

# CSX

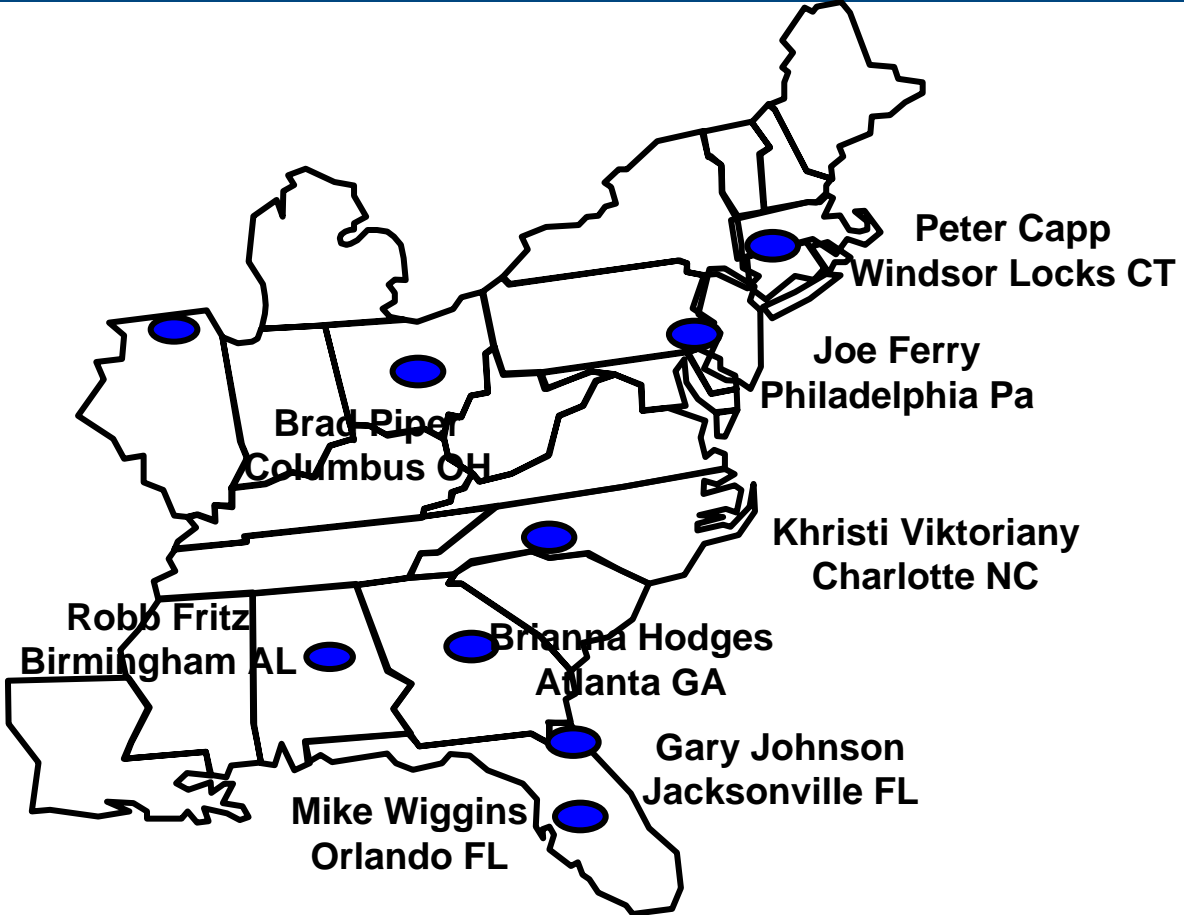
## Load Engineering & Design Services



## *The Merchandise/Intermodal Team*



# Merchandise-Intermodal Team



## *Merchandise Team Function*

- Keep Railroad Safe
- Inspect Loads
- Design Loads
- Conduct Workshops
- Yard Surveys
- Remote Ride Monitoring
- Develop and Test New Loading Methods

# Merchandise and Intermodal Team

Keep The Railroad Safe

# *Keeping the Railroad Safe*

## **CIRCULAR NO. 42-J**

(Supersedes Circular No. 42-I)

### **GENERAL RULES COVERING LOADING OF CARLOAD SHIPMENTS OF COMMODITIES IN CLOSED CARS**



Issued January 1, 2001

The "General Rules" quoted in AAR Circular No. 42-I, dated March 1, 1994, have been revised as shown herein.

