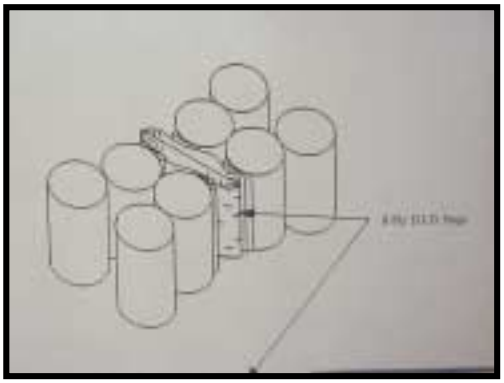
Load and Ride Solutions Loading Assistance

DISPOSABLE INFLATABLE DUNNAGE (DID) BAGS

Railcar Shipments



Disposable inflatable dunnage (DID) bags can be a practical, cost-effective tool to protect lading from damage resulting from movement during transportation. They can be employed in boxcar, intermodal, and even, in some cases, open top loads to fill lengthwise and or crosswise voids. However, it is imperative that DID bags be installed correctly and, in many instances, should be utilized in conjunction with other dunnage materials.

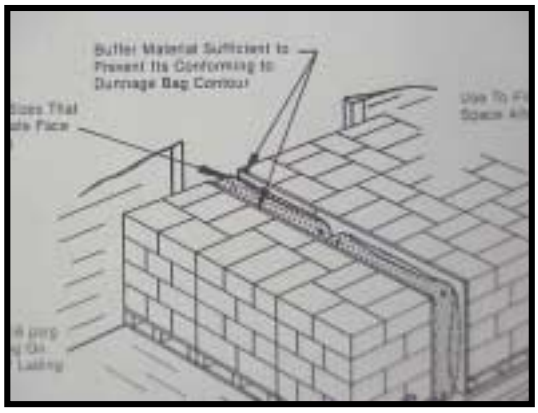
DID bags consist of an interior bladder surrounded with various plies of heavy kraft-type paper. DID bags are measured by the length and width (when not inflated) plus the number of plies surrounding the interior bladder. They can be ordered in almost any size with the number of plies generally ranging from two to eight. DID bags of less than six plies are utilized in intermodal shipments while DID bags of six plies and greater are employed in railcar (the vast majority being boxcar) shipments.

Disposable Bags

DID bags are meant to be used one time and one time only. While there are reusable dunnage bags manufactured and in use, because of logistical problems associated with the return of these bags, they are far less popular and practical than the disposable types.

Buffer Material

When inflated, DID bags will exert a large amount of pressure to the lading. If the lading is of the nature of cased goods the cases could conform to the DID bag itself with damage possibly resulting. The same can be true in reverse. If part of the lading is very rigid and/or uneven—such as pallets, these could puncture the DID bag resulting in deflation which would then, of course, render the DID bag useless. The optimal effectiveness of DID bags is when the void that they are placed in is between four and twelve inches **after inflation.** In the diagram to the right note how the DID bags are sandwiched between rigid buffer material.



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Lateral Application

DID bags can be used as lateral void filler in boxcars, however, there are far more practical and cost effective materials which can be used. DID bags can be a very cost-effective way of protecting lading from destructive longitudinal movement within boxcar shipments. When they are used as lateral fillers in these same boxcar shipments, they become very expensive and labor-intensive.

Longitudinal Application & the Shock Absorbing Effect

The purpose of DID bags installed for longitudinal movement protection is to act as "shock absorbers" for the lading. Upon normal longitudinal impacts the DID bags will compress allowing limited lading movement and then the DID bags will return to their original position. While the lading will experience limited movement towards the DID bag(s), the bag(s) themselves, instead of the lading, will absorb the brunt of the energy force. In many instances it is far better to allow the lading limited movement rather than attempt to eliminate all movement as is the object of wooden bracing or cribbing. While this type of dunnage can eliminate movement, the shipment will experience the same energy forces. These forces must go somewhere and if the bracing is of sufficient strength to stop movement, those energy forces will then be transferred to the lading which could (and often) result in damage. The "shock absorbing" effect of the DID bags alleviate this problem.

Positioning of Bags

It is very important to raise the DID bag(s) slightly above the floor (one or two inches) of the boxcar. This will ensure that the DID bag is not compromised by the rough floor of a boxcar during normal transportation vibrations and movement.

Cylindrical Objects

DID bags are suitable for use with cylindrical objects like rolled paper, however the used of buffer material in these types of loads is even more critical. The DID bag(s) must remain in position for the bag(s) to be effective. Therefore, the employment of contour buffer material greatly aids in this goal. At the right is a diagram showing the proper loading of a rolled paper boxcar utilizing a horizontally installed DID bag sandwiched between contour buffer pads.