



Chapter 28 – Coffee

Coffee is processed from coffee beans, the seed of the coffee plant. The beans are processed by either wet or dry processing (typically varying by country of origin). Coffee can be transported as a bulk cargo (break bulk or pre-slung) or in containers.

28.1 Packaging

Traditionally, coffee beans are shipped in woven natural fibre bags, allowing free circulation of air. However, coffee is now most commonly transported by container, particularly from East and West Africa. As the trade has expanded, the methods of shipment have changed from loading coffee bags into containers to loading loose coffee directly into lined containers to save packaging costs and to increase carriage capacity (from 18 to 21 T in a 20 ft container (TEU)).



Figure 28.1: A liner bag fitted in a container for stowage of coffee.

28.2 Stowage and Care of Coffee

Coffee cargoes are highly susceptible to moisture absorption when transported by sea. This is particularly the case for coffee cargoes that are loaded in warm/moist climates and then discharged in the colder climates of Europe/North America. As the low temperature air of the northern hemisphere enters a container loaded in tropical areas, the shipment of coffee suffers more condensation damage than coffee from other sources. The main risk of condensation damage to bagged coffee arises in containers shipped into Northern Europe, particularly if the containers remain on the quayside for long periods after discharge, often exposed to large variations in temperature. Containers on the outside of the stack suffer most damage, with those on the inside being partly protected by the outer containers. Rapid stripping of the containers after discharge, or storage of the containers in a warehouse, are the only solutions to this problem.

For both carriage in bulk and by container, careful ventilation is important to prevent condensation forming on the surfaces of the ship's holds/containers.

Coffee cargoes are sensitive and therefore highly susceptible to taint. Cleanliness of the cargo hold/container is important. Care should be taken not to damage the coffee by fumigation and also to keep the coffee away from exposed internal surfaces with the use of paper.



Figure 28.2: Condensation from the container roof has dripped onto the bags.



Figure 28.3: Sealed ventilation openings.

Another cause of condensation damage is the practice of sealing the container ventilators with tape for fumigation purposes prior to shipment. After fumigation, the tapes are often not removed, preventing airflow and resulting in excessive condensation and mould growth. The volume of the air space at the top of the container should be carefully checked. When containers are loaded with 250 × 70 kg bags, a space of about 50 cm should be left between the top of the stow and the roof of the container.

When loaded with 300 × 60 kg bags, minimal space remains and in this case the cargo is more prone to condensation damage. There is no obvious scientific explanation for this phenomenon but it is well substantiated. Although ships' crew cannot control the stuffing of containers, such damage may well be attributed to the ship, with allegations of incorrect ventilation during the passage.



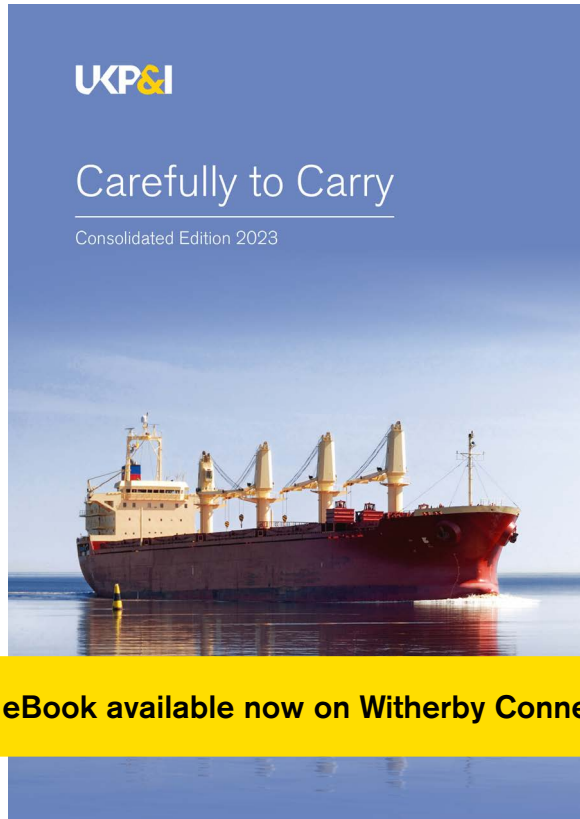
Figure 28.4: Water has penetrated through all the openings.

It is recommended that containers are lined with heavy duty kraft paper/corrugated paper, which should also cover the floor and the top of the stow of bags, so as to effectively form an 'envelope' around the stow of bags. Bags should be stored in a brickwork fashion in order to minimise the effect of vertical changes between the bags and therefore minimise the rising of moist air towards the roof of the container. The floor of the container will have wooden boarding and this should be treated with wood preservative products. The preservative must be compatible with coffee to avoid contamination and resulting claims.

Shippers are recommended to check the history of containers prior to using them for transportation of coffee.



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