These "General Rules" **MUST** be observed for all closed car loading and take precedence over the "Loading Methods" referred to, or included, in the loading publications. Those publications contain detailed methods for loading specific commodities.

Approved by

**DAMAGE PREVENTION AND FREIGHT CLAIM COMMITTEE  
ASSOCIATION OF AMERICAN RAILROADS**

## *Keeping the Railroad Safe*

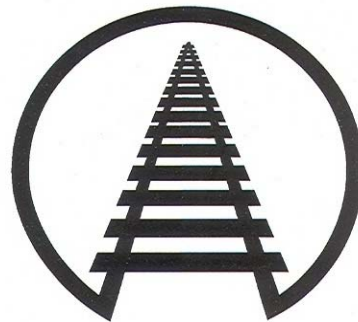
Effective July 1, 2010 Rule 5,C,1 will change from an aggregate of 18 inches to an aggregate of 6 inches.

### **RULE 5. DISTRIBUTION OF WEIGHT - CROSSWISE OF CAR**

- (A) The load must be located so that the weight along both sides of car is about equal for the entire length of the load.
- (B) When the load is of such a character that it cannot be placed so as to obtain equal distribution of weight, crosswise of car, suitable ballast, properly secured, must be used to equalize the weight.
- (C) In box cars lading must be secured to prevent tipping or moving towards car's sides where the vacant space across car exceeds the following:
  - (1) An aggregate of 18 inches crosswise of car.

# **INTERMODAL LOADING GUIDE** **for Products in Closed** **Trailers and Containers**

**Circular No. 43-D**  
**Pamphlet No. 45**  
**BOE Pamphlet No. 6C**



Issued: June 2001



## SECTION I - INTRODUCTION

### A - GENERAL

The **Intermodal Loading Guide for Products in Closed Trailers and Containers** is intended to be a comprehensive manual for loading of commodities in trailers and containers for shipment by rail. Incorporated into this publication are AAR Circular 43-D, Rules Governing the Loading, Blocking and Bracing of Freight in Closed Trailers and Containers for TOFC/COFC Service (See Section II), the approved loading and bracing information contained in AAR Bureau of Explosives Pamphlet No. 6C on hazardous materials, and AAR Pamphlet No. 45 on general loading in closed trailers and containers.

The “General Rules,” as contained in Circular 43-D or Supplements thereto, are issued by the Association of American Railroads, and have been formulated for the purpose of providing safe methods of loading in closed trailers or containers. These “General Rules” must be observed. References to, or illustrations of, trailers in this publication include both containers and trailers.

It must be understood that trailers or containers may move in a backwards or reverse direction for all or a portion of their journey. During its journey, normal transportation forces may shift an unsecured load or cause lading to exert excessive pressure against the nose, rear doors or side walls. Lading that is improperly blocked and braced can shift to one side of the vehicle and cause the vehicle to lean on the flatcar. A container or trailer leaning on a flatcar can cause a sideswipe or contribute to a derailment. Weight of a load that is concentrated in a small area and not properly distributed throughout the trailer or container can also cause a vehicle floor to collapse. It is imperative that trailers or containers moving in rail service be loaded by the shipper in strict compliance with the General Rules. Shipper is defined in these rules as that party (or his agent) who is responsible for the physical loading and securement of the lading in the trailer or container.

The General Information and Loading Methods contained in this publication, apply to shipments transported in the USA, Canada and Mexico.

The loading methods, as described in this Intermodal Loading Guide, are approved by the Damage Prevention and Freight Claim Committee and Bureau of Explosives Steering Committee of the Association of American Railroads, and are minimum standards that have been evaluated and approved. These minimum standards offer practical guidelines on the subjects covered. As these are minimum standards, it may be necessary to supplement these methods in some instances.

The securement standards specified in AAR closed trailer/container loading publications are intended for safe transit of the trailer/container and rail car from origin to destination, and prevention of lading and equipment damage. These standards do not address unloading practices.

## SECTION IV

### TESTED AND APPROVED SECUREMENT METHODS

Methods contained in this section have been tested according to AAR procedures for evaluation and acceptance of new loading and bracing systems. These procedures involve evaluation of the method during simulation and/or field test shipments. Methods in this section have been approved by the Damage Prevention and Freight Claim Committee. Methods marked with a diamond (◆) have been recommended for hazardous materials loading by the Bureau of Explosives Steering Committee. Methods marked with an asterisk (\*) have been tested to 8 mph.

