

FACT SHEET 01/96

STOWAGE OF CARGO IN CONTAINERS

ADVICE TO SHIPPERS AND CONSIGNEES

The following shipping line recommendations on the receipt of containers and the stowage of cargo inside shipping containers are given as a reminder that the safe carriage of cargo by road, rail and sea depends on all parties adopting a common sense approach to packing containers to ensure that the cargo and container arrive at the other end of the trade link in a safe and useable condition.

PACKING SITES

The packing of the container may take place at:

- the customer's premises.
- an inland terminal or depot.
- a groupage agent's premises.
- the sea terminal or port.
- on board ship (break bulk cargo in special circumstances).

PRELIMINARY INTERNAL CHECKS

Prior to packing the container, it should be checked for fitness, i.e. that it is suitable with regard to type, cleanliness and repair, for the cargo it has to carry and the voyage to be made. These checks will include:

- cleanliness : there should be no remnants of the previous cargo, e.g. no dust, sweepings, grease, liquid, etc.
- dryness : the interior should be free from any sweat, frost, etc., which might adversely affect the cargo to be packed.
- infestation : the container should be free of any signs that vermin or pests are present or have been present.
- taint : particularly if delicate goods or foodstuffs are to be put in the container, there should be no residual taint. If there is any hint of an odour when the container door(s) is/are first opened then the container must be rejected for export packing if the cargo is susceptible to damage by taint, eg. dried fruits, rice, milk powder.
- watertightness : this may best be tested with the "light test", i.e. entering the container, shutting both doors, and looking for any ingress of light.

RESTRAINING CARGO

It is most important that the cargo inside the container is restrained from any movement. Proper restraint will prevent :

- damage to the cargo from falling or sliding around during the container's movements on land or sea.
- damage to the cargo or packaging from chafe - usually caused by vibration on road or rail.
- damage to the container floor or walls.
- danger to personnel opening the container doors at time of unpacking or for customs inspection.

In extreme cases very heavy cargo, which is not adequately restrained, might break through the container walls and affect adjacent cargo or even the safety of the ship itself.

Particular care must also be taken in the case of dangerous goods.

RESTRAINT TECHNIQUES

Restraint can be provided by:

- using an appropriate interlocking stow of the packages.

Pre-plan the stow so that if it does not fill the container, it fully covers the floor and is level in height throughout.

Where possible (and appropriate) leave void spaces down the centre of the stow so that cargo may be restrained by being supported hard up against either side wall, and fill appropriate void spaces with dunnage or waste material, e.g. spare packaging material, old tyres, inflatable dunnage bags (which must be compatible with the cargo carried, e.g. with respect to taint).

Shore and block the "face" of the stow (near the doors) with timber or inflatable dunnage.

- using the floor and wall securing points to lash with rope, wire or nets.

DAMAGE TO ADJACENT CARGO

The cargo may damage itself or adjacent cargo, if not properly stowed, by:

- mechanical damage, e.g. crushing. etc.
- cross-contamination, e.g. taint, spillage or leakage, migration of dust or debris, infestation, movement of moisture, i.e. condensation.

Such damage may be guarded against by:

- stowing light items (of low density) over heavy items (high density). Keep items such as crates separated from cargo such as paper sacks.
- providing dunnage (timber, hardboard, etc.) between tiers as required stowing liquids on the floor, dry items above.

Drums and barrels should be stowed with bungs or closures uppermost.

Stuff moisture inherent items in separate containers to those requiring dry stowage.

- stuffing items with a strong odour in separate containers to those susceptible to taint damage (or which might affect the packaging).

Commodities with properties that might leave long lasting residual taint (e.g. phenolic based substances) may have to be stuffed into special containers that are reserved for dirty cargoes.

- strict observance of dangerous goods rules and regulations.

OTHER DAMAGE

Other areas of damage that have to be guarded against at time of packing or during transit include:

- uneven weight distribution; the cargo weight should be so distributed that the centre of gravity remains as low as possible and near the centre of the container. No more than 60 per cent of the weight should be in one half of the container.

- when very heavy high density cargo is packed (e.g. lead ingots) the cargo should be positioned hard up against the side walls, and the weight distributed as extensively as possible to obtain full benefit from the inherent floor strength.

Some such cargoes may require dunnage or similar to support the weight and spread the load.

