

***ALGOMA STEEL Inc.***

***CORPORATE  
PACKAGING/LOADING MANUAL***

***QMPL 0001***

***Originator: Manager – Shipping Services***

***This manual is issued by the Distribution Coordinator. The original pages of this manual and all revisions are approved by the Manager – Shipping Services.***

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***Jon Irwin  
Manager – Shipping Services***

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**RECORD OF REVISION**

Manual Number: QMPL 0001

Original Issue Date: February 1, 1996

SECTION NO.	DESCRIPTION/REASON FOR CHANGE	Revision Date	DATE Implemented	APPROVED BY
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Entire Manual	Revised Algoma name references to Essar Steel Algoma Inc.	June 6, 2008	June 23, 2008	C. McMaster
Control of Documents	Control Document numbers	June 9, 2010	June 9, 2010	C. McMaster
Entire Manual	Replaced 2 ¼ x 3" lumber with 2 x 3"	June 27, 2011	June 27, 2011	C. McMaster
Control of Documents	Removed CM Manual as they will view electronically Removed CTL Inspections as they don't use	July 6, 2011	July 6, 2011	C. McMaster
All	Reformatted full manual – headers sections changed / included record of review section in manual	December 16, 2014	December 16, 2014	C. McMaster
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Cover Page	Revised originator from C. McMaster to J. Irwin	March 26, 2018	March 26, 2018	J. Irwin
Entire Manual	Revised Essar names references to Algoma	March 26, 2018	March 26, 2018	J. Irwin
Entire Manual	Revised Essar names references to Algoma Steel Inc. Review of entire Manual	Nov 30, 2018	Nov 30, 2018	J. Irwin
2	Processed Coil Strapping Guidelines	March 7, 2019	March 7, 2019	J. Irwin
5	Strapping Guide	March 7, 2019	March 7, 2019	J. Irwin

<b>SECTION NO.</b>	<b>DESCRIPTION/REASON FOR CHANGE</b>	<b>Revision Date</b>	<b>DATE Implemented</b>	<b>APPROVED BY</b>
Entire Manual	Updated distribution coordinator information and review of entire manual.	Dec 13 <sup>th</sup> , 2019	Dec 13 <sup>th</sup> , 2019	J. Irwin
5.3.1	Added outside processor accountability for joint testing.	Mar 23 <sup>rd</sup> , 2020	Mar 23 <sup>rd</sup> , 2020	J. Irwin

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## **PREFACE**

The Algoma Steel Inc. Packaging Manual has been designed to facilitate a means of communication for describing recommended standards of Marking, Packaging, and Loading of Algoma Steel Inc.'s products.

All data has been developed in conjunction with established industry standards. We therefore recommend that you consult this guide for the purpose of maintaining both uniformity and economy in the shipment of steel products.

The Contract of Sale, issued by Algoma Steel Inc., acknowledges responsibility for both the "Purchaser" and "Seller" with regard to established packaging standards. Contents described herein, should therefore, not be construed as a warranty on the adequacy of Marking, Packaging or Loading of these products.

Methods prescribed are considered standard. Deviation from standard is subject to cost evaluation (labour and materials). Subject costs, which may result from this evaluation, are to be considered **extra** for the customer's account. Please consult Algoma Steel Inc.'s pricing book "List of Applicable Extras" or call your Sales Office for determination of cost associated with your preferred method.

Illustrations herein are considered to be minimum requirements; however, any additional strapping, nailing, blocking, etc. may be utilized at the mill shipper's discretion.

**Note:** If, upon delivery, there is evidence of loss or damage, it is advisable that the carrier's representative be notified for the purpose of conducting a mutual inspection prior to off-loading. This inspection will serve to facilitate the completion of any claims that may result. **The essential element in the establishment of any claim is to ensure proper notation is made on the carrier's copy of the Bill of Lading, identifying the issue at hand.**

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## 1. DOCUMENT CONTROL AND DISTRIBUTION LIST

### 1.1 Document Control

This Manual is document controlled following the procedures outlined in QMS 0001.

The manual is to be reviewed at least once every 2 years. When a review or a revision is made, the changes must be documented on the Record of Revision or Review sheet located at the front of this manual.

#### Distribution List

Copy	Location
Master	Electronic – Intranet Electronic – ALGOMA Internet - www.algoma.com

Printed copies of the “Mark Pack and Load” Manual must be controlled by designated department as required.

## 2. GENERAL PACKAGING & LOADING INFORMATION

### 2.1 Scope & General Information

1. The scope of this manual is to ensure proper application of loading standards as prescribed by the various transportation ruling bodies. It will also serve to facilitate dialogue between the shipper and the receiver for the purpose of delivering a damage free report.
2. Customer specific packaging requires that the purchaser consider many different variables, which together lend to make a final packaged product. Some variables for your consideration may include:
  - a. Size and weight of any single site, size and weight of any multiple item group (referred to as multiple specific lift).
  - b. Secured/unsecured lifts (plate is shipped loose unless otherwise specified).
  - c. Preferred lumber size of bearing/separator pieces.
  - d. Preferred direction of wood bearing/separator pieces to facilitate off-loading practice.
  - e. Identified internal handling equipment to your mill source.
  - f. Preferred method of shipment, rail/truck/vessel. Identify type of equipment and specify loading particulars for each type.
  - g. Material to ship bare/shrouded/wrapped/oiled.
3. A conventional package is considered a single lift, weighing 4,536 kg. (10,000 lbs.) or more. Packages heavier than 4,536 kg. (10,000 lbs.) are encouraged, for reasons of improved performance against damage, in addition to economies of scale, given both the purchaser and supplier.
4. Illustrations contained within this manual represent Algoma's standard practices. Prior consultation of these methods, in the establishment of either initial or proprietary specifications, is recommended.
5. Rail Shipments are sanctioned by the A.A.R. (Association of American Railways) General Rules 1 and 2, which are also included in the U.S. and Canadian classification tariffs. These rules state that all load configurations **must** be in accordance to an approved A.A.R. figure. Non-compliance will result in liability for damage etc. being transferred to the shipper.
6. For shipment by Transport, Inter Provincial authorities govern all safety standards. Responsibility for the application of these rules lies exclusively with the carrier as does the prevention of product damage while in transit.
7. MPL Codes are based on absolute minimum criteria. It remains the option of operating personnel to alter these minimums provided it is equal to or greater than the established minimum.  
Eg: 2" x .044 Strapping substituted for 1-1/4" x .044

Covered Gondola in place of Open Gondola or Bulkhead Flatcar

**2.2 Exhibit 1- Transmittal Form**

**Transmittal Form**

ALGOMA

Date Issued: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE/COMPANY: \_\_\_\_\_

DEPARTMENT/ADDRESS: \_\_\_\_\_

\_\_\_\_\_

RETURN TO: Algoma Steel Inc.  
P.O. Box 1400  
Sault Ste. Marie, Ontario P6A 5P2

ATTENTION: Distribution Coordinator  
Shipping Services  
Administration Building

*Receipt of a copy of an Algoma Steel Inc. Mark Pack Load Manual, in part or in whole, is hereby confirmed and in accepting same, the undersigned agrees that the contents are to be treated as confidential and shall not be used for any purpose other than application of Packaging Standards and Load Methods, as prescribed by Algoma Steel Inc.*

Please sign and return this form to the above address for purpose of acknowledging completed change.

DATE

SIGNATURE

\_\_\_\_\_  
Fax to (705) 945-4530 or Phone (705) 943-9449 or Email [Joshua.jansen@algoma.com](mailto:Joshua.jansen@algoma.com)



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## 2.3 Glossary of Terms

<b>A.A.R.</b>	Association of American Railroads
<b>“A” End Of Car</b>	The opposite end to that on which the brake wheel is located. In the event there are two brake wheels, the ends are designated, on both sides of the car, by stenciling the letters “A” and “B” respectively near the ends.
<b>“B” End Of Car</b>	The end on which the brake wheel is located. In the event there are two brake wheels, the ends are designated, on both sides of the car, by stenciling the letters “A” and “B” respectively near the ends.
<b>Backup Cleats</b>	See Cleats
<b>Bands (High Tension)</b>	Steel strapping of various widths and thicknesses, each with standard load strength, used to secure pieces together in a lift or unit load or lading. See table page.
<b>Bearing Pieces</b>	Wooden blocking on which the steel rests in transit but to which it is not attached.
<b>Binder</b>	Any material used for securement of lading.
<b>Blocking</b>	Wooden material, nailed, bolted or wired in position to secure lading in place.
<b>Bracing</b>	Material used to retain lading or blocking in position.
<b>Brand</b>	Producer’s or consumer’s trademark
<b>Bulkhead Flat Car</b>	Flat car with permanent steel bulkheads at “A” and “B” end of car.
<b>Bumper Block</b>	Wooden pieces banded to ends of lift for protection.
<b>Cleats</b>	Wooden pieces nailed to floor to reinforce blocking.
<b>Corner Clip</b>	See Cushion Protectors
<b>Covered</b>	See Shroud and Wrap
<b>Cross Pieces</b>	Strips of wood across width of steel as a protection in transit.

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<b>Cushion Protectors</b>	Protective material consisting of metal, wood, or fiber board placed under the bands at product edges and under the seals.
<b>Deck</b>	The floor of a rail car or transport.
<b>Divider</b>	Wooden or metal pieces used in vertical position when stacking sheets end to end or side by side.
<b>Dunnage</b>	All material used to shroud, wrap, cover, brace, block, support and protect shipments on trucks or cars.
<b>Edge Clearance</b>	The distance from the end of the steel in a package to the outside edge of bearing pieces
<b>End Blocks</b>	Lumber placed crosswise and secured to bearing pieces. (Sometimes referred to as a Stop Block)
<b>Filler</b>	Wooden pieces placed beneath bands to even up package.
<b>Flat Car</b>	A freight car having the floor laid over sills, and without any sides or body above.
<b>Floor Cleat</b>	See Cleats
<b>Gondola (Covered)</b>	Equipped with a cover, which can be removed or opened for access.
<b>Gondola (Drop End)</b>	The ends can be lowered to facilitate loading and unloading, or for transporting long steel which extends beyond the ends of car.
<b>Gondola (Fixed End)</b>	The ends are not moveable.
<b>Gross Weight</b>	If applied to a rail car or truck, it signifies the weight of the vehicle and its entire contents, (rail car or truck plus lading and dunnage).
<b>Idler Car</b>	A freight car used to protect overhanging loads or used between loading cars carrying long material.
<b>“L” Side</b>	Left Side - the side of the car on the left of the observer when standing inside of car facing the “A” end.
<b>Label</b>	Similar to a tag but attached by an adhesive.

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<b>Lading</b>	Product being shipped
<b>Lift</b>	A unit of steel that can be handled by mechanical equipment.
<b>Lift Weight</b>	The weight of the lift, made up of the package or packages as limited by the customer's handling equipment or plant facilities.
<b>Light Weight</b>	If applied to a rail car or truck, signifies the weight of the unloaded car or truck.
<b>Load Limit</b>	The maximum load in pounds which the rail car is designed to carry. The figure is stenciled on car sides.
<b>Mark</b>	Information or identification applied to or attached to steel by any method. When used to differentiate between stencil and freehand marking it refers to the freehand method using chalk, crayon, paint or paint stick.
<b>Marker</b>	Any material inserted in package for the purpose of maintaining identification of page, size, quantity, grade or summer heat.
<b>Mechanical Brakeman</b>	A metal cleat nailed to the floor through which lengthwise bracing bands pass to retard forward movement of steel.
<b>Package</b>	A lift of steel or a number of specific lifts or hand bundles, secured in at least one direction into a single unit of specified weight, count, or dimensions.
<b>Polywrap</b>	Polyethylene film used as a moisture barrier in protecting product during transit.
<b>“R” Side</b>	Right Side - the side of car on the right of the observer when standing inside the truck facing the “A” end.
<b>Runner</b>	See bearing Pieces.
<b>Safety Band</b>	A band secured around a lift of sheets to hold them intact. Use for internal movement.
<b>Seal</b>	Steel clip that is crimped or notched mechanically to hold the ends of a band under tension.

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<b>Separator</b>	Any material used in any direction for dividing lifts or for maintaining necessary clearance to protect shipment in transit.
<b>Shields</b>	Lumber or metal used for purposes of alignment and protection
<b>Shroud (Unit)</b>	Waterproof paper or plastic covering applied to material loaded within a railcar or on a truck to provide additional weather protection. Product bands are located under the shroud and the shroud is joined using tape only.
<b>Stencil</b>	Information or identification applied to the package by means of a stencil.
<b>Strapping</b>	See Bands.
<b>Supports</b>	See Bearing Pieces.
<b>Tag</b>	Computer printed information tags for the purpose of describing manufacturer and customer related product data.
<b>Tare Weight</b>	See Light Weight.
<b>VCI Paper</b>	Protective paper wrapping containing a rust emulsifier which protects the product against rust formation. When used, paper cover <u>must</u> be sealed air tight for the emulsifier to be effective.
<b>Wrapping</b>	Waterproof paper which completely seals product. Straps are generally placed over top of paper unless otherwise specified.

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## 2.4 Identification Marking Plate Product

1. Product markings are to minimum standards as specified within the most recent additions for example CSA, ASTM, and/or other recognized society specifications.
2. Standard marking specified is applied by any one or more of the following means and according to product requirements:

Paint Mark	Ink Mark	Die Stamped	Tags
Paint Stencil	Ink Stencil		

3. Any change in standard marking practices must be by written request, listing reasons for such request, and must be approved through your Algoma Sales agent.
4. Plates are die stamped at .250 gauge and over and paint or ink marked under .250 gauge.
5. Plates are die stamped, unless otherwise specified by customer. If alternative to die stamping is required, information regarding change must be so indicated within the MPL Instructions.
6. Standard mill practice on “Die Stamping” is to utilize characters measuring 3/8”.
7. Standard marking includes the following information, in the form of either die stamping or hot chalk marking:

Manufacturer’s Name  
Plate Number  
Heat Number  
Grade  
Dimension

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## **2.5 Identification Marking - Sheet, Coil Product & Structural Shapes**

Normal practice is to show either by tag, label, marking or stenciling the following minimum information.

### **Sheet**

- Length
- Package Weight
- Heat Number or Numbers
- Coil Number or Numbers
- Piece Count
- Package Number (Tag Number)

### **Coils**

- Coil Weight
- Heat Number or Numbers
- Coil Number or Numbers
- Package Number (Tag Number)

### **Structural Shapes/Per Piece**

- Heat Number
- Size or Section
- Length
- Mill Identification
- Grade

Producer's name, brand, or trademark shall be shown in raised letters at intervals along the length.

Small structural-size shapes with the greatest cross-sectional dimension not greater than 6" (in) may be bundled for shipment with each lift marked or tagged showing the above identification.

The designation and grade may be shown by colour markings at one end of each piece or secured lift as per table II of CSA Standard CAN/CSA-G40.21.

### **Report of Material Loaded (Packing List or Tally)**

Included with each shipment and compiled as accurately as practicable, subject to confirmation by the official shipping manifest.

## 2.6 Weather Protection

### RECOMMENDED MINIMUM WEATHER PROTECTION FOR COILS & CTL SHEET SHIPPED BY

Product	Rail Open Gondola	Boat & Rail Open Gondola	Rail (Box Car) Covered Gondola	Boat & Rail Box Car or Covered Gondola	Boat & Truck	Truck
Cold Rolled Dry	Not recommended	Not recommended	Wrap and unit shroud	Not recommended	Not recommended	Wrap
Cold Rolled Oiled	Not recommended	Not recommended	Unit shroud	Wrap	Wrap	Unit shroud
Electrical Steel	Not recommended	Not recommended	Unit shroud	Wrap	Wrap	Unit shroud
Hot Rolled Pickled Dry	Not recommended	Not recommended	Not recommended	Wrap shroud	Wrap	Wrap & Unit
Hot Rolled Pickled & Oiled	Not recommended	Not recommended	Unit shroud	Wrap	Wrap	Unit shroud
Hot Rolled Black (Processed)	Not recommended	Not recommended	Nil	Wrap	Wrap	Nil
Hot Rolled Black (Unprocessed)	Nil	Nil	Nil	Nil	Nil	Nil

### Not Recommended

Although ALGOMA does not recommend this method of shipment because of the hazard involved, nothing less than wrapped and unit shrouded is suggested if purchaser elects to assume the risk.

### Dry Material

It is very susceptible to rust. Algoma Steel Inc. strives to commence shipment with a rust-free product and cannot assume responsibility for subsequent rust.

Refer to Glossary for defined “Wrapped” and “Shroud” (Unit).

1. **WRAPPING**

Water-repellent paper will be used to wrap the package unless otherwise specified. The corners are to be folded in such a manner that any pockets where moisture might accumulate are eliminated. A minimum lap of **152 mm (6")** will be provided for in all cases.

2. **SHROUDING**

Water-repellent paper will be used in all applications requiring shrouding. All folds are to be made with laps down to prevent moisture accumulation. At paper joints, a minimum lap of **152 mm (6")** must be maintained.

3. **BANDING**

***Sheet***

Adequate securement of package is of prime importance. Tension tying with bands is recommended and is normal Algoma Steel Inc. practice. Corner protection is provided wherever necessary. The actual number and type of bands for any specific unit load or package is generally determined by past experience and is compatible with the loading rules of the "Association of American Railroads".

***Coils***

Individual coils and coil groups must be adequately banded. A minimum of one circumference band and one core band is used for individual coils. The core band should be located near the outside coil end. Corner protection is provided wherever necessary. The actual number and type of bands is generally determined by past experience and is compatible with the loading rules of the Association of American Railroads.



## 2.7 Processed Coil Strapping Guidelines

Processed Coil Strapping Guidelines	
<b>Customer Direct General Guidelines:</b>	
DSPC – All Sizes	Min .044 x 1-1/4"
CM - All Sizes	2 Circ. Bands
WS – All Sizes	2 Radial Bands
<b>Multiple Coil groups - Individual Coils:</b>	
Coils to 3,629 kg (8,000 lbs.)	2 Radial Bands approximately 180 degrees of one another 1 Circumferential Band
Coils over 3,629 kg (8,000 lbs.)	3 Radial Bands approximately 120 degrees of one another 1 Circumferential Band
<b>Multiple Coil Groups - Unitizing Bands:</b>	
Coil Group Less than 1,219 mm (48") Wide -	3 Radial Bands, min. .029 x 1-1/4" located approximately 120 degrees of one another
Coil Group over 1,219 mm (48") Wide -	4 Radial Bands, min. .029 x 1-1/4" located approximately 90 degrees of one another

### Overriding rules to general guidelines:

1. MPL **CUSTOMER** specific instructions **ALWAYS** override general guidelines.
2. Corner protectors: **MANDATORY** on all cold rolled and slit edge material.
3. Radial bands are **ALWAYS** placed over top of circumferential bands.

## 2.8 High Tension Bands

Width & Thickness MM (inches)		Minimum Breaking Strength-kg (pounds)	Minimum Joint Strength-kg (pounds)
10 mm x 1.3 mm	(3/8 x .050)	953 kg (2,100)	771 kg (1,700)
19 mm x .64 mm	(3/4 x .025)	1,034 kg (2,280)	807 kg (1,710)
19 mm x .71 mm	(3/4 x .028)	1,034 kg (2,280)	807 kg (1,710)
19 mm x .79 mm	(3/4 x .031)	1,293 kg (2,850)	964 kg (2,140)
19 mm x .89 mm	(3/4 x .035)	1,293 kg (2,850)	964 kg (2,140)
19 mm x 1.1 mm	(3/4 x .044)	1,837 kg (4,050)	1,379 kg (3,040)
19 mm x 1.3 mm	(3/4 x .050)	1,837 kg (4,050)	1,379 kg (3,040)
32 mm x .74 mm	(1-1/4 x .029)	2,155 kg (4,750)	1,617 kg (3,565)
32 mm x .74 mm	(1-1/4 x .031)	2,155 kg (4,750)	1,617 kg (3,565)
32 mm x .79 mm	(1-1/4 x .031)	2,155 kg (4,750)	1,617 kg (3,565)
32 mm x .89 mm	(1-1/4 x .035)	2,155 kg (4,750)	1,617 kg (3,565)
32 mm x 1.1 mm	(1-1/4 x .044)	3,062 kg (6,750)	2,297 kg (5,065)
32 mm x 1.3 mm	(1-1/4 x .050)	3,062 kg (6,750)	2,297 kg (5,065)
32 mm x 1.7 mm	(1-1/4 .065)	4,037 kg (8,900)	3,028 kg (6,675)
51 mm x 1.1 mm	(2 x .044)	4,808 kg (10,600)	3,606 kg (7,950)
51 mm x 1.3 mm	(2 x .050)	4,808 kg (10,600)	3,606 kg (7,950)
51 mm x 1.7 mm	(2 x .065)	6,260 kg (13,800)	4,695 kg (10,350)

## 2.9 Nails

Nails or spikes, when practicable, should be driven vertically. The length of nails used in the assembly of platforms consisting of two or more pieces must be at least one inch longer than the thickness of the nailed member. Unless otherwise specified, one nail shall be used at each point of contact, for each **51 mm** (two inches) of width or fraction thereof. Generally nails will be equally spaced.

### Size of Common Nails

<b>64 mm</b> (2-1/2")	8-D	<b>102 mm</b> (4")	20-D
<b>70 mm</b> (2-3/4")	9-D	<b>114 mm</b> (4-1/2")	30-D
<b>76 mm</b> (3")	10-D	<b>127 mm</b> (5")	40-D
<b>83 mm</b> (3-1/4")	12-D	<b>140 mm</b> (5-1/2")	50-D
<b>89 mm</b> (3-1/2")	16-D	<b>152 mm</b> (6")	60-D

### Size of Cement-Coated Nails

<b>60 mm</b> (2-3/8")	8-D	<b>95 mm</b> (3-3/4")	20-D
<b>73 mm</b> (2-7/8")	10-D	<b>108 mm</b> (4-1/4")	30-D
<b>79 mm</b> (3-1/8")	12-D	<b>121 mm</b> (4-3/4")	40-D
<b>82 mm</b> (3-1/4")	16-D	<b>146 mm</b> (5-3/4")	60-D

## 2.10 Skids, Bearing Pieces, Separators

### Material

All bearing pieces, skids or separators are made of sound lumber of commercial sizes not less than **76 mm** (three [3] inches) in width.

### Number

Refer to table 1 page 1.21 for lengthwise

Refer to table 2 page 1.21 for crosswise

### Dimensions

**Width** - **76 mm or 102 mm** (3" or 4") but never less than height.

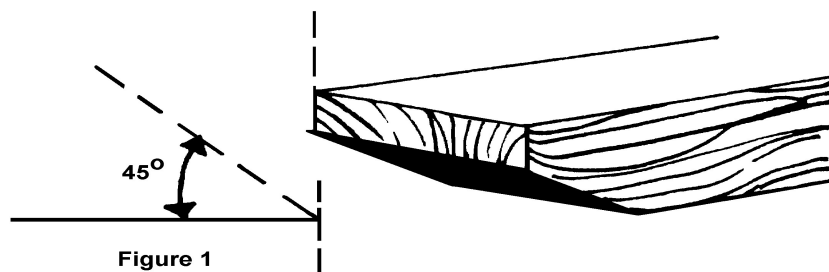
**Height** - Usually **51 mm** (2") minimum for bearing pieces or skids. Sometimes **25 mm** (2") minimum for separators. In increments of **25 mm** (1") up to and including **102 mm** (4").

*Note:* The use of skids, bearing pieces, or separators over **102 mm** (4") in height or width requires additional labour and material.

**Length** - It is regular practice to make the overall length equal to the full dimensions of the package along the direction in which skids, bearing pieces or separators are used. Algoma Steel Inc. does not recommend the use of skids longer than **4877 mm** (192"). In no case will the length of skid exceed the length of the material to be packaged.

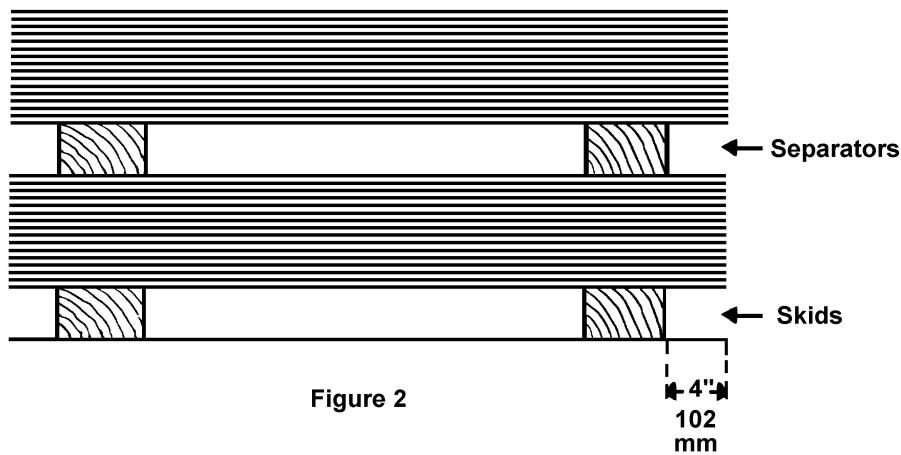
### Beveling-

When the ends of skids must be beveled, beveling should comply with Figure 1 below. Skid ends are normally only beveled when used for floating loads.



**Location**

To provide enough clearance for handling with sheet lifters, the skids, bearing pieces or separators shall be spaced at least **102 mm (4 inches)** from the package edge unless otherwise specified (see Figure 2 below).



**Table 1 RECOMMENDED NUMBER OF LENGTHWISE BEARING PIECES, SKIDS OR SEPARATORS**

SHEET GAUGE	DECIMAL EQUIVALENT	ORDERED WIDTH IN MM (INCHES)							
		Over 457mm- 914mm (18-36) INCL.	Over 914mm- 1067mm (36-42) INCL.	Over 1067mm- 1270mm (42-50) INCL.	Over 1270mm- 1422mm (50-56) INCL.	Over 1422mm- 1727mm (56-68) INCL.	Over 1727mm- 1930mm (68-76) INCL.	Over 1930mm- 2134mm (76-84) INCL.	Over 2134mm- (84)
Heavier than 12	over 2.8mm (.1120)	2	2	2	2	2	2	2	2
12 to under 16	2.8mm-1.6mm (.1120-.0636)	2	2	2	2	2	2	3	3
16 to under 20	1.6mm-.99mm (.0635-.0389)	2	2	2	3	3	3	3	4
20 to under 24	.99mm-.65mm (.0388-.0255)	2	2	3	3	3	4	4	4
24 to 28 include	.65mm-.36mm (.0254-.0142)	2	3	3	3	4	4	--	--

**NOTE:** Lengthwise bearing pieces, skids or separators are not recommended for sheets over 4877mm (192") long or less than 457mm (18") wide.

**Table 2 RECOMMENDED NUMBER OF CROSSWISE BEARING PIECES, SKIDS OR SEPARATORS**

SHEET GAUGE	DECIMAL EQUIVALENT	ORDERED WIDTH IN MM (INCHES)						
		Over 914mm- (36) and Under	Over 914mm- 1067mm (36-42) INCL.	Over 1067mm- 1270mm (42-50) INCL.	Over 1270mm- 1422mm (50-56) INCL.	Over 1422mm- 1727mm (56-68) INCL.	Over 1727mm- 1930mm (68-76) INCL.	Over 1930mm- 2438mm (79-96) INCL.
Heavier than 12	over 2.8mm (.1120)		2	2	2	2	2	3
12 to under 16	2.8mm-1.6mm (.1120-.0636)		2	2	2	2	3	3
16 to under 20	1.6mm-.99mm (.0635-.0389)		2	2	2	3	3	4
20 to under 24	.99mm-.65mm (.0388-.0255)		2	2	3	3	4	4
24 to 28 include	.65mm-.36mm (.0254-.0142)		2	3	3	3	4	5

SHEET GAUGE	DECIMAL EQUIVALENT	ORDERED WIDTH IN MM (INCHES)							
		Over 2438mm- 3048mm (96-120) INCL.	Over 3048mm- 3708mm (120-146) INCL.	Over 3708mm- 3912mm (146-154) INCL.	Over 3912mm- 4775mm (154-188) INCL.	Over 4775mm- 5283mm (188-208) INCL.	Over 5283mm- 6246mm (208-253) INCL.	Over 6246mm- 6756mm (253-266) INCL.	Over 6756mm- 8306mm (266-327)
Heavier than 12	over 2.8mm (.1120)	3	3	4	4	4	5	5	6
12 to under 16	2.8mm-1.6mm (.1120-.0636)	3	4	4	5	5	6	--	--
16 to under 20	1.6mm-.99mm (.0635-.0389)	4	5	5	6	--	--	--	--
20 to under 24	.99mm-.65mm (.0388-.0255)	5	6	6	--	--	--	--	--
24 to 28 include	.65mm-.36mm (.0254-.0142)	6	--	--	--	--	--	--	--

**NOTE:** Crosswise bearing pieces, skids or separators will not be placed less than a minimum of 102mm (4") from end of package unless otherwise specified.

## 2.11 Skeleton Platforms

### General

Skeleton Platforms are wooden structures, beneath the steel and fastened to it, made up of bearing pieces spaced at appreciable distances and placed at right angles on runners. A normal skeleton platform consists of lengthwise runners with crosswise bearing pieces. A reverse skeleton platform consists of crosswise runners with lengthwise bearing pieces. Bearing pieces are normally nailed to runners.

### Material

All runners and bearing pieces should be made of sound lumber of commercial sizes.

### Dimensions

**Runners - Width** - 76 mm (3") minimum up to and including 102 mm (4") minimum but never less than height

**Height** - 51 mm (2") minimum up to and including 102 mm (4") maximum

**Length** - Equal to the full dimension of the package along the direction in which they are used. Should not be longer than 4877 mm (192").

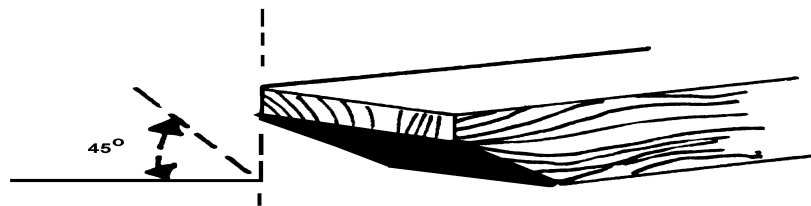
**Note:** The use of runners over 102 mm (4") in height or width requires additional labour and material

### Construction

Refer to Tables 1 and 2 on page number 21 for recommended minimum number of runners and minimum number of bearing pieces to be used.

### Beveling

Runners are normally beveled only when used for floating loads. When required, should be as illustrated:



### Location

To provide enough clearance for handling with sheet lifter, the runners are set in at least 102 mm (4") from ends of bearing pieces.

### 3. GUIDE FOR LOADING OF PLATE MILL PRODUCT

#### 3.1 Type of Lumber Base

##### LUMBER SIZE FOR BASE

25 mm x 76 mm (1" x 3")  
51 mm x 76 mm (2" x 3")  
102 mm x 102 mm (4" x 4")

#### 3.2 Type of Carrier & Loading Method

##### ORIGINATING CARRIER

Truck Pool Car  
Rail Vessel or Barge

##### DELIVERING CARRIER

Truck Pool Car  
Rail Vessel or Barge

##### ORIGINATING CARRIER'S EQUIPMENT TYPE

###### TRUCK (Trailer Type)

Flat Bed  
Rack & Tarp  
Van  
Trombones  
Other

###### RAIL (Car Type)

Standard Mill Gondola  
Bulkhead Flat Car  
Triple Trough  
Covered Gondola  
Low Sided Gondola  
Extra Long Flat Car  
Standard Flat Car  
Miscellaneous

The Carrier is responsible for placement, protection and securing of the load. Algoma Steel Inc. cannot assume liability for transit safety or damage and fulfills its obligation by indicating customer's requirements.

Typical methods shown are based on AAR approved figures. Algoma is required to load in accordance with pre-established railroad practices.

**TRUCK LOADING – PLATE**

Lengthwise blocked  
Crosswise blocked

**RAIL LOADING - PLATE**

Lengthwise blocked - Fig. 22  
Crosswise blocked – Fig.24 Method of Unloading

**METHODS OF LIFTING**

By Magnet Crane  
By Boom Crane  
By Lift Truck  
By Straddle Carrier

**LIFTING ATTACHMENTS**

Chains & Slings  
Sheet Lifter  
Grab Hooks - Plate Shoes  
Forks  
Magnet or Vacuum Cups

**DIRECTION OF UNLOADING**

From overhead  
From Side  
From End



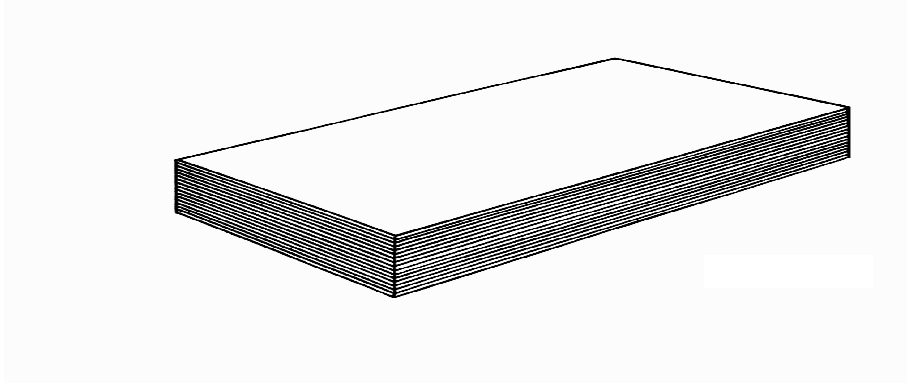
### 3.3 Alternative Shipping Mode

*“This is to be referenced when loads are switched between rail & truck & where the corresponding paperwork has not been changed”*

<b>DELIVERING CARRIER</b>	
Rail Truck Pool Car Vessel or Barge	
<b>EQUIPMENT TYPE</b>	
<b>TRUCK (TRAILER TYPE)</b>	<b>RAIL (CAR TYPE)</b>
Flat bed Rack & Tarp Van Trombone Other	Standard mill gondola Bulkhead flat car Triple Trough Covered gondola Low-sided gondola Extra long flat car Standard flat car Miscellaneous
<b>LOADING METHOD</b>	<b>RAIL</b>
<b>TRUCK</b>	<b>RAIL</b>
The Carrier is responsible for placement, protection and securing of the load. Algoma Steel Inc. cannot assume liability for transit safety or damage and fulfills it’s obligation by indicating customer’s requirements.	Typical Methods shown are based on A.A.R. approved figures. Algoma Steel Inc. is required to load in accordance with pre-established railroad practices.
<b>TRUCK LOADING - PLATE</b>	
Lengthwise blocked Crosswise blocked	
<b>RAIL LOADING - PLATE</b>	
Lengthwise blocked - Fig. 22 Crosswise blocked - Fig. 22A	

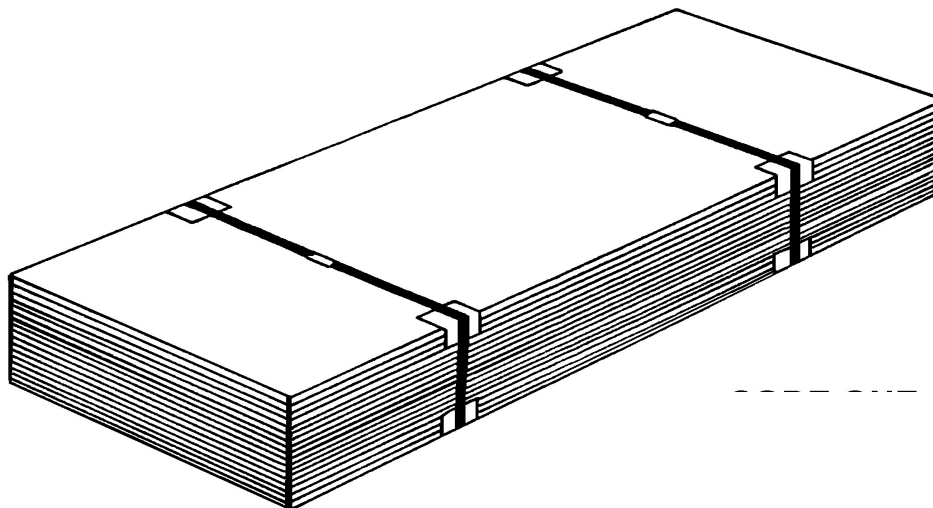
### 3.4 PLATE PACKAGE TYPE

#### Plate Standard Lift (Unsecured)



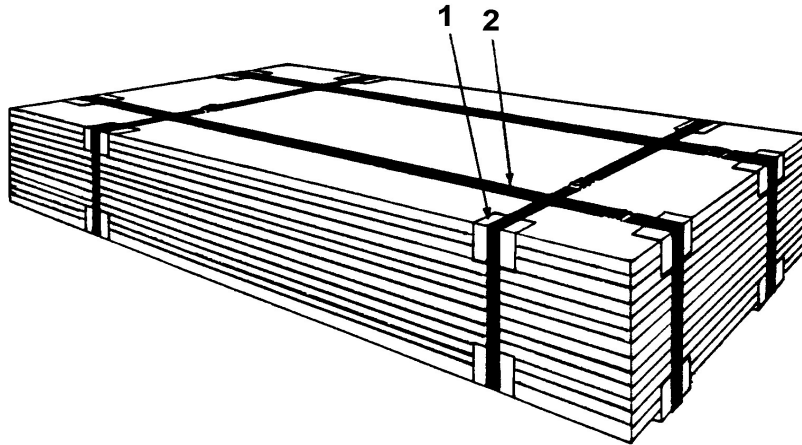
*Note:* Plate product ships loose unless specified otherwise.

#### Plate Standard Lift (Secured)



1. Minimum .029 x 1-1/4" bands.
2. Two bands up to 6096 mm (240"), add one additional band for each additional 2438 mm (96").
3. Corner protectors to maximum .250 gauge.
4. Banding to maximum .750 gauge

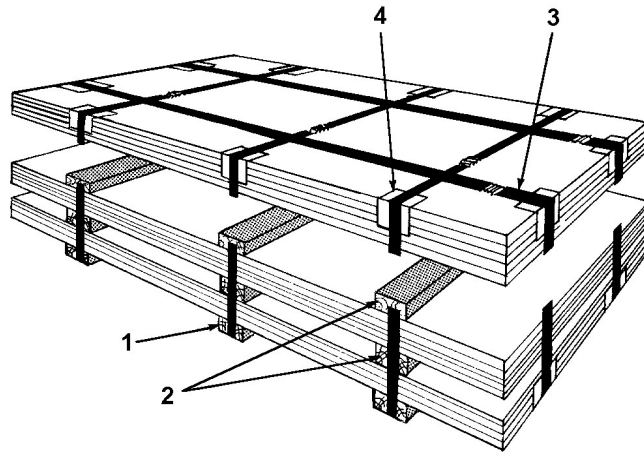
**Plate  
Standard Lift  
(Secured)**



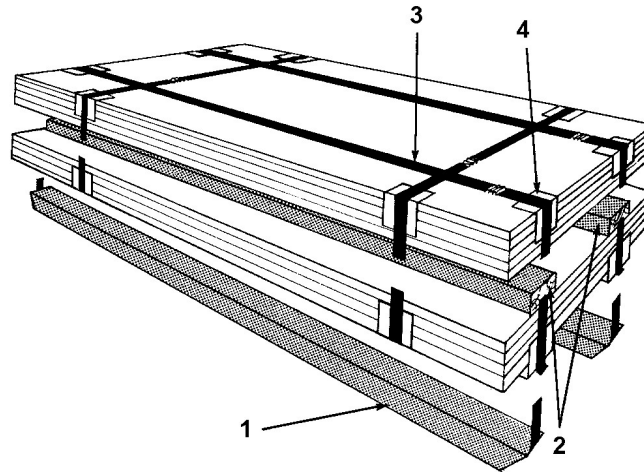
1. Corner protectors for gauges 5/16" and less.
2. 1-1/4" strapping, lengthwise and crosswise.