<b>E. Rubber Mats</b> .....	<b>4-36</b>
Method E-1 - Coils on Skids with Rubber Mats on Floor in Refrigerated Equipment .....	4-36
Method E-2 - Coils on Skids with Rubber Mats on Floor (Hardwood Flooring) .....	4-38
Method E-3 - Wire Cable Coils Using Guide Rails and Rubber Mats.....	4-40
Method E-4 - 58" Diameter Roll Pulpboard On End Using Rubber Mats.....	4-42
Method E-5 - 50" Diameter Roll Wrapping Paper On End Using Rubber Mats .....	4-44
Method E-6 - Bilge Loaded Large Diameter Roll Paper on Wood Cradles.....	4-46
◆Method E-7 - Closed Head Drums in a 3-4-3 Pattern on Rubber Mats with Steel or Approved Polyester Cord Strapping .....	4-48
Method E-8 - 58" Diam. Roll Pulpboard On End Using Two 3 Foot Wide Rubber Mats .....	4-50
Method E-9 - CANCELLED March 1998.....	4-52
Method E-10 - Roll Pulpboard On End Using Rubber Mats with Incomplete Second Layer .....	4-54
Method E-11 - CANCELLED March 1998.....	4-56
Method E-12 - 45" Diam. Roll Paper On End Secured Using 2 Foot Wide Rubber Mats.....	4-58
Method E-13 - 50" Diam. Newsprint On End Using 1 Foot Wide Rubber Mats.....	4-60
Method E-14 - 40"-45" Diam., Large-Width Roll Paper On End in Two Sections Using Two 2 Foot Wide Rubber Mats Under Each Section and Steel Strapping.....	4-62

**Method E-18 -Split Loads of 58" Diameter Roll Pulpboard on End Using 3' Wide Rubber Mats** *(If loading split loads of 58" diameter roll pulpboard on end in trailers having large metal plates approximately 9' in length at the nose use Method E-19)*

This method is for split loads of 58" diameter roll pulpboard loaded on end in a 1-1 offset pattern in a trailer or container for intermodal service. A maximum of 8 rolls may be loaded in a trailer or container using this method. The loads generally consist of 7 or 8 rolls loaded in two sections in the trailer or container. Plan the load to **equalize the weight on each side of the trailer or container**. Since roll weights vary, this will require attention to pre-planning. **A balanced load is required for the stability and success of this loading method.**

**Illustration No. 77B:**

1. Only the following rubber mats have been evaluated and found acceptable for this loading method:

TransMat™ 7513 [3mm (0.125") thick] - Allegheny Industrial Associates  
 TransMat™ 6900 [2mm (0.080") thick], [3mm (0.125") thick] - Allegheny Industrial Associates  
 TransMat™ 8060 [2mm (0.080") thick] - Allegheny Industrial Associates  
 Rubber Restraint Mat BC548™ [2mm (0.080") thick], [3mm (0.125") thick] - Amorim Industrial Solutions  
 Load Grip 5 [2mm (0.080") thick] - NRI Industries  
 Load Lock [3mm (0.125") thick] - RB Rubber Products, Inc.  
 Brown Bear™ - Friction Mat 101 [2mm (0.080") thick], [3mm (0.125") thick] - Circle, Inc.

Specifications for these rubber mats are in Appendix E of this Loading Guide.

**NOTE: Do not reuse rubber floor mats if they have been torn or in any way damaged.**

2. The nose section will consist of 3 or 4 rolls. Place the first mat on the floor at the nose, centered in the trailer as shown in **Sketches 2 & 3**. Use the appropriate size mat for the number of rolls being loaded.  
 If **4 rolls** are loaded in the nose section, use a 3' x 17' mat at the nose.  
 If **3 rolls** are loaded in the nose section, use a 3' x 14' mat at the nose.
3. If **4 rolls** are loaded in the nose section, load the four rolls tightly starting against the nose and using a 1-1 offset pattern. See **Sketch 2**.