Cargo susceptible to damage from fluctuations in temperature may have to be carried in insulated containers under temperature control conditions, or given stowage and stacking position adequately protected from direct sunlight.

Cargo requiring ventilation may have to be carried in containers fitted with mechanical ventilation, or in open-sided or open-top containers. The stowage pattern of such cargo should be arranged to allow the proper movement of air through the cargo to achieve the ventilation required.

Refrigerated cargo must be packed in such a manner that the cargo is fully enveloped in refrigerated air to maintain a constant cargo temperature.

UNPACKING A CONTAINER

When opening a container door for unstuffing of your cargo never assume that the shipper has stowed the cargo inside the container in a safe manner. Always take care when opening the doors and if in doubt tie the door locking rods together to restrict the amount of opening of the doors when releasing the door locking rods.

Before stripping (de-vanning, or unpacking) a container, the following should be carefully checked:

- any notices or labels (e.g. dangerous goods labels), or notices concerning the contents specially if bulk has been loaded.

It is the consignee's responsibility to ensure that all hazardous cargo residue is removed and the container made safe. All labels must be removed to comply with local/international regulations. Where there is risk of gas being present (e.g. when using In2 or co2 as a refrigerant) then doors should be left open for some minutes to allow any gas to dissipate before personnel may enter the container.

- the right hand door should be opened - cautiously first. This is to guard against the risk of improperly secured cargo falling out and injuring personnel.
- the seal should be intact and not have been tampered with.
- a note should be made of the number for future reference.
- the external condition of the container should be apparently sound.

Any damage that may have affected the contents should be noted. When the container is empty of cargo the interior should be checked and any residue removed.

SPECIALISED CONTAINER CARGOES

Containers may carry many different specialised cargoes, for which special containers have been designed, e.g.:

- tank containers for liquids.
- bulk containers for dry bulk.
- half height containers for high density cargoes.
- open-top containers for overheight cargo (and top access).
- open-sided containers for overwidth cargo (and side access).
- livestock containers
- fantainers for onions/potatoes/squash etc.
- lined containers for bulk cargo eg: bulk grains, polyester granules.

- lined containers for “dirty” cargo eg: wet hides.

The use of “specials” may add additional costs to the freight rate, however the use of specialised equipment or containers can provide additional cargo protection resulting in an improved cargo out turn for specialised cargoes. Techniques in this direction have been developed for the carriage of dry bulk and liquid bulk using general purpose containers. Where bulk is loaded in a general purpose container, it must be ascertained that the container is structurally fit for this type of treatment.

Further advice on the carriage of cargo in shipping containers can be obtained from individual shipping companies.

MAXIMUM ALLOWABLE WEIGHTS & UNEVENLY LOADED CONTAINERS

- The gross weight of the container (tare weight and weight of cargo) is not to exceed the maximum recommended weight tolerances as indicated in the body of the container.
- The maximum gross weight of the container may also be governed by national and or provincial authorities of the destination country. It is the Shipper's responsibility to ensure the weight of the container is within the limits permissible on road/rail at the discharge port for carriage up to the consignee's premises as required.
- Any container moved in international commerce should have its gross weight determined and such weight, inclusive of external packaging and dunnage, must be declared in the accompanying documentation (whether that be hard copy or electronic data). The responsibility for accurate determination and declaration rests with the organisation that packs the container. The shipper should have a contractual arrangement with the packing/consolidating organisation to ensure that this responsibility is clear.
- Under International Liability regimes, Shippers/Consignees and ultimately the organisation packing the container are obliged to ensure that NO overweight or unevenly loaded containers are presented to a transport operator.
- In the case of an import container, the Consignee must have recourse through the purchase contract back to the Consignor/Shipper.
- In the event that an overweight or Unevenly-Loaded Container is discovered by the operator or intermediary, receipt of the container may be refused until offending condition(s) are rectified at the tendering party's expense.
- Where a transport operator or intermediary holds reasonable concerns over the accuracy of a containers' loaded weight as declared or load balance, the operator or intermediary may order a certification of weight from a weigh-bridge prior to acceptance of the container, the cost of the certificate being at the expense of the tendering party.
- A seller of the goods moved in unitised form must, together with the buyer, recognise that they share a common obligation and mutual benefit in ensuring that containers moved in their commercial transactions should not exceed declared weight limits and not be in an unbalanced load condition.

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