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6 BASIC PRINCIPLES FOR THE SAFE HANDLING AND SECURING OF CTUs

6.1 General

Before handling a CTU, the handling staff should make certain whether it is empty or loaded. Unless otherwise known, it should be treated as being loaded.

6.2 Lifting

6.2.1 Before lifting a CTU, the handling staff should ensure that the lifting equipment is safely and securely attached to it and that the unit is free-standing (i.e. all securing, fixing and lashing devices have been released).

6.2.2 Not all lifting equipment is suitable for all types and all sizes of CTUs. Before using any such equipment, the lifting staff should ensure that the equipment selected is suitable for use with the unit. International Standard ISO 3874:1988 gives all necessary details for such a decision for containers.

6.2.3 Some methods of lifting CTUs may only be used when the unit is empty ('tare weight'). This relates particularly to the use of lift trucks or four leg slings. Such limitations have to be strictly observed, otherwise very severe accidents may occur.

6.2.4 Under no circumstances should containers be lifted with forks applied under the base of the container. This applies equally to containers with or without fork-lift pockets.

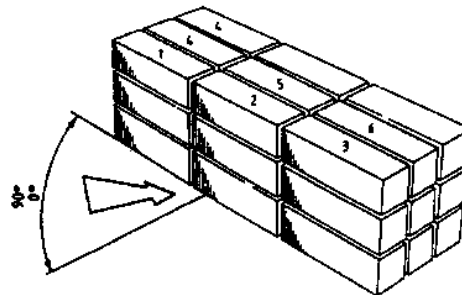
6.2.5 Under no circumstances should CTUs without a grapple lifting area be lifted by means of grapple arms.

6.3 Containers on the ground

6.3.1 When a container is standing on the ground, a firm, flat and drained surface should be provided, clear of obstructions and projections. On the ground, the container should be supported by the four bottom corner fittings only.

6.3.2 When stacking containers, the bottom surfaces of the lower corner fittings of the upper container should have complete contact with upper surfaces of the top corner fittings of the lower container. A shift of up to 25 mm laterally and 38 mm longitudinally may be tolerated.

6.3.3 A container stack may be subject to forces by heavy winds. This might lead to sliding and toppling of containers. Stacks of empty containers will be more subject to such dangers than stacks of loaded containers. The higher the stack, the greater the danger.



Container 1: most likely to be displaced by wind
Container 2: second most likely to be displaced by wind

Figure 40 - Wind effect on container stacks

6.4 CTUs on vehicles

6.4.1 CTUs should be firmly secured on vehicles before the vehicle is moved. The most appropriate points for fixing containers and swap-bodies are the bottom corner fittings of the unit. Before and during transport, it should be checked that the unit is properly secured on the vehicle.

6.4.2 For transport on public roads or by rail, containers and swap-bodies should be secured to the road or rail vehicle by all bottom corner fittings, in the absence of which, appropriate alternative measures should be taken. The main forces during the transport operation should be transferred to the unit through these bottom corner fittings. Some additional forces may be transferred between the road vehicle chassis or rail-car surface and the unit bottom through load-transfer areas in the unit bottom and in the vehicle surface. The securing devices on the vehicle may be twist-locks, securing cones, or securing guides. All such securing devices should be designed in such a way that the 'open' or 'locked' position of such securing devices is readily apparent.

6.5 CTUs on ships

6.5.1 Securing of CTUs on board ships should be carried out in accordance with instructions in the ship's Cargo Securing Manual.*

* Reference is made to MSC/Circ.745, Guidelines for the preparation of the Cargo Securing Manual, approved by the International Maritime Organization (IMO).

6.5.2 Whenever practicable, overheight, soft-top and tank containers should be stowed so that access for securing or cargo-handling operations is provided.

6.5.3 Handling of CTUs with a high centre of gravity should be carried out carefully. Such units may need extra lashings.