

Container Loading Procedure

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 Ref: TRA_CON_LOA
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 Revised on
 6/27/2009 11:06 AM

Object:	Advising suppliers on way to load containers
Scope:	Bagged commodities
Other relevant documents:	Container Loading Protocol, USAID, 2009
Definitions of terms:	CaCl ₂ : Calcium Chloride
Responsibility:	Procurement officer
Step of the process:	To be approved
Annexes:	None

Circulation:	Name and signature
Quality responsible	
OMLP head	
OMLP chief	
Nutrition programme head	N.R.
Manufacturer	
Inspection company	
Laboratory	N.R.

Date	Index	Identification of changes	Pages	Modified	Approved
08/06/2009	A	Creation	All	B.S.	B.S.
27/06/2009		Review	2	B.S.	B.S.

Creation SOP	Reference SOP	Drafting SOP	Approval of SOP
(date)	TRA_CON_LOA	(name)	(name)

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Container Loading Procedure

Scope

This procedure applies to all bagged commodities transported by ocean freight in containers. These requirements are mandatory regardless of the cargoes destination.

Definitions

Containers: this procedure refers to standard 20 ft or 40 ft containers (see annex 1 for details). This applies also to ventilated (naturally ventilated) containers.

Desiccants: is a product that will attract water from the environment, to eliminate mold, corrosion, mildew, peeling labels and other harmful effects of moisture & condensation during shipping and storage by controlling dew point

Kraft paper: this is made of at least 90% fresh, usually unbleached, sulfate pulp (Kraft pulp). It is characterized by high strength and resistance.

Reference Standards

- WFP fumigation SOP
<http://foodquality.wfp.org/Portals/0/Fumigation%20SOP%20WFP.swf>
- Container Loading Protocol, USAID, 2009
http://www.usaid.gov/business/ocean/notices/notice_041509.html

Specific requirement for container loading

1. Prior to stuffing of the containers, each empty container is fully inspected on the exterior and interior. All containers in which bags are loaded must be found suitable for loading of the goods for human consumption with respect to cleanliness, dryness, free of odour, free of crack, proper closing and proper rubber seals, interior/exterior paint and wooden floor being reasonably intact, no hole/potential leakages.
2. To check that the cargo is secure
3. To check for the presence/absence of pest
4. Line container walls and floor with Kraft paper sheeting, and place sheeting on the top of bags
5. Apply calcium chloride (CaCl₂) based desiccant to interior container walls or on the sheeting, based upon the length of time in transit in containers. CaCl₂ based desiccant should be placed horizontally along interior container walls or laid on the top tier of the sheeting and maintain a minimum of 20 cm of headspace for optimal effectiveness. Vents of container should be closed or taped closed.

Required desiccant volumes (125 gram packs) for a **20 ft container**:

- 15 - 59 days: 72 bags of CaCl₂ based desiccant.
- 60 - 89 days: 90 bags of CaCl₂ based desiccant.
- 90 - 120 days: 108 bags of CaCl₂ based desiccant.