**Note:** Lengthwise strapping applied to a maximum of 4877 mm (16 ft).

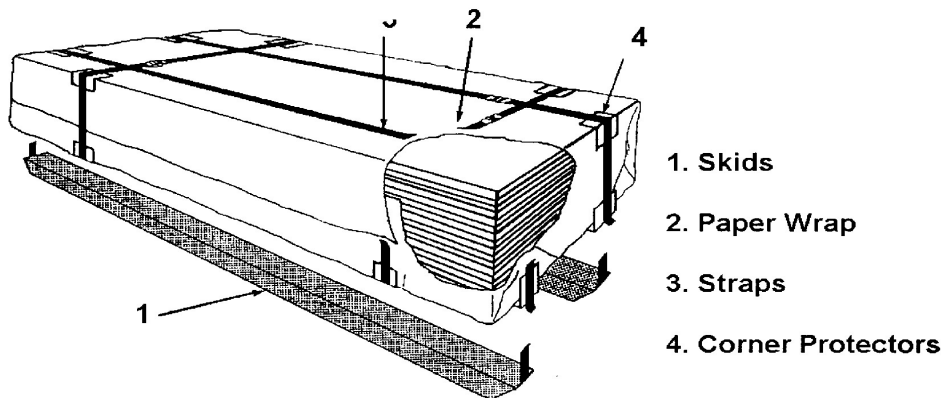
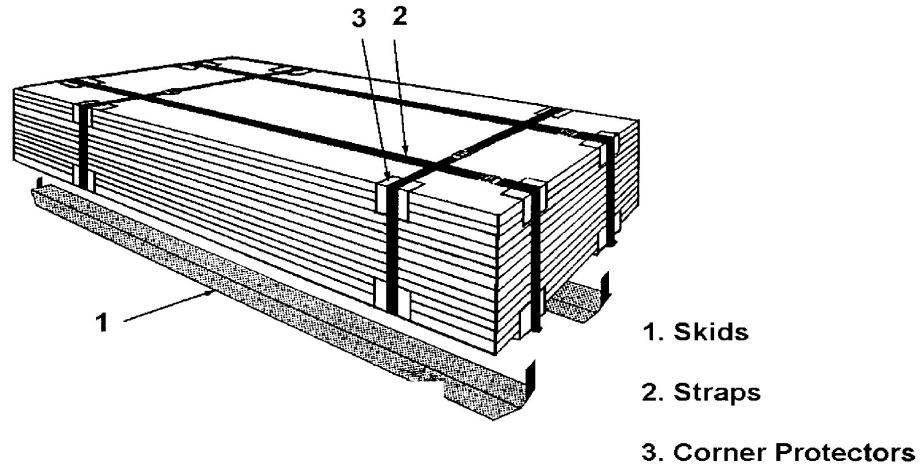
### Plate Multiple Specific Lift



- 1. Runners
- 2. Separators
- 3. 1-1/4" Strapping
- 4. Corner Protectors to maximum 5/16"



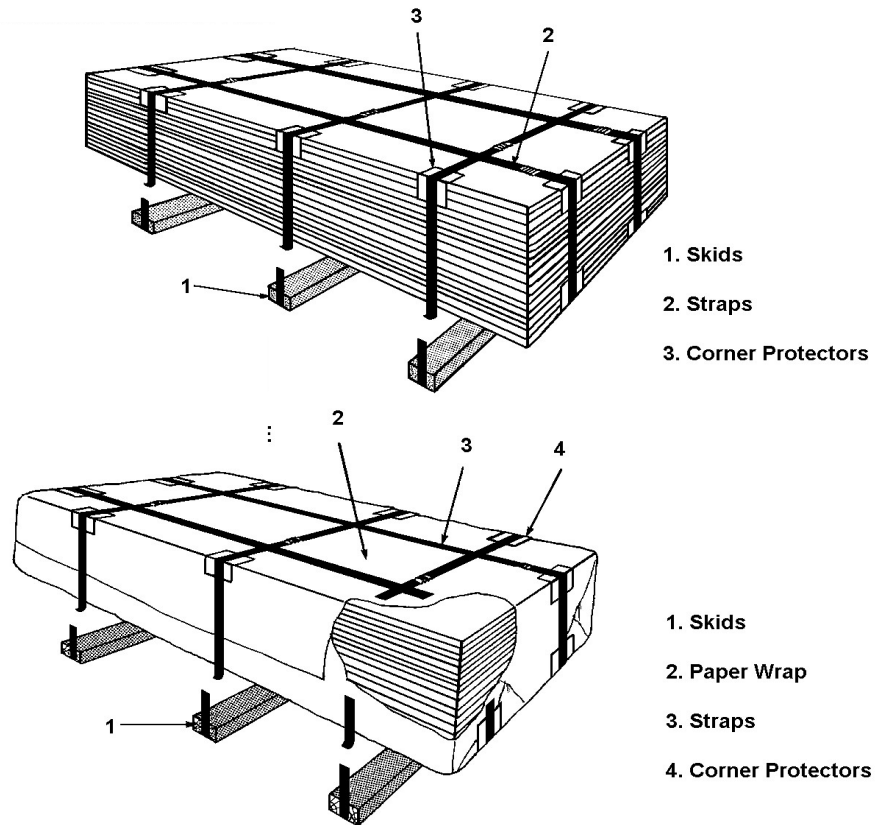
**Cut Plates - Lengthwise Skids  
(Bare & Wrapped)**



**Note: Applies to widths of 457 mm (18") and over**

**Note:** Applies to widths of 457 mm (18) and over

**Cut Plates - Crosswise Skids  
(Bare & Wrapped)**

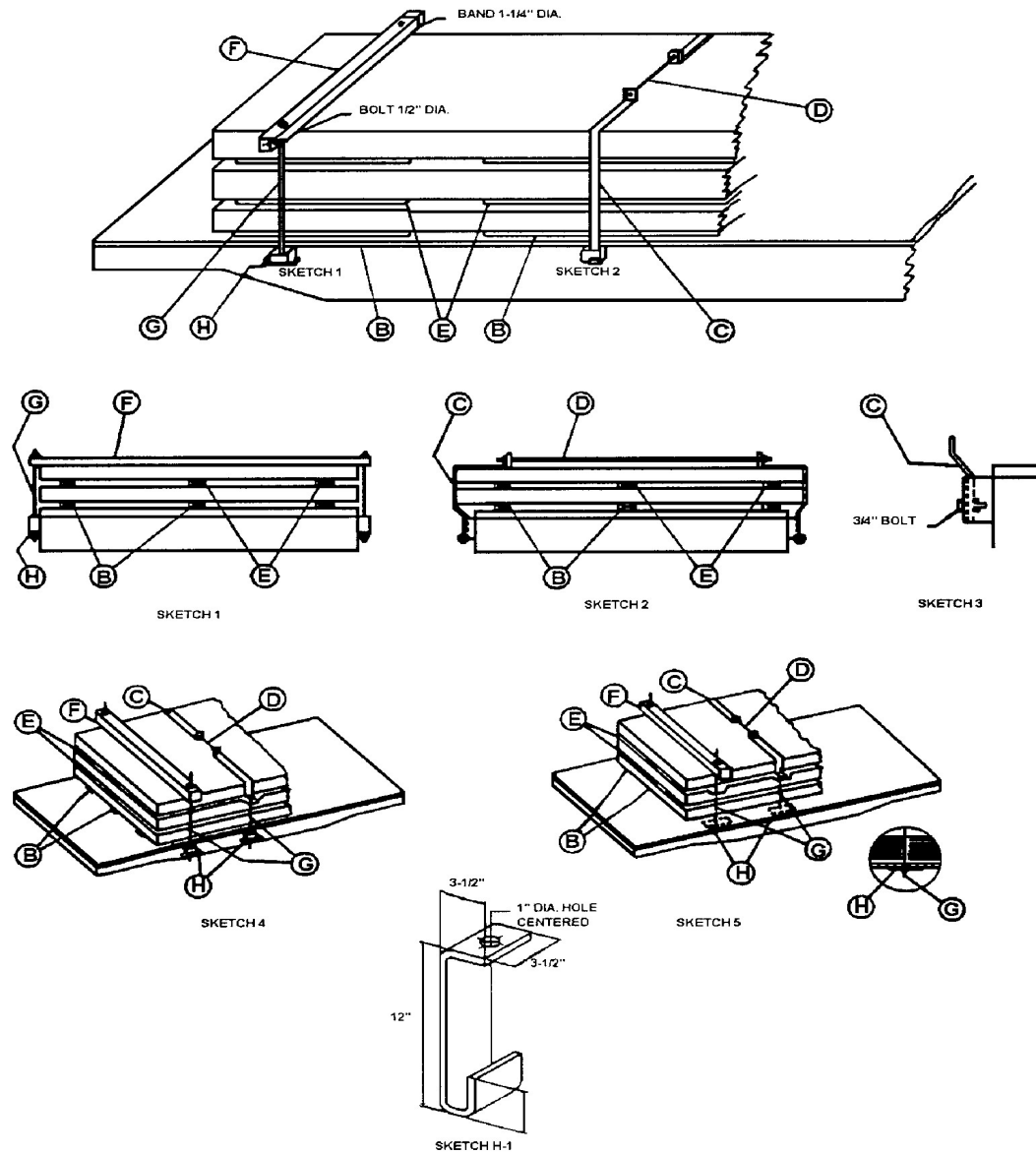


**Note:** Applies to widths of 457 mm (18") and over

### 3.5 Plate Loading Rail

Sec. 2 - Fig. 14 (Rev. - 9-1991)

#### Steel Plates - Flat Cars



**Sec. 2 - Fig. 14 (Rev. - 9-1991) (Cont'd)**  
**Steel Plates - Flat Cars**

Item	No. of Pcs.	Description
A		Load should be centrally located on car at origin, but must not be closer than 2 ft. from the "B" end and 1 ft. from the "A" end of car. Conventional flat cars only. When load is prepared on flat cars with side mounted hand brakes, load may be located not closer than 1 ft. from either end of car, or hand brakes which extend above the side sill.
B	1 per each 7 ft. less width	Crosswise bearing pieces: Hardwood of minimum of 1 in. x 3 in., height not to exceed width, in one piece, length about equal to width of car. Locate end pieces approximately 3 ft. in from ends of pile(s) and in line with stake pockets when possible. (Use Optional.)
	Minimum of 2.	Lengthwise bearing pieces: Hardwood minimum of 1 in. x 3 in. x 8 ft., height not to exceed width. May consist of more than one (1) piece. Space ends no more than 3 ft. apart. Locate not less than 6 in. nor more than 12 in. from edge of bottom plate and within 3 ft. from each end of pile(s). (Use optional.)
C	See Chart.	Clamping pieces: Consisting of two pieces of steel, 1/2 in. x 3-1/2" in., length to suit per Sketch 2. Locate about 1/4 length, but not more than 7 ft. from ends of piles), with intermediate Item "C"'s equally spaced between. Form and secure to stake pockets as shown in Sketch 2, or secure to stake pocket using a 3/4 in. bolt, washer and nut as shown in Sketch 3. Clamping pieces may also be formed as illustrated in Sketch Nos. 4 and 5 when used with Item "G" tie-rods.

**Chart - Items "C" and "F"**

No. of Pcs.	Height of Pile Above Bearing Pieces	Length of Pile
2	24 inches or less	12 ft. or less
3	24 inches or less	Over 12 ft. to length of car
3	Over 24 inches	Over 12 ft. to 30 ft.
4	Over 24 inches	Over 30 ft. to length of car.

\* When 50% of pile height consists of plates 90 in. or less in width, one (1) additional Item "C" must be applied.

D	1 per each pair	Tie rod: 3/4 in. diameter steel rod or bolt, length to suit, passed through of Items "C". Items "C". Sketch Nos. 2, 4 and 5.
E	1 per each 7 ft. or less.	Crosswise separators: Lumber, minimum, 1 in. x 2 in., height not to exceed length width, in one piece, length about equal to but not exceeding width of pile. Locate in line with crosswise Items "B" when possible. (Use optional.)
	Minimum of 2.	Lengthwise separators: Lumber, minimum, 1 in. x 2 in. x 8 ft., height not to exceed width. May consist of more than one piece. Space ends no more than 3 ft. apart. Locate not less than 6 in. or more than 12 in. from edge of bottom plate in lift and within 3 ft. from each end of bottom plate in lift. (Use optional.)
F	See Chart.	Clamping pieces: Hardwood, 4 in. x 6 in., length equal to width over stake pockets. Use one (1) 1-1/4 in. x .029 in. high tension band to prevent splitting. Bolts or bands must be applied outside of Items "G". Locate about 1/4 length, but not more than 7 ft. from ends of pile(s), with intermediate Item "F"'s equally spaced between. Not required for loads prepared in accordance with Sketch 2.



**Sec. 2 - Fig. 14 (Rev. - 9-1991) (cont'd)**  
**Steel Plates - Flat Cars**

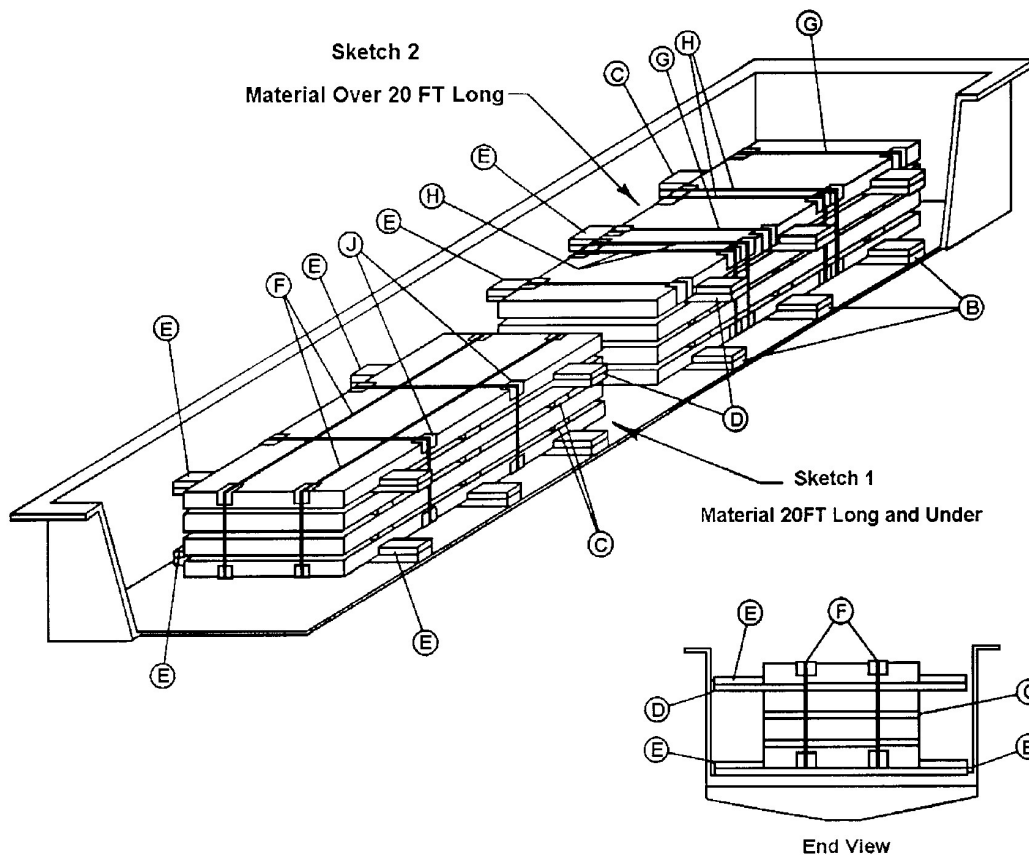
G	2 each Items "F" "C", Sketch 1, 4 and 5.	Tie rod: 3/4 in. diameter steel rod or bolt, length to suit with washers at top. or Pass through Item "F", stake pocket or floor and Item "H". Rods must be Nos. Located within 4 in. of side of pile as illustrated in Sketches 1, 4 and 5. Not required for loads prepared in accordance with Sketch 2. When preparing loads under Sketch 5, Items "C" may be extended to car floor and Items "G" substituted with a 3/4 in. bolt passed through the car floor and Items "H".
H	1 each Item "G" Sketch Nos. 1	Steel plates: 1/2 in. x 4 in. x 10 in. applied under stake pocket or 1/2 in. x 4 in. x 6 in. steel plate when Item "G" is located under floor on cars equipped 4 and 5. with steel plate floors. For cars equipped with other than steel plate floors use a 1/2 in. x 4 in. x 18 in. steel plate. Not required for loads prepared in accordance with Sketch 2. J-hooks, as illustrated in Sketch H-1, may be substituted for Item "H" when applied to stake pocket.

**Notes:**

1. If piles are overlapped lengthwise, each plate(s) must have minimum number of Items "C" or "F" to each pile.
2. Additional blocking may be applied between plates to provide stability.
3. When necessary to elevate load for clearance purposes, a minimum of two (2) crosswise and lengthwise bearing pieces per pile, may be stacked in alternating layers. Crosswise pieces must be located approximately 18 in. from ends of longitudinal pieces. Load may also be raised in accordance with General Rule 9 (b), Section No. 1.
4. Height of load including separators is not to exceed 42 in. above top of bearing pieces.

Sec. 2 - Fig. 18 (Rev. - 9-1994)

Uncoiled Steel Plates or Sheets, lengthwise with horizontal separators, secured with 2 in. x .044 in. high tension bands - Gondola Cars.



**Sec. 2 - Fig. 18 (Rev. 9-1994) (Cont'd)**

**Unoiled Steel Plates or Sheets, lengthwise with horizontal separators, secured with 2 in. x .044 in. high tension bands - Gondola Cars.**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
A		Brake wheel clearance. See Fig. 2, Sec. No. 1.
B	As required.	Bearing Pieces, Hardwood, Minimum 2 in. x 4 in. length about equal to width of car. Locate one about 2 ft. from each end of pile and the others so that spaces between them do not exceed 10 ft. When ends of piles overlap each other, the bearing pieces must be placed so as to fully support the overlapped portion, even though additional bearing pieces may be necessary.
C	1 per each item "B" between each lift.	Separators, hardwood, minimum 1 in. x 3 in. Must be one (1) piece with length about equal to width of pile. Apply crosswise of pile between lifts.
D	2 - 20 ft. or less. 3 - over 20 ft.	Top separator, hardwood, minimum 2 in. x 4 in., must have length about equal to width of car, in one piece.
E	2 each Item "B". 2 each Item "D".	2 in. x 4 in. lumber. Length 12 in. or equal to space between pile and car sides, nail to each Items "B" and "D", with three 20-D nails. Not required when total vacant space across car between piles and between piles and car sides, does not exceed eight (8) in.
F	2 per pile 40,000 lbs. or less. Add 1 band for each additional 10,000 lbs. or less.	2 in. x .044 in. high tension bands encircling pile lengthwise. See Sketch 1.
G	3 per pile.	2 in x .044 in. high tension bands encircling top lift crosswise when length of pile exceeds 20 ft. and pile consists of three (3) or more lifts. See Sketch 2.
H	2 per pile 20,000 lbs. or less, 20 ft. or less in length. 3 per pile over 20,000 lbs. to 40,000 lbs. Over 40,000 lbs. add 1 band for each additional 10,000 lbs. or less. Piles over 20 ft. long 3 per pile, 20,000 lbs. or less, 4 per pile pile over 20,000 lbs. to 40,000 lbs. Add 1 band for each additional 10,000 lbs. or less.	2 in. x .044 in high tension bands encircling entire pile crosswise. See Sketch 1 and 2.

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**Sec. 2 - Fig. 18 (Rev. 9-1994) (Cont'd)**

**Unoiled Steel Plates or Sheets, lengthwise with horizontal separators, secured with 2 in. x .044 in. high tension bands - Gondola Cars.**

J As required. Protection angles, 20 gauge, 4 in. wide, applied to prevent displacement.

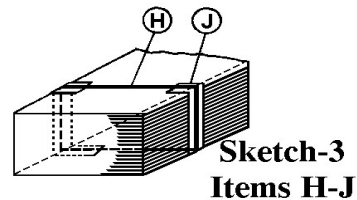
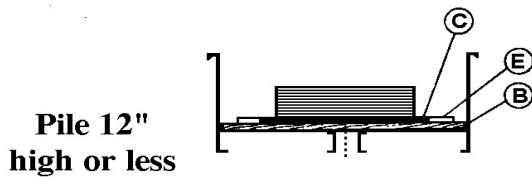
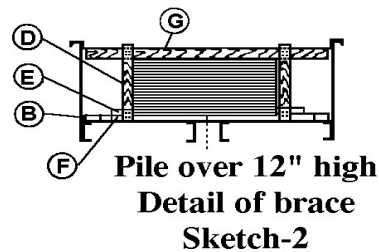
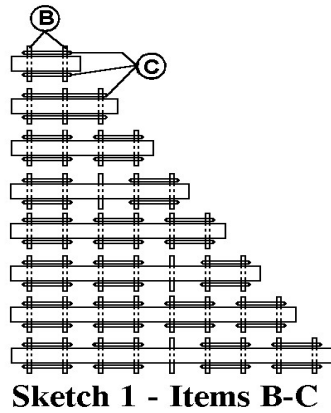
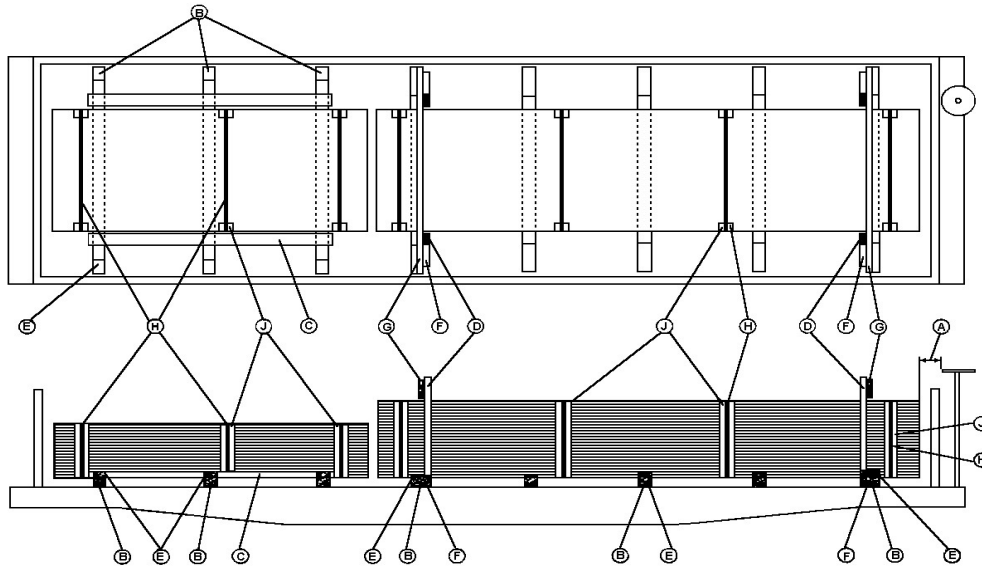
**Notes:**

1. The inside width of car may be reduced a minimum of 8 in. by the application of suitable wooden fillers, (minimum 2, maximum 6), with one 4 in. x 4 in. or two 2 in. x 4 in. pieces of lumber, located between each Item "B", secured to car sides with two 3/8 in. bolts, with washers.
2. If units vary in width, apply wood fillers secured so that they will not become displaced and so as to make size of piles uniform at the points where Items "H" are applied.
3. Narrow units may be placed side by side and tied together with crosswise Items "H" only, provided vertical separators, secured so as to prevent displacement, are used.
4. Where width of piles permit, they should be loaded side by side in order to keep height of load as low as possible.
5. Units may overlap each other between truck centers, provided the end of each pile is not more than one foot from each end of car, and that the specified weight limitations in Rule 4 are not exceeded at overlapped portion of load.
6. Height of piles not to exceed width of individual units nor two inches below top of car sides.

See General Rules 1, 2, 3, 4, 5, 9 and 14 for further details.

Sec. 2 - Fig. 19 (Rev 9-1994)

Uncoiled Steel Plates or Sheets, lengthwise, secured with high tension wires or high tension bands, height of piles, measured at outer ends, must not exceed 24 in. above floors, nor width of individual units - Gondola Cars



**Sec. 2 - Fig. 19 (Rev 9-1994) (Cont'd)**

**Unoil Steel Plates or Sheets, lengthwise, secured with high tension wires or high tension bands, height of piles, measured at outer ends, must not exceed 24 in. above floors, nor width of individual units - Gondola Cars**

Item	No. of Pcs.	Description
A		Brake wheel clearance. See Fig. 2.
B	As required	2 in. x 3 in., hardwood, length about equal to width of car. Locate one about 2 ft. from end of pile and the others so that spaces between them does not exceed 10 ft. When ends of piles overlap each other, the bearing pieces must be placed so as to fully support the overlapped portion, even though additional bearing pieces may be necessary. Substitute, if desired 1 in. x 3 in., hardwood, where Items "C" or "D" are not required.
C	As required Sketch 1	2 in. x 4 in., hardwood, long enough to extend about 4 in beyond Items "B" with three 20-D nails. Not required when Items "D" are used.
D	2 each side of pile	2 in. x 4 in., hardwood, long enough to extend from floor to 5 in. above top of pile, per Sketch 2. Secure each to Items "B" and "E", at outer ends of pile, with three 20-D nails, two in Item "B" and one in Item "C". Place one additional Item "D" about at center of overlapping portion of 2 piles.
E	2 each Item "B"	2 in. x 4 in., hardwood, length about 10 in. Locate about 1 in. from pile or against Item "C" and secure to Items "B" with three 20-D nails.
F	1 each Item "D"	2 in. x 4 in., hardwood, length about 10 in. Locate edgewise and against Item "D" and secure to side of Items "B" and "E" with three 20-D nails.
G	1 each pair Items "D"	2 in. x 4 in., hardwood, length about equal to inside width of car. Locate about 1 in. above top of pile and secure to each Item "D" with three 20-D nails.
H	Individual ties As required	Wires or bands. A minimum of two ties per pile must be used. Draw taut but not too tight. Locate as far away from Items "B" as practicable. (See following table.)

Width of Pile	Height of Pile	No. 8 ga. wires	1¼ in. x .029 in. bands	2 in. x .044 in. bands
24 in. wide or less	12 in. high or less	1 each 4 ft. length of pile, or fraction thereof	1 each 8 ft. length of pile, or fraction thereof	1 each 16 ft. length of pile, or fraction thereof
	Over 12 in. high	1 each 2 ft. length of pile, or fraction thereof	1 each 4 ft. length of pile, or fraction thereof	1 each 16 ft. length of pile, or fraction thereof
Over 24 in. to 48 in.	12 in. high or less	1 each 2½ ft. length of pile, or fraction thereof	1 each 5 ft. length of pile, or fraction thereof	1 each 8 ft. length of pile, or fraction thereof
	Over 12 in. high	1 each 2 ft. length of pile, or fraction thereof	1 each 4 ft. length of pile, or fraction thereof	
Over 48 in. Wide	12 in. high or less	1 each 2 ft. length of pile, or fraction thereof	1 each 4 ft. length of pile, or fraction thereof	
	Over 12 in. high	1 each 1½ ft. length of pile, or fraction thereof	1 each 3 ft. length of pile, or fraction thereof	

**Sec. 2 - Fig. 19 (Rev 9-1994) (Cont'd)**

**Unoiled Steel Plates or Sheets, lengthwise, secured with high tension wires or high tension bands, height of piles, measured at outer ends, must not exceed 24 in. above floors, nor width of individual units - Gondola Cars**

Item	No. of Pcs.	Description
J	As required	Protection angles, 20 gauge, 4 in. wide, applied so as to prevent displacement.

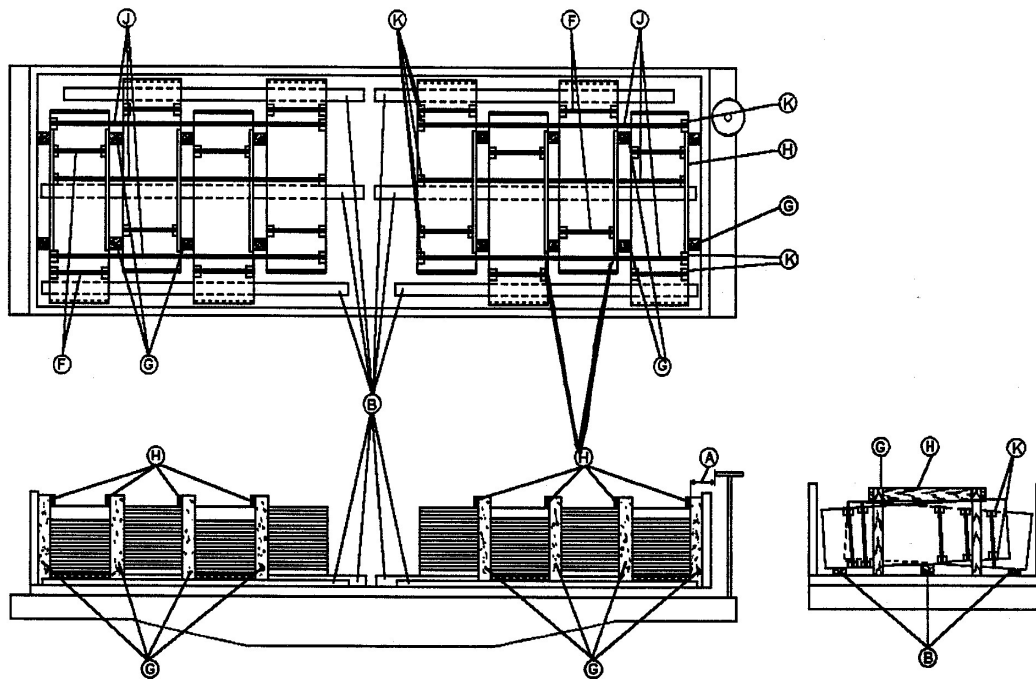
**Notes:**

1. Items "D", "F" and "G" not required for piles 12 in. or less in height.
2. Item "D", "F" and "G" not required for piles over 12 in. to 18 in. in height provided additional tie equal to strength of one 2 in. band (Item "H") is used.
3. Items "B" to Items "J", inclusive, not required when total vacant space between piles and between piles and car sides, across car, does not exceed 8 in. The inside width of car may be reduced a maximum of 8 in. by the application of suitable wooden fillers, (minimum 2, maximum 6) located between each Item "B" and attached to each side of car, as follows:
4. **For wood side cars** - each shall consist of 2 pieces of 2 in. x 4 in., hardwood, length 2 in. greater than height of pile. Nail first piece of car side with four 20-D nails and second piece to first piece in a like manner.
5. **For steel side cars** - use on 4 in. x 4 in. or two 2 in. x 4 in., hardwood, and secure to car side with two 3/8 in. bolts, with washers, at each location.
6. If units vary in width, apply wood fillers secured so that they will not become displaced and so as to make size of piles uniform at the points where Items "H" and "J" are applied.
7. Narrow units may be placed side by side and tied together provided vertical separators, applied so as to prevent displacement, or top clamping pieces 1 in. thick, are used.
8. Where width of piles permit, they should be loaded side by side, in order to keep height of load as low as possible.
9. 1 in. x 3 in. strips must be securely nailed to vertical separators, when used, to prevent displacement.
10. Horizontal separators are prohibited.
11. When load extends about entire length of car and is lapped at center or Staggered, maximum weight must not exceed marked capacity of car.
12. Units may overlap each other between truck centers, provided the end of each pile is not more than one foot from end of car, and that the specified weight limitations in Rule 4 are not exceeded at overlapped portion of load. Extreme height of load, measured at any point, must not exceed 30 inches from floor.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 21 (Rev 9-1994)

Uncoiled Steel Plates or Sheets, crosswise (staggered), secured with high tension wires or high tension bands, height of piles must not exceed 28 in. above floor at car sides, nor width of individual unit - Gondola Cars





**Sec. 2 - Fig. 21 (Rev 9-1994) (Cont'd)**

**Uncoiled Steel Plates or Sheets, crosswise (staggered), secured with high tension wires or high tension bands, height of piles must not exceed 28 in. above floor at car sides, nor width of individual unit - Gondola Cars Item**

No. of Pcs.	Description
A	Brake wheel clearance. See Fig. 2.
B As required	One 2 in. x 3 in. hardwood, located in center of car, and two 1 in. x 3 in., hardwood, one located approximately 6 in. from each side of car. Must be long enough to extend 3 ft. beyond sides of end piles, except when loaded full length of the car. Center Item "B" must be 1 in. higher than side Items "B".
C	VACANT
D	VACANT
E	VACANT
F Individual ties As required	Wires or bands. Lengthwise of car, suitably spaced. Draw taut but not too tight.

Width of Pile	No. 8 ga. Wire	1¼ in. x .029 in. bands	2 in. x .044 in. bands
24 in. or less	4	2	2
Over 24 in. wide	6	3	2

G As required	Suitable hardwood vertical separators, placed between center and outside Items "B", as close to the ends of pile as practicable.
H 1 each pair Items "G"	1 in. x 3 in., nailed to Items "G".
J Overall Ties	Wires or bands. Lengthwise of car, suitable spaced. Draw taut but not too tight. Not required. As Required when load completely fills length of car.

Weight of Pile	No. 8 ga. wire	1¼ in. x .029 in. bands	2 in. x .044 in. bands
25,000 lbs. or less	3	2	2
25,001 lbs. to 40,000 lbs. .	4	2	2
40,001 lbs. to 55,000 lbs. .	6	3	2
55,000 lbs. to 85,000 lbs. .	8	4	2

K As required Protection angles, 20 gauge, 4 in. wide, applied so as to prevent displacement.

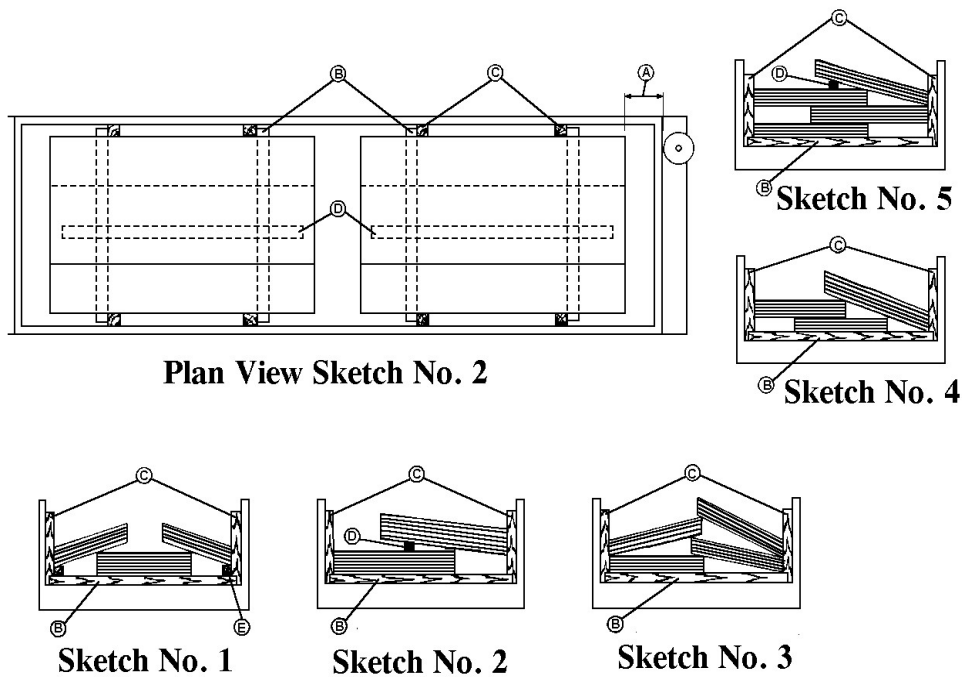
**Notes:**

1. If units vary in width, apply wood fillers secured so that they will not become displaced and so as to make size of pile uniform at the points where Items "F" and "J" are applied.
2. Narrow units may be placed side by side and tied together provided vertical separators applied so as to prevent displacement, or top clamping pieces 1 in. thick, are used.
3. Horizontal separators are prohibited.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 22 (Rev 9-1994)

Uncoiled Steel Plates or Sheets over 1/8 in. thick, lengthwise - Gondola Cars.



**Sec. 2 - Fig. 22 (Rev 9-1994) (Cont'd)**

**Uncoiled Steel Plates or Sheets over 1/8 in. thick, lengthwise - Gondola Cars.**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
A		Brake wheel clearance. See Fig. 2.
B	As required	2 in. x 4 in., length about 2 in. less than width of car. Use optional.
C	2 per pile each side of car	Wood, dimensions to suit. Use optional.
D	As required Sketches 2 & 5	2 in. x 4 in., length to suit. Locate so as to incline top lift towards side of car.
E	2 per pile Sketch 1	Wood, dimensions to suit. Use optional.

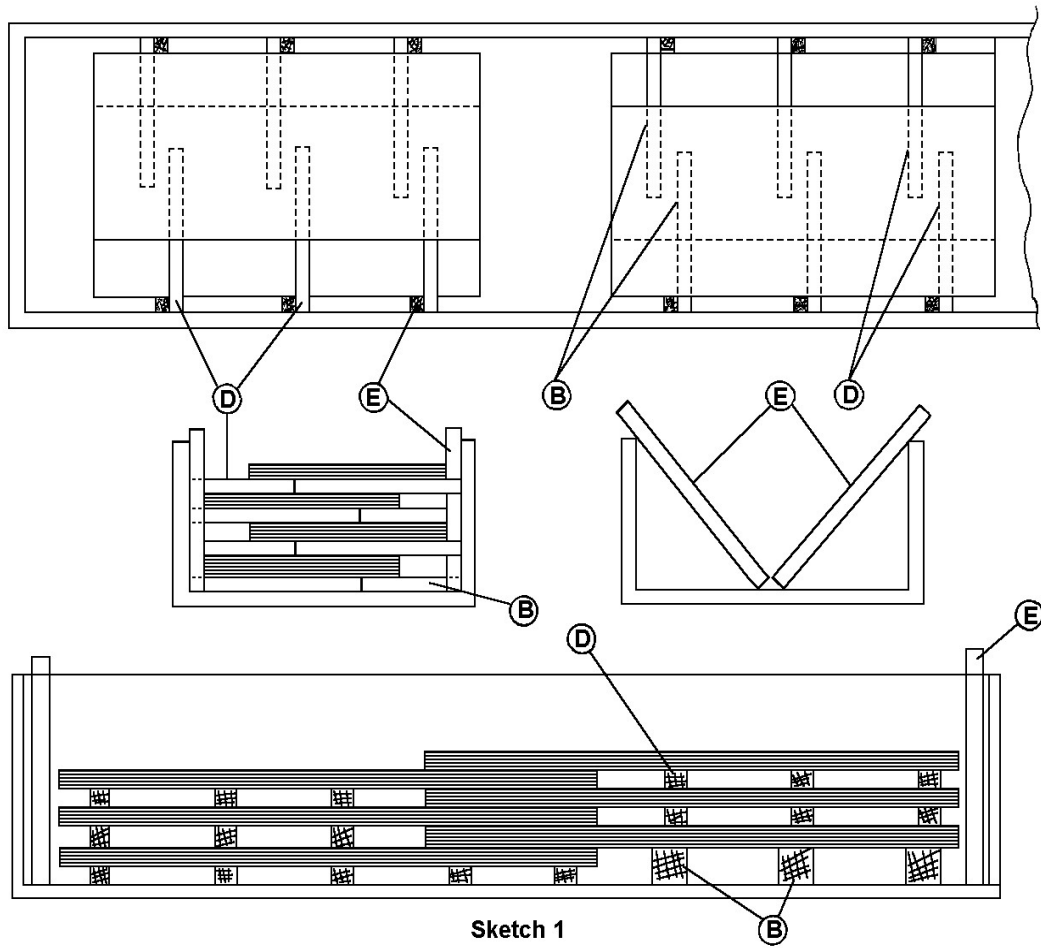
**Notes:**

1. When loaded as per Sketch 1, the height of center portion above Items "B" must not be more than 10 in. and of a width that will place over 50% of weight of side lift below overlapping contact point. One side of each side portion must contact Items "C" or side of car. The height of complete pile measured at point where top portion rests on center portion must not exceed 23 in. above Items "B". 4 in. x 4 in. pieces, length to suit, may be substituted for center pile of steel. Locate one about 2 ft. from each end of side portions, space intermediate pieces not more than 8 ft. apart. Secure to Items "B" or wood floor with four 30-D nails in each and to steel floors with two in. dia. bolts in each.
2. When loaded as per Sketch 2, the weight of plates in each portion must be equal and wide enough to permit the top portion to overlap the bottom portion about  $\frac{1}{2}$  of its width, with one side of each portion contacting Item "C" or side of car. The height of complete pile, measured at point where top portion rests on bottom portion, must not exceed 23 in. above Items "B".
3. When loaded as per Sketch 3, the weight of plates in each portion must be equal and wide enough to permit the top portion to overlap the bottom portion not less than 2 in. with one side of each portion contacting Items "C" or side of car. The height of complete pile, measured at Items "C" or sides of car, must not exceed 12 in. above Items "B".
4. When loaded as per Sketch 4, the height of pile, measured at a point where top portion rests on bottom portion, nearest side of car, must not exceed 23 in. above Items "B".
5. When loaded per Sketch 5, the height of pile, measured at a point where top portion rests on the one immediately below, nearest to side of car, must not exceed 23 in.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 22-A (Rev. 10-1981)

Unoiled Steel Plates, minimum thickness 1/8 in., minimum width 30 inches, stagger loaded with crosswise separators - Gondola Cars.