# E-18

4. If **3 rolls** are loaded in the nose section, load the first roll so it is centered in the trailer against the nose. Place void fillers, 3" x (void width) x 48" corrugated fiberboard 1,500 lbs. minimum crush strength, on both sides of the first roll between roll and trailer walls. Position void fillers so that the crush strength is crosswise to the trailer or container. If using multiple void fillers in tandem, unitize them to restrict independent movement. See **Sketch 3**. Lumber side blocking can be used as an alternative to the void fillers provided it is 3" in height, extends a minimum of 48" from the nose of the trailer and is secured adequately using 12d nails. Ladder type lumber side blocking may also be used as an alternative provided it is 3" in height and extends a minimum of 48" from the nose.

5. Load the next two rolls tightly lengthwise against opposite side walls of the trailer as shown in **Sketch 3**.

6. A minimum of **3 feet** of void is required between the lading and the trailer doors. Position the rear section to obtain the proper load weight distribution and maintain the 3' void at the rear of the trailer.

7. The rear section consisting of 4 rolls is loaded using two 3' x 14' mats. The mats are positioned at the opposite side walls of the trailer. Position the mats to extend a minimum of 6" beyond the rolls at each end of each mat. Place the rolls on the mats in a 1-1 offset pattern. See **Sketches 2 & 3**.

8. Unitize the rear section (at trailer doors) with one approved polyester cord strap or one  $\frac{5}{8}$ " x .040" approved polyester plastic strap. Position the unitizing strap at a maximum height of 4' above the trailer floor. Be sure the strap is level. Tension and seal the straps using proper tensioning and sealing tools.

If using approved polyester cord strap, a wire buckle with legs (prongs) on the same side of the frame and which has a non-slip surface is required. (See Section III F for approved polyester cord strapping.)

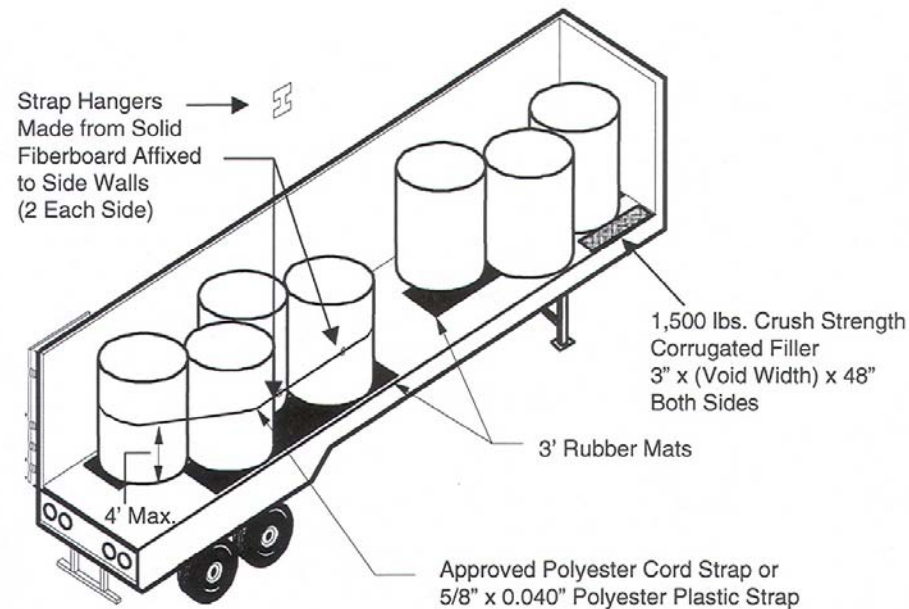
If using a  $\frac{5}{8}$ " x .040" approved polyester plastic strap, a heat seal, a friction weld or metal seals may be used to seal the strap. A minimum joint strength of 900 lbs. is required.

See Section III F for approved polyester plastic strapping.

9. Position two strap hangers on each trailer side wall at the rear section as indicated in **Sketch 1** to maintain proper strap alignment and prevent straps from slipping out of position. Strap hangers may be solid fiberboard secured by use of adhesive, tape or staples; looped cord strap secured by staples. Use adhesive or tape which is heat and cold resistant for this purpose. Do not use tape as the strap hanger. If additional strap hangers are positioned on the rolls be sure they are positioned so the strap remains level.

