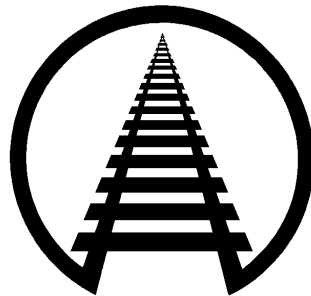


General Information Series No. 803

Stretch Film Roping of Steel Coils and Coil Loading Methods for Railroad Shipments

(CCLG Part 9, Section 4.4. (revised) (Cancels GIB 8)

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.

Box cars for the loading of metals of heavy concentrated weight must be inspected by the shipper (either before commodities are for loading or at loading point) to verify that they are in suitable condition to safely carry loads to destination. The shipper should check the box car to verify that the floors and supporting structure are in good condition. If the shipper has any doubts concerning the condition of the car, the serving railroad should be contacted. Reference CCLG Part 9 – Section 2.1.7 for further information on concentrated weight shipments.

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This approval may be withdrawn if the loads using these methods exhibit consistent load failure during actual shipments.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: 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 to carry load safely to destination. Cars must have sound roofs, sides, floors and end walls; and operable, snug-fitting doors.

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 9, Coiled Metal Products in Closed Car.

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Close Car Loading Guide Part 9 – Minimum Loading Standards of Coiled Metal Products in Closed Cars

Section 4.4 High-Friction and Stretch-Rope Packaging (revised)

4.4.1 Stretch film is made from linear low-density polyethylene resins and may be used for load containment. Machine films are the preferred method where speed and consistency of wrapping are needed. Stretch film has “memory” while applying the film it is stretched as it is being applied. This memory pulls on the film creating tension, keeping the coil tight to the pallet. Common roping patterns are referred to as 1-3 and 2-2 depending on the number of corners the rope catches per revolution of the wrap.

4.4.2 Only the following methods using high friction layers and stretch-film roping have been evaluated and found acceptable.

4.4.3 Coils are secured on wood skids by the Alcoa, Inc., the Weirton Steel or the Bethlehem Steel stretch film roping method.

- Alcoa, Inc. packaging patents US No. 5,918,745; US No. 6,125,612, Canada No. 2,277,514 – Reference Figure 1
- Weirton Steel packaging patent U.S. No. 5,941,050 - Reference Figure 2.
- Bethlehem Steel stretch film roping method – Reference Figure 3.

	Alcoa Inc. Method	Weirton Steel Method:	Bethlehem Steel Method:
Coil Wt.:	Up to 28,000 lbs.	Up to 24,000 lbs.	Up to 24,000 lbs.
Skid Size:	48 in. x 40 in.	56 in. (most common)	56 in. (most common)
Pad (base):	Shoddy	Shoddy	Foam
Pad Composition:	140 G/sq. ft.	110 gm/sq. ft.	3.5 lb. density, ½ in. thick
Film:	Polyethylene (blown)	Polyethylene (cast)	Polyethylene (blown)
Film Gauge:	150	165	150
Film Width:	not specified	20 in.	20 in.
Pre-stretch:	not specified	240%	150-250%
Ropes/Corner:	5-8	6	3 minimum
Tension/Rope:	650lb tension at corners	30-40 lbs. per rope depending on skid size	40 lbs. per rope depending on skid size

4.4.4 Coils with stretch rope packaging may be loaded per Closed Car Loading Guide Part 9, Section 7.5. Wood guide rails and back-up cleats may be used in lieu of welded guide rails – see section 7.3.6.

- For more detailed information regarding wood and nailing refer to Close Car Loading Guide Part 1 or AAR *Open Top Loading Rules Manual*, Section 1, Appendix D, “Material Mechanical Properties”.

4.4.5 Coils with the Weirton Steel and Bethlehem Steel stretch rope packaging methods may be loaded per Closed Car Loading Guide part 9, Section 8.2 and Section 5.5 (GIS795) – Floor Anchored Straps

4.4.6 Metal Coils secured by floor anchored strap systems may require additional securement to prevent the coils from tipping in transit. Coils have a height to base width (diameter) ratio of 1.0 or greater require supplemental securement. For more information reference Closed Car Loading Guide Part 9, Section 3.2 (GIS 795, Metal Coils on Platforms/Skids in Boxcars) and GIS 786, Aluminum Coils on platforms/skids Loaded on Rubber Mats & Secured by Two Floor Anchored Web Straps and Supplemental Securement Straps.