**Sec. 2 - Fig. 22-A (Rev. 10-1981) (Cont'd)**

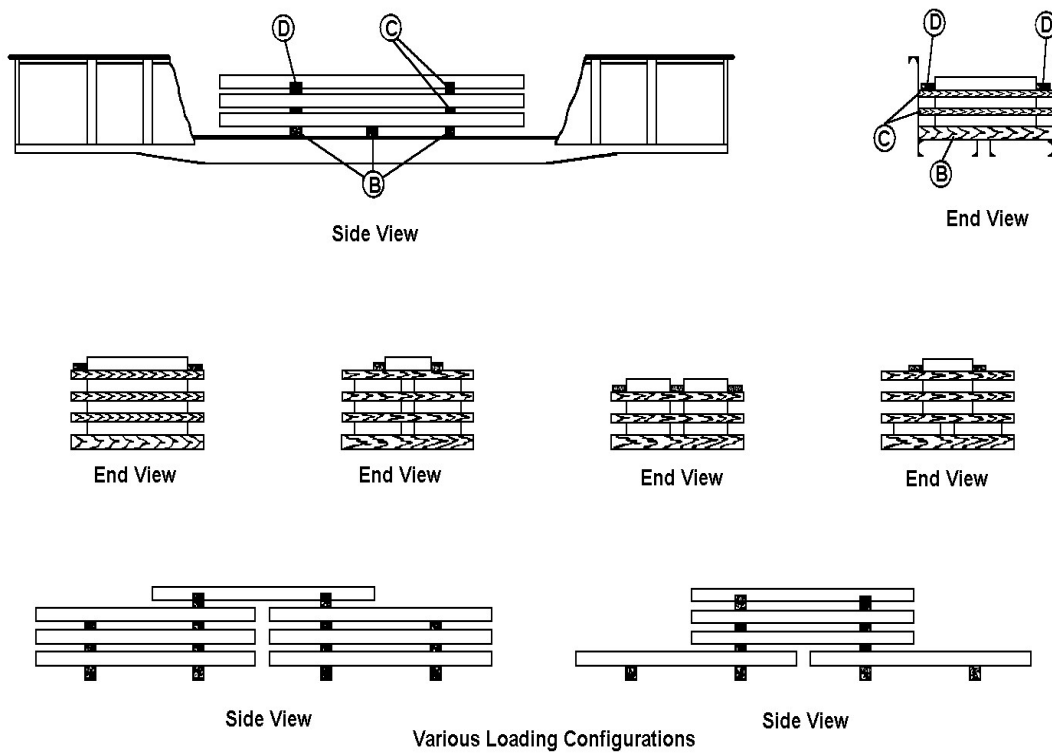
**Unoiled Steel Plates, minimum thickness 1/8 in., minimum width 30 inches, stagger loaded with crosswise separators - Gondola Cars.**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
A		Brake wheel clearance. See Fig. 2, Sec. 1.
B	2 for 20 ft. long or less. Add 1 for 10 ft. or less.	Bearing Pieces, lumber, 2 in. x 4 in. x 5 ft. minimum, height not to exceed width. Each to consist of 2 pieces placed side by side with ends against each side of car. Stagger ends on each side of side each additional spacers, Items "C" if used. Use optional.
C	2 per each Item B	Side spacers, lumber, 2 in. x 4 in. minimum, length to extend above top of pile. Locate at bearing pieces and secure to prevent displacement. Use optional.
D	2 for 20 ft. long or less. Add 1 for each additional 10 ft. or less.	Separators, lumber, 2 in. x 4 in. x 5 ft. minimum, height not to exceed width. Each to consist of 2 pieces placed side by side with ends against each side of car. Stagger ends on each side of side spacers, Item "C" if used.
E	As required.	Spacer blocks, lumber, length sufficient to extend from top of car sides to meet or overlap near center of car. Locate as shown in ends of car and/or between piles. Secure to prevent displacement. Ends must not extend beyond sides of car. Use optional.
F	As required.	Top separators, 2 in. x 4 in. lumber, length to suit. Locate so as to incline top lift of plates towards side of car. See Note 2 (not shown on drawing).

**Notes:**

1. Plates or sheets longer than 1/2 the length of the car may be lapped lengthwise to distribute weight and reduce pile height. Bearing pieces and separators may be built up to allow flat piling or the plates may be allowed to conform to the blocking. (See sketch 1)
2. Top lift of plates or sheets which are both under 60 inches wide and under 1/4 inch thickness must be secured against side shift by either slanting toward the car side, using Item "F" when necessary or by using suitable and sufficient blocking and/or bracing on lifts loaded flat.

**Sec. 2 - Fig. 22-B (New 9-1993)**  
**Steel Slabs, 8 in. thick - Gondola Cars**  
**(Restricted to movement of 400 miles or less)**



**Sec. 2 - Fig. 22-B (New 9-1993) (Cont'd)**  
**Steel Slabs, 8 in. thick - Gondola Cars**  
**(Restricted to movement of 400 miles or less)**

Item	No. of Pcs.	Description
A		Vacant.
B	2 per each slab 200 in. or less in length, 3 for slabs over 200 in.	Bearing pieces: Hardwood, 4 in. x 4 in. in one piece. Length about equal to width of car. Locate approximately ¼ length, from each end of slab.
C	2 per each slab	Separators: Hardwood, 2 in. x 4 in. in one piece. Length about equal to width of car. Locate in line with Items “B”, when possible.
D	2 per each top Item “C”.	Cleats: Lumber, 2 in. x 4 in. x 12 in. Locate approximately ½ in. from edge of slab in line with Item “C”. Secure each with three (3) 20-D nails, equally spaced. When piles are loaded side-by-side, a block must be applied to the top separator, filling void between piles and be secured to prevent displacement.
<b>Notes:</b>		
1.		Floor must be clean of ice, snow and debris in area where bearing pieces are applied.
2.		No more than 50 percent of the top slab is permitted to extend above top of car sides and ends.
J	2 per pile	6 in. x 8 in., hardwood, length to suit, against edge of plates, each secured with two ¾ in. dia. bolts, through floor and Item “L”. Substitute, if desired, for each item “J”, one additional Item “K”, located about six inches above floor, or bearing piece, if used.
K	2 per pile	7/8 in. dia. rod, against edge of plates, with nuts and washers.
L	1 each Items “E” and “J”	4 in. x 4 in. x 18 in., hardwood, or ½ in. x 4 in. x 18 in. plate. On cars equipped with steel plate floors, plate size may be reduced to ½ in. x 4 in. x 6 in.
M	1 each Item “G”	¾ in. dia. rod. Pass through and secure to Item “G”, with nut, and close to bottom of opposite car side. Secure with two nuts, one inside and one outside, with washers. Not required when Items “N” and “O” are used.
N	Single pile on two Items “B”-2 Single pile on Three or more Items “B”-3. Lapped piles, 1 Between each Item “B”	2 in. x .044 in. high tension bands encircling all plates are passed through each slot of top and bottom Item “O”. Permitted only when all plates in pile equal or exceed 2-1/2 in. in thickness. Not required when Items “G” and “M” are used.
O	2 each Item “N”	Protection plates formed to suit. 3/16 in. x 6 in. x 48 in. with 2 in. x 3 in. slot at each end. Not required when Items “G” and “M” are used.

Determine number of Items “B” required, by dividing total weight of load by load allowed per Item “B”, in following table.

Maximum Load Allowed Per Item “B”	Size of Item “B”	Length of Item “B”	Diagonal Tie Rods		Bolts Securing Each Item “B” To Side of Car	
			Number	Diameter	Number	Diameter
9,000 lbs.	6 in. x 6 in.	Over 5 ft.	1 ea. Item “B”	¾ in.	2	¾ in.
12,000 lbs.	6 in. x 6 in.	5 ft. or less	1 ea. Item “B”	¾ in.	2	¾ in.
13,000 lbs.	6 in. x 8 in.	Over 5 ft.	1 ea. Item “B”	7/8 in.	2	7/8 in.
17,000 lbs.	6 in. x 8 in.	5 ft. or less	1 ea. Item “B”	7/8 in.	2	7/8 in.
20,000 lbs.	8 in. x 8 in.	Over 5 ft.	2 ea. Item “B”	7/8 in.	2	7/8 in.
25,000 lbs.	8 in. x 10 in.	Over 5 ft.	2 ea. Item “B”	7/8 in.	2	7/8 in.

**Notes:**

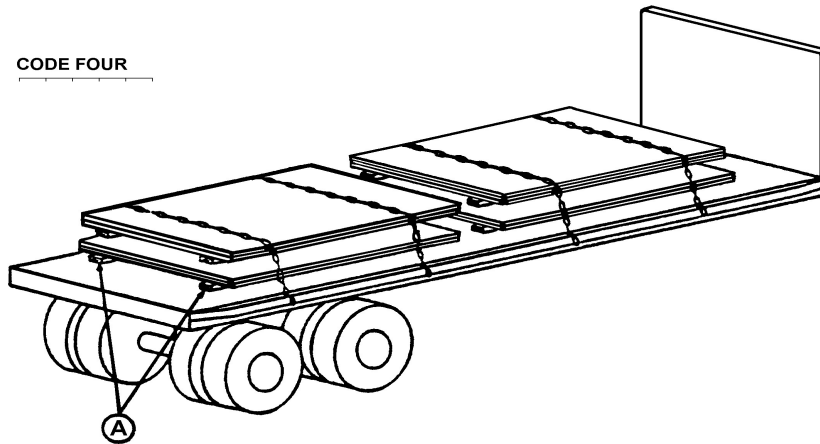
- Items “G” and “M” or Items “N” or “O” not required for single plate 2-1/2 in. or over, in thickness.
- Place center line of plates above longitudinal center line of car, using filler pieces between Items “B” and car sides, if necessary. Top plate must contact side of car and rest on floor, or on bearing pieces, if used. Diagonal plates must not exceed 75 percent of load weight limit, unless covered by a special Note in the Railway Equipment Register. Bearing pieces used for loading or unloading must be opposite each Item “B” securely nailed or bolted to floor or sides.
- Load must not extend beyond car side except when loaded in cars with steel racks. When cars equipped with steel racks are used, the load may extend a maximum of 4 in. beyond car side, subject to railroad clearances.
- Items “B”, “C”, “D”, “E”, “F”, “H”, “J” and “L”, not required when steel racks illustrated in Sketch 2 are used.

See General Rules 1, 2, 3, 4, 5, 7, 9, 10, 12, 14 and 15 for further details.



### 3.6 Plate Loading Truck

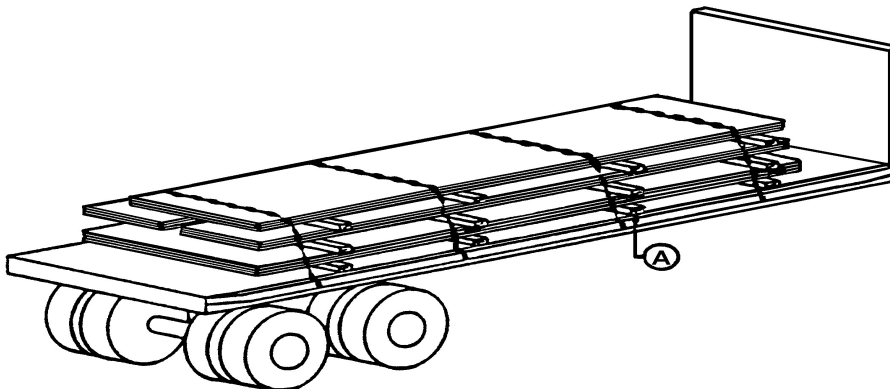
#### Truck Loading (Lengthwise Plates - Lengthwise Blocked)



A. Lengthwise blocking.

**Note:** Carrier is responsible for placement, protection and securing of the load.

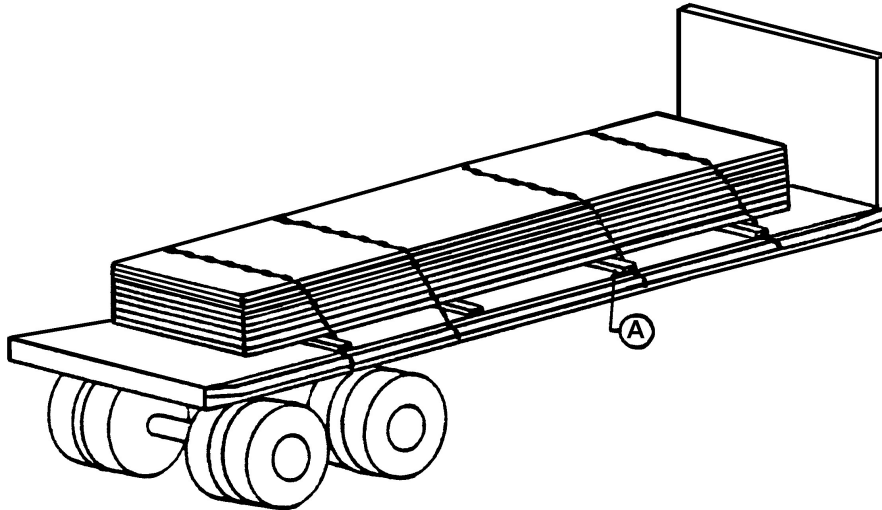
#### Truck Loading (Lengthwise Plates - Crosswise Blocking)



A. Crosswise Blocking.

**Note:** Carrier is responsible for placement, protection and securing of the load

**Truck Loading  
(Non-Staggered Load)**

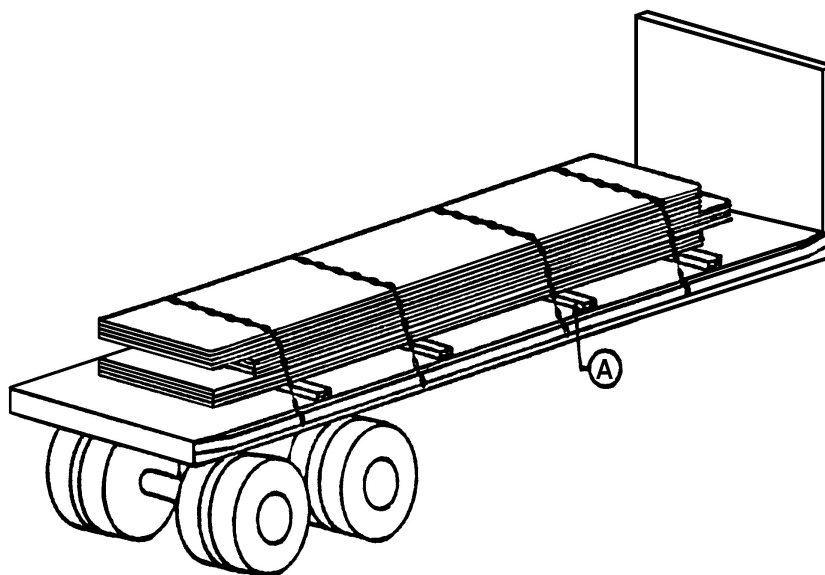


A. No blocking other than bottom bearing pieces.

**Note:** Carrier is responsible for placement, protection and securing of the load

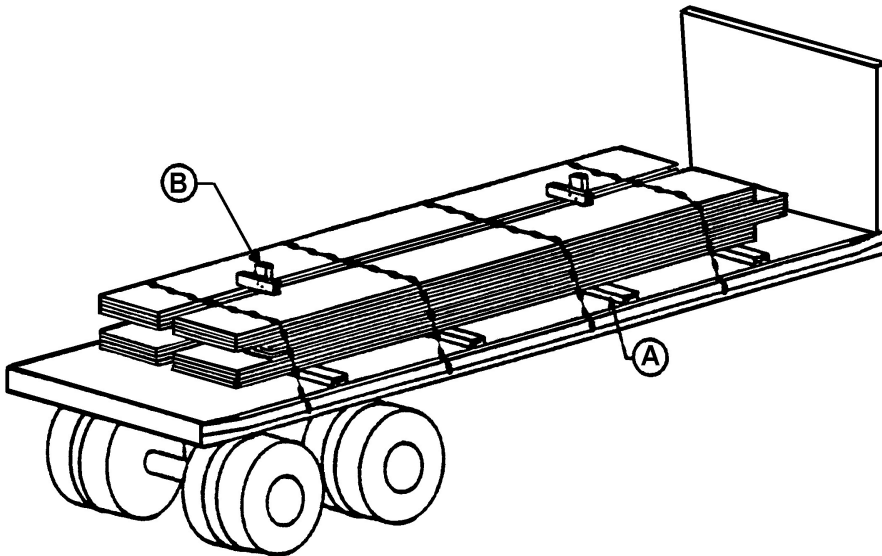
**Truck Loading  
(Staggered Load)**

A. No blocking other than bottom bearing pieces.



**Note:** Carrier is responsible for placement, protection and securing of the load

**Truck Loading  
(Narrow Plates Separated)**



- A. Bottom bearing pieces.
- B. 2" x 3" hardwood separator tee's.

**Note:** Carrier is responsible for placement, protection and securing of the load

**4. COIL & C.T.L., PRODUCTS**

**Type of Product & Package**

Cut to Length Coils	
<b>PACKAGE FOR</b>	
<b>CUT TO LENGTH</b>	<b>COILS</b>
Standard lift	Bore horizontal
Multiple specific lift	Bore vertical
Short lengths	Bore horizontal
Coil group - narrow coils	Coil group - narrow coils bore
Narrow strips	vertical

**Type of Weather Protection**

<b>PROTECTION TYPE</b>
Bare
Protective oil coating
Metal wrap
Poly wrap
Unit shroud (paper or poly)
VCI Paper wrap
Paper wrap

**Type Of Lumber Base For Package**

<b>DIRECTION</b>
Lengthwise
Crosswise
Bearing pieces (unattached)
Skeleton platform (attached)
Skids (attached)
Poly Wrapped Bearing Pcs. (unattached)
Poly Wrapped Skelton Platform (attached)
Poly Wrapped Bearing Pcs. (attached)
<b>LUMBER SIZE FOR BOTTOM COMPONENT</b>
<b>25 mm x 76 mm (1" x 3")</b>
<b>51 mm x 76 mm (2" x 3")</b>
<b>102 mm x 102 mm (4" x 4")</b>
<b>LUMBER SIZE FOR BALANCE OF PACKAGE</b>
<b>BAR CODE REQUIRED</b>

**Type of Carrier & Loading Method**

<b>ORIGINATING CARRIER</b>	
Barge Rail Truck	
Container	
Indicates no applicable code	
Pool car	
Boat or vessel	
<b>DELIVERING CARRIER</b>	
Rail Barge Pool car Indicates no applicable code	
Truck Container Boat or vessel	
<b>ORIGINATING CARRIER'S EQUIPMENT TYPE</b>	
<b>TRUCK (TRAILER TYPE)</b>	<b>RAIL (CAR TYPE)</b>
Flat bed	Standard mill gondola
Rack & Tarp	Bulkhead flatcar
Van	Triple Trough
Trombone	Covered gondola
	Open coil car
	Covered coil car
	Standard flat
	Box car
	Insulated Coil Car
<b>ORIGINATING CARRIER'S LOADING METHOD</b>	
<p><b>TRUCK</b></p> <p><i>Note:</i>                      The carrier's representative is responsible for direct placement, protection and securing of the load. Algoma Steel Inc. cannot assume liability for in-transit safety and fulfills its obligation by indicating customers' requirements.</p>	<p><b>RAIL</b></p> <p><i>Note:</i>                      Typical Methods shown are based on A.A.R. approved figures. Algoma loads in accordance with established railroad practices.</p>
continued next page	

**TRUCK**

Lengthwise method for sheet, lengthwise bearing pieces  
Lengthwise method for sheet, crosswise bearing piece  
Crosswise method for sheet, lengthwise bearing pieces  
Crosswise method for sheet, crosswise bearing piece  
Lengthwise method for sheet, lengthwise skids  
Lengthwise method for sheet, crosswise skids  
Crosswise method for sheet, lengthwise skids  
Crosswise method for sheet, crosswise skids  
Lengthwise method for coils bore horizontal  
Crosswise method for coils bore horizontal  
Coils eye vertical and bearing pieces lengthwise  
Coils eye vertical and bearing pieces crosswise  
Coils bore vertical - no bearing pieces  
Coils bore vertical palletized - lengthwise bearing pieces  
Coils bore vertical, palletized - crosswise bearing pieces  
Coils bore vertical, palletized - lengthwise runners  
Coils bore vertical, palletized - crosswise runners

**RAIL**

Lengthwise skidded sheets (less than .025 gauge) contained using outriggers - gondola cars with steel floors only - Fig. 25  
Lengthwise sheets with horizontal separators - gondola cars only - Fig. 18  
Lengthwise sheets (less than .025 gauge) in packages with high tension bands - gondola cars – Fig. 27  
Lengthwise sheets with either lengthwise or crosswise separators - loaded flatcar or bulkhead flat - Fig. 14  
Crosswise skidded sheets loaded crosswise in gondola cars - Fig. 20  
  
Flat rolled steel - lengthwise bearing pieces load secured with high tension bands - gondola cars - Fig. 19-C  
Flat roll steel less .250 gauge - loaded crosswise - skidded - gondola cars - Fig. 24  
Coils loaded lengthwise in permanently equipped coil trough cars - gondola cars - Fig. 33

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**Method of Unloading**

**METHODS OF LIFTING**

By crane

By lift truck

**LIFTING ATTACHMENTS**

Chains or slings

Sheet lifter

Grab hooks

C hook

Heppenstahl

Ice tongs

Forks

Pole

Magnet or vacuum cups

**DIRECTION OF UNLOADING**

From overhead

From side

From end



**Alternative Shipping Mode**

*“This is to be referenced when loads are switched between rail & truck & where the corresponding paperwork has not been changed”*

<p><b>INDICATES POSSIBLE ALTERNATIVE</b></p> <p>Possible Alternative</p> <p><b>CARRIER TYPE</b></p>	
<p>Rail Barge Pool car Indicates no applicable code</p>	
<p>Truck Container Boat or vessel</p>	
<p><b>EQUIPMENT TYPE</b></p>	
<p><b>TRUCK (TRAILER TYPE)</b></p> <p>Flat bed                  Rack &amp; Tarp                  Van                  Trombone</p>	<p><b>RAIL (CAR TYPE)</b></p> <p>Standard mill gondola                  Triple Trough                  Bulkhead flatcar                  Covered gondola                  Open coil car                  Covered coil car                  Standard flat                  Box car                  Insulated Coil Car</p>
<p><b>LOADING METHOD</b></p>	
<p><b>TRUCK</b></p> <p><i>Note:</i>                  The carrier’s representative is responsible for placement, protection and securing of the load. Algoma Steel Inc. cannot assume liability for in-transit safety and fulfills its obligation by indicating customer’s requirements.</p>	<p><b>RAIL</b></p> <p><i>Note:</i>                  Typical methods shown are based on A.A.R. approved figures.                   Algoma loads in accordance with established railroad practices.</p>
<p>continued next page</p>	

### TRUCK

Lengthwise method for sheet, lengthwise bearing pieces  
Lengthwise method for sheet, crosswise bearing piece  
Crosswise method for sheet, lengthwise bearing pieces  
Crosswise method for sheet, crosswise bearing piece  
Crosswise method for sheet, lengthwise skids  
Lengthwise method for sheet, lengthwise skids  
Lengthwise method for sheet, crosswise skids  
Crosswise method for sheet, crosswise skids  
Lengthwise method for coils bore horizontal  
Crosswise method for coils bore horizontal  
Crosswise method with the exception of roll top vans and dump trucks, where lengthwise loading is permitted  
Coils eye vertical and bearing pieces lengthwise  
Coils eye vertical and bearing pieces crosswise  
Coils bore vertical - no bearing pieces  
Coils bore vertical palletized - lengthwise bearing pieces  
Coils bore vertical, palletized - crosswise bearing pieces  
Coils bore vertical, palletized - lengthwise runners  
Coils bore vertical, palletized - crosswise runners

### RAIL

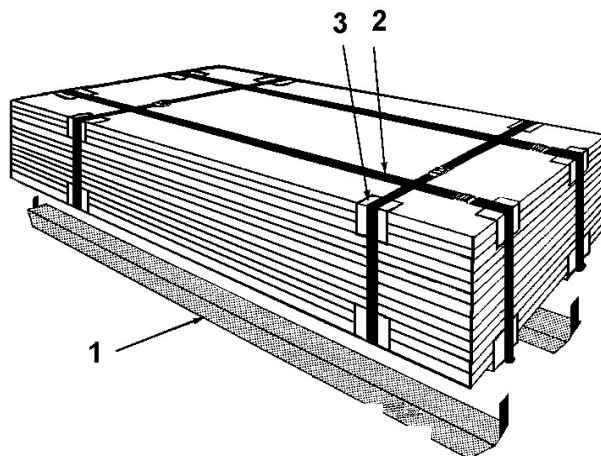
Lengthwise skidded sheets (less than .025 gauge) contained using outriggers - gondola cars with steel floors only - Fig. 25  
Lengthwise sheets with horizontal separators - gondola cars only - Fig. 18  
Lengthwise sheets (less than .025 gauge) in packages with high tension bands - gondola cars - Fig. 27  
Lengthwise sheets with either lengthwise or crosswise separators - loaded flatcar or bulkhead flat - Fig. 14  
Crosswise skidded sheets loaded crosswise in gondola cars - Fig. 20  
Flat rolled steel - lengthwise bearing pieces load secured with high tension bands - gondola cars - Fig. 19-C  
Flat roll steel less .250 gauge - loaded crosswise - skidded - gondola cars - Fig. 24  
Coils loaded lengthwise in permanently equipped coil trough cars - gondola cars - Fig. 33  
Coils loaded lengthwise in removable steel troughs - flat or bulkhead flat cars - Fig. 29-B

### Rules to apply when alternate method optioned:

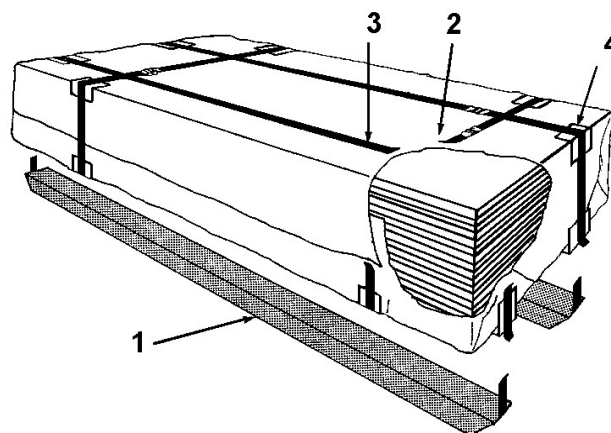
1. Coils loaded **lengthwise** on truck **must** always be spaced a minimum of 12” apart and/or as specified in Rail Tape Free English Instructions.
2. When switching from Rail to Truck, **all loads** must be tarped.
3. When switching from Truck to Rail and whereby Tally indicates “Tarp Load”, Railcar **must be** covered.

### 4.1 C.T.L. Package Type

#### Cut Lengths - Lengthwise Bearing Pieces (Bare & Wrapped)



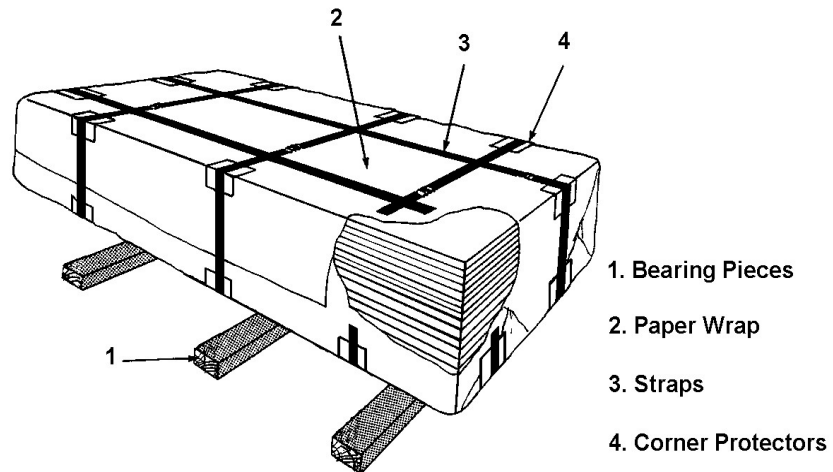
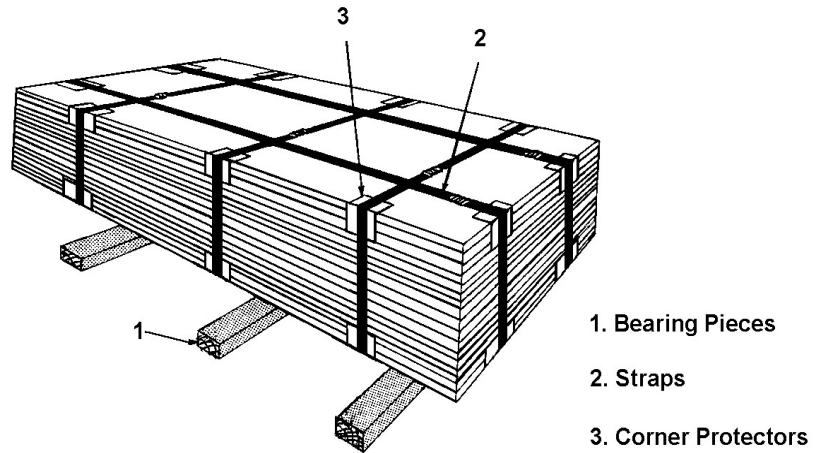
- 1. Skids
- 2. Straps
- 3. Corner Protectors



- 1. Skids
- 2. Paper Wrap
- 3. Straps
- 4. Corner Protectors

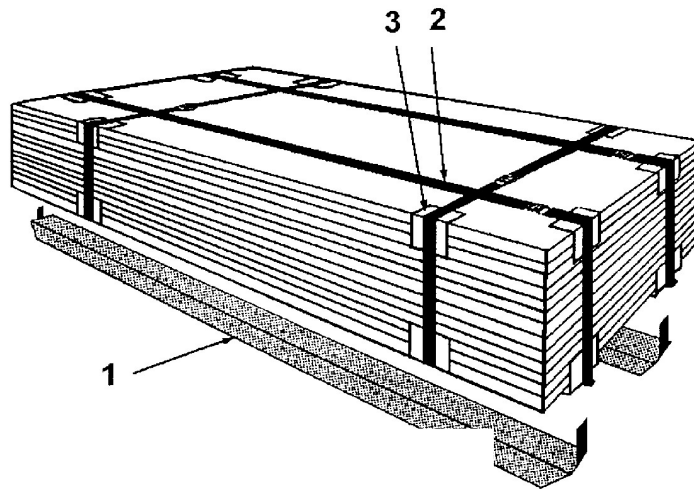
*Note:* Applies to Widths of 457 mm (18”) and over

**Cut Lengths - Crosswise Bearing Pieces  
(Bare and Wrapped)**

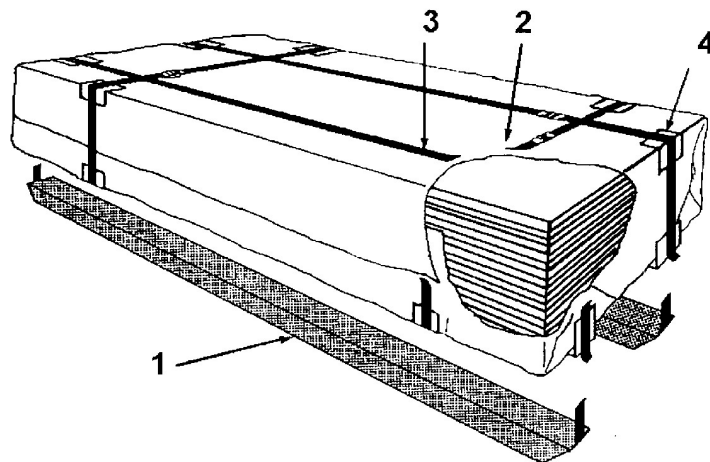


**Note:** Applies to widths of 457 mm (18”) and over

**Cut Lengths - Lengthwise Skids  
(Bare & Wrapped)**



- 1. Skids
- 2. Straps
- 3. Corner Protectors

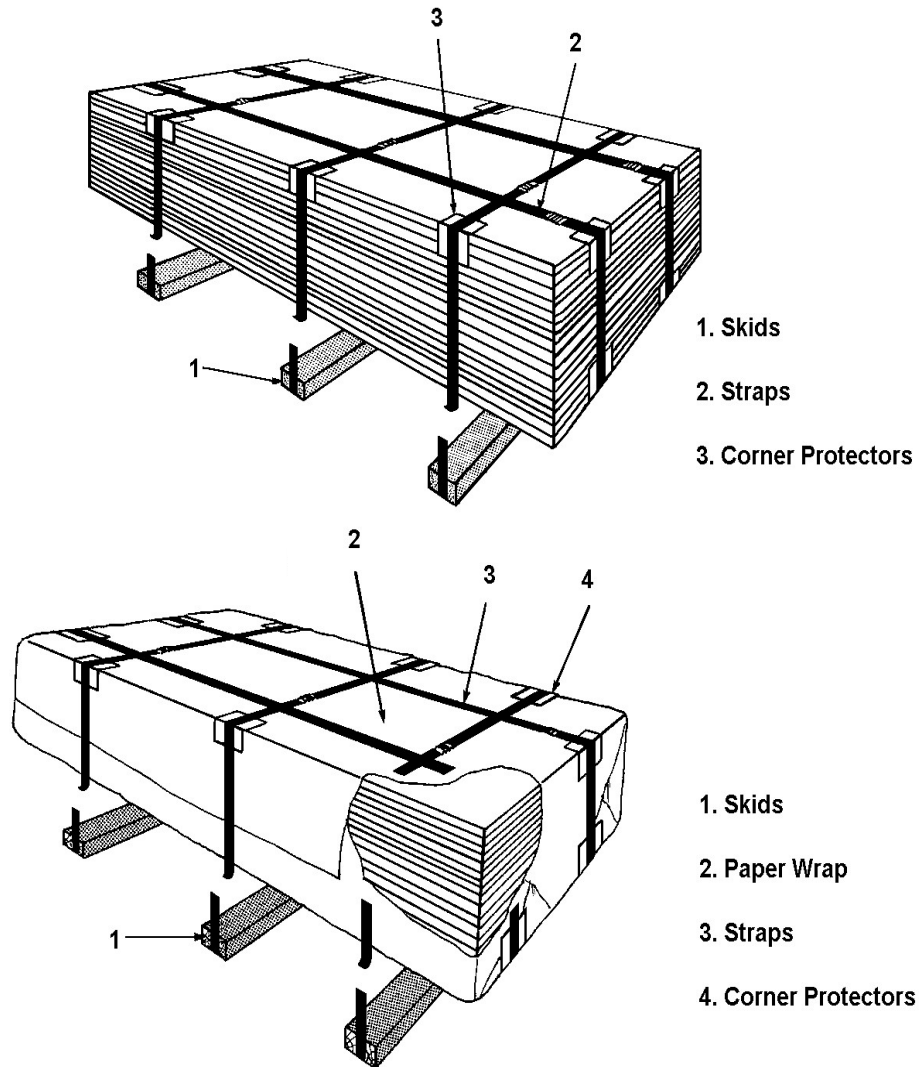


- 1. Skids
- 2. Paper Wrap
- 3. Straps
- 4. Corner Protectors

**Note: Applies to widths of 457 mm (18") and over**

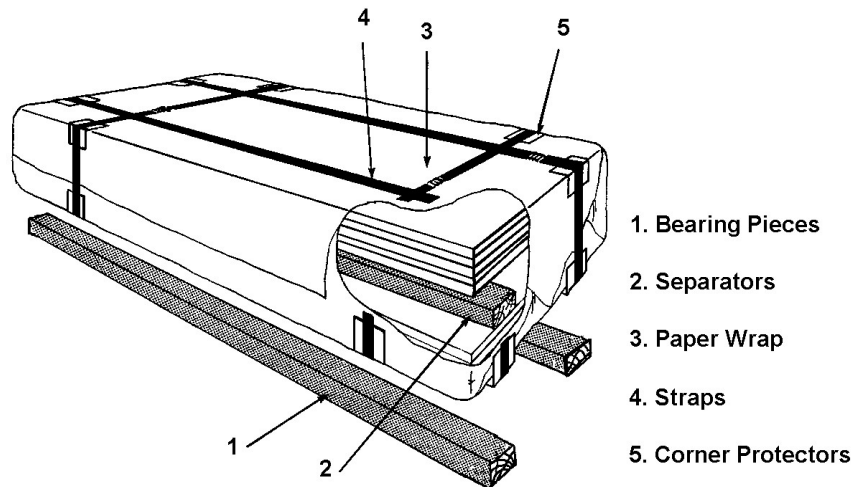
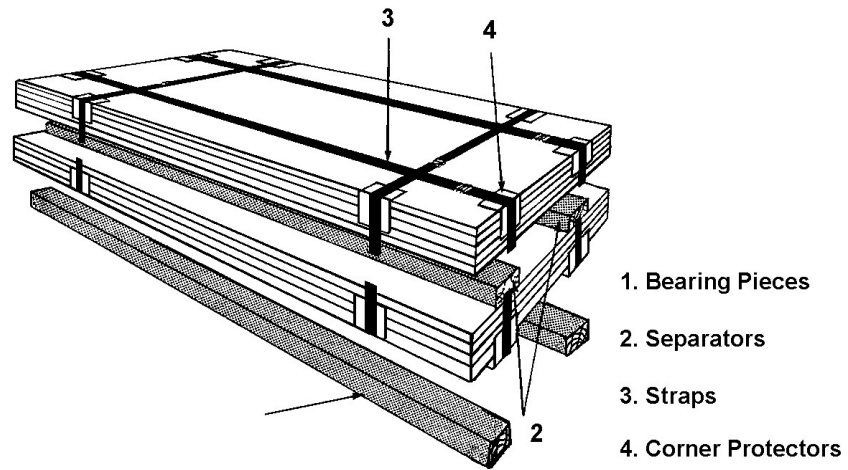
*Note:* Applies to widths of 457 mm (18") and over

**Cut Lengths - Crosswise Skids  
(Bare & Wrapped)**



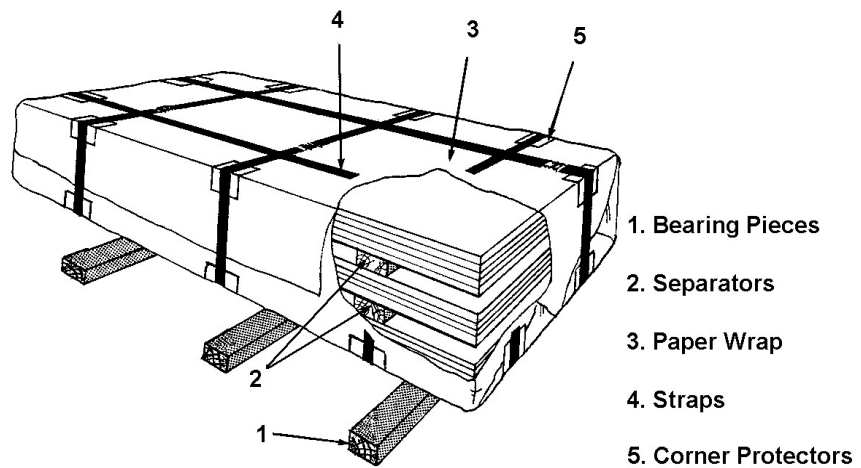
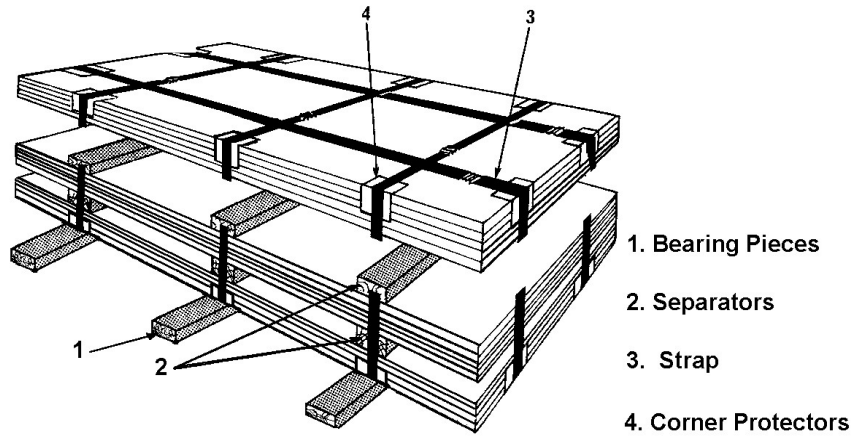
**Note:** Applies to widths of 457 mm (18") and over

**Cut Lengths - Multiple Package - Lengthwise Bearing Pieces  
(Bare & Wrapped)**



**Note:** Applies to widths of 457 mm (18") and over

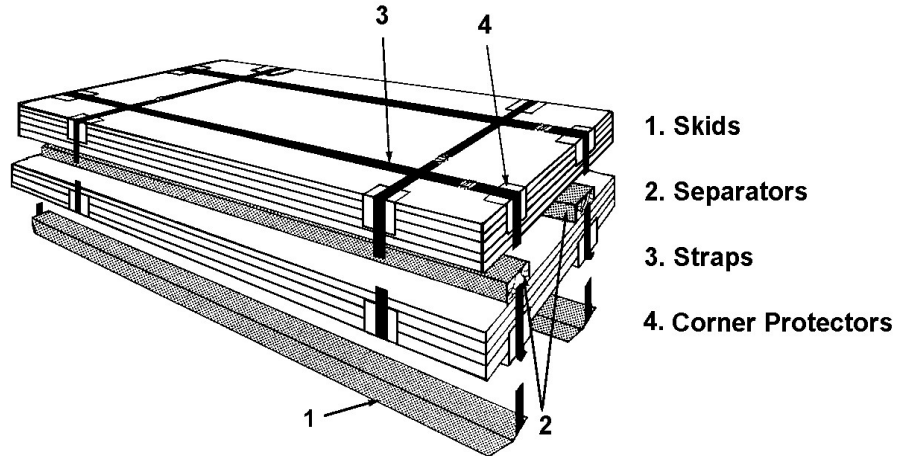
**Cut Lengths - Multiple Package - Crosswise Bearing Pieces  
(Bare & Wrapped)**