7/1/02

# E-18



Sketch 1

# E-18

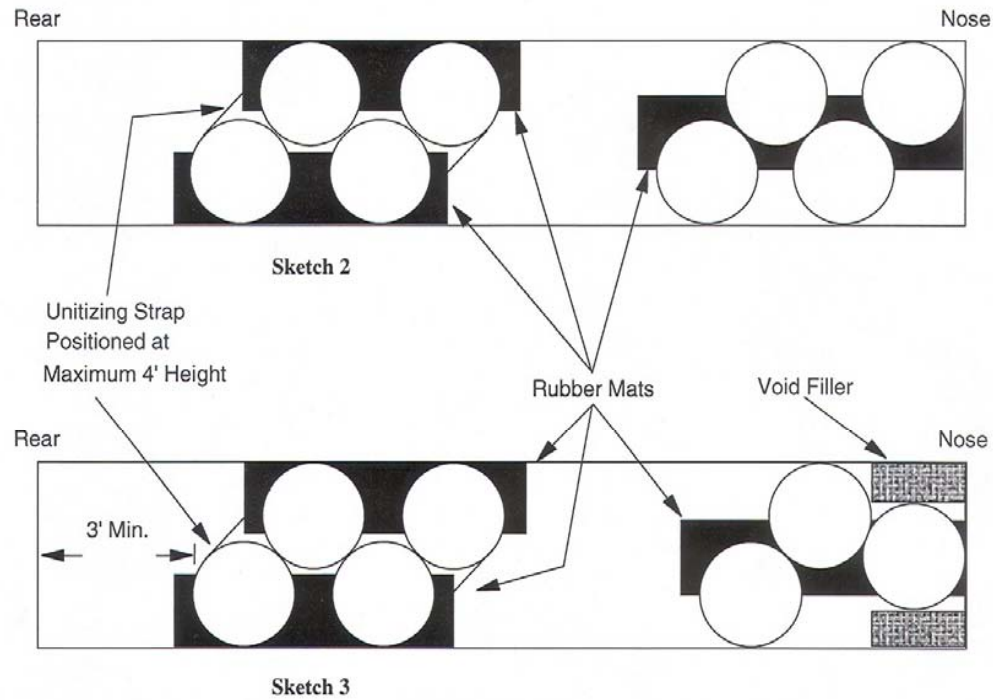


Illustration No. 77B  
Method E-18  
Split Loads of 58" Diameter Roll Pulpboard on End Using 3' Wide Rubber Mats

6/14/01

**Method E-19 - Split Loads of 58" Diameter Roll Pulpboard on End Using 3' Wide Rubber mats When Stowed in Trailers Having Large metal Plates Approximately 9' in Length at the Nose**

This method is for split loads of 58" diameter roll pulpboard loaded on end in a 1-1 offset pattern for intermodal service in a trailer or container having wood floors with large metal plates approximately 9' in length at the nose. A maximum of 8 rolls may be loaded in a trailer or container using this method. The loads generally consist of 7 or 8 rolls loaded in two sections in the trailer or container. Plan the load to **equalize the weight on each side of the trailer or container**. Since roll weights vary, this will require attention to pre-planning. **A balanced load is required for the stability and success of this loading method.**

**Illustration No. 77C:**

1. Only the following rubber mats have been evaluated and found acceptable for this loading method:

TransMat™ 7513 [3mm (0.125") thick] - Allegheny Industrial Associates  
 TransMat™ 6900 [2mm (0.080") thick], [3mm (0.125") thick] - Allegheny Industrial Associates  
 TransMat™ 8060 [2mm (0.080") thick] - Allegheny Industrial Associates  
 Rubber Restraint Mat BC548™ [2mm (0.080") thick], [3mm (0.125") thick] - Amorim Industrial Solutions  
 Load Grip 5 [2mm (0.080") thick] - NRI Industries  
 Load Lock [3mm (0.125") thick] - RB Rubber Products, Inc.  
 Brown Bear™ - Friction Mat 101 [2mm (0.080") thick], [3mm (0.125") thick] - Circle, Inc.

Specifications for these rubber mats are in Appendix E of this Loading Guide.

**NOTE: Do not reuse rubber floor mats if they have been torn or in any way damaged.**

2. The nose section will consist of 3 or 4 rolls and may be loaded in-line or using a 1-1 offset pattern. When loading in-line, place the first mat on the floor at the nose, centered in the trailer as shown in **Sketches 1, 2 & 3**. When loading using a 1-1 offset pattern, place two mats side by side centered in the trailer as shown in **Sketches 4 & 5**. Use the appropriate size mat for the number of rolls being loaded. The mats are not secured to the trailer floor.
  - If **3 rolls** are loaded **in-line** at the nose section, use a 3' x 16' mat at the nose.
  - If **4 rolls** are loaded **in-line** at the nose section, use a 3' x 21' mat at the nose.
  - If **3 rolls** are loaded using a **1-1 offset** pattern at the nose, use two 3' x 14' mats at the nose.
  - If **4 rolls** are loaded using a **1-1 offset** pattern at the nose, use two 3' x 17' mats at the nose.

