BNSF RAILWAY

Load and Ride Solutions Loading Assistance

DISPOSABLE INFLATABLE DUNNAGE (DID) BAG

Intermodal Shipments

DID bag installed in center void

DID bags can be a very effective and economically feasible way of protecting lading from damage resulting from product movement in intermodal shipments. However, the practical use and installation of DID bags in intermodal shipments is quite a bit different than their use in boxcar shipments. In boxcars DID bags are installed in the longitudinal void to act as a type of "shock absorber" while for intermodal shipments the DID bags are installed in the center lateral void to **control** movement within the shipment. The key word here is "control." Using DID bags for intermodal shipments is not meant to eliminate all movement; in fact, stopping all movement in intermodal shipments (especially loads such as cased goods) could actually have a detrimental effect on the product. However, by greatly controlling the movement and allowing the product to move slightly as an entire unit can have the desired effect of absorbing the longitudinal energy forces, thus eliminating damage.

Installation

The proper procedure for installing DID bags for intermodal service is to load the product tight against each sidewall and then install the DID bag in the center lateral void sandwiched between appropriate buffer material (see photo above). The purpose of the DID bag in this type of application is to push the product snugly against each sidewall thus creating a higher coefficient of friction to control longitudinal movement of the product within the intermodal transportation vehicle. Instructions call for inflating DID bags between 2 and 2.5 psi. Underinflation makes the bags ineffective, overinflation can cause the bag to burst or put excessive pressure on the sidewalls. (See page two for details on overinflation problems.)

DID bags consist of an interior bladder surrounded with various plies of heavy kraft-type paper. The 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 boxcar shipments.

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Overinflation of DID Bags

DID bags should never be installed adjacent to a trailer/container's sidewall. The sidewalls of trailers and containers have a great deal less strength than the endwalls of boxcars. Over inflating the DID bag(s) can easily distort, damage, and even destroy the sidewalls. While it is very important to inflate the DID bag(s) so the product is snug against the trailer/container's sidewalls, great care must be taken not to over-inflate the DID bag(s). Keep a close eye on the sidewalls during inflation so damage to the sidewalls does not occur.

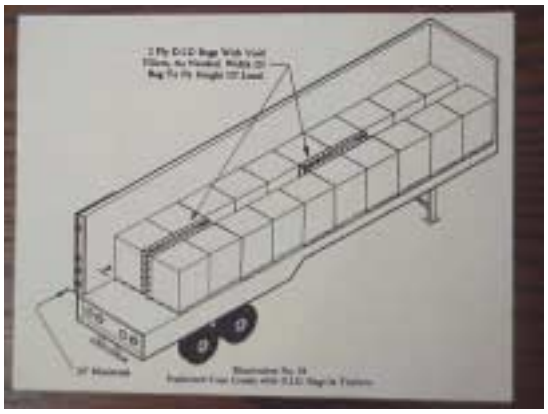
Improper Bag Installation

In the photograph on the left a customer attempted to fill a large void with a DID bag without any buffer material. This application is little more than an expensive void filler and definitely not a securement method. Adding rigid buffer material would reduce the size of the void and make the DID bag more effective —though, in this case, it would take a great deal of buffer material to reduce the void down to 12 inches after bag inflation. A better alternative is turning the pallets to reduce the void or just using a different securement method.

Buffer Material

The purpose of buffer material sandwiched around the DID bag(s) in intermodal shipments is to provide a rigid surface to spread the pressure exerted by the DID bag(s) evenly against the product units, reduce the void filled by the DID bag(s), and protect the product from the DID bag(s) and protect the DID bag(s) from the product.

The AAR diagram on the right details the proper application of DID bags in a cased good intermodal shipment. Note that two DID bags are used—one just slightly ahead of the longitudinal center of the shipment and one between the rear two units. The size of the void filled by the DID bags is between four and twelve inches after inflation. Also, as with their use in railcars, DID bag(s) should always be installed an inch or two off the floor of the trailer/container to prevent chaffing or torn bags.



To summarize, the employment of DID bags in both railcar and intermodal shipments can be a very effective and economically feasible method to protect lading from damage in the rail environment. However, it is of the utmost importance that when DID bags are employed, they are installed properly with appropriate buffer material also utilized.