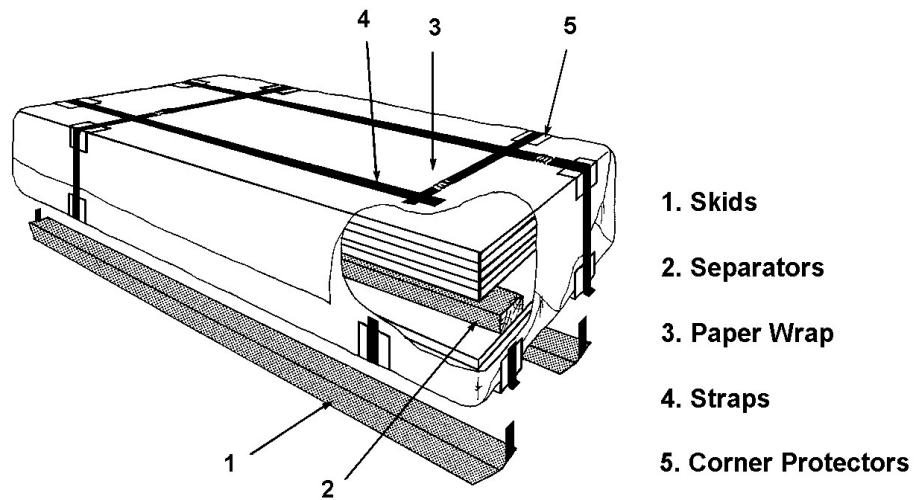
**Note:** Applies to widths of 457 mm (18") and over



**Cut Lengths - Multiple Package - Lengthwise Skids & Separators  
(Bare & Wrapped)**



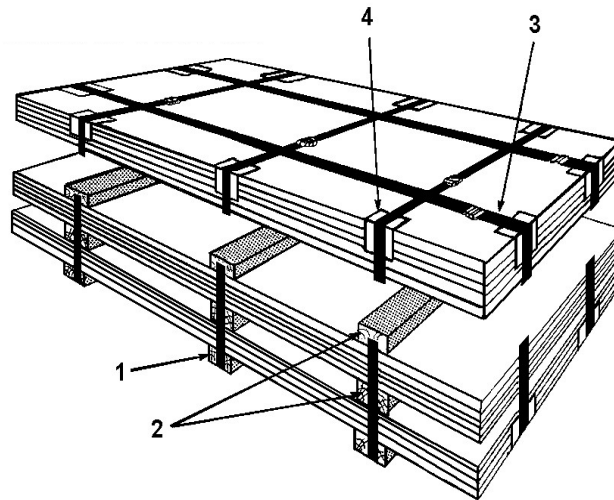
- 1. Skids
- 2. Separators
- 3. Straps
- 4. Corner Protectors



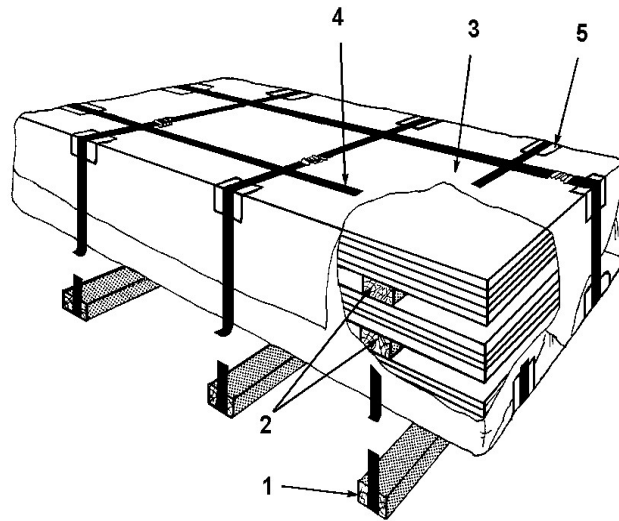
- 1. Skids
- 2. Separators
- 3. Paper Wrap
- 4. Straps
- 5. Corner Protectors

**Note:** Applies to widths of 457 mm (18") and over

**Cut Lengths - Multiple Package - Crosswise Skids & Separators  
(Bare & Wrapped)**



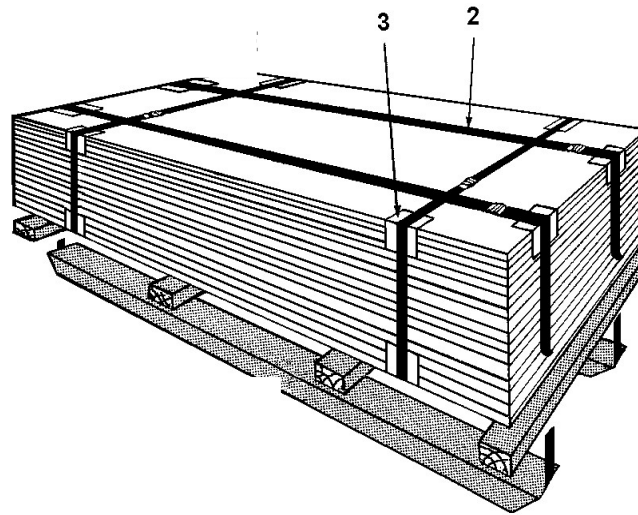
- 1. Skids
- 2. Separators
- 3. Straps
- 4. Corner Protectors



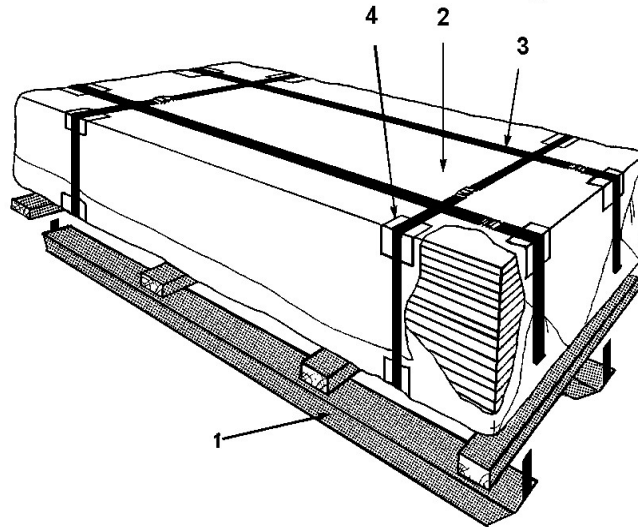
- 1. Skids
- 2. Separators
- 3. Paper Wrappers
- 4. Straps
- 5. Corner Protectors

**Note:** Applies to widths of 457 mm (18") and over

**Cut Lengths - Lengthwise Skeleton Platform  
(Bare & Wrapped)**



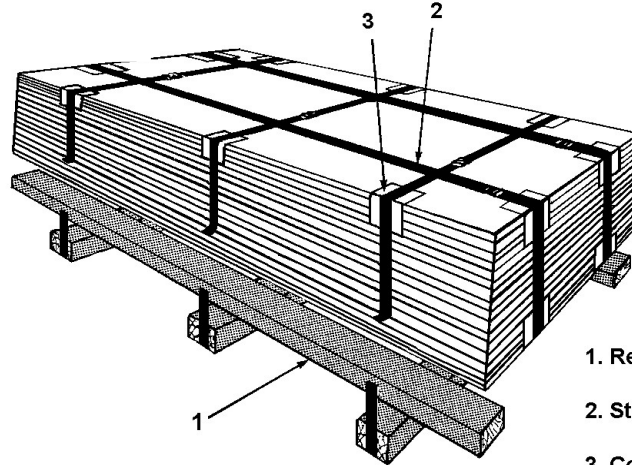
- 1. Skeleton Platform
- 2. Straps
- 3. Corner Protectors



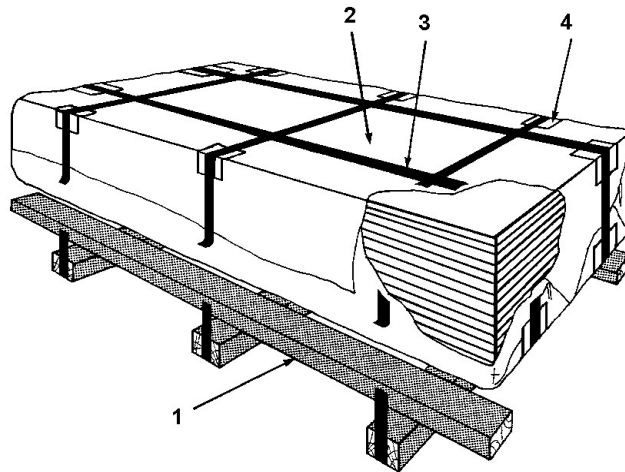
- 1. Skeleton Platform
- 2. Paper Wrap
- 3. Straps
- 4. Corner Protectors

**Note:** Applies to widths of 457 mm (18") and over

**Cut Lengths - Reverse Skeleton Platform  
(Bare & Wrapped)**



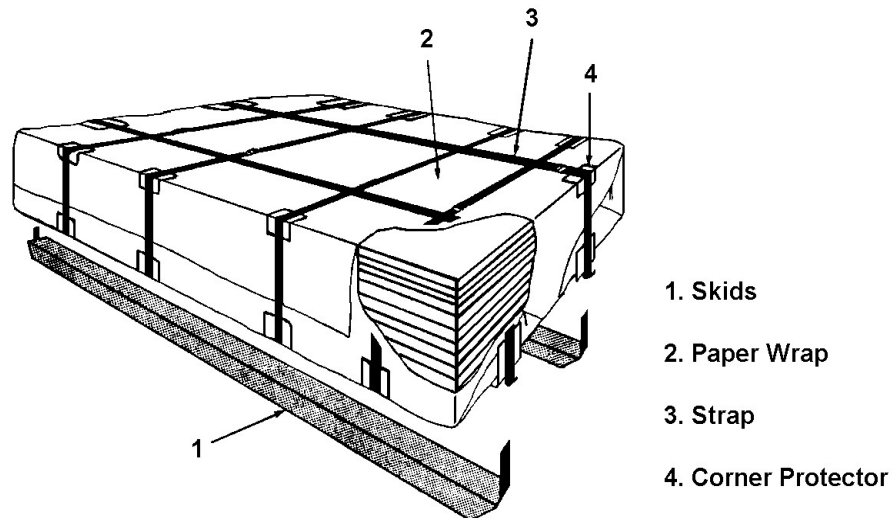
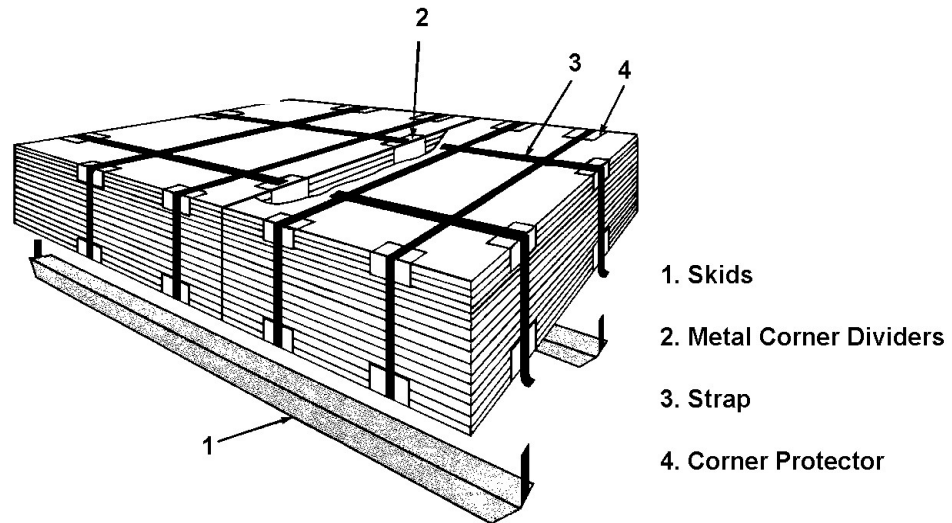
- 1. Reverse Platform
- 2. Straps
- 3. Corner Protectors



- 1. Reverse Platform
- 2. Paper Wrap
- 3. Straps
- 4. Corner Protectors

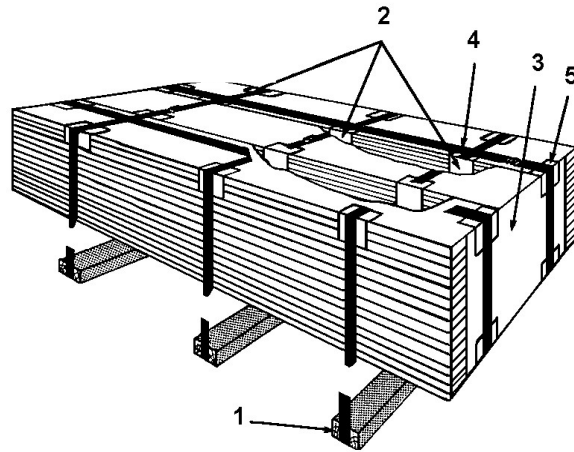
**Note:** Applies to widths of 457 mm (18”) and over

**Cut Lengths - Multiple Package Short Lengths -  
Lengthwise on Lengthwise Skids  
(Bare & Wrapped)**

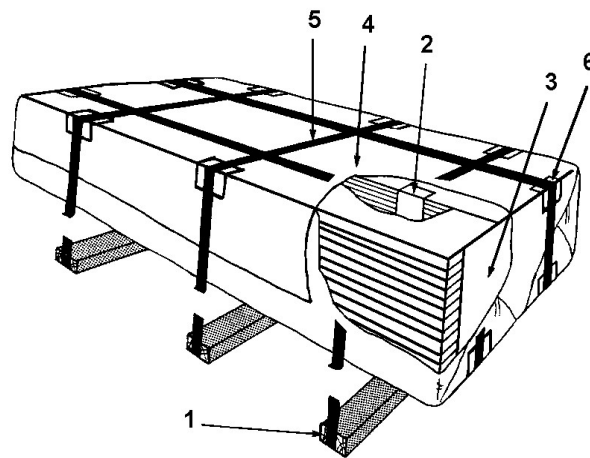


**Note:** Sheet width of 457 mm (18") and over  
Lift length 3048 mm (120") maximum

**Cut Lengths - Narrow - Two or More Stacks  
Lengthwise on Crosswise Skids  
(Bare & Wrapped)**



- 1. Skids
- 2. Metal Corner Dividers
- 3. Shields required for 3 or more stacks unsupported by strapping
- 4. Straps
- 5. Corner Protectors

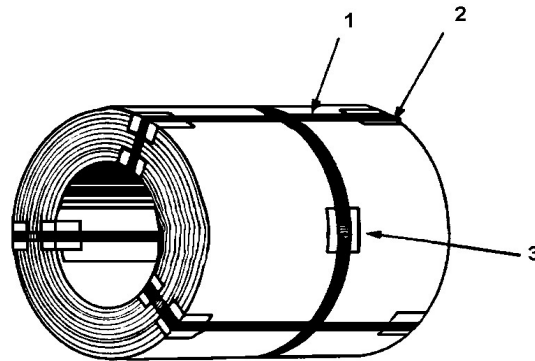


- 1. Skids
- 2. Metal Corner Dividers
- 3. Shields required for 3 or more stacks unsupported by strapping
- 4. Paper wrap
- 5. Strap
- 6. Corner Protectors

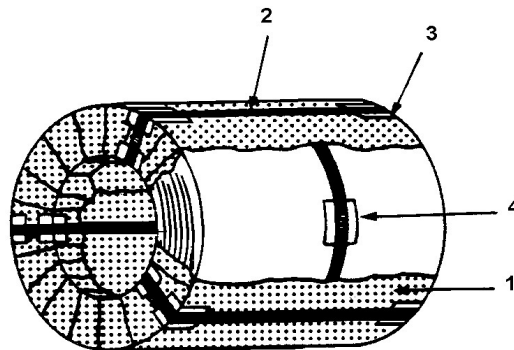
**Note:** Cut length width - under 457 mm  
Lift width - 1118 mm (44") maximum

Coil Package Type

**Coils - Eye Horizontal  
(Processed Coils Bare & Wrapped)**  
(for Unprocessed Coils see 3.37)



- 1. Strap
- 2. Edge Protector
- 3. Seal Protector

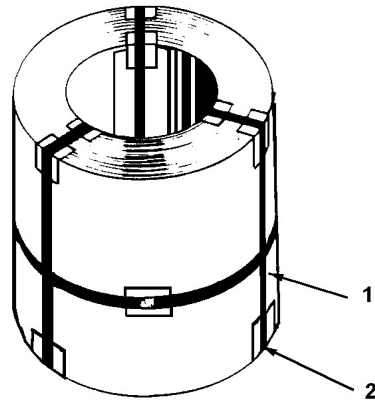


- 1. Paper Wrap
- 2. Strap
- 3. Edge Protector
- 4. Seal Protector

**Notes:**

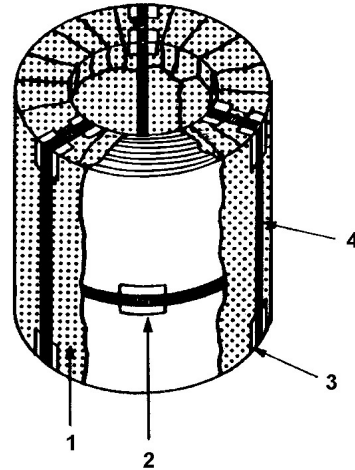
- 1. Edge protectors on slit edge & Cold rolled only
- 2. Seal protectors on Cold Rolled only
- 3. 1 circumference, 2 radials to 6,804 kg. (15,000 lbs.)  
1 circumference, 3 radials for 6,804 kg. (15,000 lbs.) to 20,412 kg (45,000 lbs.)  
1 circumference, 4 radials for 20,412 kg. (45,000 lbs.) and over or  
  
2 circumference, 3 radials for 20,412 kg. (45,000 lbs.) and over

**Coils - Bore Vertical  
(Bare & Wrapped)**



- 1. Strap
- 2. Edge Protector

- 1. Paper Wrap
- 2. Seal Protector
- 3. Edge Protector
- 4. Strap



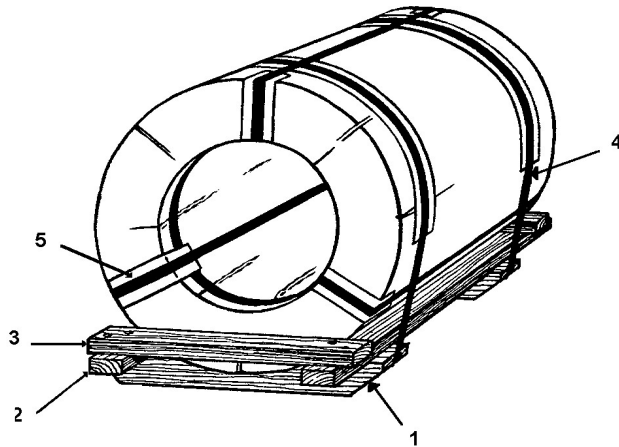
**Notes:**

- 1. Edge protectors on slit edge & Cold rolled only
- 2. Seal protectors on Cold Rolled only 1 circumference, 2 radials to 6,804 kg. (15,000 lbs.)
- 3. 1 circumference, 3 radials for 6,804 kg. (15,000 lbs.) to 20,412 kg (45,000 lbs.)  
1 circumference, 4 radials for 20,412 kg. (45,000 lbs.) and over  
or  
2 circumference, 3 radials for 20,412 kg. (45,000 lbs.) and over

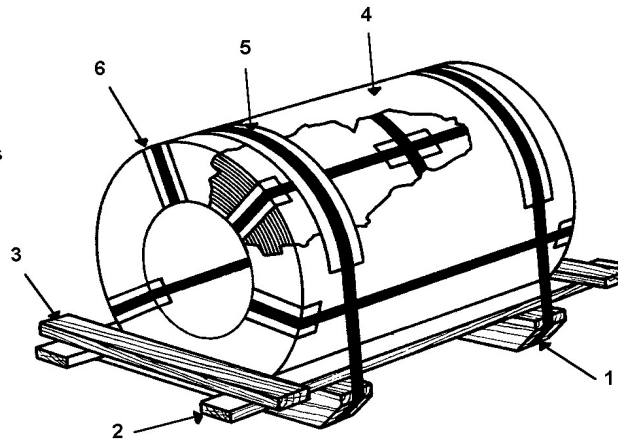


**Coils - Bore Horizontal - Skeleton Platform  
(Bare & Wrapped)**

- 1. 3' x 4' Skids
- 2. 2" x 4" Cross Pieces
- 3. 2" x 4" End Piles
- 4. Straps
- 5. Edge Protectors



- 1. 3' x 4' Skids
- 2. 2" x 4" Cross Pieces
- 3. 2" x 4" End Piles
- 4. Paper
- 5. Straps
- 6. Edge Protectors

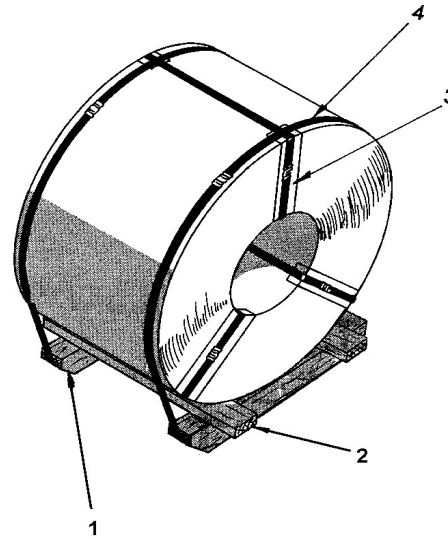


**Notes:**

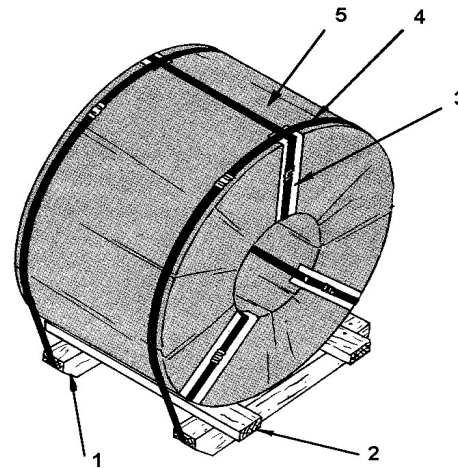
- 1. Edge protectors on slit edge & Cold rolled only
- 2. Seal protectors on Cold Rolled only
- 3. 1 circumference, 2 radials to 6,804 kg. (15,000 lbs.)  
1 circumference, 3 radials for 6,804 kg. (15,000 lbs.) to 20,412 kg (45,000 lbs.)  
1 circumference, 4 radials for 20,412 kg. (45,000 lbs.) and over  
or  
2 circumference, 3 radials for 20,412 kg. (45,000 lbs.) and over

**Coils - Bore Horizontal - Skeleton Platform  
(Bare & Wrapped)**

- 1. 3" X 4 " Skids
- 2. 2" x 4" Cross Piece
- 3. Edge Protectors
- 4. Strap



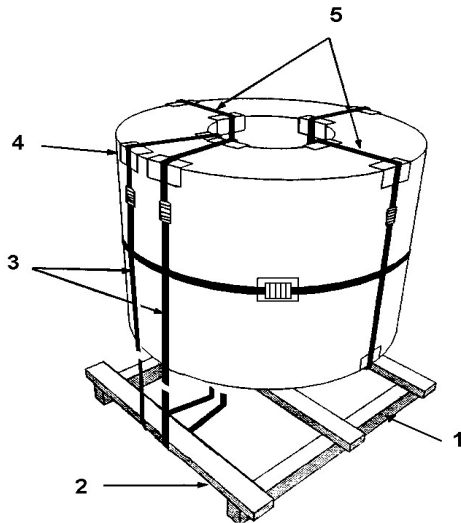
- 1. 3" X 4 " Skids
- 2. 2" x 4" Cross Piece
- 3. Edge Protectors
- 4. Strap
- 5. Paper Wrap



**Notes:**

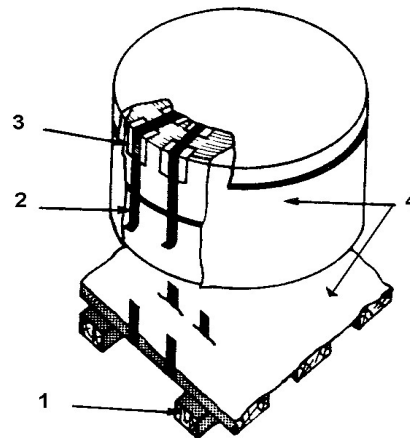
- 1. Edge protectors on slit edge & Cold rolled only
- 2. Seal protectors on Cold Rolled only
- 3. 1 circumference, 2 radials to 6,804 kg. (15,000 lbs.)  
1 circumference, 3 radials for 6,804 kg. (15,000 lbs.) to 20,412 kg (45,000 lbs.)  
1 circumference, 4 radials for 20,412 kg. (45,000 lbs.) and over  
or  
2 circumference, 3 radials for 20,412 kg. (45,000 lbs.) and over

**Coils - Bore Vertical - Skeleton Platform  
(Bare & Wrapped)**



- 1. 3" X 4" Skids
- 2. 2" x 4" Cross Pieces
- 3. Straps (to platform)
- 4. Edge Protectors
- 5. Package Straps

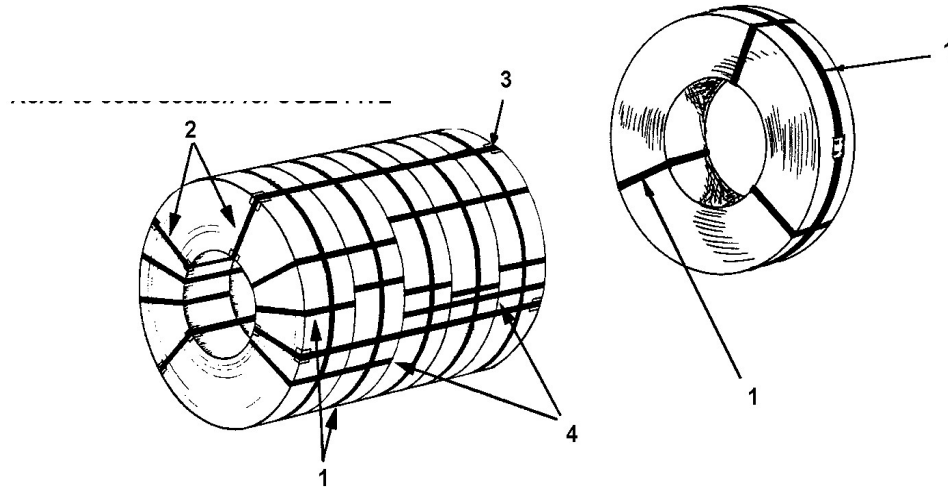
- 1. Skeleton Platform  
(see above for lumber size)
- 2. Straps (to platform)
- 3. Edge Protectors
- 4. Paper Wrap



**Notes:**

- 1. Edge protectors on slit edge & Cold rolled only
- 2. Seal protectors on Cold Rolled only
- 3. 1 circumference, 2 radials to 6,804 kg. (15,000 lbs.)  
1 circumference, 3 radials for 6,804 kg. (15,000 lbs.) to 20,412 kg (45,000 lbs.)  
1 circumference, 4 radials for 20,412 kg. (45,000 lbs.) and over  
or  
2 circumference, 3 radials for 20,412 kg. (45,000 lbs.) and over

**Coils - Bore Horizontal  
(Bare)**



1. Minimum (1) circumference strap and (2) radial straps to 3,629 kg. (8,000 lbs.)  
Minimum (1) circumference strap and (3) radial straps over 3,629 kg. (8,000 lbs.)
2. Unitizing straps - minimum (3) per coil group to 48" wide  
- minimum (4) per coil group over 48" wide
3. Edge protectors on outside edges only.
4. Strap two specific coil groupings PER LIFT.

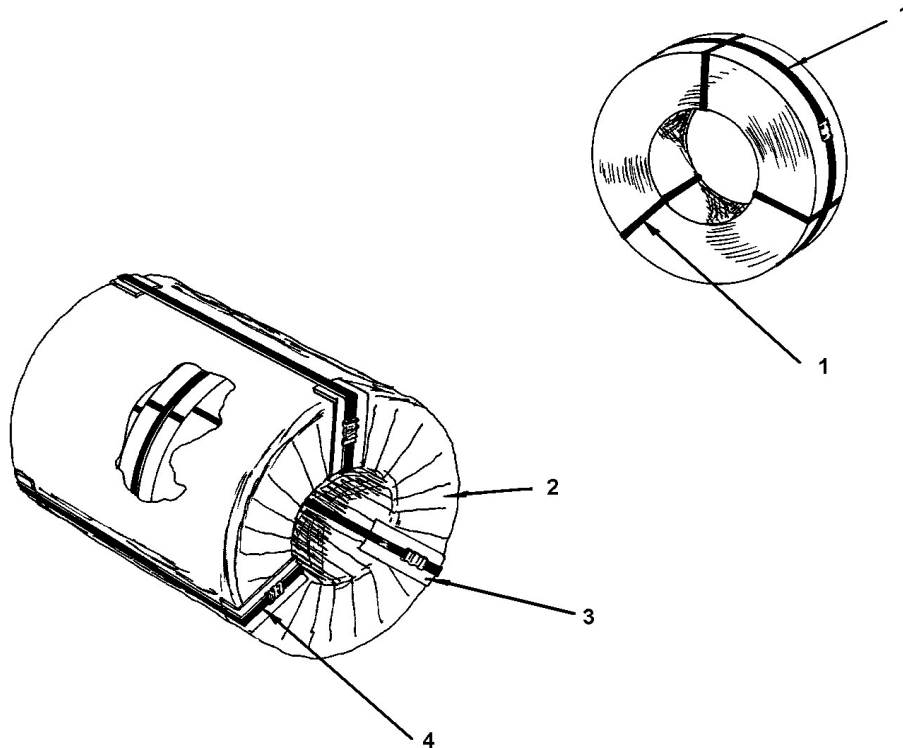
**Slit Coils**

10  
9  
8  
7  
6  
5  
4

**Unitize Specific Coil Groupings**

5 CUTS/5 CUTS  
5 CUTS/4 CUTS  
4 CUTS/4 CUTS  
4 CUTS/3 CUTS  
3 CUTS/3 CUTS  
3 CUTS/2 CUTS  
2 CUTS/2 CUTS

**Coil Mults - Bore Horizontal  
(Wrapped)**



1. Minimum (1) circumference strap and (2) radial straps to 3,629 kg. (8,000 lbs.)  
Minimum (1) circumference strap and (3) radial straps over 3,629 kg. (8,000 lbs.)
2. Unitizing straps - minimum (3) per coil group to 48" wide  
- minimum (4) per coil group over 48" wide
3. Edge protectors on outside edges only.
4. Strap two specific coil groupings PER LIFT.

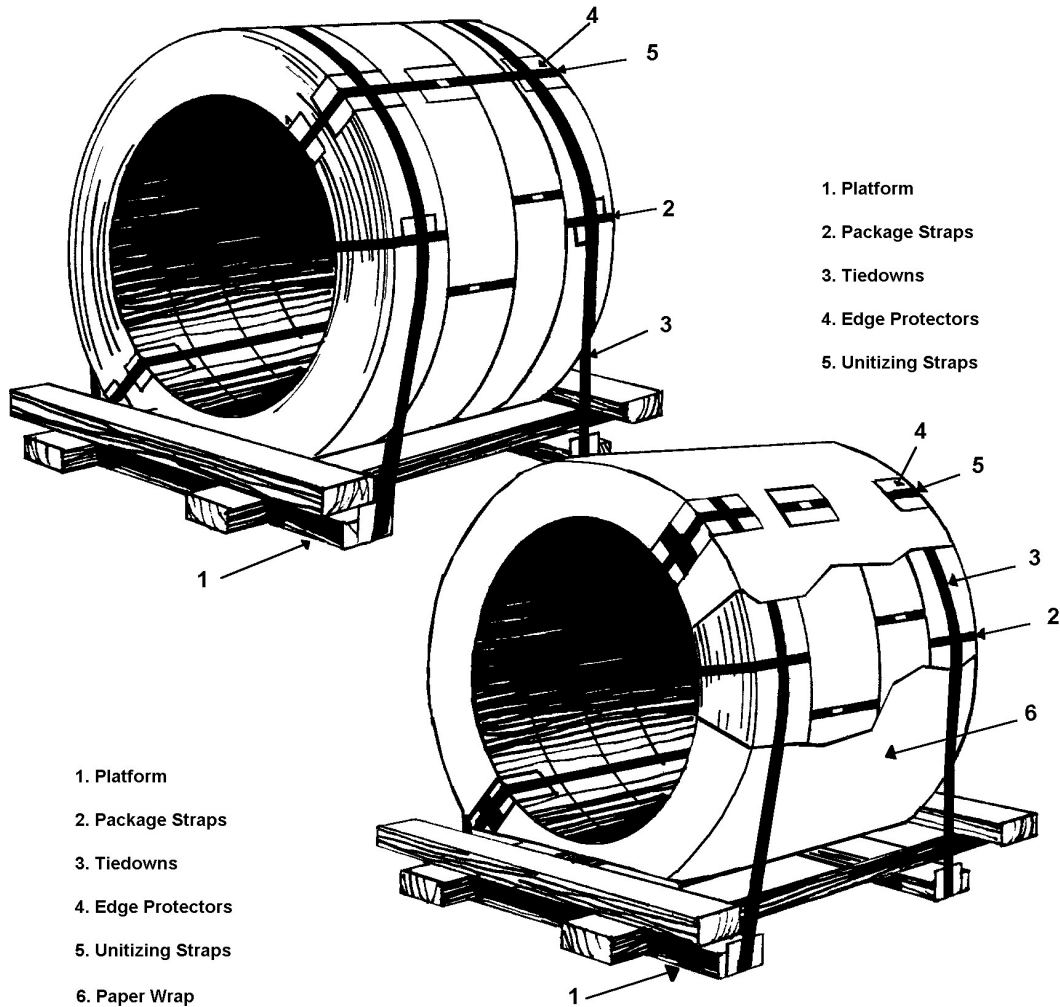
**Slit Coils**

10  
9  
8  
7  
6  
5  
4

**Unitize Specific Coil Groupings**

5 CUTS/5 CUTS  
5 CUTS/4 CUTS  
4 CUTS/4 CUTS  
4 CUTS/3 CUTS  
3 CUTS/3 CUTS  
3 CUTS/2 CUTS  
2 CUTS/2 CUTS

**Coil Mults - Bore Horizontal – Skeleton Platform  
(Bare & Wrapped)**

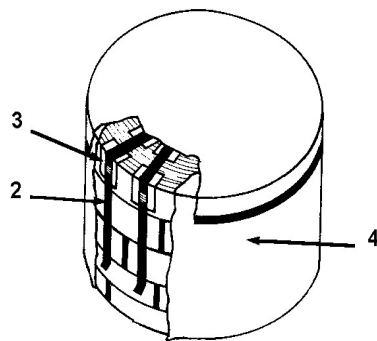
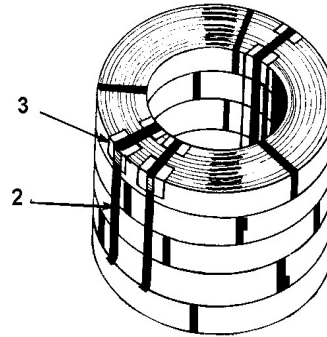


**Notes:**

1. Minimum (1) circumference strap and (2) radial straps to 3,629 kg. (8,000 lbs.)  
Minimum (1) circumference strap and (3) radial straps 3,629 kg. (8,000 lbs.) and under
2. Edge protectors on outside edges only
3. Unitizing straps - minimum (3) per coil group to 48" wide  
- minimum (4) per coil group over 48" wide

**Coil Mults - Bore Vertical  
(Bare & Wrapped)**

1. Package Band
2. Unitizing Band
3. Edge Protectors

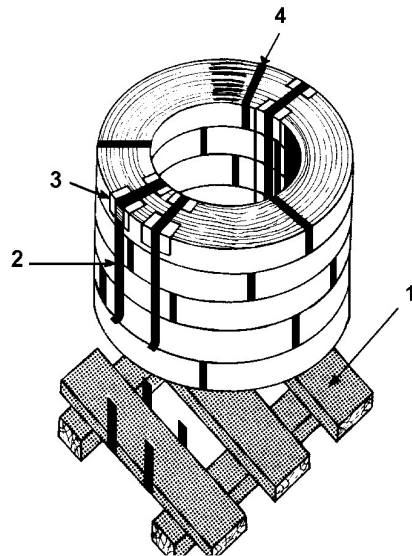


1. Package Band
2. Unitizing Band
3. Edge Protectors
4. Paper Wrap

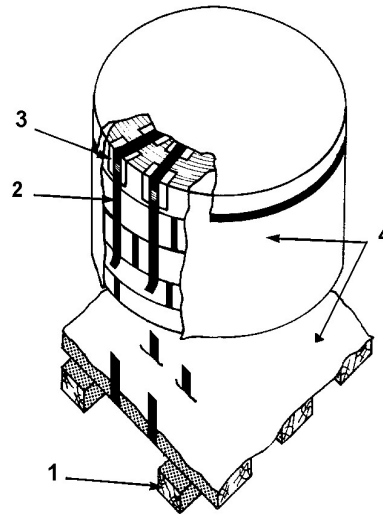
**Notes:**

1. Package straps - minimum (1) circumference strap and (2) radial straps to 3,629 kg. (8,000 lbs.)  
- minimum (2) circumference strap and (3) radial straps 3,629 kg. (8,000 lbs.) and over
2. Unitizing straps - minimum (3) per group to 48" wide  
- minimum (4) per group over 48" wide
3. Edge protectors on outside edges only

**Coil Mults - Bore Vertical- Skeleton Platform  
 (Bare & Wrapped)**



- 1. Platform
- 2. Unitizing Strap
- 3. Edge Protector
- 4. Package Strap



- 1. Platform
- 2. Unitizing Strap
- 3. Edge Protector
- 4. Package Strap

**Notes:**

- 1. Package straps
  - minimum (1) circumference strap and (2) radial straps to 3,629 kg. (8,000 lbs.)
  - minimum (2) circumference strap and (3) radial straps 3,629 kg. (8,000 lbs.) and over
  
- 1. Unitizing straps
  - minimum (3) per group to 48" wide
  - minimum (4) per group over 48" wide
  
- 2. Edge protectors on outside edges only



**Hot Rolled Ship  
(Unprocessed Coils)**  
(see page 3.27 for Processed Coils)

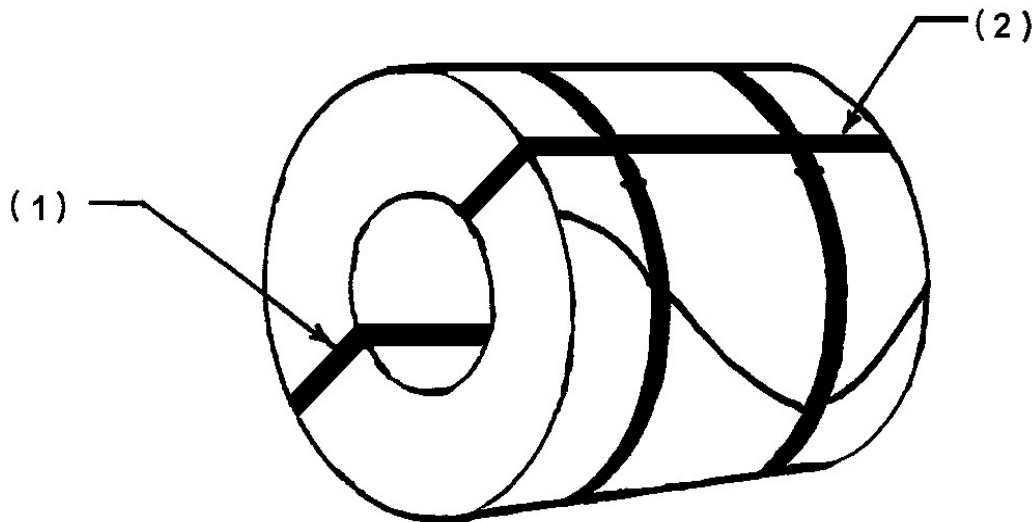
**Standard for all HR (Unprocessed) Coils: Utilizing .044 x 2" Strapping only**

**\* DSPC only utilizing .044 x 1-1/4" strapping only \***

Minimum 2 circumferential bands - locate bands approximately 1/3 (33%) in from each edge.

Minimum 2 radial bands - Item (1) - locate at 180° of one another

- Item (2) - location of initial radial band must not be more than 18"  
from coil end.



**Rules governing the shipment of Hot Roll (Unprocessed) Coils**

1. Telescope - maximum 4" acceptable
2. Loose wraps - maximum 4 loose wraps acceptable to a maximum 4" separation
3. Coils exceeding (1) and (2) must either be repaired through burning or diverted over #1-line (within 1 Line limits), prior to shipment.

