20)
- 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)
- 851** 50 in. Diameter Roll Paper in 50 ft. Cushioned Boxcars with Plug Doors – 23 Floor Spots (CCLG Part 2) (8/20)
- 852** Cased Goods Secured by Cargo Tuff Dually™ D.I.D. Bags (ILG Method F-7) (9/20)
- 853** 59 in. Diameter Cellulose Loaded in 60 ft. Cushioned Boxcars with 16 ft. Plug Doors (CCLG Part 2) (10/20)
- 854** Doorway Protection for Baled Paper and Wood Pulp Products in Boxcars (CCLG Part 8) (10/20)