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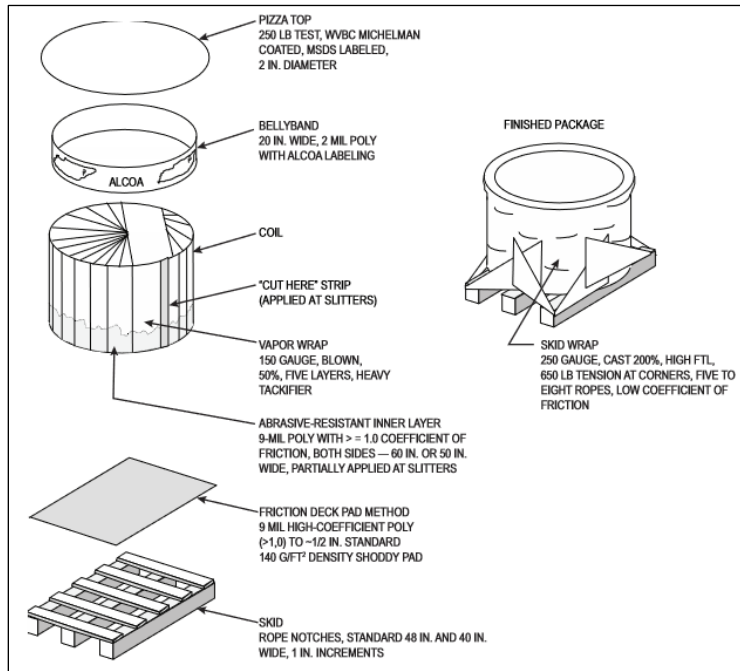


Figure 1 – Alcoa, Inc. Stretch Film Roping Method

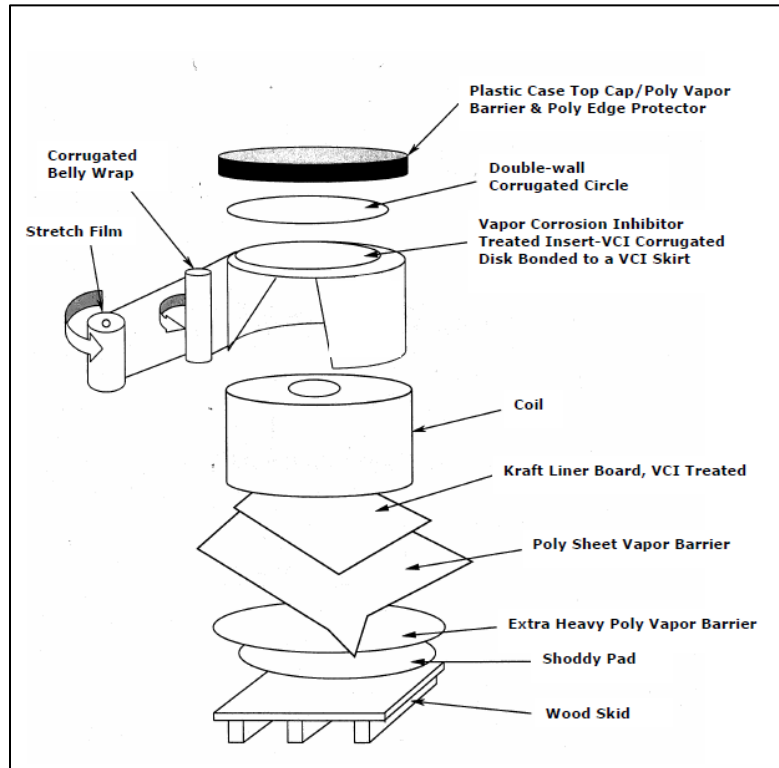


Figure 2 - Weirton Steel Stretch Film Roping Method

Stretch Film Roping of Steel Coils and Coil Loading Methods for Railroad Shipments