**Multiple Coil Group  
(Eye Horizontal Utilizing Wood Separators)**

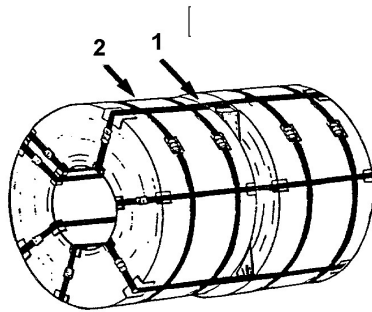


FIG. 1

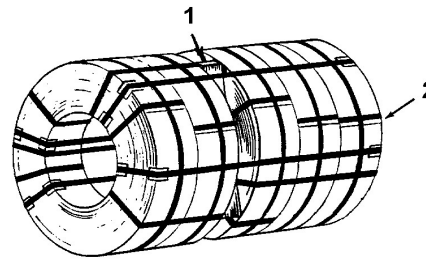


FIG. 2

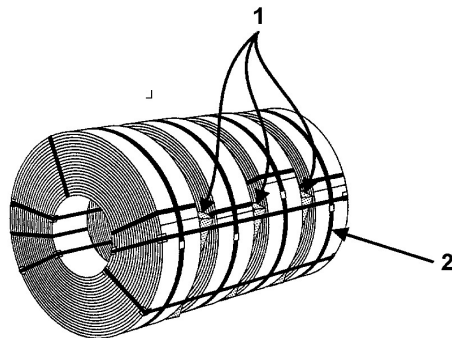
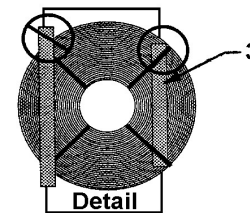


FIG. 3



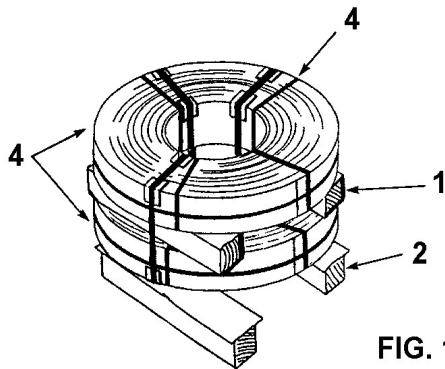
**NOTE: WOODEN SPACERS MUST  
BE ATTACHED SECURELY  
AND MUST NOT EXTEND  
BEYOND O.D.**

1. 102 mm (4") space required as specified by max lift weight.
2. All strapping 32 mm (1-1/4") - eye straps to be positioned at end of outside wrap.
3. Wooden spacers must be attached securely to side wall using eye straps and must not extend beyond coil O.D.

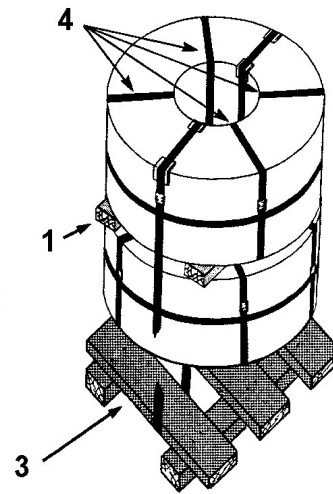
**Note:**

When code indicates paper wrapping (WO), wrap max lift weight individually prior to attaching wooden separators.

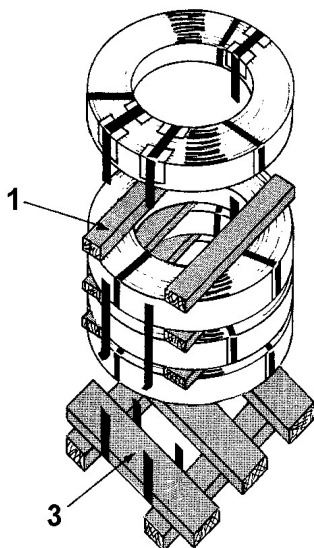
**Multiple Coil Group  
(Eye Vertical Utilizing Wood Separators)**



**FIG. 1  
(BEARING PIECES)**



**FIG. 2  
(SKELETON PLATFORM)**



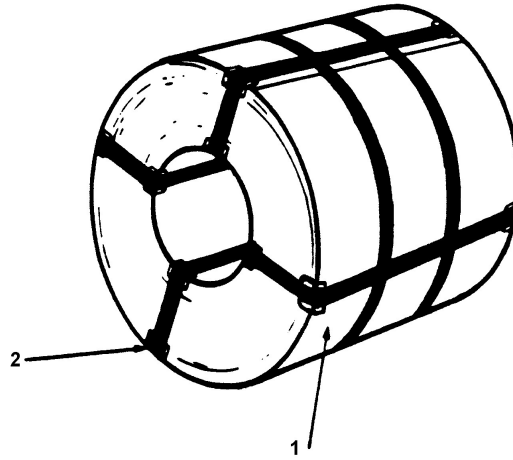
**FIG. 3  
(SKELETON PLATFORM)**

- 1) 76mm (3"x3") separators
- 2) 76mm (3"x3") base runners with paper on top of runner only
- 3) Skeleton platform
- 4) 32mm (1-1/4") strapping to be applied per QMPL 5000 Page 5.1

**NOTE: When code indicates paper wrapping (WO) wrap max lift weight individually prior to attaching wooden separators**

Export Packaging

**Coil, Bore Horizontal (Bare)**



1. 32 mm (1-1/4 in.) straps evenly spaced with plain seals.

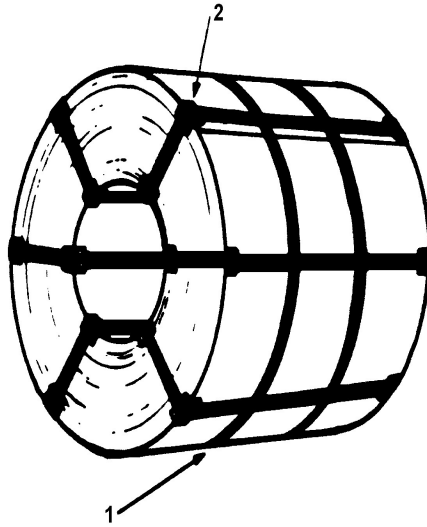
Circumference - 2 straps.

- Eye straps - 4 straps coil weight up to 9,072 kg. (20,000 lb.).  
- 6 straps coil weight over 9,072 kg. (20,000 lb.).

2. Corner protectors (slit edges only).

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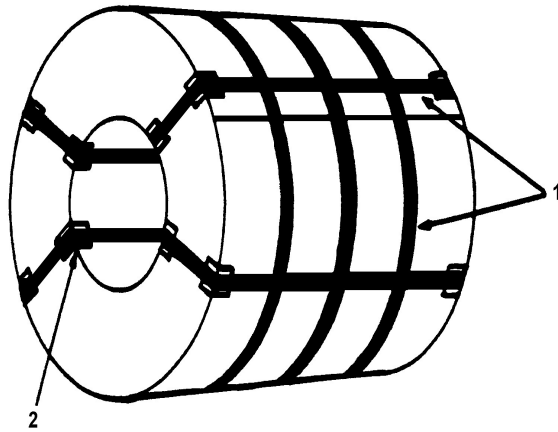
**Coil, Bore Horizontal (Bare)**



1. 32 mm (1-1/4 in.) straps evenly spaced with plain seals.  
Circumference - 2 straps.  
Eye Straps - 6 straps.
2. Corner protectors (slit edges only).

---

**Coil, Eye Horizontal (Bare)**



1. 32 mm (1-1/4 in.) straps evenly spaced with plain seals.

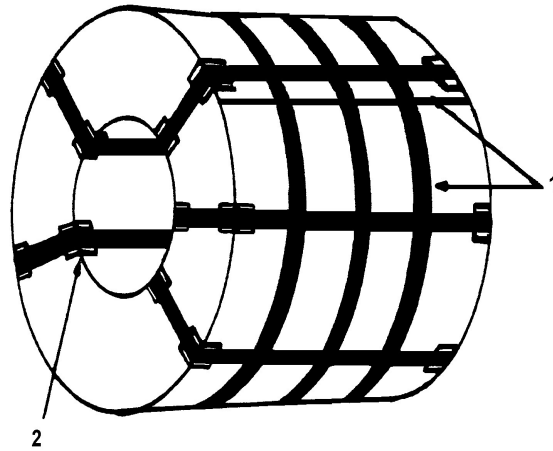
Circumference - 3 straps.

Eye Straps - 4 straps coil weight up to 9,107 kg. (20,000 lb.).  
- 5 straps coil weight over 9,072 kg. (20,000 lb.).

2. Corner protectors (slit edges only).

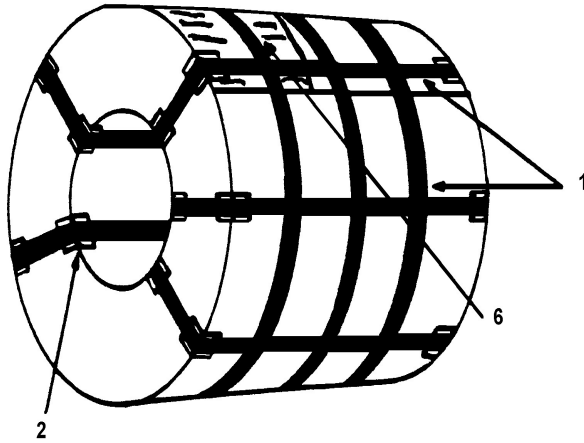
---

**Coil, Bore Horizontal (Bare)**



1. 32 mm (1-1/4 in.) straps evenly spaced with plain seals.  
Circumference - 3 straps.  
Eye Straps - 5 straps.
2. Corner protectors (slit edges only).

### Coil, Bore Horizontal Bare



1. 32 mm (1-1/4 in.) straps evenly spaced with plain seals.  
Circumference - 3 straps.
2. Corner protectors (slit edges only).

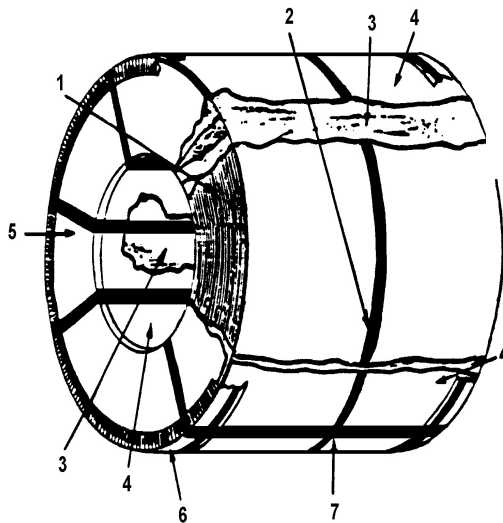
### Special Instructions

3. NO PAINT or STENCIL to be applied to ANY part of coil.
4. Two sticker labels containing shipping marks, to be applied to inside diameter of coil, within 20" of coil end.
5. Two pouches, each containing one coil ticket and one label, are to be glued to inside diameter, also within 20" of coil end.
6. At Algoma Steel Inc., a metal flange, approximately 18" x 24" with identifying marks, including colour code, will be attached to the coil with one of the eye straps. This is for INTERNAL traceability ONLY.



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**Coil, Bore Horizontal (Metal Wrapped)**

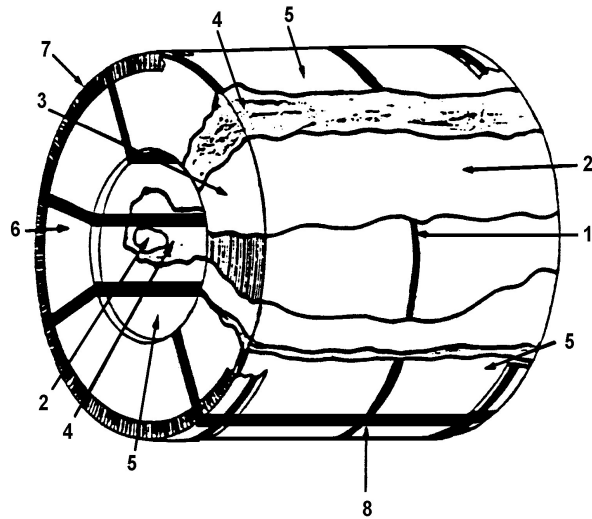


1. Edge sealer as per order instructions.
2. 13 mm (1/2 in.) or 32 mm (1-1/4 in.) straps with plain seals and seal protectors.
3. Export paper wrapping entire coil (tape seams).
4. Metal wrap (tape seams).
5. Metal circular coil end covers with flanged inside diameter.
6. Metal crimped corner angles.
7. 32 mm (1-1/4 in.) straps with plain seals.

Circumference - 3 straps.

Eye Straps - 6 straps evenly spaced.

**Coil, Bore Horizontal (Metal Wrapped)**



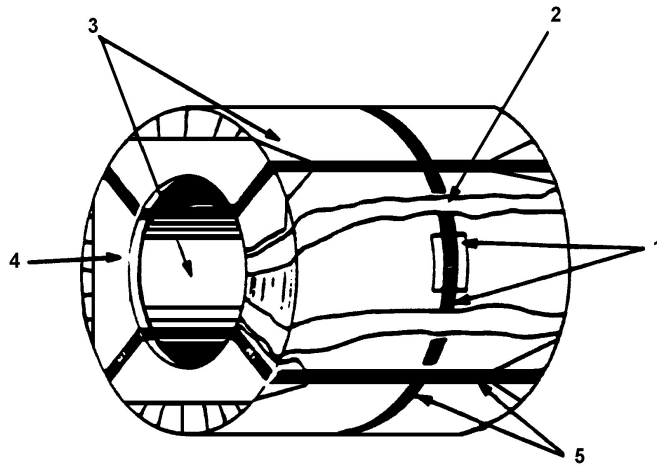
1. 13 mm (1/2 in.) or 32 mm (1-1/4 in.) with plain seals and seal protectors.
2. "Vapour Corrosion Inhibitor" paper wrapping entire coil.
3. Edge sealer as per order instructions.
4. Export paper wrapping entire coil (tape seams).
5. Metal wrap (tape seams).
6. Metal circular coil end covers with flanged inside diameter.
7. Metal crimped corner angles.
8. 32 mm (1-1/4 in.) straps with plain seals.

Circumference - 3 straps.

Eye straps - 6 straps evenly spaced.

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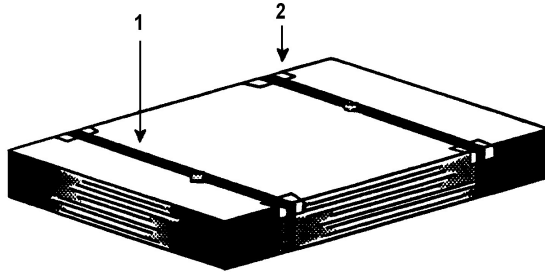
**Coil, Bore Horizontal (Metal Wrapped)**



1. Circumference strap under paper wrapping.  
(*Note* - cushion protector under seal).
2. Paper wrap entire coil.
3. Metal wrap width of coil (including eye of coil with paper between coil and metal).
4. Metal coil end cover with flanged inside diameter.
5. 32 mm (1-1/4 in.) straps with plain seals.

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### Cut Lengths - Sheet & Plate (Bare)



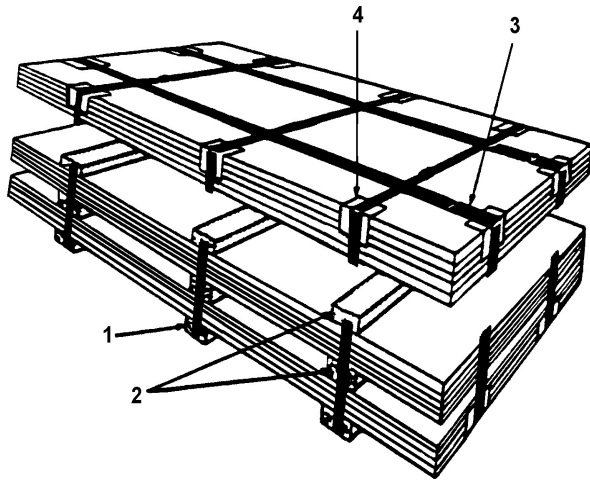
1. Strap
2. Corner Protectors
3. Widths 457 mm (18") and over

#### Limitations

The packaged height of steel must not exceed 100% of the smallest dimension.

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### Cut Lengths - Multiple Lift Package (Bare)



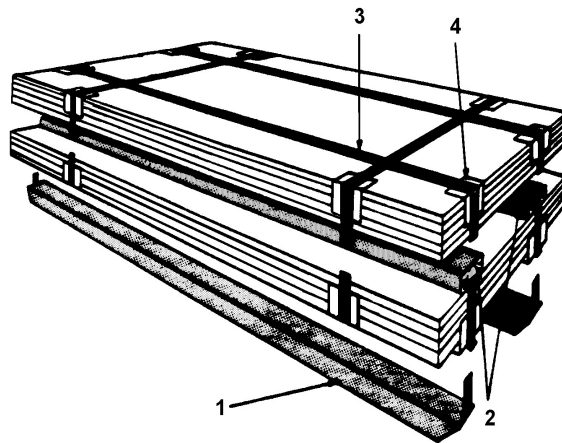
1. Runners ————— *Same Size Lumber*
2. Separators —————
3. Straps
4. Corner protectors
5. Width 457 mm (18”) and over

#### Limitations

The packaged height of steel must not exceed 100% of the smallest dimensions.

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### Cut Lengths - Multiple Lift Package (Bare)



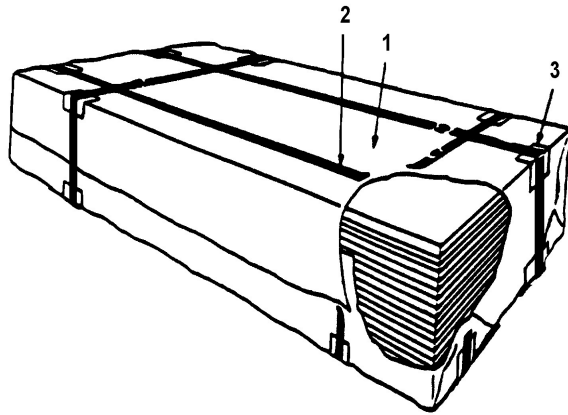
1. Runners (Lengthwise)
2. Separators
3. Straps
4. Corner Protectors
5. Width 457 mm (18") and over

#### Limitations

The packaged height of steel must not exceed 100% of the smallest dimension.

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### Cut Lengths - Sheet & Plate (Wrapped)



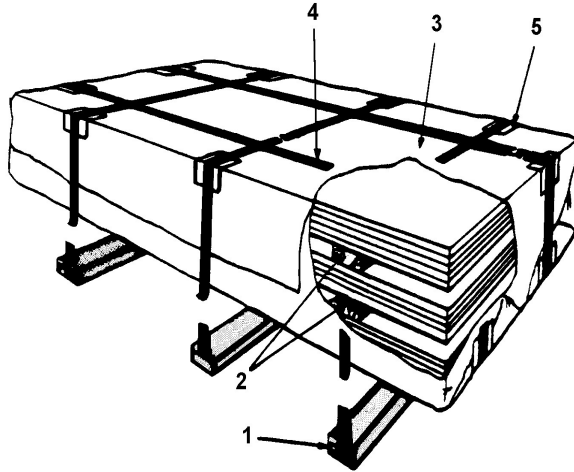
1. Paper Wrap
2. Straps (1-1/4" x .031)
3. Corner Protectors
4. Width 457 mm (18") and over

#### Limitations

The packaged height of steel must not exceed 100% of the smallest dimension.

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**Cut Lengths - Multiple Lift Package (Paper Wrapped)**



1. Runners ————— *Same Size Lumber*
2. Separators —————
3. Paper Wrap
4. Straps
5. Corner Protectors
6. Width 457 mm (18”) and over

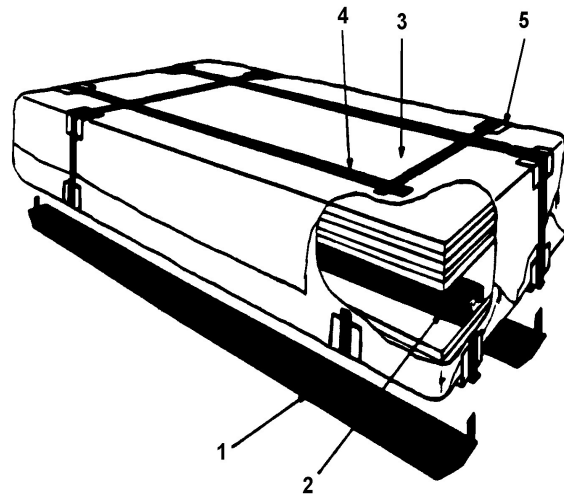
**Limitations**

The packaged height of steel must not exceed 100% of the smallest dimension.



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### Cut Lengths - Multiple Lift Package (Paper Wrapped)

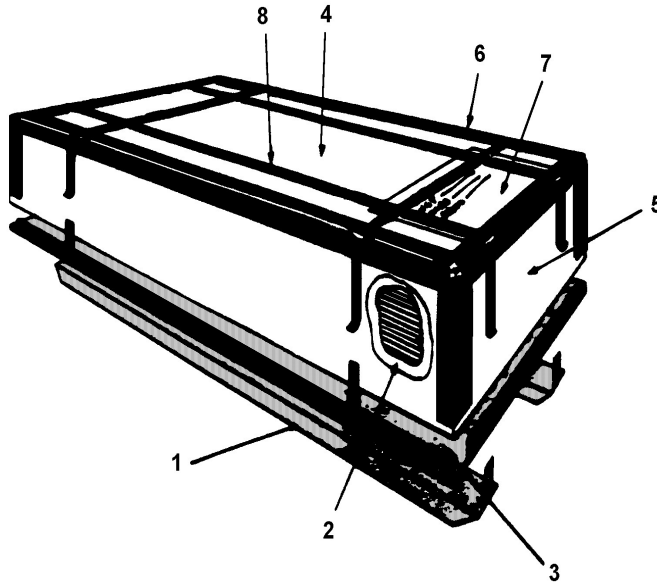


1. Runners
2. Separators
3. Paper Wrap
4. Straps
5. Corner Protectors
6. Width 457 mm (18") and over

#### Limitations

The packaged height of steel must not exceed 100% of the smallest dimension.

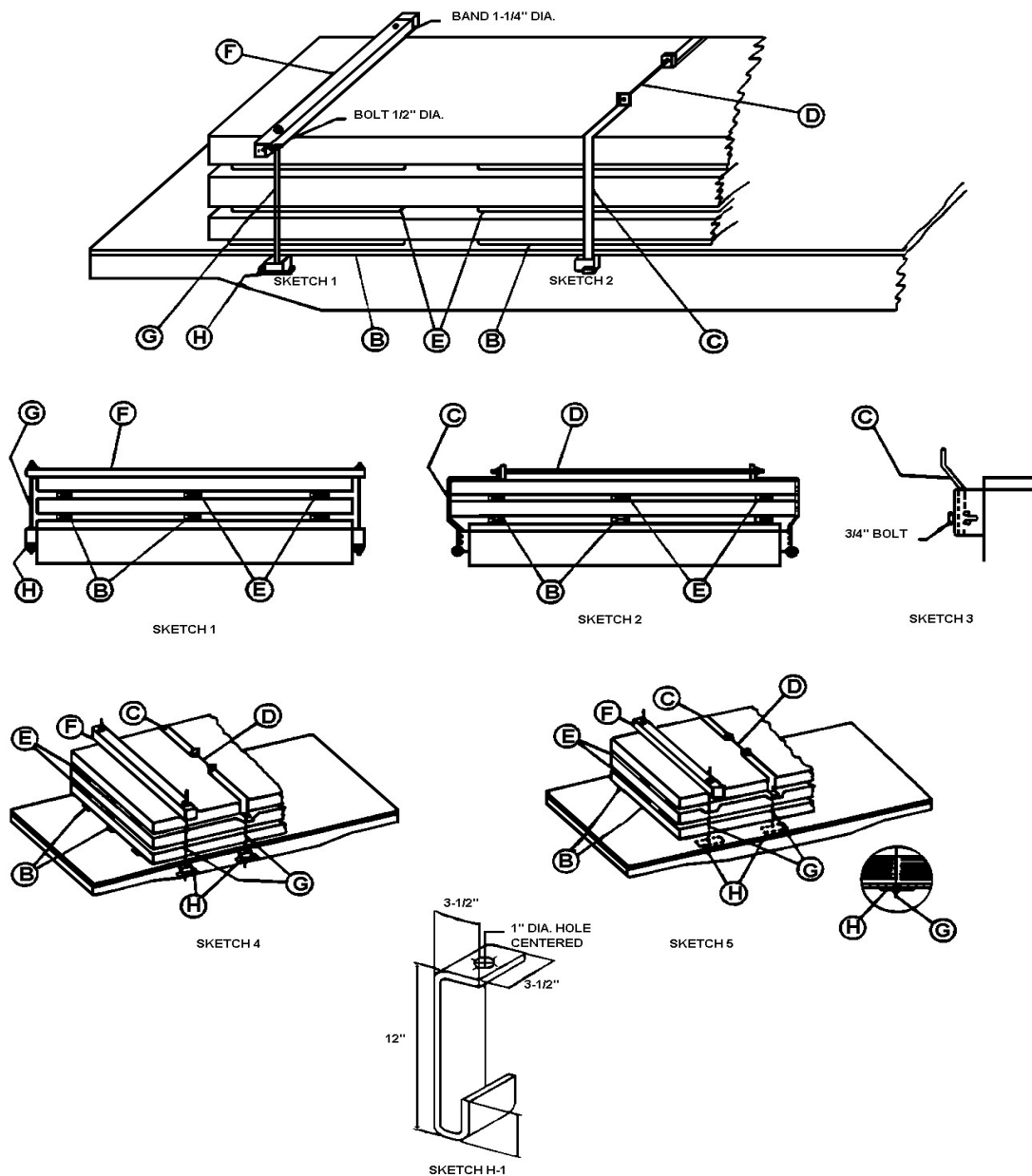
### Cut Lengths - Metal Wrapped



1. Runners
2. Paper Wrap
3. Metal Bottom Sheet
4. Metal Top Sheet
5. Metal side Sheet
6. Metal Corner Angles
7. Identification: As specified on order card.
8. 32 mm straps (1-1/4 in.)

Rail Loading C.T.L.

Sec. 2 - Fig. 14 (Rev. - 9-1991)  
Steel Plates - Flat Cars



**Sec. 2 - Fig. 14 (Rev. - 9-1991) (cont'd)**  
**Steel Plates - Flat Cars**

Item	No. of Pcs.	Description
A		Load should be centrally located on car at origin, but must not be closer than 2 ft. from the "B" end and 1 ft. from the "A" end of car. Conventional flat cars only. When load is prepared on flat cars with side mounted hand brakes, load may be located not closer than 1 ft. from either end of car, or hand brakes which extend above the side sill.
B	1 per each 7 ft.	Crosswise bearing pieces: Hardwood, of minimum, 1 in. x 3 in., height not to exceed length or less width, in one piece, length about equal to width of car. Locate end pieces approximately 3 ft. in from ends of pile(s) and in line with stake pockets when possible. (Use Optional.)
	Minimum of 2.	Lengthwise bearing pieces: Hardwood, minimum 1 in. x 3 in. x 8 ft., height not to exceed width. May consist of more than one (1) piece. Space ends no more than 3 ft. apart. Locate not less than 6 in. or more than 12 in. from edge of bottom plate and within 3 ft. from each end of pile(s). (Use optional.)
C	See Chart.	Clamping pieces: Consisting of two pieces of steel, 1/2 in. x 3-1/2" in., length to suit per Sketch 2. Locate about 1/4 length, but not more than 7 ft. from ends of piles), with intermediate Item "C"'s equally spaced between. Form and secure to stake pockets as shown in Sketch 2, or secure to stake pocket using a 3/4 in. bolt, washer and nut as shown in Sketch 3. Clamping pieces may also be formed as illustrated in Sketch Nos. 4 and 5 when used with Item "G" tie-rods.

**Chart - Items "C" & "F"**

No. of Pcs.	Height of Pile Above Bearing Pieces	Length of Pile
2	24 inches or less	12 ft. or less
3	24 inches or less	Over 12 ft. to length of car
3	Over 24 inches	Over 12 ft. to 30 ft.
4	Over 24 inches	Over 30 ft. to length of car

\* When 50% of pile height consists of plates 90 in. or less in width, one (1) additional Item "C" must be applied.

D	1 per each pair of Items "C".	Tie rod: 3/4 in. diameter steel rod or bolt, length to suit, passed through Items "C". Sketch Nos. 2, 4 and 5.
E	1 per each 7 ft. of length or less.	Crosswise separators: Lumber, minimum, 1 in. x 2 in., height not to exceed width, in one piece, length about equal to but not exceeding width of pile. Locate in line with crosswise Items "B" when possible. (Use optional.)
	Minimum of 2.	Lengthwise separators: Lumber, minimum, 1 in. x 2 in. x 8 ft., height not to exceed width. May consist of more than one piece. Space ends no more than 3 ft. apart. Locate not less than 6 in. or more than 12 in. from edge of bottom plate in lift and within 3 ft. from each end of bottom plate in lift. (Use optional.)
F	See Chart.	Clamping pieces: Hardwood, 4 in. x 6 in. length equal to width over stake pockets. Use one (1) 1-1/4 in. x .029 in. high tension band to prevent splitting. Bolts or bands must be applied outside of Items "G". Locate about 1/4 length, but not more than 7 ft. from ends of pile(s), with intermediate Item "F"'s equally spaced between. Not required for loads prepared in accordance with Sketch 2.

**Sec. 2 - Fig. 14 (Rev. - 9-1991) (cont'd)**

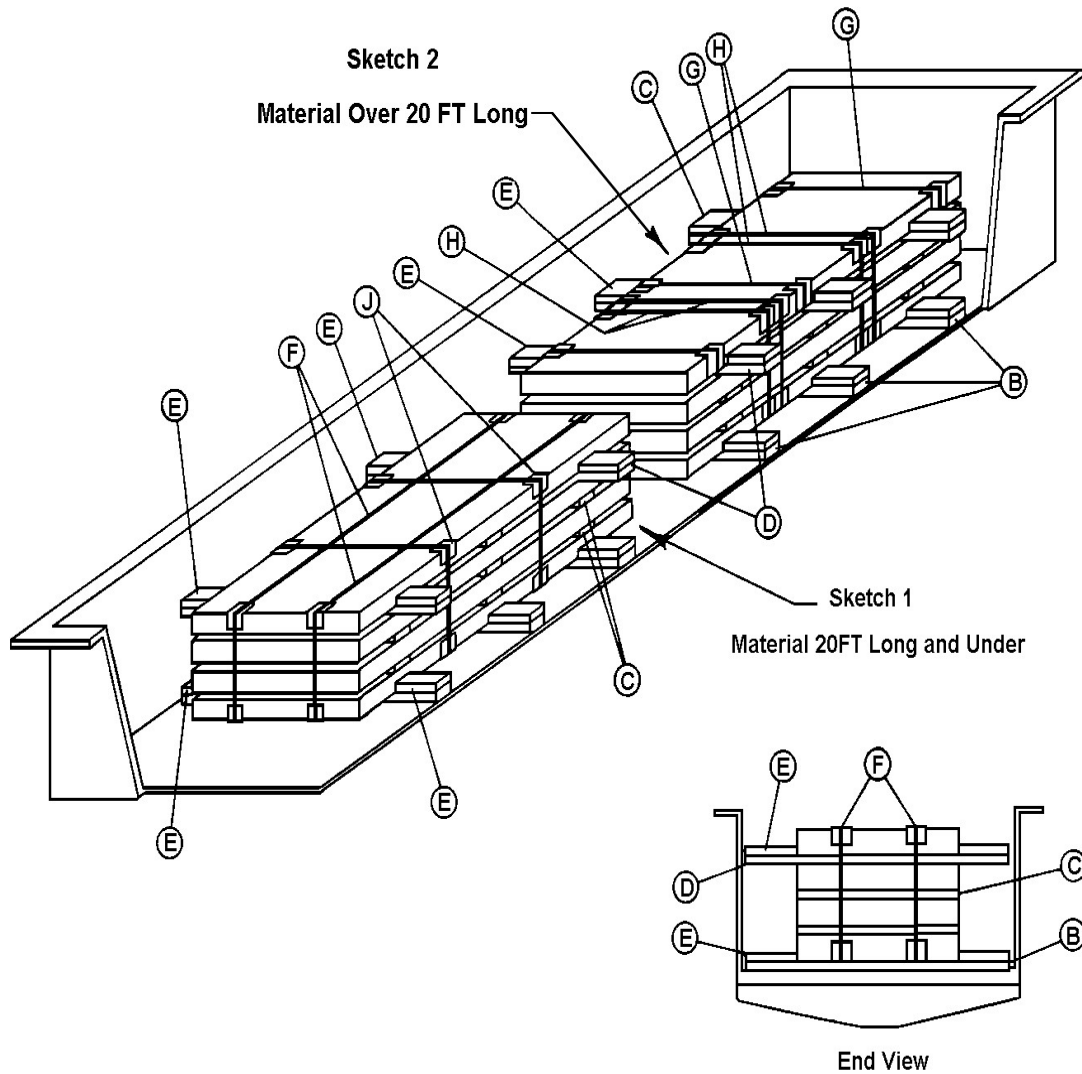
**Steel Plates - Flat Cars**

Item	No. of Pcs.	Description
G	2 each Items "F" or "C", Sketch Nos. 1, 4 and 5.	Tie rod: 3/4 in. diameter steel rod or bolt, length to suit with washers at top. Pass through Item "F", stake pocket or floor and Item "H". Rods must be located within 4 in. of side of pile as illustrated in Sketches 1, 4 and 5. Not required for loads prepared in accordance with Sketch 2. When preparing loads under Sketch 5, Items "C" may be extended to car floor and Items "G" substituted with a 3/4 in. bolt passed through the car floor and Items "H".
H	1 each Item "G" Sketch Nos. 1, 4 and 5.	Steel plates: 1/2 in x 4 in. x 10 in. applied under stake pocket or 1/2 in. x 4 in. x 6" steel plate when Item "G" is located under floor on cars equipped with steel plate floors. For cars equipped with other than steel plate floors, use a 1/2 in. x 4 in. x 18 in. steel plate. Not required for loads prepared in accordance with Sketch 2. J-hooks, as illustrated in Sketch H-1, may be substituted for Item "H" when applied to stake pocket.

**Notes:**

1. If piles are overlapped lengthwise, each plate(s) must have minimum number of Items "C" or "F" to each pile.
2. Additional blocking may be applied between plates to provide stability.
3. When necessary to elevate load for clearance purposes, a minimum of two (2) crosswise and lengthwise bearing pieces per pile, may be stacked in alternating layers. Crosswise pieces must be located approximately 18 in. from ends of longitudinal pieces. Load may also be raised in accordance with General Rule 9 (b), Section No. 1.
4. Height of load including separators is not to exceed 42 in. above top of bearing pieces.

**Sec. 2 - Fig. 18 (Rev. - 9-1994) (cont'd)**  
**Uncoiled Steel Plates or Sheets, lengthwise with horizontal separators, secured with 2 in. x .050 in. high tension bands - Gondola Cars**



**Sec. 2 - Fig. 18 (Rev. - 9-1994) (cont'd)**

**Unoiled Steel Plates or Sheets, lengthwise with horizontal separators, secured with 2 in. x .044 in. high tension bands - Gondola Cars**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
A		Brake wheel clearance. See Fig. 2, Sec. No. 1.
B	As required.	Bearing Pieces, Hardwood, Minimum 2 in. x 4 in. length about equal to width of car. Locate one about 2 ft. from each end of pile and the others so that spaces between them do not exceed 10 ft. When ends of piles overlap each other, the bearing pieces must be placed so as to fully support the overlapped portion, even though additional bearing pieces may be necessary.
C	1 per each Item "B" Between each lift.	Separators, hardwood, minimum 1 in. x 3 in. Must be one (1) piece with length about equal to width of pile. Apply crosswise of pile between lifts.
D	2 - 20 ft. or less. 3 - over 20 ft.	Top separator, hardwood, minimum 2 in. x 4 in., must have length about equal to width of car, in one piece.
E	2 each Item "B". 2 each Item "D".	2 in. x 4 in. lumber. Length 12 in. or equal to space between pile & car sides, nail to each Items "B" and "D", with three 20-D nails. Not required when total vacant space across car between piles and between piles and car sides, does not exceed eight (8) in.
F	2 per pile 40,000 lbs. or less. Add 1 band for each additional 10,000 lbs. or less.	2 in. x .044 in. high tension bands encircling pile lengthwise. See Sketch 1.
G	3 per pile.	2 in x .044 in. high tension bands encircling top lift crosswise when length of pile exceeds 20 ft. and pile consists of three (3) or more lifts. See Sketch 2.
H	2 per pile 20,000 lbs. or less, 20 ft. or less in length 3 per pile over 20,000 lbs. to 40,000 lbs. Over 40,000 lbs. add 1 band for each additional 10,000 lbs. or less. Piles over 20 ft. long 3 per pile, 20,000 lbs. or less, 4 per pile over 20,000 lbs. to 40,000 lbs. Add 1 band for each additional 10,000 lbs. or less.	2 in. x .044 in high tension bands encircling entire pile crosswise. See Sketch 1 and 2.

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**Sec. 2 - Fig. 18 (Rev. - 9-1994) (cont'd)**

**Unoiled Steel Plates or Sheets, lengthwise with horizontal separators, secured with 2 in. x .044 in. high tension bands - Gondola Cars**

J As required. Protection angles, 20 gauge, 4 in. wide, applied to prevent displacement.

**Notes:**

1. The inside width of car may be reduced a minimum of 8 in. by the application of suitable wooden fillers, (minimum 2, maximum 6), with one 4 in. x 4 in. or two 2 in. x 4 in. pieces of lumber, located between each Item "B", secured to car sides with two 3/8 in. bolts, with washers.
2. If units vary in width, apply wood fillers secured so that they will not become displaced and so as to make size of piles uniform at the points where Items "H" are applied.
3. Narrow units may be placed side by side and tied together with crosswise Items "H" only, provided vertical separators, secured so as to prevent displacement, are used.
4. Where the width of piles permit, they should be loaded side by side in order to keep height of load as low as possible.
5. Units may overlap each other between truck centers, provided the end of each pile is not more than one foot from each end of car, and that the specified weight limitations in Rule 4 are not exceeded at overlapped portion of load.
6. Height of piles not to exceed width of individual units nor two inches below top of car sides.

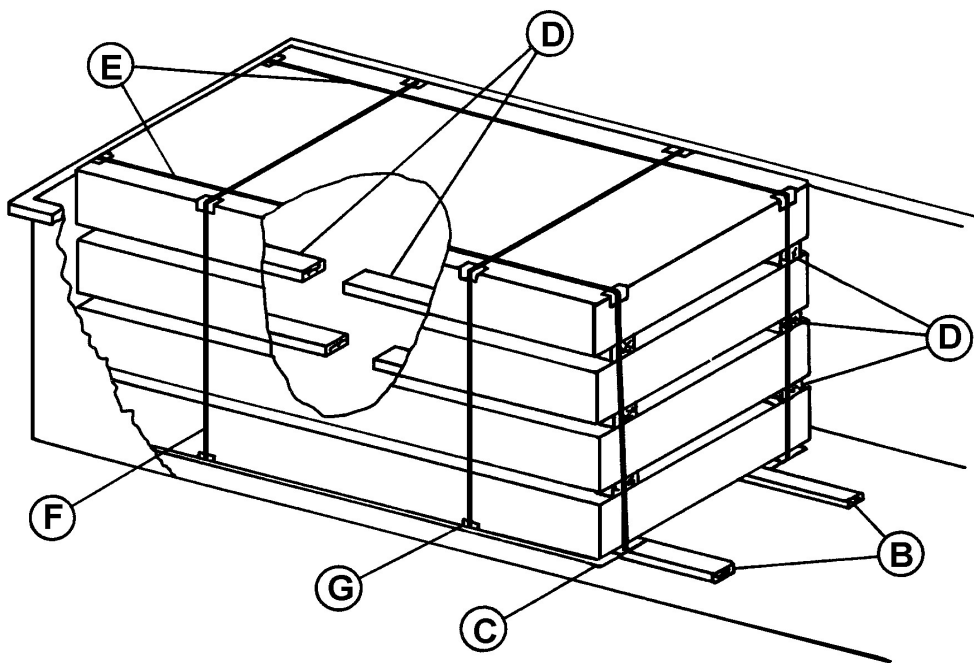
See General Rules 1, 2, 3, 4, 5, 9 & 14 for further details.