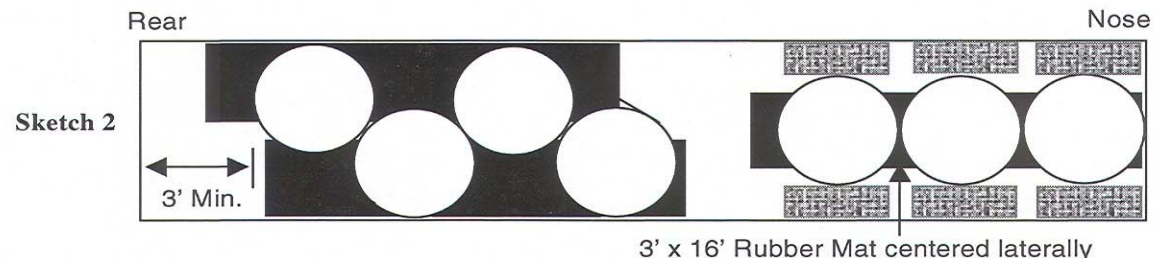
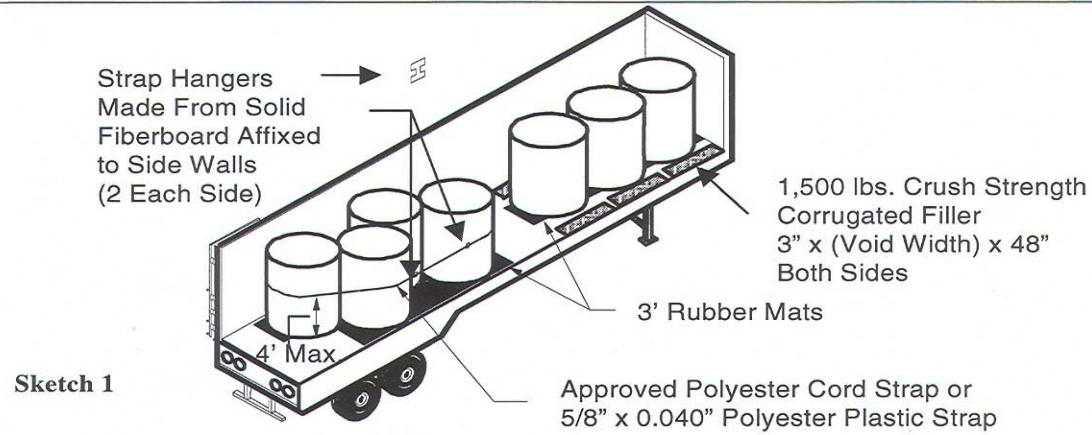
# E-19

3. If **3 rolls** are loaded **in-line** at the nose section, load the first roll so it is centered in the trailer against the nose. Continue loading the remaining 2 rolls in the nose tightly in-line down the center of the trailer. Place void fillers, 3" x (void width) x 48" corrugated fiberboard 1,500 lbs. minimum crush strength, between each roll and the adjacent sidewall. If using multiple void fillers in tandem, unitize them to restrict independent movement. See **Sketches 1 and 2**.
4. If **4 rolls** are loaded **in-line** at the nose section, load the first roll so it is centered in the trailer against the nose. Continue loading the remaining 3 rolls in the nose tightly in-line down the center of the trailer. Place void fillers, 3" x (void width) x 48" corrugated fiberboard 1,500 lbs. minimum crush strength, between each roll and the adjacent sidewall. If using multiple void fillers in tandem, unitize them to restrict independent movement. See **Sketch 3**.
5. If **3 rolls** are loaded in a **1-1 offset** pattern at the nose section, load the first roll so it is centered in the trailer against the nose. Place void fillers, 3" x (void width) x 48" corrugated fiberboard 1,500 lbs. minimum crush strength, on both sides of the first roll between roll and trailer walls. Position void fillers so that the crush strength is crosswise to the trailer or container. If using multiple void fillers in tandem, unitize them to restrict independent movement. See **Sketch 4**. Ladder type side blocking may also be used as an alternative provided it is 3" in height and extends a minimum of 48" from the nose of the trailer.
6. Load the next two rolls tightly lengthwise against opposite sidewalls of the trailer as shown in **Sketch 4**.
7. If **4 rolls** are loaded in a **1-1 offset** pattern at the nose section, load the four rolls tightly starting against the nose using a 1-1 offset pattern. See **Sketch 5**.
8. A minimum of **3 feet** of void is required between the lading and the trailer doors. Position the rear section to obtain the proper load weight distribution and maintain the 3' void at the rear of the trailer.
9. The rear section consisting of 4 rolls is loaded using two 3' x 14' mats. The mats are positioned at the opposite side walls of the trailer. Position the mats to extend a minimum of 6" beyond the rolls at each end of each mat. Place the rolls on the mats in a 1-1 offset pattern. See **Sketches 1 through 5**.