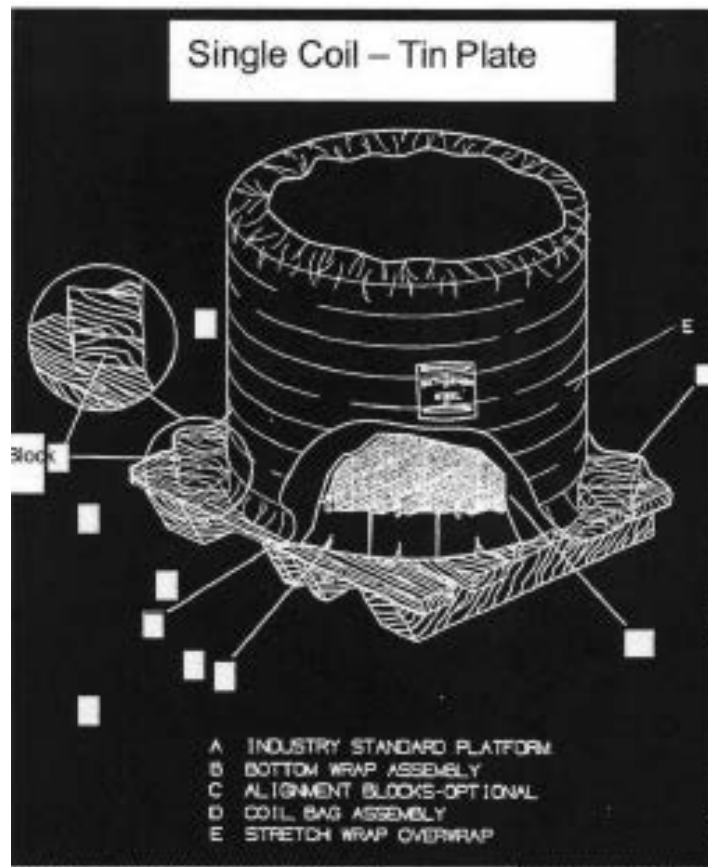


Figure 3 - Bethlehem Steel Stretch Film Roping Method

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Stretch Film Roping of Steel Coils and Coil Loading Methods for Railroad Shipments

General Information Series Publications

- 740** Doorway Protection for Baled paper in Boxcars (11/14)
- 749** 50 in. Diameter Roll Paperboard in 50 ft. Cushioned Boxcars with Horizontal Airbags (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)
- 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)
- 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)
- 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)
- 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-23) (3/18)
- 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 S.A.M. D.I.D. Bags (Intermodal Loading Guide Method F-4 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)
- 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) (7/18) (Cancels GIS 779)
- 793** Hazardous or Nonhazardous Loads Secured with Cordstrap® Barriers in 40-ft Containers (ILG Method I-5HM) (8/18) (Cancels GIS 780)
- 794** Peat Moss, Bagged or Baled, in Cushioned Boxcars (CCLG Part 8, Section 6.6, New) (8/18)
- 795** Coiled Metal on Platforms/Skids in Boxcars (CCLT Part 9, Section 3.2, New) (8/18)
- 796** 58 in. Diameter Roll Pulpboard with an Incomplete Layer (CCLG Part 2, Section 5.8 New) (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, Revised) (11/18)
- 798** Intermodal Loads Secured with TyGard DS™ (Intermodal Loading Guide Method B-9, Revised) (11/18)
- 799** 46 in. to 57 in. Diameter Roll Paper on End Using Rubber Mats (Intermodal Loading Guide Method E-21, Revised) (12/18)
- 800** 54 in. Diameter Paperboard on End Using Rubber Mats (Intermodal Loading Guide Method E-22) (12/18)
- 801** 49 in. Diameter Roll Paper in 52 ft. Cushioned Boxcars with 12 ft. Wide Plug Doors (12/18) (New)
- 802** 58 in. Diameter Paper Rolls T-Loaded in 60 ft. Boxcars with 16 ft. Double Plug Doors Using Lengthwise Void Filler Panels (CCLG Part 2. 6.6.16.1.7 & 5.7.12.1) (12/18) (New)
- 803** Stretch Film Roping of Steel Coils and Coil Loading Methods for Railroad Shipments (CCLG Part 9, Section 4.4. Revised; (12/18)