Sec. 2 - Fig. 19-C (Rev. - 9-1994)  
 (New - 10 - 1981)

Flat Rolled Steel, lengthwise bearing pieces, load secured with high tension bands - Gondola Cars

Item	No. of Pcs.	Description
------	-------------	-------------



- |   |                        |  |
|---|------------------------|--|
| A |                        | Brake wheel clearance. See Fig. 2, Section I.  |
| B | 1 per each<br>Item "C" | Guide strips minimum 1 in. x 3 in. lumber. Must be continuous and extend a minimum of 4 ft. beyond the end of the unit row or to the end of the car. Place inside or outside and a maximum of 2 in. from Items "C". Secure to floor with 10-D nails spaced not more than 18 in. apart. |

**Sec. 2 - Fig. 19-C(Rev. - 9-1994) (Cont'd)**  
**(New - 10 - 1981)**

**Flat Rolled Steel, lengthwise bearing pieces, load secured with high tension bands - Gondola Cars**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
C	Minimum 2 per pile under 48" wide 3 per pile over 48" wide and under .180 thick	Bearing pieces, minimum 2 in. x 4 in. lumber. Length approximately equal to length of pile, with beveled ends. Must be continuous but not one (1) piece. Minimum length per piece 8 ft. or length of pile, whichever is shorter. Secure each bearing piece to pile with an Item "E".
D	One per each Item "C", if lengthwise, or one per Item "F" if cross-sided	Separators, minimum 1 in. x 3 in. lumber. If crosswise, must be 1 piece length equal to width of pile. If lengthwise, separators need not be one piece, but ends of multiples must not be more than 23 ft. apart. Use optional.
	<b>Pile Weight, Lbs.</b>	<b>Min. No.</b>
E	40,000 or less over 40 to 50 over 50 to 60 over 60 - one per 10,000	2 Lengthwise encircling. 3 Minimum 2 in. x .044 in. high tension band, to encircle each pile.
F	20,000 or less over 20 to 40 over 40 to 50 over 50 to 60 over 50 - one additional band per 10,000	2 Attach to each Item "C" with a minimum of 2 staples per Item "C" or multiple. 3 Crosswise encircling band. Minimum 2 in. x .044 in. high tension bands to encircle each pile placed over Item "C".
G	As required	Corner protectors to be applied with all Items "E" and "F".

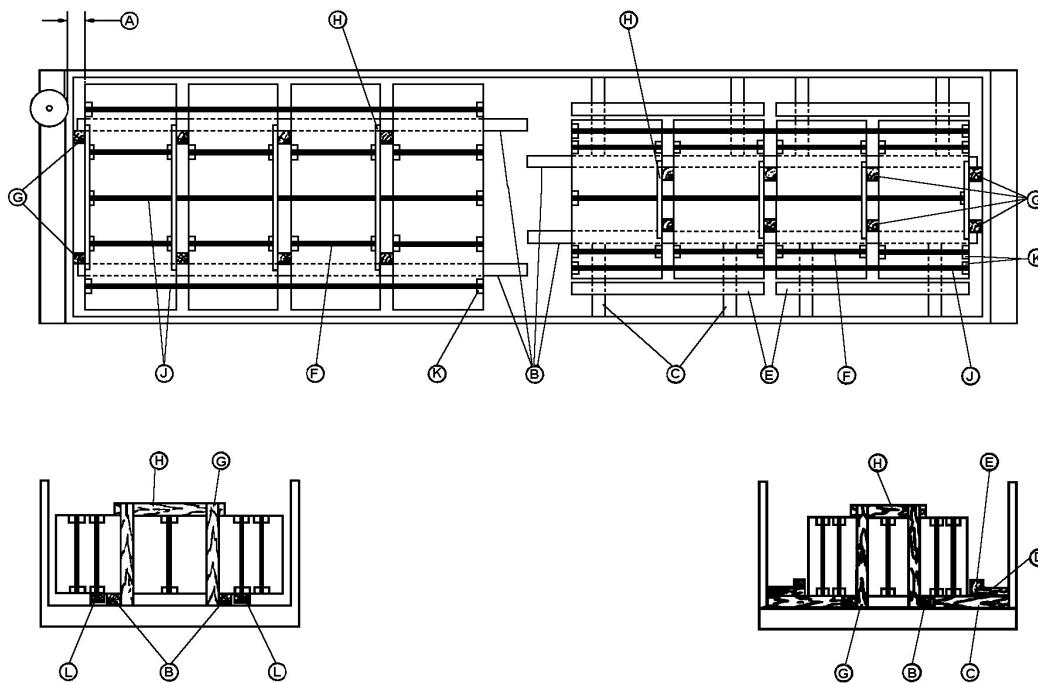
**Note:** Height of pile must not exceed 3/4 of their base or 2 in. below top of car side.

See General rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 20 (Rev. - 9 - 1994)  
 (2-1960)

Uncoiled Steel Plates and Sheets, crosswise, secured with high tension wires or high tension bands. Height of piles must not exceed 28 in. above floor, nor width of individual units - Gondola Cars  
**CODE FOUR**

Item No. of Pcs. Description



- A Brake wheel clearance. See Fig. 2.
- B 2 per pile or series of piles 2 in. x 4 in., hardwood. Must be long enough to extend 3 ft. beyond sides of single pile or/series of piles, except when loaded full length of car. Substitute, if desired, 1 in. x 3 in., hardwood, when use of Items "C" or "L" is not required. Nail to floor with 20-D nails spaced about 18 in. apart when Items "C", "D", "E" or "L" are used.

**Sec. 2 - Fig. 20 (Rev. - 9 - 1994) (cont'd)**  
**(2-1960)**

**Uncoiled Steel Plates and Sheets, crosswise, secured with high tension wires or high tension bands. Height of piles must not exceed 28 in. above floor, nor width of individual units - Gondola Cars**

Item	No. of Pcs.	Description
C	To suit	2 in. x 4 in., hardwood, long enough to extend from side of car to Items "B". Not required when Items "L" are used, nor when total vacant space between piles and between piles and car sides, across car, does not exceed 8 in.
D	2 ea. Item "C"	2 in. x 4 in., hardwood, long enough to extend from about 1 in. from pile to car side, nailed to Item "C" with three 20-D nails.
E	As required	2 in. x 4 in., hardwood, long enough to extend 2 in. beyond Items "D". Locate about 1 in. from load and nail to each Item "D" with three 20-D nails. If the vacant space across car exceeds 8 in. and the space between piles and sides of car does not permit application, other suitable fillers may be substituted for Items "E".
F	Individual ties	Wires or bands. Lengthwise of car, suitably spaced. Draw as required taut but not too tight.

Width of Pile	No. 8 ga. wire	1¼ in. x .029 in. bands	2 in. x .044 in. bands
24 in. or less	4	2	2
Over 24 in. wide.	6	3	2

G	As required	Suitable hardwood vertical separators, placed inside of, adjacent to Items B".
H	1 ea. pair Items "G"	1 in. x 3 in., nailed to Items "G".
J	Overall Ties, As required	Wires or bands. Lengthwise of car, suitable spaced. Draw taut but not too tight. Not required when load completely fills length of car.

Weight of Pile	No. 8 ga. wire	1¼ in. x .029 in. bands	2 in. x .044 in. bands
25,000 lbs. or less	3	2	2
25,001 lbs. to 40,000 lbs.	4	2	2
40,001 lbs. to 55,000 lbs.	6	3	2
55,000 lbs. to 85,000 lbs.	8	4	2

K	As required	Protection angles, 20 gauge, 4 in. wide, applied so as to prevent displacement.
L	2 each pile	1 in. x 3 in., or slightly thinner than Items "B", with ends about even with sides of piles. Locate both either inside or outside of and not more than 1 in. from Items "B". Secure to single pile by Items "F", or to series of piles by Items "J". Not required when Items "C" are used, nor when total vacant space between piles and between piles and car sides, cross car, does not exceed 8 in.

**Sec. 2 - Fig. 20 (Rev. - 9 - 1994) (cont'd)**

**(2-1960)**

**Unoiled Steel Plates and Sheets, crosswise, secured with high tension wires or high tension bands.  
Height of piles must not exceed 28 in. above floor, nor width of individual units - Gondola Cars**

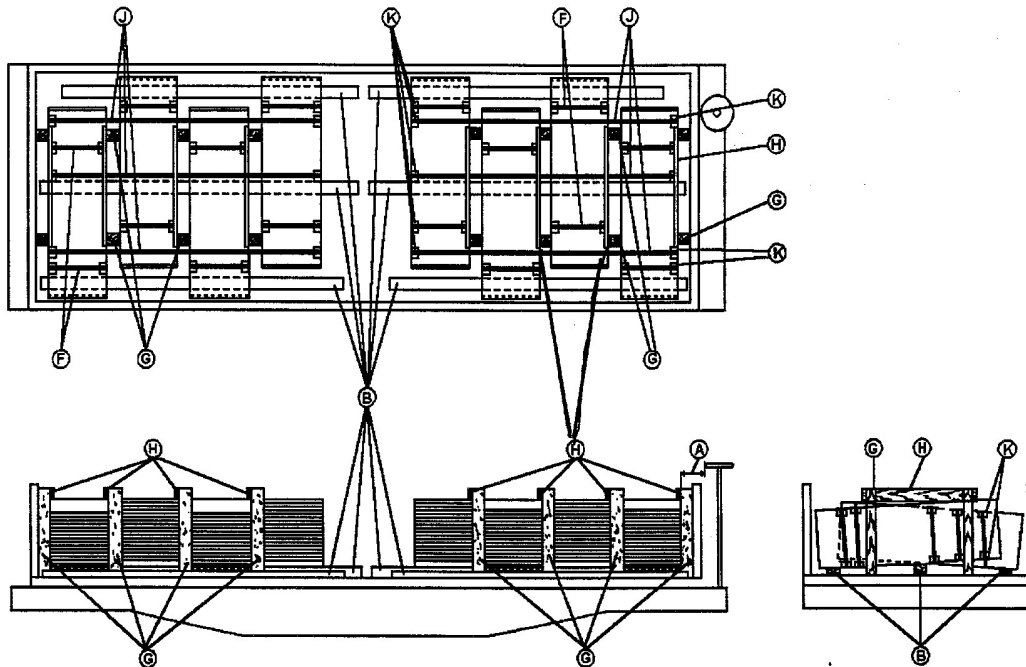
*Notes:*

1. If units vary in width, apply wood fillers secured so that they will not become displaced and so as to make size of pile uniform at the points where Items "F" and "J" are applied.
2. Narrow units may be placed side by side and tied together provided vertical separators applied so as to prevent displacement or top clamping pieces 1 in. thick are used.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 21 (Rev 9, 1994)

Unoiled Steel Plates or Sheets, crosswise (staggered), secured with high tension wires or high tension bands, height of piles must not exceed 28 in. above floor at car sides, nor width of individual unit - Gondola Cars



Item	No. of Pcs.	Description
A		Brake wheel clearance. See Fig. 2.
B	As required	One 2 in. x 3 in. hardwood, located in center of car, and two 1 in. x 3 in., hardwood, one located approximately 6 in. from each side of car. Must be long enough to extend 3 ft. beyond sides of end piles, except when loaded full length of car. Center Item "B" must be 1 in. higher than side Items "B".
C		VACANT
D		VACANT
E		VACANT

**Sec. 2 - Fig. 21 (Rev 9, 199) (cont'd)**

**Uncoiled Steel Plates or Sheets, crosswise (staggered), secured with high tension wires or high tension bands, height of piles must not exceed 28 in. above floor at car sides, nor width of individual unit - Gondola Cars**

Item	No. of Pcs.	Description
F	Individual ties. As required.	Wires or bands. Lengthwise of car, suitably spaced. Draw taut but not too tight.

Width of Pile	No. 8 ga. wire	1¼ in. x .029 in. bands	2 in. x .044 in bands
24 in. or less	4	2	2
Over 24 in. wide	6	3	2

G	As required.	Suitable hardwood vertical separators, placed between center and outside Items "B", as close to the ends of pile as practicable.
H	1 each pair Items "G".	1 in. x 3 in., nailed to Items "G".
J	Overall Ties. As required	Wires or bands. Lengthwise of car, suitable spaced. Draw taut but not too tight. Not required when load completely fills length of car.

Weight of Pile	No. 8 ga. wire	1¼ in. x .029 in. bands	2 in. x .044 in. bands
25,000 lbs. or less	3	2	2
25,001 lbs. to 40,000 lbs.	4	2	2
40,001 lbs. to 55,000 lbs.	6	3	2
55,000 lbs. to 85,000 lbs.	8	4	2

K	As required	Protection angles, 20 gauge, 4 in. wide, applied so as to prevent displacement.
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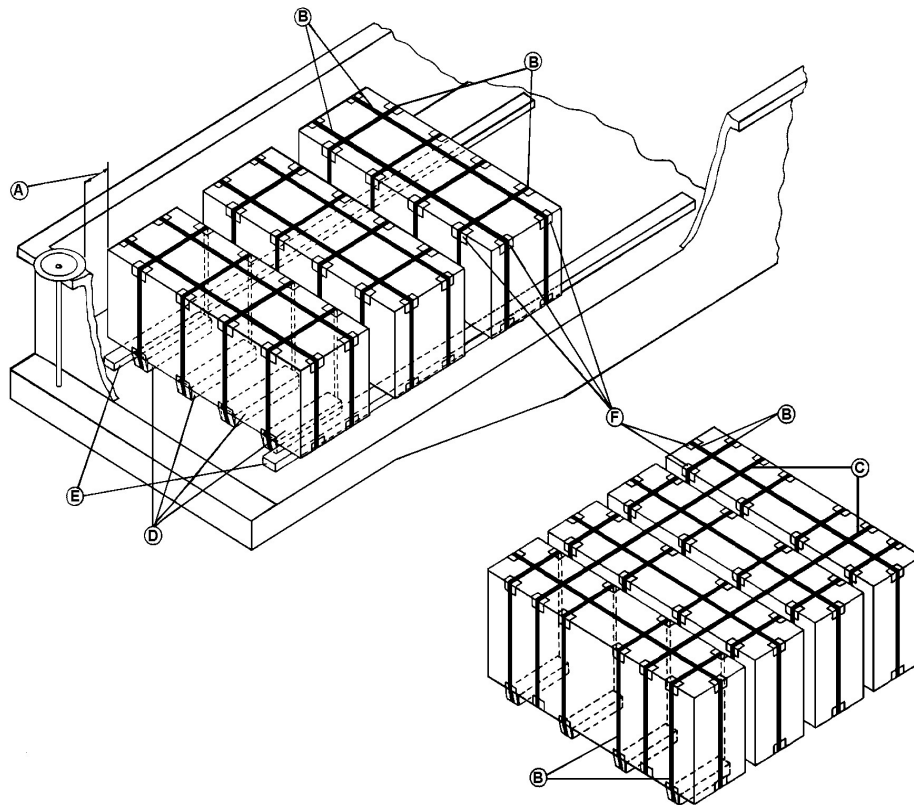
**Notes:**

1. If units vary in width, apply wood fillers secured so that they will not become displaced and so as to make size of pile uniform at the points where Items "F" and "J" are applied.
2. Narrow units may be placed side by side and tied together provided vertical separators applied so as to prevent displacement, or top clamping pieces 1 in. thick, are used.
3. Horizontal separators are prohibited.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 24 (Rev. 9 - 1994)

Flat Rolled Steel less than 1/4 in. thick, with high tension bands or high tension wires, strength 2,000 pounds each, crosswise - Gondola Cars



Item	No. of Pcs.	Description
A		Brake wheel clearance. See Fig. 2.
B	Individual ties. As required.	Bands or Wires. Draw taut but not too tight.



**Sec. 2 - Fig. 24 (Rev. 9 - 1994)**

**Flat Rolled Steel less than 1/4 in. thick, with high tension bands or high tension wires, strength 2,000 pounds each, crosswise - Gondola Cars**

**OTHER THAN OILED OR HIGHLY FINISHED**

	Wt. Of Pile	3,000 lbs. or less		Over 3,000 lbs. to 15,000 lbs.		Over 15,000 lbs. to 20,000 lbs.		Over 20,000 lbs. to 30,000 lbs.	
	Width of Pile	14 in. or less	Over 14 in.	14 in. or less	Over 14 in.	14 in. or less	Over 14 in.	14 in. or less	Over 14 in.
Lengthwise of Car, Together with Crosswise Ties	Total Load Strength of Ties (lbs.)	4,000	4,000	6,000	8,000	8,000	10,000	10,000	12,000
Crosswise of Car, Together with Lengthwise Ties		0	2,000	0	2,000	2,000	4,000	4,000	4,000
Crosswise of Car, and Bundle Only		4,000	6,000	6,000	10,000	10,000	14,000	14,000	14,000

**OILED OR HIGHLY FINISHED**

	Wt. Of Pile	3,000 lbs. or less		Over 3,000 lbs. to 15,000 lbs.		Over 15,000 lbs. to 20,000 lbs.		Over 20,000 lbs. to 30,000 lbs.	
	Width of Pile	14 in. or less	Over 14 in.	14 in. or less	Over 14 in.	14 in. or less	Over 14 in.	14 in. or less	Over 14 in.
Lengthwise of Car	Total Load Strength of Ties (lbs.)	4,000	4,000	6,000	10,000	10,000	12,000	12,000	14,000
Crosswise of Car		2,000	2,000	2,000	2,000	2,000	4,000	6,000	6,000

Item	No. of Pcs.	Description
C	Overall Ties 4 per unit	Bands or wires, lengthwise of car. Draw taut but not too tight. Required only when a series of piles are tied into a unit.
D	2 per pile	2 in. x 3 in., hardwood, beveled ends, not more than 2 in. shorter than width of pile, secured by Items "B", lengthwise of car.
E	As required. Minimum 2 per pile or series of piles	Guide strips, 1 in. x 3 in. or thinner than Items "D". Place on floor, both to be inside or outside of, and not more than 1 in. from Items "D". Must be continuous and extend not less than 4 ft. beyond side of pile. Secure to wood floors with 20-D nails spaced about 18 in. apart and to steel floors with 3/8 in. x 2-1/2 in. self-threading metal drive screws located not more than 6 in. from each end of each guide strip and not more than 4 ft. apart. Not required when the total vacant space across car between piles and between the load and car sides does not exceed 8 in.
F	As required.	Protection angles, 20 gauge, 4 in. wide, applied so as to prevent displacement.

**Sec. 2 - Fig. 24 (Rev. 9 - 1994)**

**Flat Rolled Steel less than 1/4 in. thick, with high tension bands or high tension wires, strength 2,000 pounds each, crosswise - Gondola Cars**

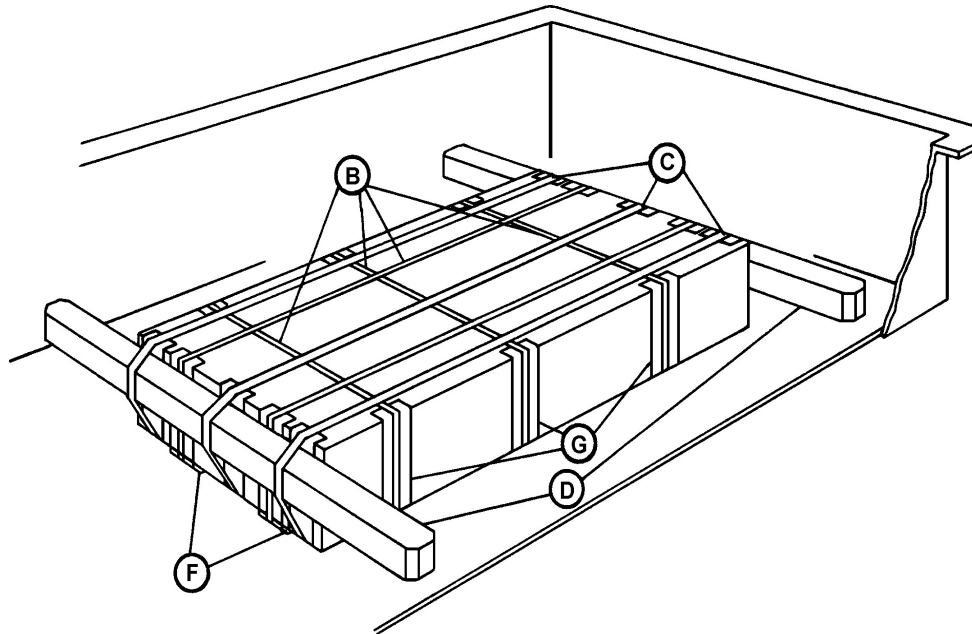
**Notes:**

1. When single pile weighs over 30,000 lbs., add one additional lengthwise and one additional crosswise tie for each additional 5,000 lbs. or less.
2. Items "B" and "C" of greater strength than 2,000 lbs. may be used, provided a minimum of two lengthwise of car are used and one crosswise of car is used, when specified.
3. Height of piles must not exceed 3/4 of their base, nor 2 in. below top of car side.
4. Separators may be used, but they must be secured to prevent displacement.
5. If sheets vary in width or length, apply wood fillers secured so that they will not become displaced, and so as to make size of pile uniform at the points where lengthwise and crosswise Items "B" and "C" are applied.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

**Sec. 2 - Fig. 25 (Rev. - 9 -1994)  
 (2-1960)**

**Flat Rolled Steel less than 1/4 in. thick, in bundles, without guide strips, with high tension bands or high tension wires, lengthwise - Gondola Cars with steel floors**



- A Brake wheel clearance. See Fig. 2, Sec. 1.
- B As required Individual Ties, Bands or Wires.

**OTHER THAN OILED OR HIGHLY FINISHED**

	Wt. Of Pile	3,000 lbs. or less	Over 3,000 lbs. to 15,000 lbs.	Over 15,000 lbs. to 20,000 lbs.	Over 20,000 lbs. to 30,000 lbs.
Lengthwise of Car, Together with Crosswise Ties	Total Load Strength of Ties (lbs.)	4,000	4,000	6,000	8,000
Crosswise of Car, Together with Lengthwise Ties		4,000	6,000	8,000	12,000
Crosswise of Car, and Bundle Only		8,000	10,000	16,000	24,000

**Sec. 2 - Fig. 25 (Rev. - 9 -1994) (cont'd)**  
**(2-1960)**

**Flat Rolled Steel less than 1/4 in. thick, in bundles, without guide strips, with high tension bands or high tension wires, lengthwise - Gondola Cars with steel floors**

**OILED OR HIGHLY FINISHED**

	Wt. Of Pile	10,000 lbs. or Less	Over 10,000 lbs. to 20,000 lbs.	Over 20,000 lbs. to 30,000 lbs.
Lengthwise of Car	Total Ld.	4,000	6,000	8,000
Crosswise of Car	Strength of Ties (lbs.)	6,000	12,000	16,000

Item	No. of Pcs.	Description
C	3 per pile or series of piles	2 in. x .044 in. bands or ties of equivalent strength. Pass over Items "D".
D	2 per pile	4 in. x 4 in., hardwood, length 2 in. less than width of car. Bevel front and back corners on each end about 1 in., as shown. Locate about 2 in. from top of pile and secure with Items "C".
E		VACANT
F	2 per pile	2 in. x 3 in. hardwood, beveled ends, not more than 2 in. shorter than pile. Secure by lengthwise Items "B".
G	As required	Protection angles, 20 ga., 4 in. wide, applied so as to prevent displacement.

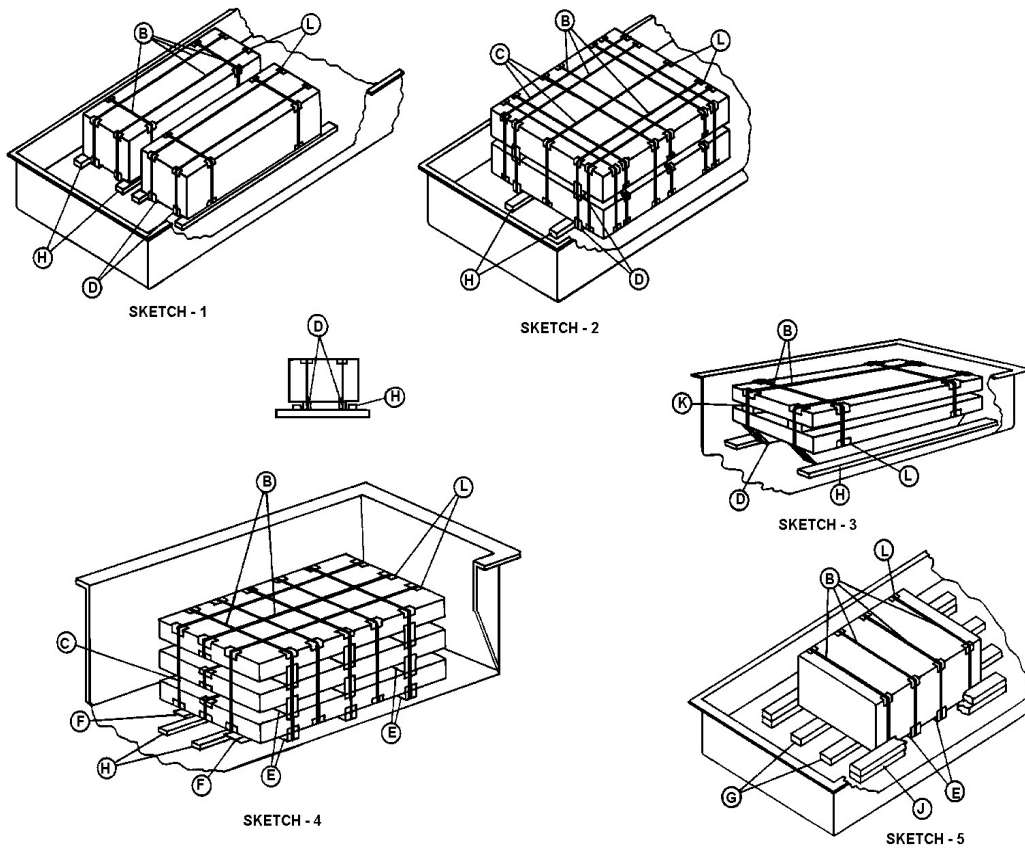
**Notes:**

1. Height of pile must not exceed 3/4 its base or 2 in. below top of car sides.
2. Separators may be used, but they must be secured to prevent displacement.
3. If sheets vary in width or length, apply wood fillers secured so that they will not become displaced and so as to make size of pile uniform at the points where lengthwise and crosswise Items "B" are applied.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

**Sec. 2 - Fig. 27 (Rev. - 9 - 1994)**  
**Flat Rolled Steel less than 1/4 inch in thickness, in packages with high tension bands,**  
**lengthwise - Gondola Cars**

Printed copies of the "Mark Pack and Load" Manual must be controlled.



**Sec. 2 - Fig. 27 (Rev. - 9 - 1994) (Cont'd)**

**Flat Rolled Steel less than 1/4 inch in thickness, in packages with high tension bands, lengthwise - Gondola Cars**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
A		Brake wheel clearance. See Fig. 2, Sec. No. 1.
B	As required, Sketch 1, 2 3, 4 and 5	Package bands, 1-1/4 in. x .029 in. high tension. On packages weighing 15,000 lbs. or less, use 2 bands lengthwise and 2 bands crosswise. For each additional 5,000 lbs. or less, add one additional band, lengthwise or crosswise, equally spaced in between.
C	As required, Sketch 2 and 4	Load bands, 2 in. x .044 in. high tension. On units weighing 30,000 lbs. or less use 2 lengthwise bands and 2 crosswise bands. For each additional 10,000 lbs. or less, add one additional band lengthwise or crosswise, equally spaced in between. Crosswise bands must not contact floor or guide strips.
D	Minimum 2 per package Sketch 1, 2 and 3	Lengthwise skids, 2 in. x 3 in. lumber, beveled ends, length not more than 2 inches shorter than package. Secure to package with lengthwise Items "B". May consist of two pieces on packages over 192 inches in length.
E	Minimum 2 per package Sketch 4 & 5	Crosswise skids, 2 in. x 3 in. lumber, length equal to width of package. ends must be cut square when loaded in accordance with Sketch 5. Secure to packages with crosswise Items "B".
F	Minimum 2 per package Sketch 4	Bearing pieces, beveled, minimum 2 in. x 3 in. lumber, length not less than the distance between the outer edges of outside Items "E" and not to extend more than 2 inches beyond outside Items "E". Place lengthwise under Items "E" and secure to unit with lengthwise Item "C". May consist of 2 pieces on unit over 192 inches in length.
K	As required Sketch 3 & 4	Separators minimum 1 in. x 3 in. lumber, length equal to material in direction placed. May be located lengthwise or crosswise in Sketch 3 and lengthwise in Sketch 4, when used. Use optional.
L	As required	Protection angles, 20 gauge, 4 inches wide. Manufactured edge protectors may be used. Apply and secure to prevent displacement.

**Notes:**

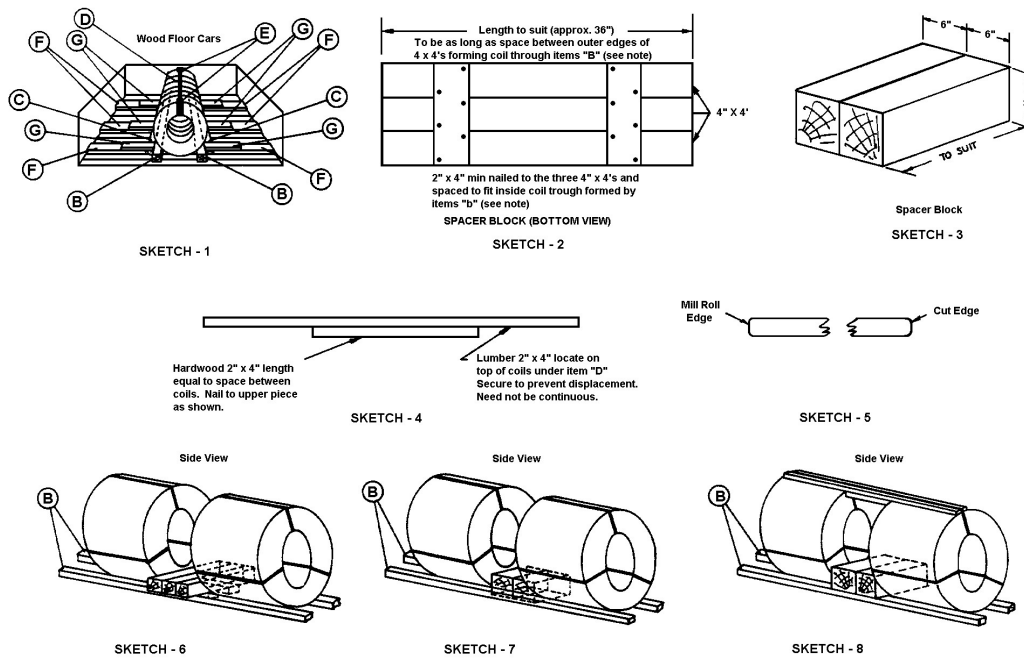
1. Packages or units may be loaded in single or multiple lengthwise rows.
2. Height of packages or units must not exceed 75 percent of their width or 2 inches below top of car side.
3. Separators, when used, must be secured to prevent displacement.

See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.

Rail Loading Coil

**Sec. 2 - Fig. 33 (Rev. 9 - 1994)  
 (Drawing Redrawn 9 - 1986)**

**Coils of Flat Rolled Steel, maximum 72 in. outside diameter, unitized eye lengthwise or individually placed eye lengthwise - wood floor Gondola Cars**



Note: When applying sketches 6 & 7 place coils a suitable distance apart using spacer bloc(s) as shown to maintain space between coils. Sketch 8 depicts the application of spacer block referred to in sketch 4

**Sec. 2 - Fig. 33 (Rev. 9 - 1994) (cont'd)**  
**(Drawing Redrawn 9 - 1986)**

**Coils of Flat Rolled Steel, maximum 72 in. outside diameter, unitized eye lengthwise or individually placed eye lengthwise - wood floor Gondola Cars**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
A		Brake wheel clearance. See Fig. 2, Sec. No. 1.
B	2	Coils, 60 in. in diameter, 5 in. x 5 in. Coils less than 60 in. in diameter, 4 in. x 4 in. Hardwood may consist of more than one piece, minimum 8 ft. in length. Must extend 3 ft. beyond end of each row of coils (unit) or to car end, whichever is less. Corners contacting coils may be beveled.
C	2	Hardwood, 2 in. x 4 in. length about equal to Items "B". Locate against Items "B" and secure to car floor with 20-D nails spaced about 18 in. apart. See Sketch 1.
D	1 per row Coils 60 in. O.D. or less 2 per row Coils over 60 in. O.D.	Unitizing bands 2 in. x .044 in. high tension band. Pass through eye and outside face of row. Locate at 12 o'clock position.  Unitizing bands 1-1/4 in. x .029 in. high tension bands. Pass through eye and outside face of row. Locate at 10 o'clock and 2 o'clock positions.
E	As required.	See Sketches 6, 7 and 8 for coils spaced over 4 in. apart. Band protectors required on coils with cut edges. Secure to prevent displacement. See Sketches 1 and 5.
F	1 every 4 ft.	Hardwood, 2 in. x 4 in. Locate from Item "C" to side of car. Secure each to car floor with four (4) 20-D nails. See Sketch 1.
G	1 each Item "F"	Hardwood, 2 in. x 4 in. x 18 in. Locate against Items "B", over top of Items "C", and on top of Items "F". Secure to Items "F" with three (3) 20-D nails.  Item "G" must extend to car side when coils exceed 50 in. O.D. See Sketch 1.

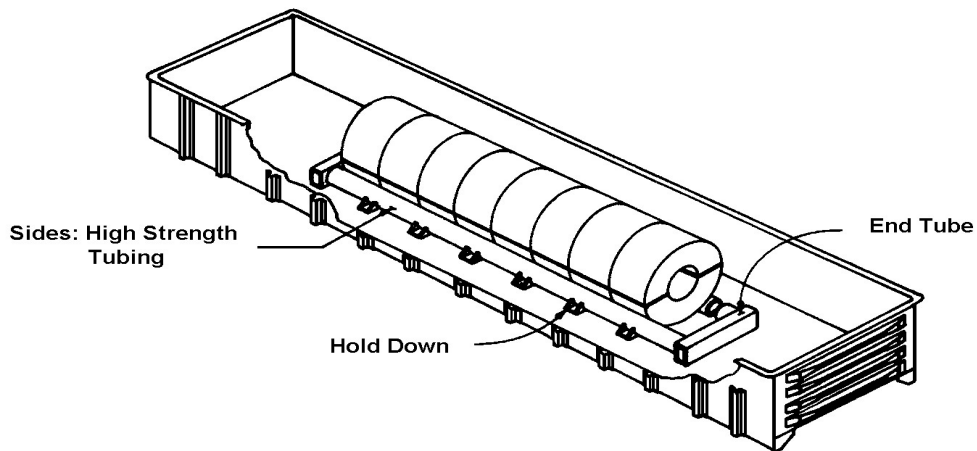
**Notes:**

1. When a car is permanently equipped to handle coils, Items B, C, F and G may be omitted.
2. Where coils of mixed diameters are loaded in the same unit or row, and the smaller coils do not contact Items "B", suitable filler pieces must be used between smaller coils and Items "B".
3. For packaging purposes, each coil is to be encircled with one (1) 1-1/4 in. x .029 in. high tension band. Locate circumferential at about center of coil. For coils 60 in. O.D. or less, locate two (2) 3/4 in. x .029 in. high tension bands through eye approximately opposite each other. For coils over 60 in. O.D., locate three (3) 3/4 in. x .029 in. high tension bands through eye equally spaced.
4. If coils are separated within the unit by more than 4 in., the length of each coil may not be less than 75 percent of the outside diameter, unless Sketches 4 and 8 are used.
5. Items "D" not required if coil lengths are 75 percent or more of the outside coil diameter and the space between the coils is more than 4 in.
6. If coils are separated, spacer blocks as depicted in Sketches 2, 3 and 4 must be applied.

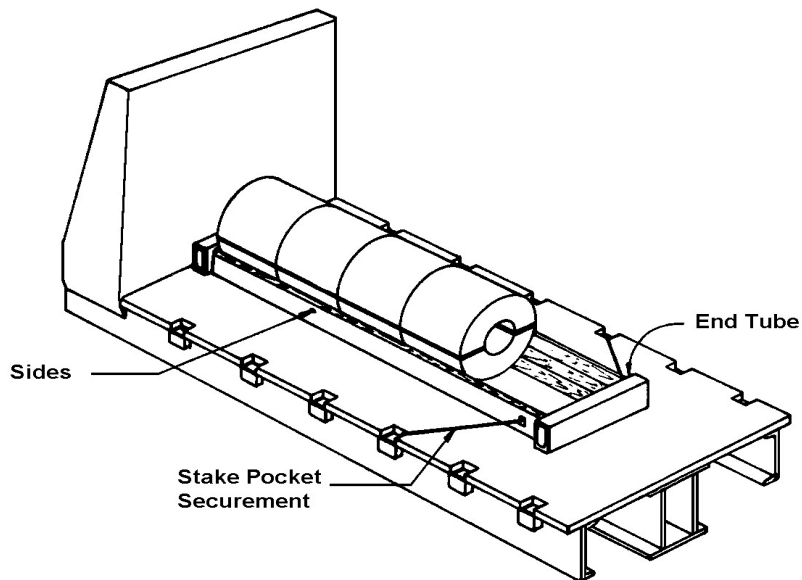
See General Rules 1, 2, 3, 4, 5, 9, 14 and 15 for further details.



**Sec. 2 - Fig. 29-B (New - 9 - 1994)**  
**Coils of Flat Steel, 86 in. or less in diameter, removable steel cradles - Gondolas or Bulkhead Flat Cars**



Steel cradles must be of design approved by the origin carrier.



**Sec. 2 - Fig. 29-B (New - 9 - 1994) (cont'd)**

**Coils of Flat Steel, 86 in. or less in diameter, removable steel cradles - Gondolas or Bulkhead Flat Cars**

Cradles constructed of steel with wood lining. Cradles must be located against end bulkheads and secured to car through side stake pockets with straps and/or chains, tensioned with turnbuckles to prevent displacement. Alternate method utilizing center stake pockets may be used without securement to side stake pockets.

Detailed drawings covering construction and securement of cradles are available from Canadian Pacific and Canadian National, Mechanical Departments, upon request.

**Package Bands:**

**For all flat rolled steel coils regardless of O.D.:** One (1) 1-1/4 in. x .029 in. high tension encircling band.

**Coils 60 in. O.D. and Under:** Two 3/4 in. x .029 high tension eye bands.

**Coils over 60 in. O.D.:** Three 3/4 in. x .029 in. high tension eye bands.

**Hot rolled sheet or strip coils in the as-rolled condition may be packaged in the following manner:**

One (1) 1-1/4 in. x .029 in. high tension encircling band.

One (1) 1-1/4 in. x .029 in. high tension eye band

It is the intent that coils shipped under this figure be unitized. However, if it is necessary to ship coils individually, in addition to the required package bands, the following bands must also be applied:

**Coils 60 in. O.D. and under:**

One (1) 1-1/4 in. x .029 in. high tension encircling band

Two (2) 1-1/4 in. x .029 in high tension eye bands

**Coils over 60 in. O.D.:**

Two (2) 1-1/4 in. x .029 in. high tension encircling bands

Three (3) 1-1/4 in. x .029 in. high tension eye bands

**Unitizing Bands:**

**Slit coils less than 12 in. wide:** Six (6) 2 in. x .044 in high tension bands

**Slit coils 12 in. to 36 in. wide:** Four (4) 2 in. x .044 in. high tension bands

**Coils 36 in. wide up to 60 in. O.D.:** Two (2) 2 in. x .044 in. high tension bands

**Coils 36 in. wide and 60 in. in O.D. and over:** Three (3) 2 in. x .044 in. high tension bands

When loading in gondola cars, coils 36 in. wide and over, regardless of coil O.D., may be unitized with two (2) 1 in. x .044 in. high tension bands in lieu of the three (3) bands required for bulkhead flat car loads.

**Notes:**

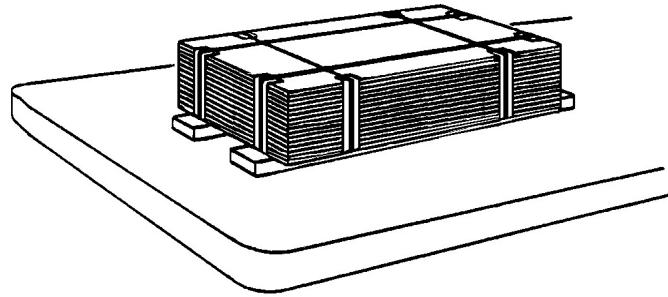
1. Package bands are not illustrated on drawings for clarity.
2. Package bands may vary in dimension and placement based on customers' orders.
3. Suitable corner protectors are required under bands on coils with sharp/slit edges.
4. When necessary to maintain space between coils, spacer blocks, hardwood, may be applied. Secure to prevent displacement.
5. If spacer blocks are used, the length of each coil may not be less than 75 percent of the outside diameter.

See General Rules 1, 3, 4, 5, 9, 12, 14 and 15 for further details.

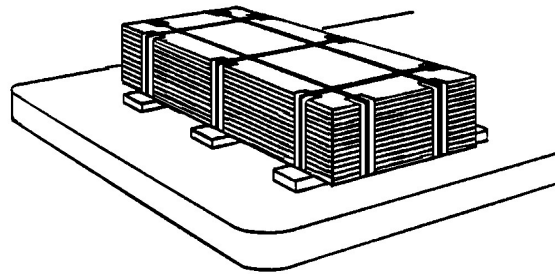
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Truck Loading - C.T.L.

