

Load and Ride Solutions Loading Assistance**Rolled Paper Loading - Boxcar Shipments**

Nearly half (45%) the product damage in carload shipments of rolled paper is assigned with an “unknown” damage cause. The *Association of American Railroads (AAR)* has conducted studies that highlight longitudinal (lengthwise) shocks are more severe in standard draft cars as opposed to cushion equipped cars. The AAR Report (DP 7-92) reflected peak longitudinal acceleration levels may exceed 2 g’s in various locations in the railcar. It is extremely important to use cores and packaging materials of sufficient strength to properly protect roll paper in the rail environment. Newsprint and printing paper are in most cases wrapped to protect all of the paper on the rolls. If pulpboard rolls are not wrapped or supplied with end protection, the outer plies and top and bottom ends are regarded as protective packaging for the rolls. Therefore, chaffing, scuffing, or edge abrasion of the outer plies and ends is likely to occur during rail transit.

EQUIPMENT CONDITION

It is the railroad’s responsibility to supply railcars that are clean, have sound roofs, sides and square ends, smooth floors and snug fitting doors to prevent product damage. Whenever a railcar contains cracks or holes, worn/missing door seals, poor closing plug doors, it’s also possible for rainwater to enter the car and damage the product. However, the shipper has the responsibility to inspect interiors of railcars to ensure they are suitable to carry lading safely and damage-free and reject railcars back to the railroad that are unsuitable for loading. If the shipper elects to load railcars with deficiencies, the shipper is then responsible for temporary repairs bringing the railcar to an acceptable level of quality. (AAR "Best Practices for Loading of Roll Paper in Rail Cars".)

DOORWAY PROTECTION

Doorway protection is required to prevent rolls from moving into and through the doorway during transit. Such roll movement may result in pressure building up against the door, which is a safety concern during transit and unloading. However, doorway protection is not required on all carload shipments of rolled paper. Rolls loaded in cushion equipped cars having plug doors **DO NOT** require doorway protection if **ALL** the following conditions are met:

Rolled Paper:

- 1.) Have a nominal diameter of 45” or less.
- 2.) Car is equipped with a minimum 15” end-of-car cushioning device or sliding sill device.
- 3.) Rolls are loaded on end in car. At origin, rolls are to be loaded tightly lengthwise of the car, with lengthwise voids filled by dunnage materials or bracing.
- 4.) Loading pattern is secured by using an AAR approved method.

Pulpboard Rolls Only:

- 1.) Diameter of rolls does not exceed 58”.
- 2.) Car is equipped with minimum of a 15” end-of-car cushioning device or sliding sill cushion device.
- 3.) Floor layer rolls are loaded on end in a 1-1 offset pattern in the car and secured in accordance with AAR approved loading methods.

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LENGTHWISE VOIDS and DID BAGS

Lengthwise voids in all railcar loads of rolled paper must be filled. One of the common lengthwise void fillers is the disposable inflatable dunnage (D.I.D.) bag. Listed below is a review of DID bag use:

- The bags should fill voids from 4” to 12” (after inflation) to insure maximum performance. Appropriate void fillers should be used in conjunction with bags for voids that exceed 12”.
- Generally speaking, bags should be inflated to 8 psi.
- Whenever a bag is “folded over,” it’s not possible to maintain equal air pressure throughout the internal bladder. Thus, the bag is more susceptible to changing shape and moving out of position.
- The bags should be positioned 1” above the car floor and extend as close to the height of the lading without exceeding it.
- Lengthwise voids should be filled with 6-ply or 8-ply bags.



Photo No. 1 illustrates proper use of a vertically placed DID bag between void fillers. The bag and void fillers fill less than 12” of lengthwise void space and cover adequate surface area of the adjacent rolls. Photo No. 2 provides an illustration of horizontally placed bags that fill excessive lengthwise void space (greater than 12”) and do not cover adequate surface area of the adjacent rolls.

INCOMPLETE LAYERS

It’s not uncommon for a shipper to load rolled paper two units high at the ends of the car and one unit high in the doorway. The one-high rolls that are adjacent the two-high rolls are used as the “blocking rolls.” These one-high rolls are placed on “risers” in order to increase their height in the car and break the strata line with the adjacent two-high rolls. The blocking roll should contact at least 50% of the width of the incomplete layer they are blocking. When rolls of paper are placed on end, the roll width becomes the roll height in the railcar. If the blocking rolls contact less than 50% of the height of the rolls they are blocking, one unitizing steel strap or approved non-metallic strap should be placed around the incomplete layer. The incomplete layer of rolls are unitized to prevent the rolls from tipping over during rail transit.



Blocking Roll on Riser