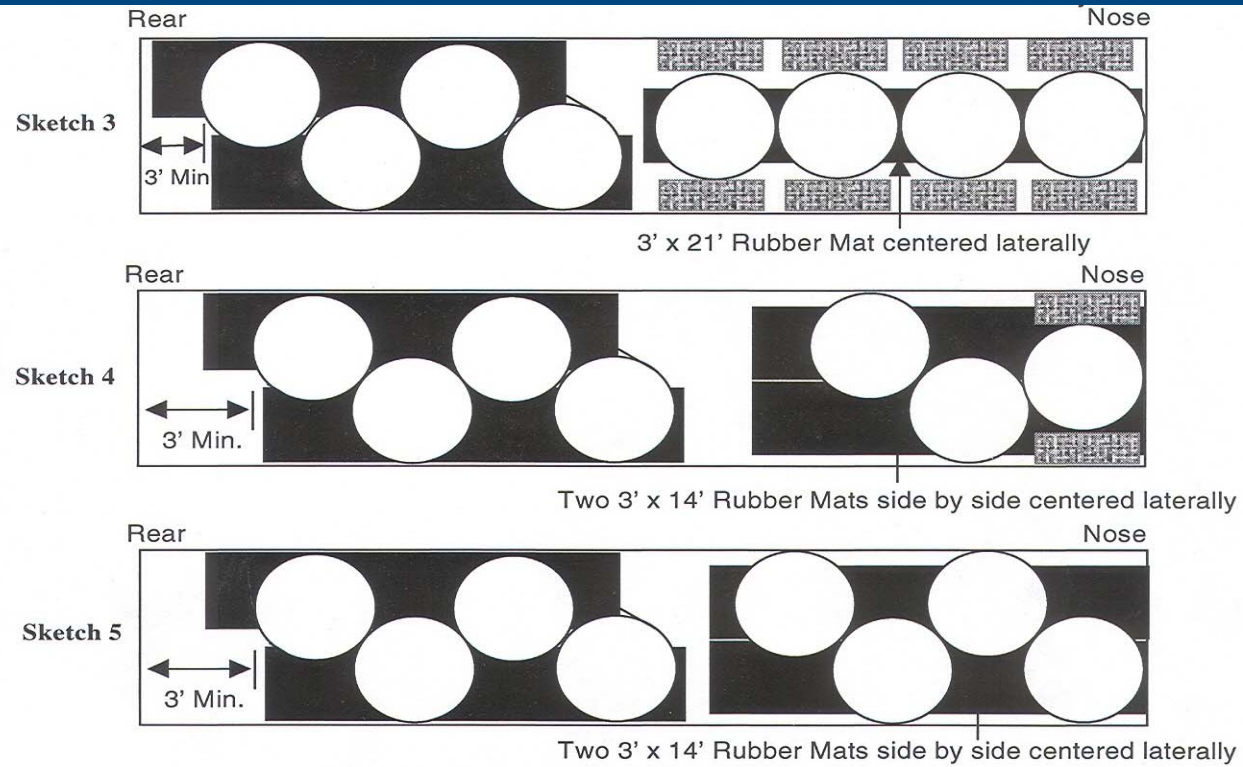
7/1/02



# E-19



# E19



## Illustration No. 77C

Method E-19

Split Loads of 58" Diameter Roll Pulpboard on End Using 3' Wide Rubber Mats in Trailers With Partial Metal Floors in the Nose

6/14/01





Back  
Rolls  
CSKU  
939250  
2-6-08

FEB 6 2008



# Questions