Package Length and  
Bearing Pieces  
Parallel to Carrier Length



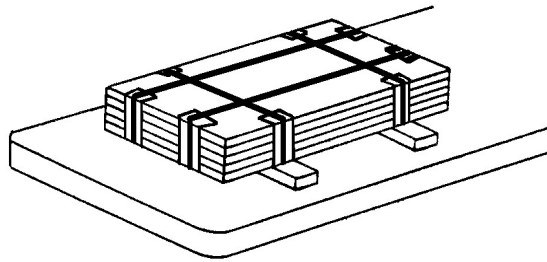
Package Length Crosswise  
to Carrier Length  
Bearing Pieces parallel  
to Carrier Length



**Note:** Carrier is responsible for placement, protection and securing of load

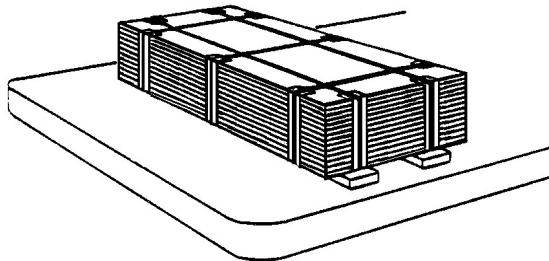
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**Truck Loading - C.T.L.**



Length Parallel  
to Carrier Length  
Bearing Pieces Crosswise  
to Carrier Length

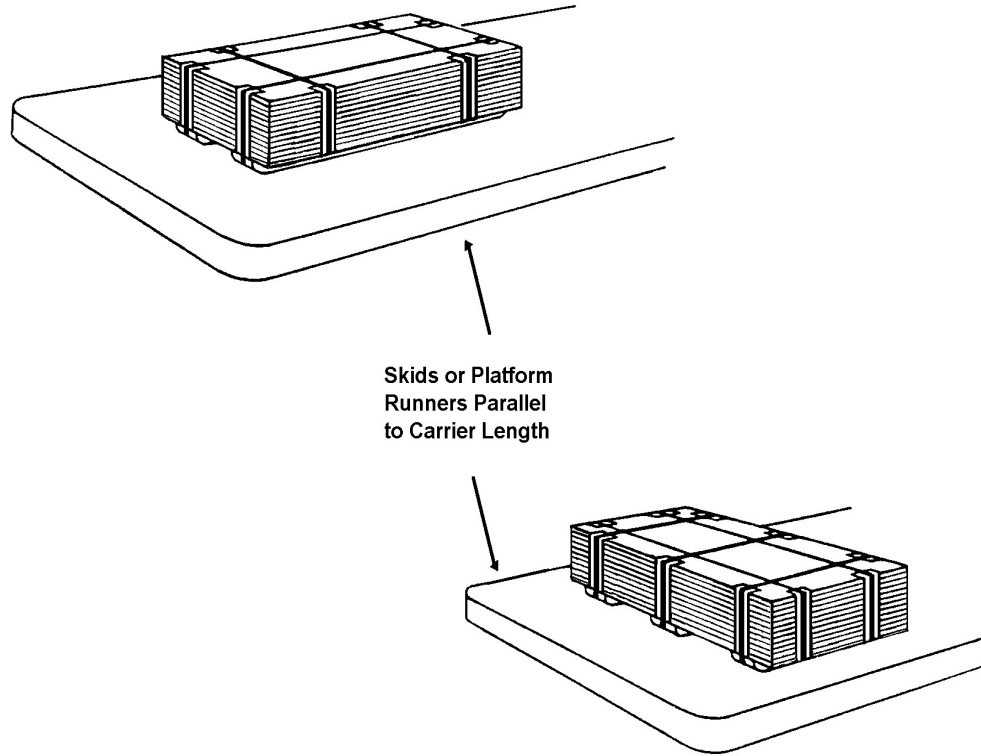
Package Length  
Bearing Pieces  
Crosswise to Carrier Length



**Note:** Carrier is responsible for placement, protection and securing of load

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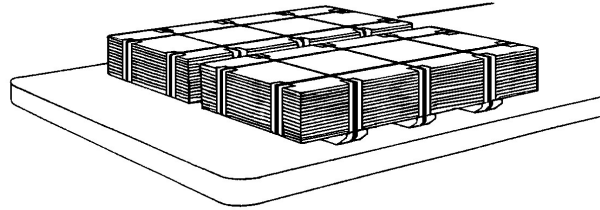
**Truck Loading - C.T.L.**



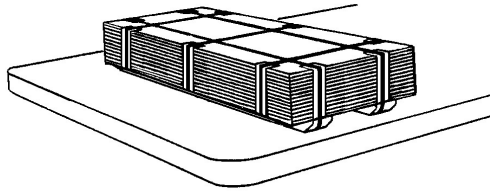
**Note:** Carrier is responsible for placement, protection and securing of load

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**Truck Loading - C.T.L.**



**Skids Crosswise  
to Carrier Length**



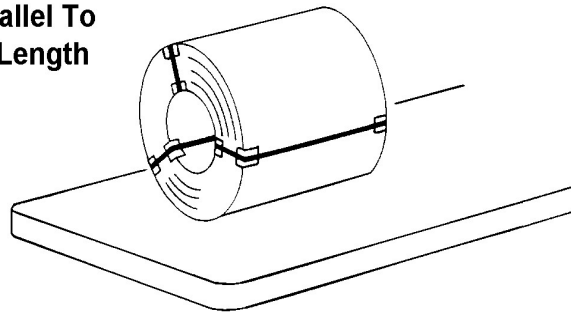
**Skids Parallel to  
Carrier Length  
Bearing Pieces Crosswise  
to Carrier Length**

**Note:** Carrier is responsible for placement, protection and securing of load

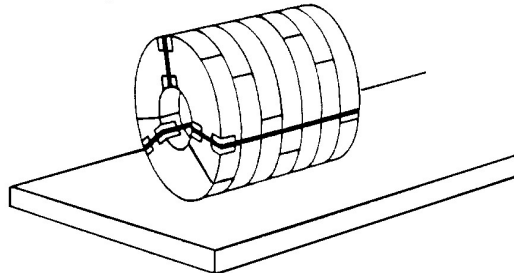
Truck Loading Coil

**Truck Loading - Coil  
(Eye Horizontal - No Platforms)**

**Eye Parallel To  
Carrier Length**



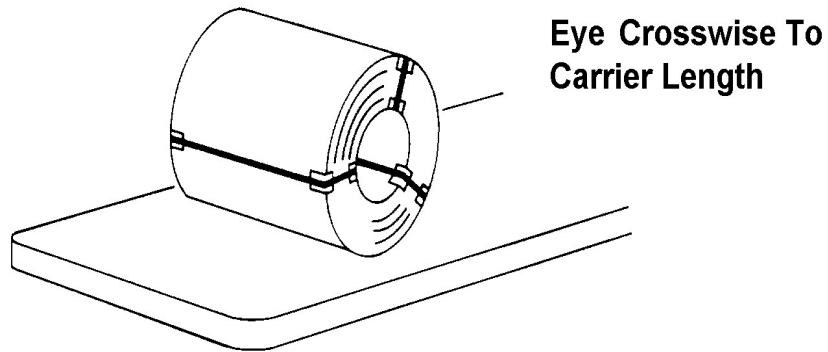
**Eye Parallel  
To Carrier Length**



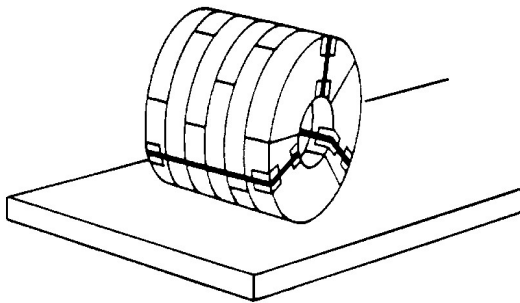
**Note:** Carrier is responsible for placement, protection and securing of load

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**Truck Loading - Coil  
(Eye Horizontal - No Platforms)**



**Eye Crosswise To  
Carrier Length**

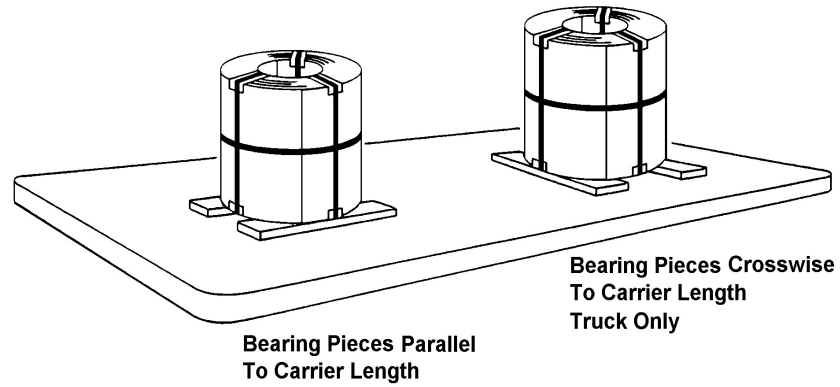


**Note:** Carrier is responsible for placement, protection and securing of load



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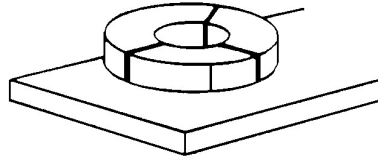
**Truck Loading - Coil  
(Eye Vertical - No Platforms)**



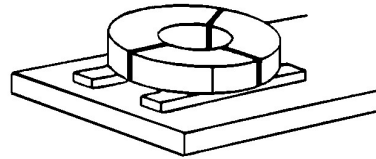
**Note:** Carrier is responsible for placement, protection and securing of load

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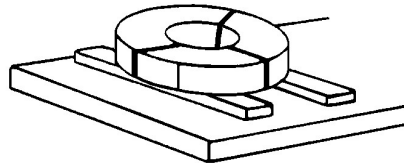
**Truck Loading - Coil**  
**(Eye Vertical - Coil Mults < 305 mm (12"))**



**Bearing Pieces Parallel  
To Carrier Length**



**Bearing Pieces Crosswise  
To Carrier Length**

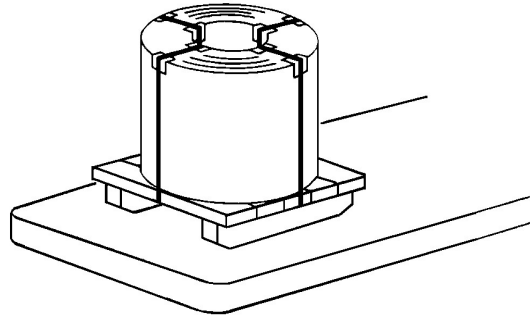


**Note:** Carrier is responsible for placement, protection and securing of load

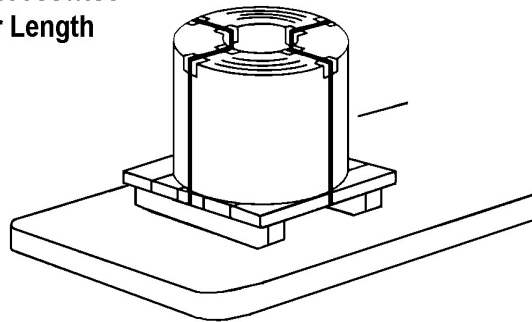
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**Truck Loading - Coil  
(Eye Vertical - On Platforms)**

**Runners Parallel  
To Carrier Length**



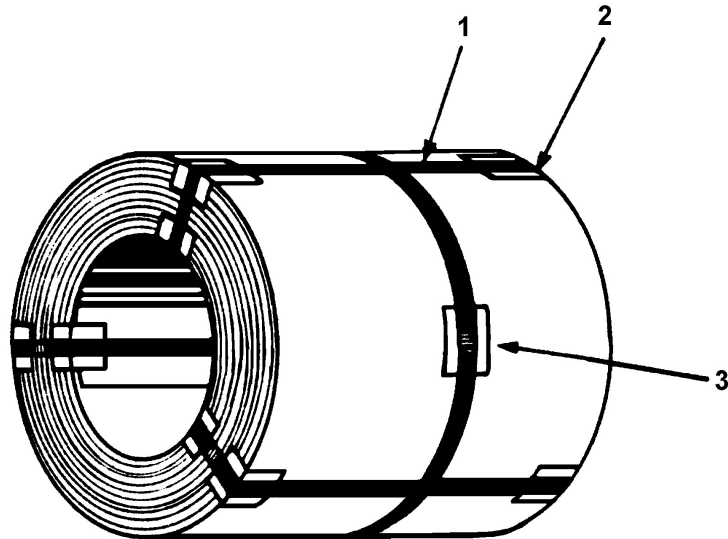
**Runners Crosswise  
To Carrier Length**



**Note:** Carrier is responsible for placement, protection and securing of load

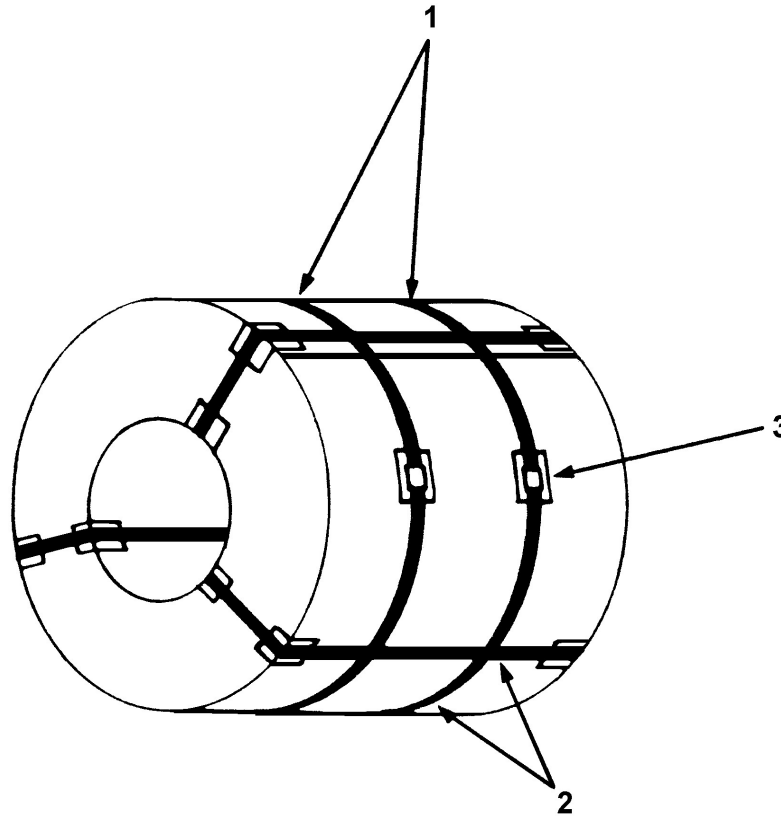
#### 4. CUSTOMER SPECIFIC PACKAGING

**Package Specifications**  
**Master Coils < 60" Wide**  
(Ref. G.M. Spec HRU60)  
(HR & HR P&O)



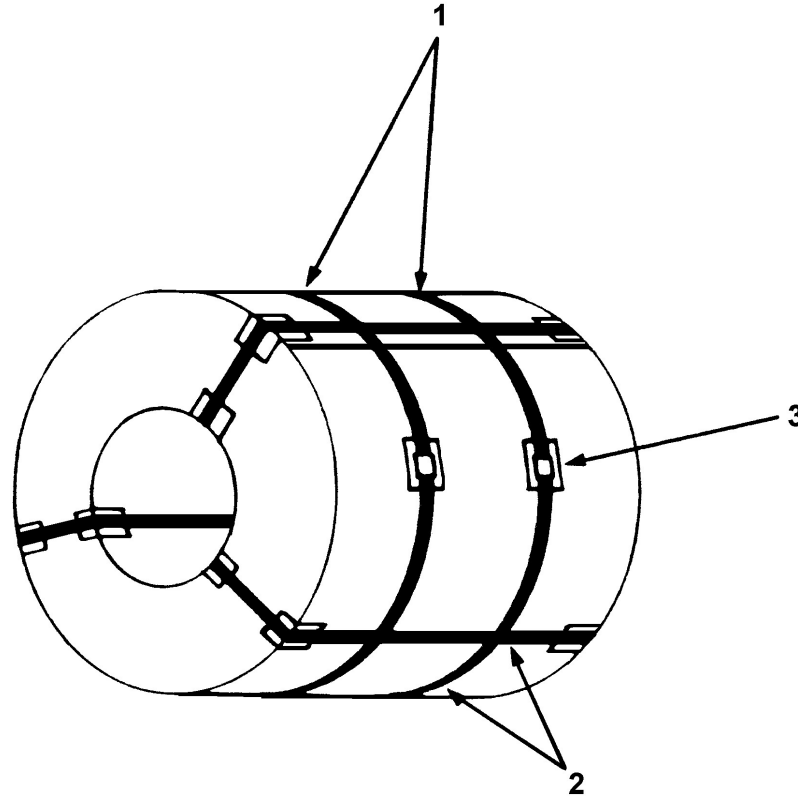
1. Straps - Minimum 32 mm (1-1/4" x .029).
2. Corner Protectors - Slit edge material only.
3. Seal protectors on cold rolled material only.
4. Minimum (1) circumferential (3) radial bands.

**Package Specifications**  
**Master Coils > 60" Wide**  
(Ref. G.M. Spec HRO60)  
(HR & HR P&O)



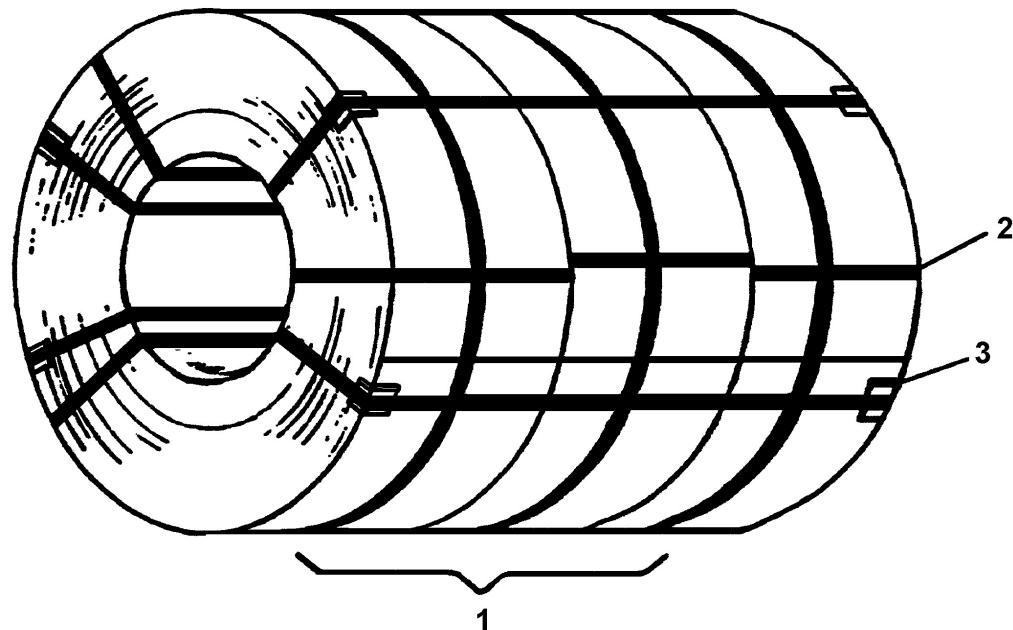
1. Two circumference straps per coil.
2. All strapping must be 32 mm (1-1/4 in. x .029) and spaced evenly. One eye strap to be located at coil end.
3. O.D. strap seal protection (window type) on cold rolled material only.
4. Corner protectors on all slit edge coils.

**Package Specifications**  
**Master Coil Gauge > .090**  
**P/N 93212-R Only**



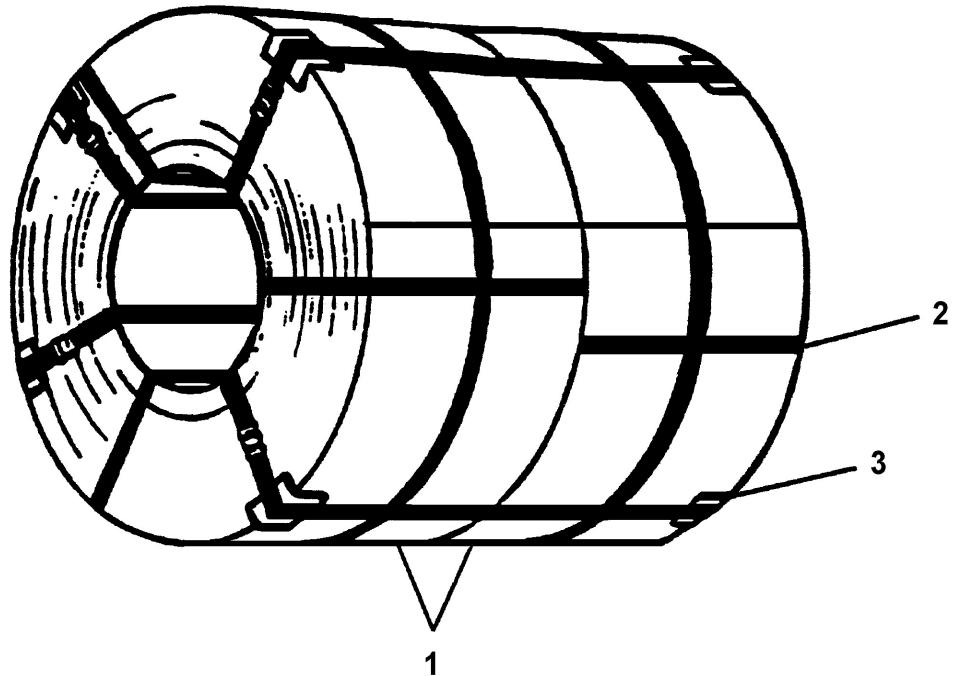
1. Two circumference straps per coil.
2. All strapping must be 32 mm (1-1/4 in. x .029) and spaced evenly. One eye strap to be located at coil end.
3. O.D. strap seal protection (window type) on cold rolled material only.
4. Corner protectors on all slit edge coils.

**Package Specifications**  
**Multiple Coil Grouping**  
**Eye Horizontal**  
(Ref. G.M. Spec HR3C)  
(HR & HR P&O)



1. Package 3 slit cuts per lift.
2. Locate individual mult (radial) strap 152 mm (6") from coil I.D. and O.D. ends. Minimum 3 radial and 1 circumferential per coil mult at minimum .029" x 1-1/4" strapping.
3. Edge protectors required under all unitizing straps. 3 unitizing straps to 1219 mm (48") 4 unitizing straps over 1219 mm (48"). Locate straps evenly at either 120 degrees or 90 degrees of each other.
4. Seal protectors required on all cold rolled coils.
5. O.D. on individual coils must not vary more than 6.35 mm (1/4").

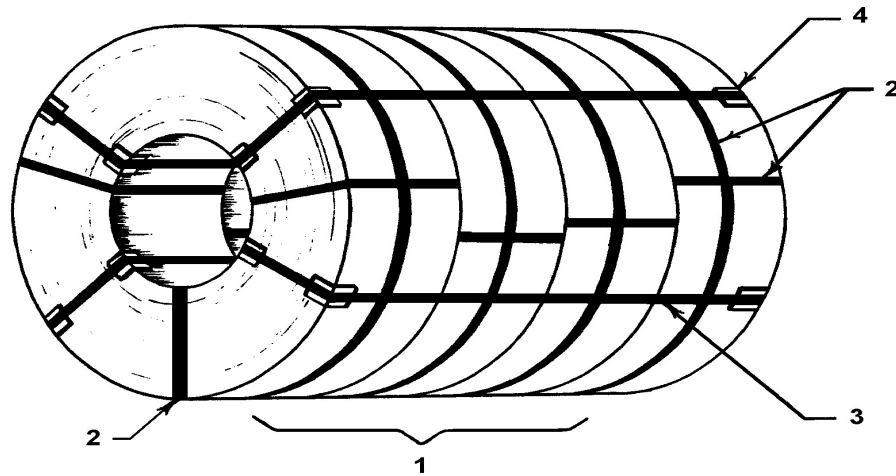
**Package Specifications**  
**Multiple Coil Grouping**  
**Eye Horizontal**  
(Ref. G.M. Spec HR3C)  
(HR & HR P&O)



1. Package 2 or more slit coils per group.
2. Locate individual mult (radial) strap 152 mm (6") from coil I.D. and O.D. ends. Minimum 3 radial and 1 circumferential per coil mult at minimum .029" x 1-1/4" strapping.
3. Edge protectors required under all unitizing straps. 3 unitizing straps to 1219 mm (48") 4 unitizing straps over 1219 mm (48"). Locate straps evenly at either 120 degrees or 90 degrees of each other.
4. Seal protectors (window type) on all cold rolled coils.
5. O.D. on individual coils must not vary more than 6.35 mm (1/4").

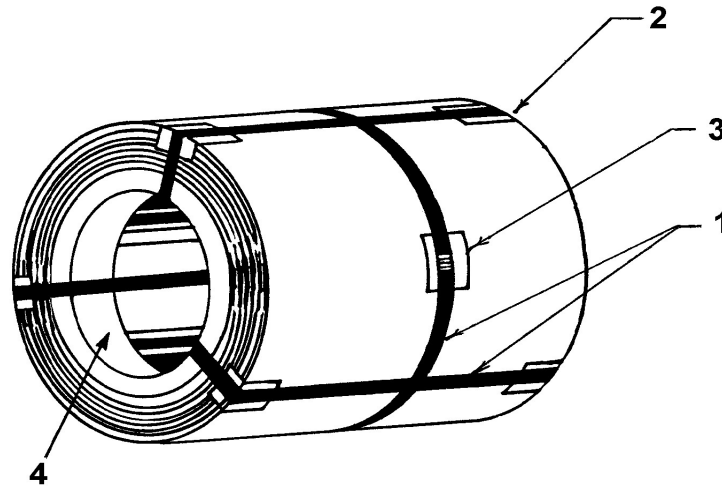


**Package Specifications**  
**Multiple Coil Grouping**  
**Eye Horizontal**  
(Ref. G.M. Spec HR3C)  
(HR & HR P&O)



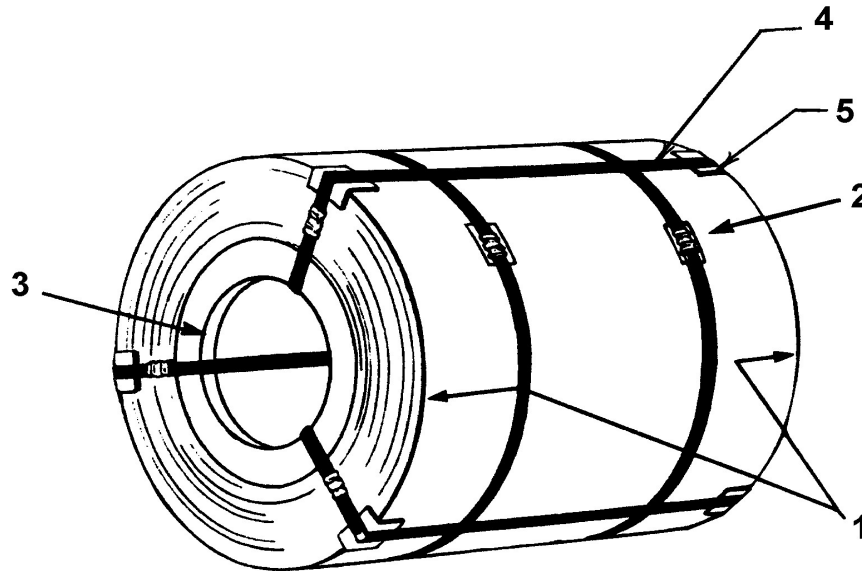
1. Package 4 slit cuts per lift.
2. Minimum (1) circumference and (3) radial straps per mult at minimum .029" x 1-1/4" strapping.
3. Minimum (3) unitizing straps per coil group spaced evenly.
4. Corner protectors under unitizing straps at outside edges.
5. O.D. on individual coils must not vary more than 6.35 mm (1/4").

**Packaging Specifications**  
**Cold Rolled Steel**  
**Coils < 60" Wide**  
**(Ref. G.M. Spec CRU60)**  
**(Cold Rolled & Galv.)**



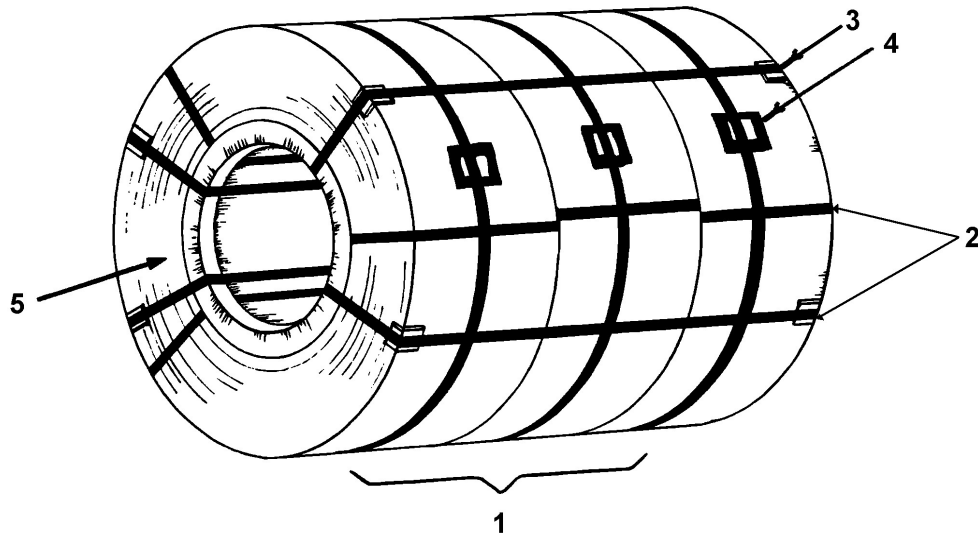
1. (1) Circumference and (3) radial straps per coil, minimum .029 x 1-1/4".
2. Corner protectors on all coils.
3. Seal protector (window type) on circumference band.
4. Metal/plastic I.D. protector required.

**Packaging Specifications**  
**Cold Rolled Steel**  
**Coils > 60" Wide**  
**(Ref. G.M. Spec CRO60)**  
**(Cold Rolled & Galv.)**



1. (2) Circumference straps per coil (min. .029" x 1-1/4").  
*Note* - each strap must be 10" from coil edge.
2. Seal protectors (window type) on each coil.
3. Metal/plastic I.D. protector on each coil.
4. Minimum (3) radial bands per coil (min. .029 x 1-1/4").
5. Corner protectors on all coils.

**Packaging Specifications**  
**Multiple Coil Grouping**  
**Eye Horizontal**  
(Ref. G.M. Spec CR2C)  
(Cold Rolled & Galv.)

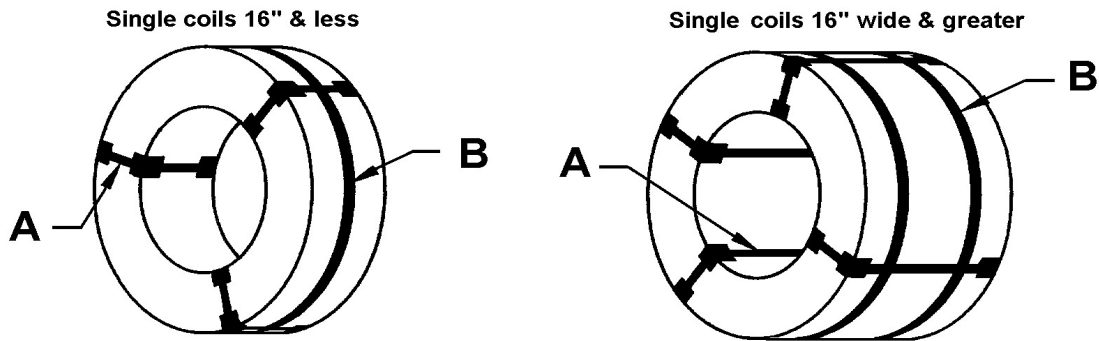


1. Package for 2 or more slit cuts within a group.
2. All strapping minimum 32 mm (1-1/4 x .029)  
3 eye straps per coil  
1 circumference strap per coil  
Minimum 3 unitizing straps per coil
3. Corner protectors required.
4. Seal protectors (window type) required on O.D. strap.
5. Metal/Plastic I.D. protector required.
6. O.D. of individual coils within group must not vary more than 6.35 mm (1/4").

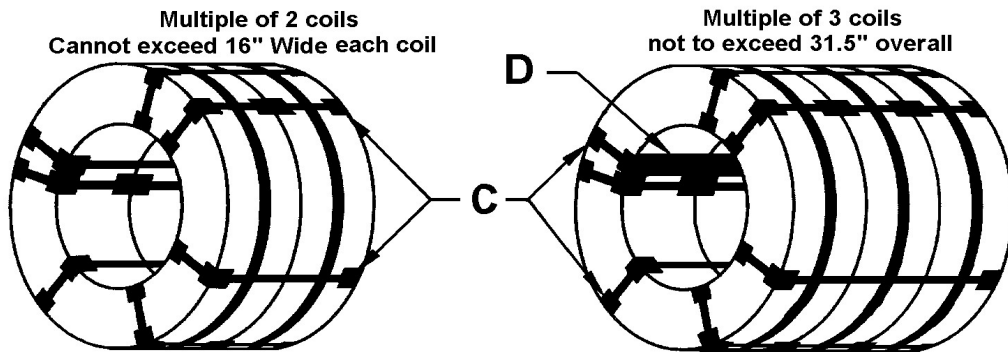
**Note:** If wrapped, do not use paper containing asphalt or tar.

Package Specifications

Chassis Products Division



- A. Min 1-1/4" x .029 radial band
- B. Min 1-1/4" x .029 circumference band
- C. Corner Protectors required under all radial & unitizing band
- D. Metal brace required to support centre mult



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## 5. STRAPPING PRACTICES/PROCEDURES

### 5.1 Strapping Guide

#### Banding

##### Sheet

Adequate securement of package is of prime importance. Tension tying with bands is recommended and is normal Algoma Steel Inc. practice. Corner protection is provided wherever necessary. The actual number and type of bands for any specific unit load or package is generally determined by past experience and is compatible with the loading rules of the Association of American Railroads.

##### Coils

Individual coils and coil groups must be adequately banded. A minimum of one circumference band and one core band is used for individual coils. The core band should be located near the outside coil end. Corner protection is provided wherever necessary. The actual number and type of bands is generally determined by past experience and is compatible with the loading rules of the Association of American Railroads.

#### Processed Coil Strapping Guidelines

##### Customer Direct General Guidelines

<b>DSPC/Cold Mill/ Wide Strip</b>	Min .044 x 1-1/4" 2 Circ. Bands 2 Radial Bands
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##### Multiple Coil Groups - Individual Coils

Coils to 3,629 kg (8,000 lbs.)	2 Radial Bands at approximately 180 degrees of one another 1 Circumferential Band
Coils over 3,629 kg (8,000 lbs.)	3 Radial Bands at approximately 120 degrees of one another 1 Circumferential Band

---

##### Multiple Coil Groups - Unitizing Bands

Coil Group Less than 1,219 mm (48") Wide -	3 Radial Bands, min. .029 x 1-1/4" located approximately 120 degrees of one another
Coil Group over 1,219 mm (48") Wide -	4 Radial Bands, min. .029 x 1-1/4" located approximately 90 degrees of one another

##### Overriding rules to general guidelines:

1. MPL **CUSTOMER** specific instructions **ALWAYS** override general guidelines.
2. Corner protectors: **MANDATORY** on all cold rolled and slit edge material.
3. Radial bands are **ALWAYS** placed over top of circumferential bands.

---

**Hot Rolled Ship  
(Unprocessed Coils)**

**Standard for Non D.S.P.C. HR (Unprocessed) Coils: Utilizing .044 x 1-1/4" Strapping only**

Minimum 2 circumferential bands - locate bands approximately 1/3 (33%) in from each edge.

Minimum 2 radial bands - Item (1) - locate bands approximately 180° of one another

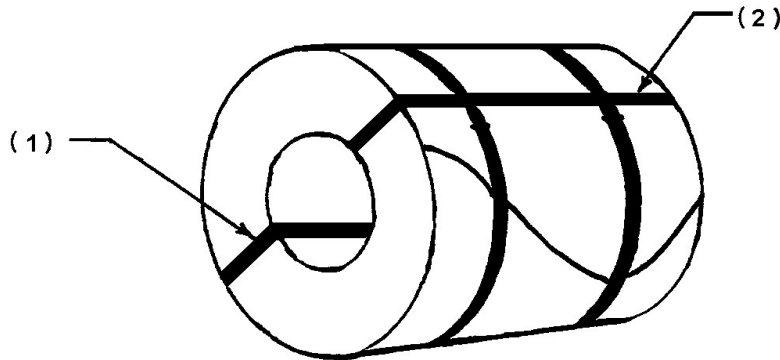
- Item (2) - location of initial radial band must not be more than 18" from coil end.

**Standard for D.S.P.C. HR (Unprocessed) Coils: Utilizing .044 x 1-1/4" Strapping only**

Minimum 2 circumferential bands - locate bands approximately 1/3 (33%) in from each edge.

Minimum 2 radial bands - Item (1) - locate bands approximately 180° of one another

- Item (2) - location of initial radial band must not be more than 18" from coil end.



**Rules governing the shipment of Hot Roll (Unprocessed) Coils**

1. Telescope - maximum 4" acceptable
2. Loose wraps - maximum 4 loose wraps acceptable to a maximum 4" separation
3. Coils exceeding (1) and (2) must either be repaired through burning or diverted over #1-line (within 1 Line limits), prior to shipment.

## 5.2 Strap Testing Procedures

### 5.2.1 New Tool Purchase Procedure

1. Only those tools tested and approved will be available in SAP for purchasing. No alternative tools or tool parts are to be purchased.
2. Mill areas will follow purchasing guidelines for procurement of new tools that meet required specifications.
3. Purchasing Department must make certain that tool specification matches intended end use. Eg. - Notch guns rated at .031 gauge max should not be purchased for use on .044 gauge strapping.
4. All strapping and related materials, required to make a complete joint (seal, strapping & tools) must include a stated minimum specification, as established by Mill areas. Detail minimums are required to be included on the Purchase Order in order to satisfy quality system requirements and to preclude the need for internal Algoma Steel Inc. testing verification.
5. Upon receipt of new tool, tool must be catalogued and tested prior to entering new tool into service.  
This is accomplished by forwarding each new tool(s) to Central Trades repair facility, which will catalog and test new tool(s) for rated efficiency.
6. Following initial approval, tool efficiency is to be maintained, through monthly testing for joint efficiency refer to procedure in MPL.



### 5.3 Joint Efficiency Testing Rules

- Each operating area is required to perform joint efficiency test, on all pneumatic and hand operated tools. Test scheduling is to be maintained utilizing the following schedule, in order to preserve lab turn-around efficiencies.

Suggested Test Schedule:

Week 1 of Each Month	-	Cold Mill
Week 2 of Each Month	-	Wide Strip & Plate Mill
Week 3 of Each Month	-	Transportation (Dock)
Week 3 of Each Month	-	Q.B.I. (when in operation)
Week 4 of Each Month	-	D.S.P.C.

- \*\* Each outside processor used by Algoma is accountable for determining their own joint efficiency testing procedures for seals and strapping.
- Joint strength must achieve 75% of the straps rated minimum breaking strength listed below.
  - All new tools must be catalogued (see new tool procedures) & tested, prior to introduction into the workplace. This catalog number will then serve to provide proper control of performance records.
  - Where a joint efficiency fails (results in less than 75% of strap rating), the failed tool must be tagged as non-conforming and forwarded to Central Trades for service.
  - Following needed repairs, a joint test must be conducted by Central Trades prior to returning tool to its original work station. Records showing degree of repairs and corresponding retesting results must be maintained with tools service record.

<u>Strap Size</u>	<u>Minimum Breaking Strength of Straps/Lbs</u>	<u>Minimum Joint Strength Acceptable/Lbs</u>
1-1/4" x .029	4750 lbs.	3565 lbs.
1-1/4" x .031	4750 lbs.	3565 lbs.
1-1/4" x .035	4750 lbs.	3565 lbs.
1-1/4" x .044	6750 lbs.	5065 lbs.
1-1/4" x .050	6750 lbs.	5065 lbs.
2" x .044	10600 lbs.	7950 lbs.

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## 5.4 Procedure for Testing Strap Joints

### Test sample submission:

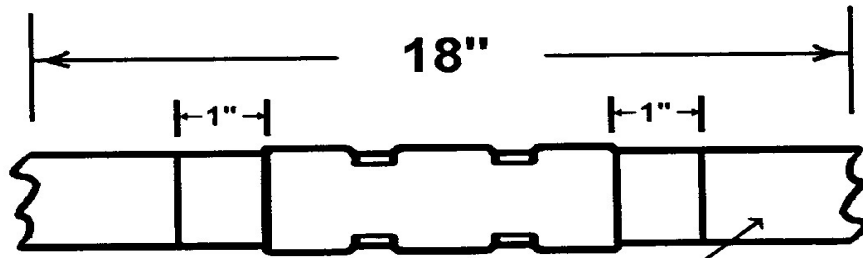
**Note:** **ALTHOUGH SEALS & STRAPPING ARE ORDERED TO SPECIFICATION, IT IS ADVISABLE THAT RANDOM TEST BE CONDUCTED ON EACH PRODUCT. (STRAPPING TEST FOR YIELD STRENGTH & SEALS TEST FOR HARDNESS ON ROCKWELL “B” SCALE)**

- Cut two (2) test pieces of strap, approximately 18” in length.
- Overlap test pieces and apply a **single** seal only. Overlap portion must extend beyond edge of seal approximately 1” each side. (See Exhibit “A” p5.16).
- Care must be taken to apply notches so that they are evenly distributed across width of seal.
- 1-1/4” strapping requires a minimum of two (2) notches.
- 2” strapping requires a minimum of three (3) notches.
- Utilizing marking tape, indicate tool origin (Eg. PSO, for Plate Mill & WSO for Wide Strip Mill) and tool catalogue number (Eg. PSO 0015).
  
- **All samples are to be recorded / submitted.**
  
- Mechanical Lab Services personnel provide test results to Mill FLS or designated mill personnel for the purpose of monitoring tool efficiency and to ensure that tools are being properly maintained.
- Completed data results from tests **must** be evaluated by Mill FLS’s or designated mill personnel for each area. Each mill area is accountable for maintaining records of tests submitted and documented test results.
- Where seal joint has failed the corresponding tool **must** be removed from service and forwarded to Central Maintenance for required servicing.
- Upon completion of repair service, tools are to be tested for joint efficiency; the designated department must keep copy of records of testing.

**Procedures for Testing Strap Joints**  
**Exhibit "A"**

**1-1/4" Strapping**

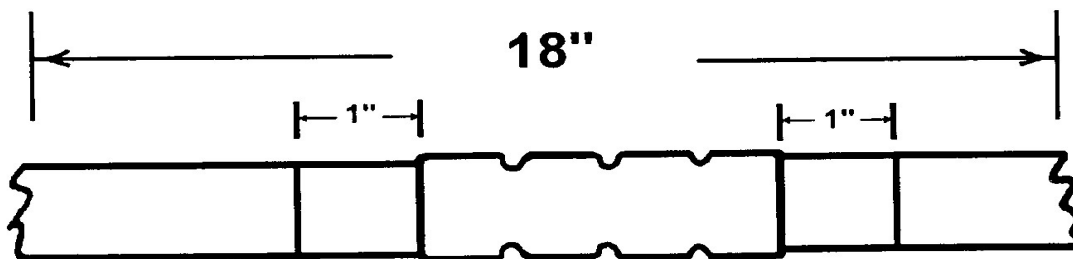
**1 SEAL - 2 PAIRS OF NOTCHES**



Apply identification  
tape here  
(1) origin (eg. W/S Mill)  
(2) Tool number

**2" Strapping**

**1 SEAL - 3 PAIRS OF NOTCHES**



**5.5 Example Strapping Tensile Manifest for Strip Finishing:**

<b>STRAPPING TENSILE MANIFEST FOR STRIP FINISHING</b>
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DATE MANIFESTED : (year/mth/day)		DATE COMPLETED: (year/month/day)	
-------------------------------------	--	-------------------------------------	--

MANIFESTED BY:	COMPLETED BY:
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LOCATION	TOOL NUMBER	TYPE	SIZE JAW	TEST LOAD	BREAK LOCATION

<u>SECTION</u>	<u>STRAP LOAD (lbs)</u>		<u>ACCEPT. LOAD (lbs)</u>	
1-1/4" X .029	4750	X 75%	3565	<b>NOTE:</b> FOR BREAK LOCATION INDICATE WHETHER THE BREAK WAS IN THE STRAP OR CLAMP
1-1/4" X .031	4750	X 75%	3565	
1-1/4" X .035	4750	X 75%	3565	
1-1/4" X .044	6750	X 75%	5065	
2 X .044	10600	X 75%	7950	

### 5.6 Example of Test Results Received from Laboratory



ESSAR Steel Algoma Inc.  
QUALITY SERVICES  
PHYSICAL TEST LAB

07/11/2013

#### Strapping Test Results

Tool Number	Type	Strap Size	Lab Id	Test Facility	Test Load	Break Location
119	STRAP	1 1/4 X .044	13601131	270K	2218	CLAMP
119	STRAP	1 1/4 X .044	13601132	270K	2197	CLAMP
119	STRAP	1 1/4 X .044	13601133	270K	2130	CLAMP
119	STRAP	1 1/4 X .044	13601134	270K	1929	CLAMP

---

## 6. LOADING OF STRUCTURAL PRODUCTS

### Type of Package

<p><b>REPRESENTS PRODUCT</b> Structural Beams</p>
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<p><b>PACKAGE TYPE</b></p>
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<p>Standard bundle (unsecured) Standard bundle (secured)</p>
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### Weather Protection

<p><b>PROTECTION TYPE</b></p>
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<p>Bare Protective oil coating Poly wrap Unit shroud Paper wrap</p>
---

<p><b>ADDITIONAL PROTECTION</b></p>
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**Type of Lumber Base**

**DIRECTION**

Horizontal  
Vertical

**LUMBER SIZE FOR BOTTOM BEARING PIECE**

**76 mm x 102 mm (3" x 4")**  
**102 mm x 102 mm (4" x 4")**  
**51 mm x 203 mm (2" x 8")**

**LUMBER SIZE FOR TIER SEPARATORS**

**57 mm x 76 mm (2-1/4" x 3")**  
**51 mm x 102 mm (2" x 4")**  
**76 mm x 102 mm (3" x 4")**  
**102 mm x 102 mm (4" x 4")**  
**51 mm x 203 mm (2" x 8")**

**LUMBER SIZE FOR VERTICAL SEPARATORS**

**51 mm x 102 mm (2" x 4")**

**Carrier Mode**

**INTERMEDIATE CARRIER**

Pool car  
Vessel or barge  
Rail  
Truck

**DELIVERING CARRIER**

Pool car  
Vessel or barge  
Rail  
Truck

**TRANSPORT TYPE**

**TRUCK**

Flat bed  
Trombone  
Other

**RAIL**

Standard mill gondola  
Bulkhead flatcar  
Extra long flat car  
Standard flat car  
Miscellaneous

**LOADING METHOD**

**TRUCK**

The carrier's representative is directly responsible for placement, protection and securing of the load. Algoma Steel Inc. cannot assume liability for in-transit safety or damage and fulfills it's obligation by indicating customer's requirements.

**RAIL**

Typical Methods shown are based on A.A.R. approved figures. Algoma is required to load in accordance with pre-established railroad practices.

continued next page



### **TRUCK LOADING - STRUCTURALS**

Bottom bearing pieces only - balance of load nested  
Bottom bearing pieces with additional tier separations required per tier  
Bottom bearing pieces, tier separation and vertical "T" separation required  
Bottom bearing pieces, balance of load staggered, on per lift basis (min. stagger 10" either end)

### **RAIL LOADING - STRUCTURALS**

Gondola cars - height must not exceed 6 ft. above floor, Fig. 37A  
Bulkhead flat cars 50 ft. over in length - secured with high tension bands - no tier separation - Fig. 8B  
Flat cars – 60 ft. and over in length and equipped with permanently secured bearing pieces - Fig. 105  
Flat cars 50 ft. and over equipped with cushioning devices – Fig. 105-A.

**Method of Off-Loading**

**METHODS OF LIFTING**

By magnet crane  
By boom crane  
By lift truck (Forklift)  
By straddle carrier  
By twin trolley crane

**LIFTING ATTACHMENTS**

Chains and slings  
Grab hooks  
Forks  
Magnet or Vacuum cups

**DIRECTION OF OFF-LOADING**

From overhead  
From side  
From end

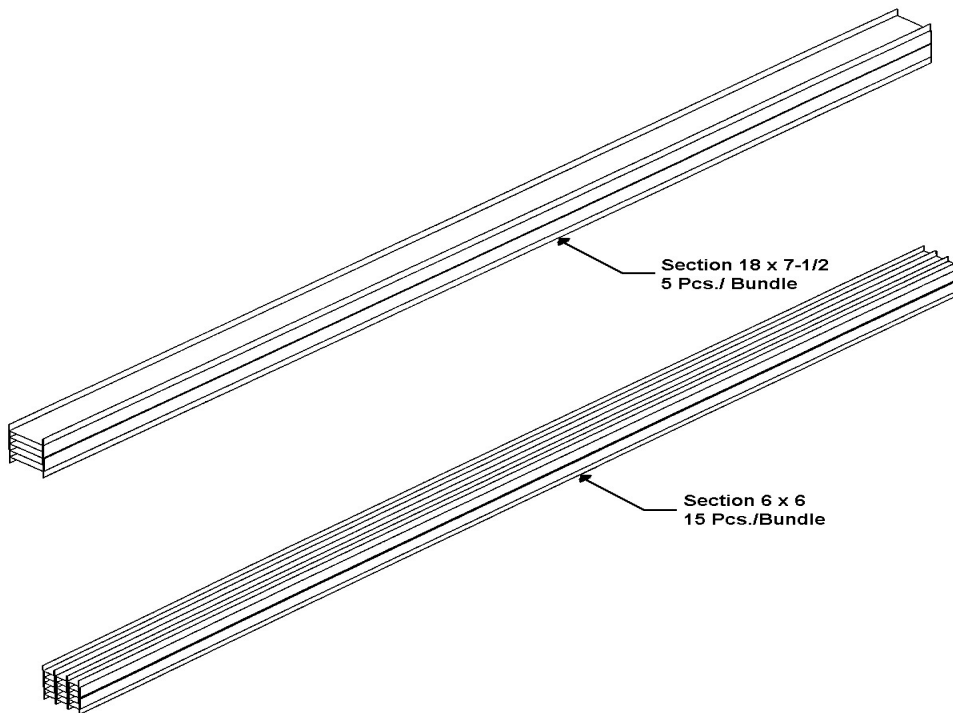
**“This is to be referenced when loads are switched between rail & truck and whereby the corresponding paperwork has not been changed”**

<b>INTERMEDIATE CARRIER</b>	
Possible Alternative	
<b>DELIVERING CARRIER</b>	
Rail	
Truck	
<b>TYPE OF VEHICLE</b>	
<b>TRUCK (TRAILER TYPE)</b>	<b>RAIL (CAR TYPE)</b>
Flat bed	Standard mill gondola
Trombone	Bulkhead flat car
Other	Extra long flat car
	Standard flat car
	Miscellaneous
<b>LOADING METHOD</b>	

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## 7. STRUCTURAL PACKAGE TYPE

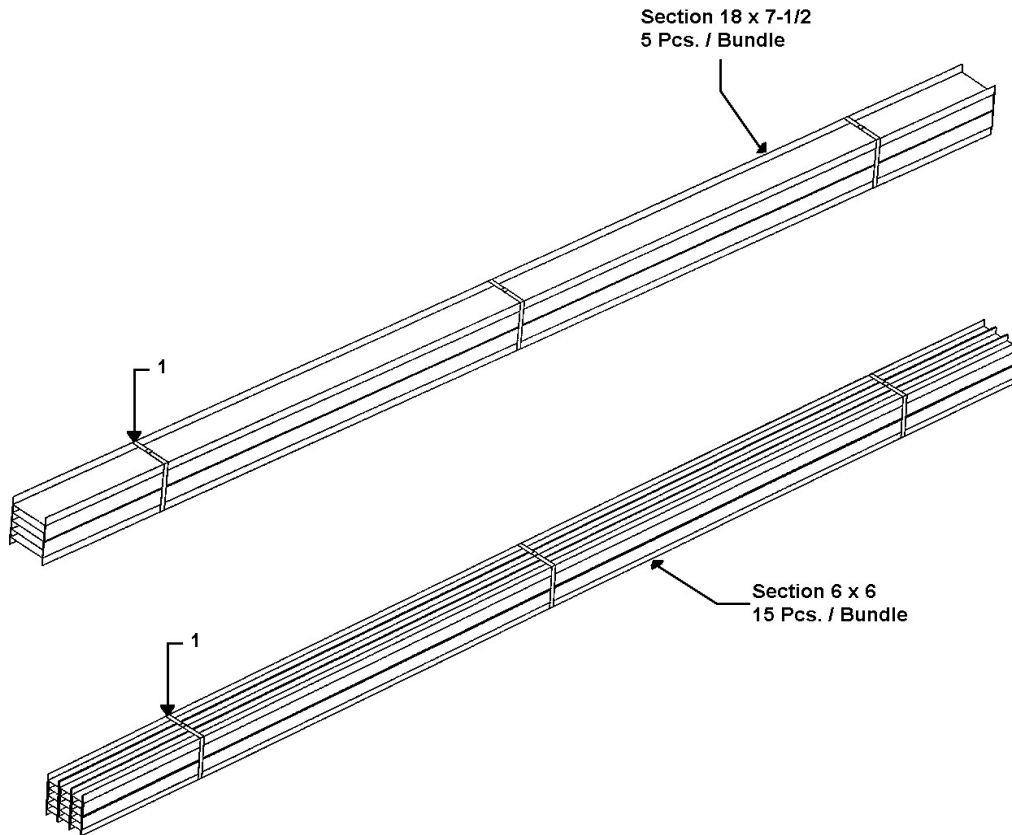
### Structurals Standard Lift (Unsecured)



1. No banding
2. Pieces are interlocked up to Section 12 x 6-1/2.

Sections larger than 12 x 6-1/2 are then stacked as single bundles of either 4 or 5 high

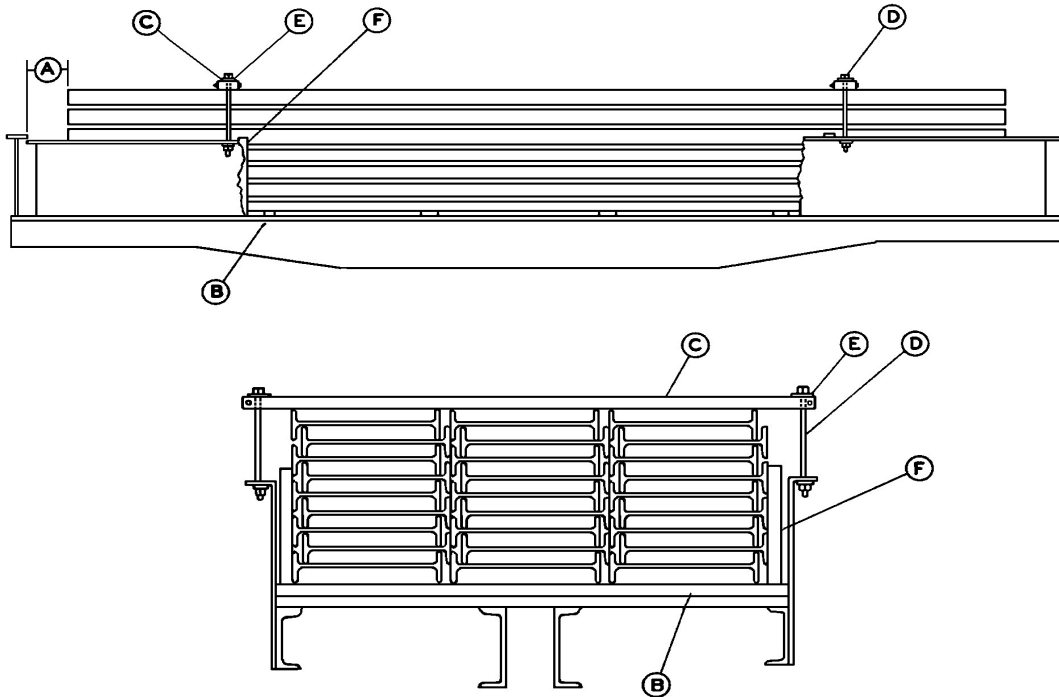
**Structurals**  
**Standard Lift**  
**(Secured)**



1. Minimum 1-1/4" x .029 strapping
2. Minimum 3 straps to 40'0"(Ft.)
3. One additional strap for each 10 Ft. increment beyond 40'0" (Ft.)

## 7.1 Structural Loading Rail

**Sec. 2 - Fig. 37-A (Rev. - 9-1994)**  
**Structural Steel Shapes - Single Car - Height Must Not Exceed 6 FT.**  
**Above Floor - Gondola Cars**



Item	No. of Pcs.	Description
A		Break wheel clearance. See Fig. 2, Sec. 1.
B	Minimum 2 per pile	3 in. x 4 in., hardwood, length about equal to width of car. Locate sufficient distance from ends of pile to provide bearing under all conditions of possible endwise movement of load.
C	Minimum 2	4 in. x 6 in., hardwood, length to suit. Use one 1/2" in. diameter bolt, crosswise, with washers at each end or one 1-1/4" x .029 in. high tension band to prevent splitting. Locate so that at least two secure each length on top tier.
D	2 each Items "C"	7/8 in. dia. rod with nuts. Pass through Items "C" and "E" and top chord member of car.
E	2 each Items "C"	1/4 in. x 4 in. steel plate. Place on top of Item "C".
F	As required	Wood uprights to fill vacant space at car sides, dimensions to suit, length not less than height of car sides, secured to prevent displacement.

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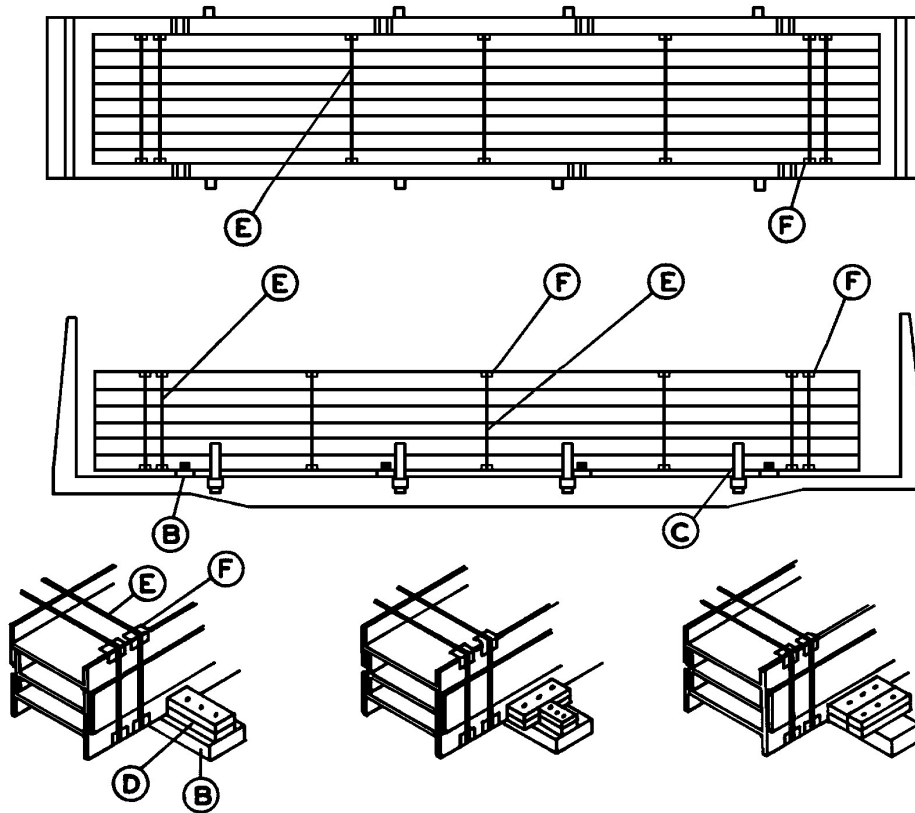
**Sec. 2 - Fig. 37-A (Rev. - 9-1994) (cont'd)**  
**Structural Steel Shapes - Single Car - Height Must Not Exceed 6 FT.**  
**Above Floor - Gondola Cars**

**Notes:**

1. When voids occur between flanges of top pieces and Items "C", suitable wood fillers must be used between Items "C" and beams, secured to prevent displacement, so that pressure may be rough to bear on all top pieces.
2. When at least 2 inches of each flange in top layer of beams is below the top of car sides and ends, and when lower edges of flanges of outer piles are confined inside the flanges of beams underneath, Items "C", "D" and "E may be omitted.
3. When total vacant space across car, between piles and between load and car sides does not exceed 18 in., Item "F" may be omitted.

See General rules 1, 2, 3, 4, 5, 9 and 15 for further details.

**Sec. 2 - Fig. 8 (Rev. - 9-1995)**  
**Structural Steel Shapes, Bar Iron, channels, Billets, Etc., Secured with High Tension Bands - Flat Cars 50 Ft. and Over in Length, Equipped with Permanent End Bulkheads**



**SKETCH 1**

**SKETCH 2**

**SKETCH 3**

Item	No. of Pcs.	Description
A		Vacant.
B	6 when 2 in. x when 2 in. x 8 in.	Bearing Pieces, hardwood, length equal to width of car. Locate end in. are used; bearing pieces a minimum of 5 ft. in from ends of load. Center bearing pieces must be spaced equally between end bearing pieces, but are used no more than 11 ft. apart. Secure to prevent displacement.
C	4 pair per pile	Side stakes, hardwood, 4 in. x 4 in., length to extend 24 in. above car deck. Locate end stakes a minimum of 7 ft. in from ends of load with remaining stakes equally spaced in between.
D	4 each Item "B"	Side blocking, lumber, 2 in. x 4 in. Length of blocks, 12 in. per per Sketch 1; Sketch 1, and 8 in. per Sketch 3. Nail first piece to bearing piece with 8 ea. Item "B" three (3) 20-D nails. Nail second piece in each set on top of bottom per Sketches 2 & 3 piece with three (3) 20-D nails. Locate blocks approximately 1/2 in. from side of load.



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**Sec. 2 - Fig. 8 (Rev. - 9-1994) (cont'd)**

**Structural Steel Shapes, Bar Iron, channels, Billets, Etc., Secured With High  
Tension Bands - Flat Cars 50 Ft. and Over in Length, Equipped with Permanent End Bulkheads**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
E	7	Encircling bands, 2 in. x .044 in. high tension. Locate two (2) adjacent to each other approximately 3 ft. from each end of pile and one (1) midway between each Item "B".
F	4 each Item "E"	Band protectors. Locate under bands and secure to prevent displacement.

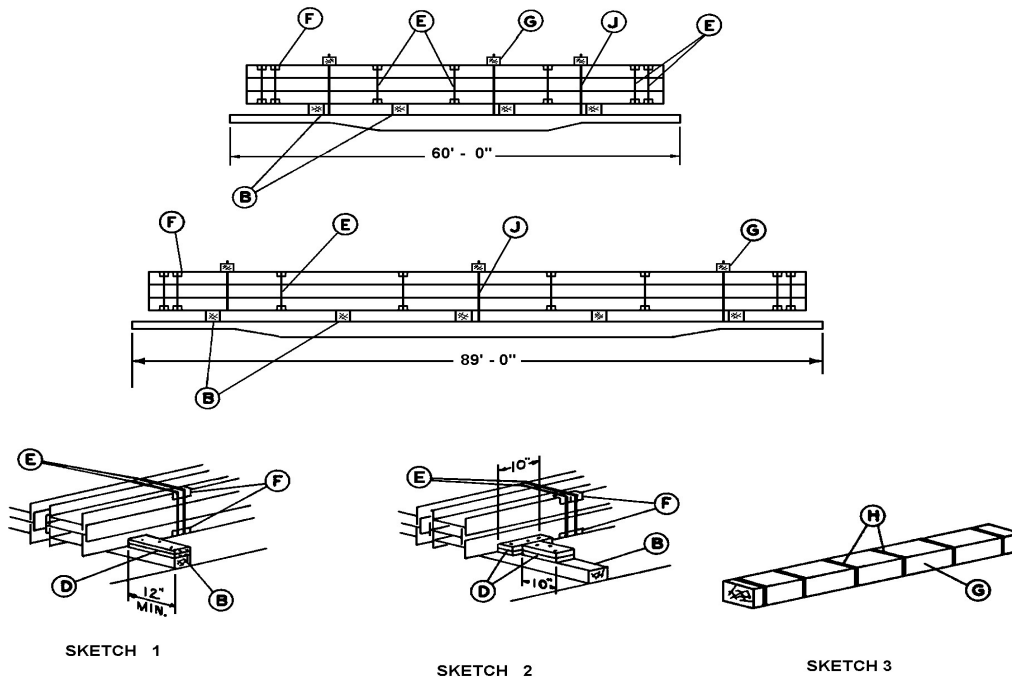
**Notes:**

1. Height of load must not exceed 60 in. above bearing pieces.
2. Load must be centrally located on car at origin.

See General Rules 1, 3, 4, 5, 9, 10, 14 and 15 for further details.

Sec. 2 - Fig. 105 (Rev. - 9-1994)

**Structural Steel Shapes, Secured With 2 in. x .044 in. High Tension Bands - Flat Cars 60 Ft. and Over In Length Equipped with Permanently Secured Bearing Pieces - Height of Load Not To Exceed 60 in. Above Bearing Pieces**



Item	No. of Pcs.	Description
A		Load should be located centrally on car at origin, but must not be closer than 2 ft. from the "B" end and 1 ft. from the "A" end of car. Conventional flat cars only. When load is prepared on flat cars with side mounted hand brakes, load may be located not closer than 1 ft. from either end of car.
B		4 per 60 ft. car, Bearing pieces, hardwood, 6 in. x 8 in., length equal to width of 5 per 89 ft. car . Secure each with a minimum of two (2) 3/4 in. diameter bolts. Locate end bearing pieces a minimum of 4 ft. in from each end of load.
C	1 each Item "B"	Rubber belting or suitable substitute 6 in. wide, length equal to length of bearing pieces, secure with a minimum of ten (10) 8-D nails. (Not shown on drawing).

**Sec. 2 - Fig. 105 (Rev. - 9-1994) (cont'd)**

**Structural Steel Shapes, Secured With 2 in. x .044 in. High Tension Bands - Flat Cars 60 Ft. and Over In Length Equipped with Permanently Secured Bearing Pieces - Height of Load Not To Exceed 60 in. Above Bearing Pieces**

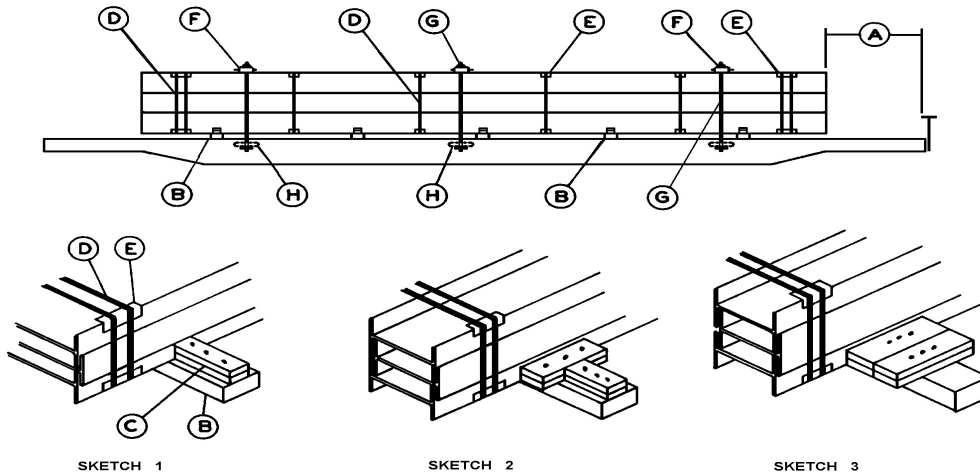
<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
D	4 each Item "B" per Sketch 1; 8 ea. Item "B"	Side blocking, lumber, 2 in. x 6 in., length as required in accordance with Sketch 1 or 2. Use Sketch 2 where distance between load and car side is 16-1/2 in. or more. Use Sketch per Sketch 2. 1 where distance between load and car side is under 16-1/2 in.  Nail first piece to bearing piece with a minimum of three (3) 20-D nails. Nail second piece in each set on top of bottom piece with a minimum of three (3) 20-D nails. Blocks must be placed approximately 1/2 in. from each side of material. Side blocking may be substituted if desired by 1/2 in. x 8 in. x 4 in. angle, 4 in. long, with the 8 in. leg applied vertically and secured to the bearing piece with one (1) 3/4 in. diameter bolt and nut. Not required when equipped with permanent 1/2 in. x 4 in. x 5 in. steel angle, length sufficient to span 2 bearing pieces and secured to bearing pieces with 3/4 in. diameter bolts.
E	As required.	Encircling bands, 2 in. x .044 in. high tension. Locate two (2) adjacent to each other approximately 2 ft. from each end of pile and one (1) midway between each Item "B".
F	4 each Item "E"	Metal corner protectors, locate under bands and secure to prevent displacement.
G	3	6 in. x 8 in. hardwood or steel channel, minimum 6 in. wide x 2-1/2 in. high x 3/8 in. thick, length as required to apply Items "J".
H	6	Anti-split bands, 1-1/4 in. x .029 in. high tension bands. Apply as shown in Sketch 3.
J	2 each Item "G"	1-1/4 in. diameter steel rod with washers, pass through Item "G" and secure to car floor or permanent angle. Locate as close to load as possible.

**Notes:**

1. When height of load does not exceed 44 in. above the bearing pieces, Items "G", "H", and "J" may be omitted.
2. Width of load must be a minimum of 12 in. in from each side of car for application of side blocking per Sketch 1.  
See General Rules 1, 3, 4, 5, 9, 14 and 15 for further details.

Sec. 2 - Fig. 105 (Rev. - 9-1994)

**Structural Steel Shapes, Secured With 2 in. x .044 in. High Tension Bands - Flat Cars 50 Ft. or Over In Length Equipped with Cushioning Devices - Height of Load Not To Exceed 60 in. Above Bearing Pieces**



Item	No. of Pcs.	Description
A		Load should be located centrally on car at origin, but must not be closer than 2 ft. from the "B" end and 1 ft. from the "A" end of car. Conventional flat cars only. When load is prepared on flat cars with side mounted hand brakes, load may be located not closer than 1 ft. from either end of car.
B	5	Bearing pieces, hardwood, 2 in. x 6 in., length equal to width of car. Secure each to car floor with six (6) 30-D nails, equally spaced. Locate end bearing pieces a minimum of 4 ft. in from each end of load, with others spaced equally, a maximum of 11 ft. apart.
C	4 each Item "B" per Sketch 1, 8 ea. Item "B" per Sketches 2 & 3.	Side blocking, lumber, 2 in. x 4 in. Length of blocks, 12 in. per Sketch 1, 10 in. per Sketch 2 and 8 in. per Sketch 3. Nail first piece to bearing piece with three (3) 20-D nails. Nail second piece in each set on top of bottom piece with three (3) 20-D nails. Locate blocks approximately 1/2 in. from side of load.
D	6	Encircling bands, 2 in. x .044 in. high tension. Locate two (2) adjacent to each other approximately 2 ft. from each end of pile and one (1) midway between each Item "B".
E	4 each Item "D"	Band protectors, locate under bands and secure to prevent displacement.

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**Sec. 2 - Fig. 105 (Rev. - 9-1994) (cont'd)**

**Structural Steel Shapes, Secured With 2 in. x .044 in. High Tension Bands - Flat Cars 50 Ft. or Over In Length Equipped with Cushioning Devices - Height of Load Not To Exceed 60 in. Above Bearing Pieces**

<b>Item</b>	<b>No. of Pcs.</b>	<b>Description</b>
F	3	Clamping pieces, hardwood, 4 in. x 6 in., length as required to apply Items "G". Use one 1/2 in. diameter bolt, crosswise, with washers at each end or one 1-1/4 in. x .029 in. high tension band to prevent splitting.
G	2 each Item "F"	7/8 in. diameter steel rods with washers, pass through Items "F" and secure beneath car floor. Locate as close to load as possible.
H	1 each Item "G"	For cars with wood floors, use a 4 in. x 4 in. x 18 in. hardwood cleat or a 1/2 in. x 4 in. x 18 in. steel plate. Length of steel plate may be reduced to 6 in. on cars equipped with steel floors. Locate lengthwise of car under floor.

**Notes:**

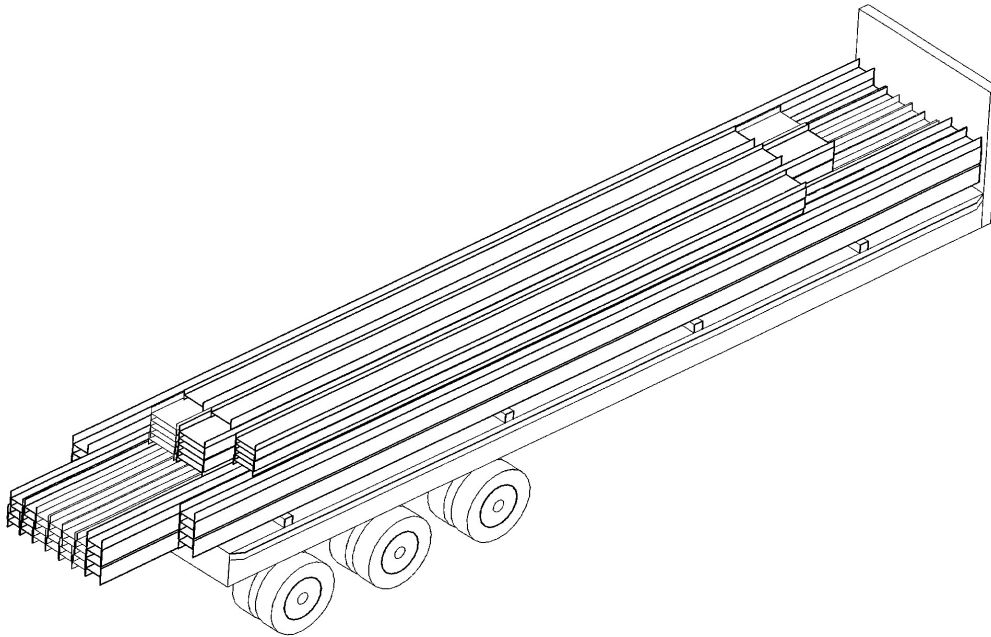
1. When height of load does not exceed 44 in. above bearing pieces, Items "F", "G" and "H" may be omitted.

See General Rules 1, 3, 4, 5, 9, 12, 14 and 15 for further details.

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## 7.2 Structural Loading Truck

### Truck Loading (Bottom Bearing Pieces & Nested)

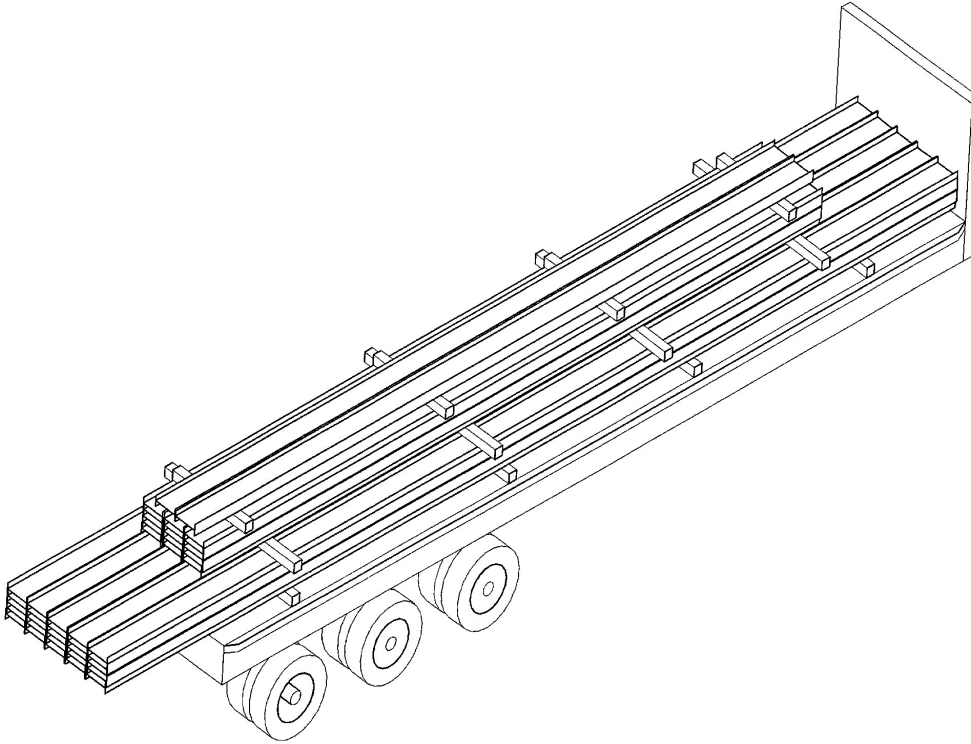


1. Used only when section sizes are numerous & length variation is numerous.
2. Where possible, shorter lengths should be loaded on the bottom so that ease of off-loading can be facilitated.

**Note:** Carrier is responsible for placement, protection and securing of load

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**Truck Loading**  
**(Bottom Bearing Pieces & Tier Separation)**

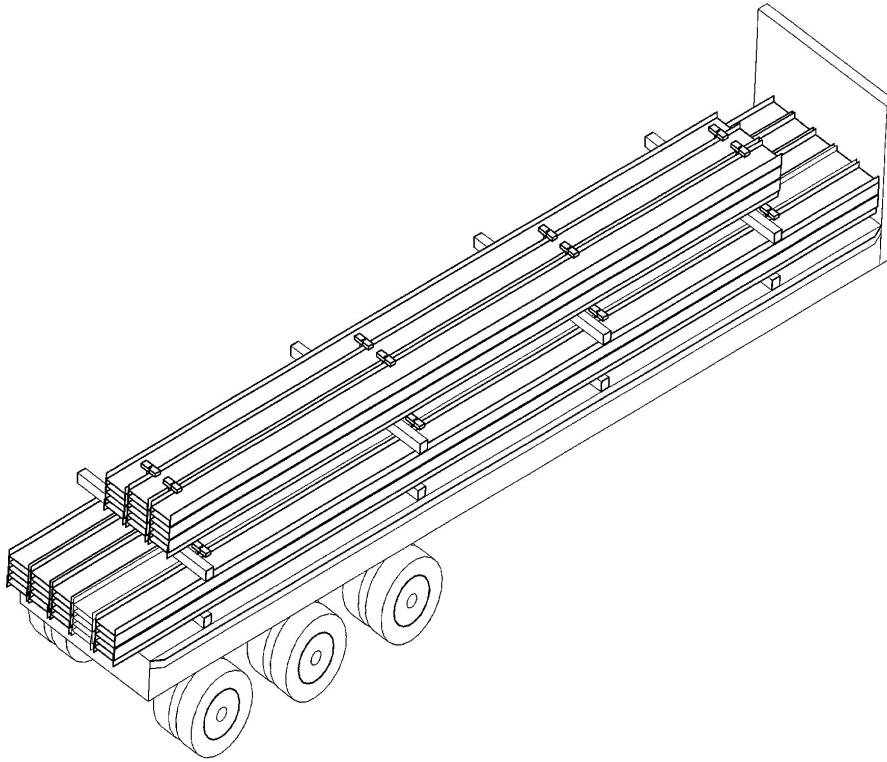


1. Load type to be maximized, however, where numerous mix sections & lengths occur, load method 01 or 04 may be substituted.
- 2.

**Note:** Carrier is responsible for placement, protection and securing of load

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**Truck Loading**  
**(Bottom Bearing Pieces, Tier Separation & Vertical “T” Separation)**



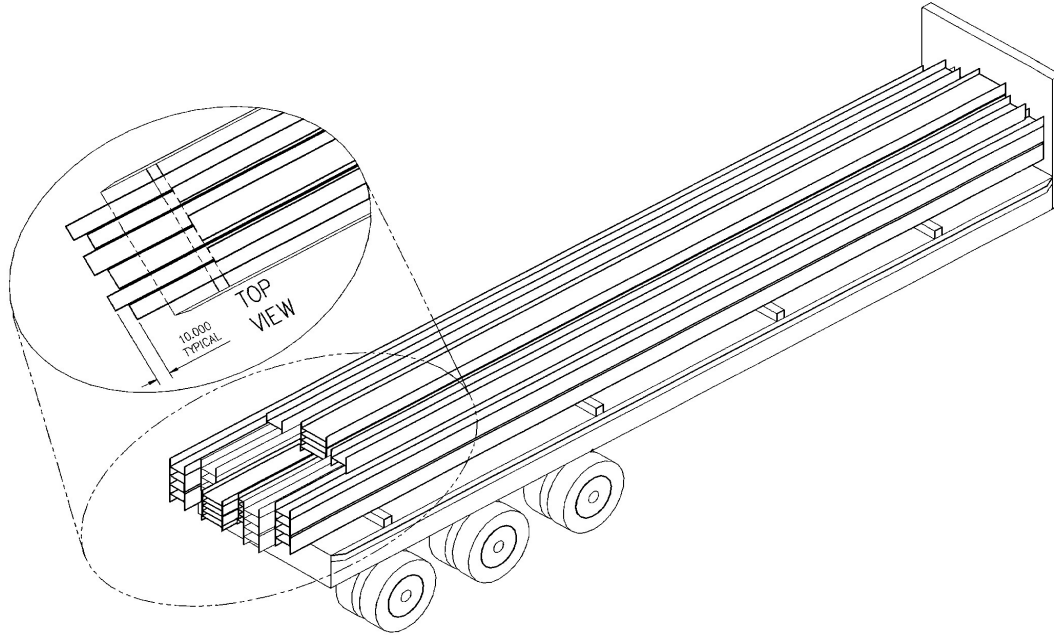
1. Vertical “T’s” made from 2” x 4” softwood, minimum 16” (in.) in length.

**Note:** Carrier is responsible for placement, protection and securing of load



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**Truck Loading**  
**(Bottom Bearing Pieces, Balance of Load Staggered)**



1. Stagger on a per lift basis
2. Minimum stagger should approximate 10” (in.)
3. Where possible, shorter lengths should be loaded on bottom so that ease of off-loading can be facilitated

**Note:** Carrier is responsible for placement, protection and securing of load