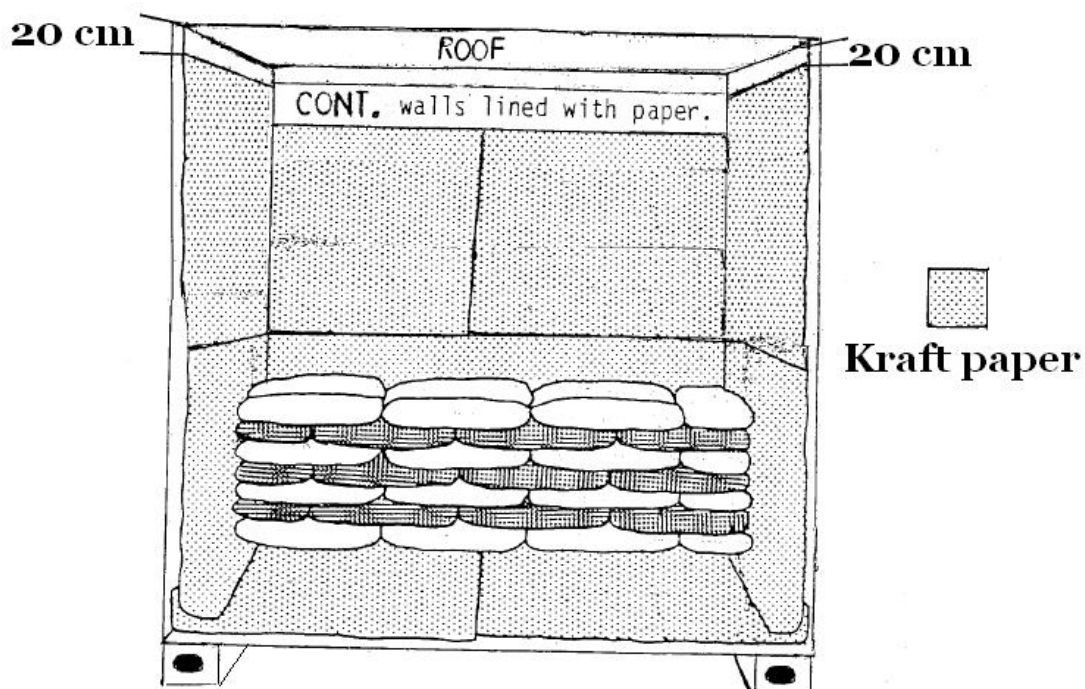


Figure 1: Position of the Kraft paper in the container

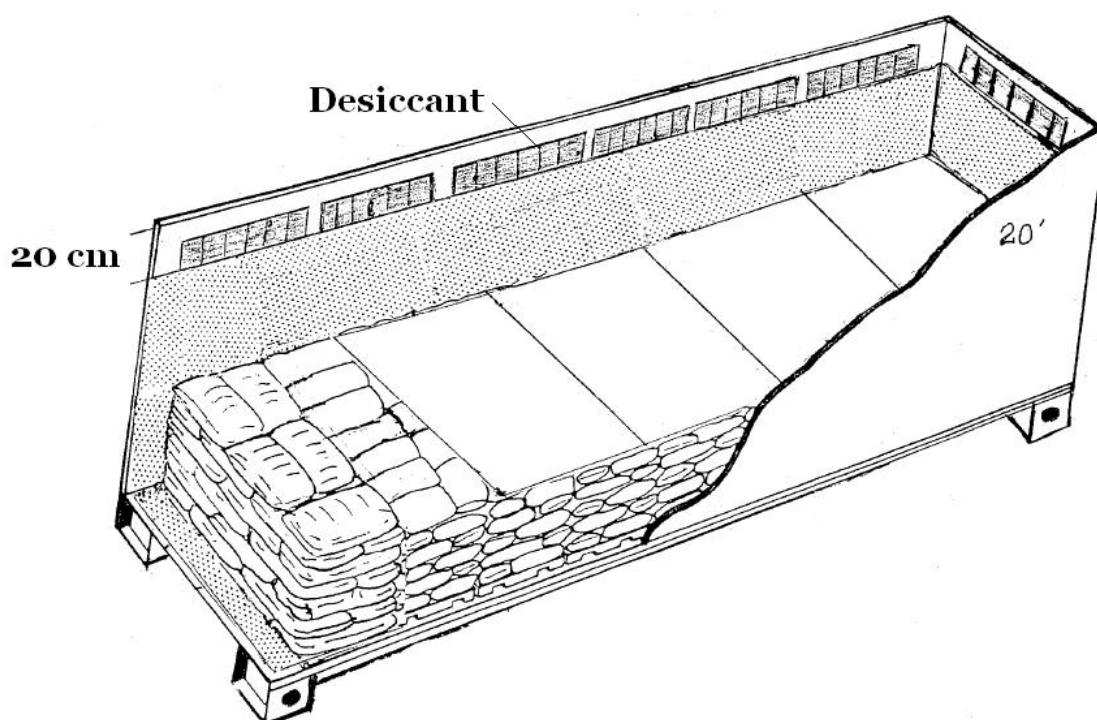


Figure 2: Position of the desiccant in fully loaded containers

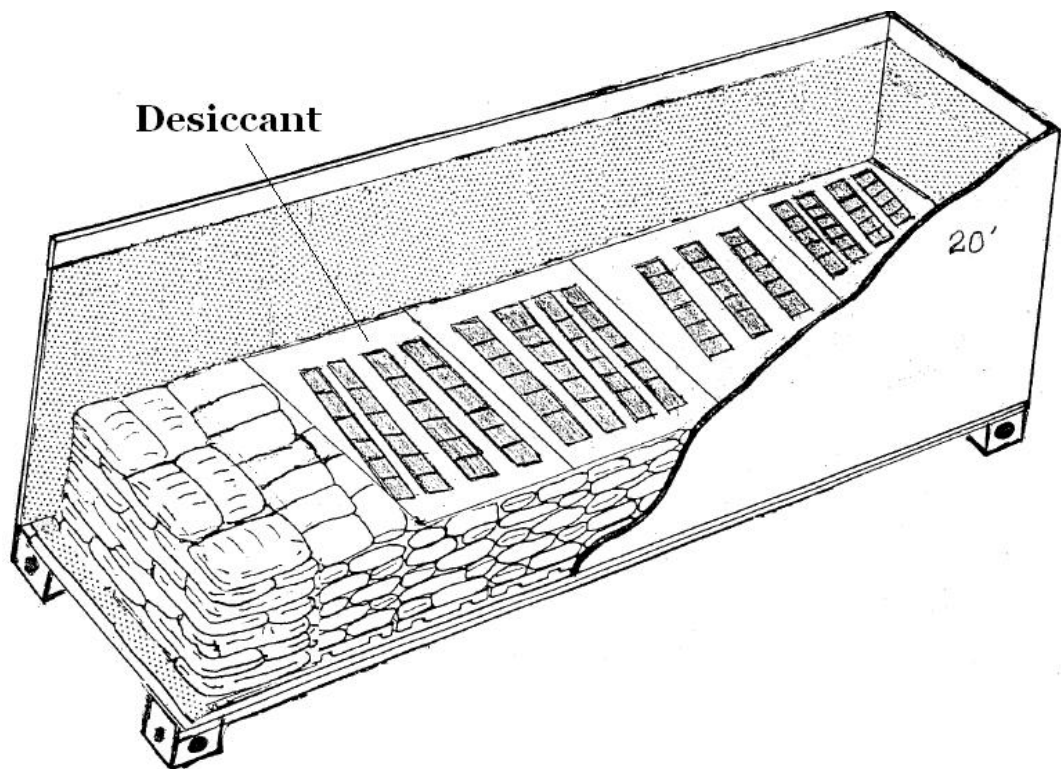


Figure 3: Position of the desiccant in partially loaded containers

Required desiccant volumes (125 gram packs) for a **40 ft container**:

- 15 - 59 days: 140 bags of CaCl₂ based desiccant.
 - 60 - 89 days: 180 bags of CaCl₂ based desiccant.
 - 90 - 120 days: 200 bags of CaCl₂ based desiccant.
6. Duct tape is not to be used when adhering the Kraft sheeting to the walls of the container as it has shown to act as a potential insect attractant.
 7. For Material instructions and illustrations of container loading protocol see annex 2

Fumigation & Desiccant

WFP has indicated that only phosphine gas can be employed during fumigation. The fumigant Phostoxin or aluminum phosphide reacts very vigorously with liquid water and may form an explosive gas. All fumigation is to be completed prior to desiccant being applied in loaded containers. The desiccant packaging should maintain a separation between any fumigant, as it is recognized that accidentally torn desiccant bags may release liquid/gel and pose a potential hazard. Fumigation of commodities with Phostoxin must be performed on a warehouse floor under tarp.

(See <http://foodquality.wfp.org/Portals/0/Fumigation%20SOP%20WFP.swf>)

Damaged cargo

In the event of suspected moisture damage within a container loaded per the current procedure: Do not discard any of the desiccant bags at time of container de-stuffing and all cargo surveys must include the following requirements:

- Accurately document cargo quantity and quality condition upon receipt and outturn.
- Retrieve data loggers, humidity monitors or any applicable devices for interpretation/evaluation, if part of the transportation process.
- Count and weigh each individual desiccant bag and identify where in the container they were located.
- Document if container loading protocol was properly implemented.

Annex 1: Container description

Standard container of steel: 20' long and 8'6" high with corrugated walls and wooden floor

Internal dimensions			Door openings		Weights			Volume
Length [mm]	Width [mm]	Height [mm]	Width [mm]	Height [mm]	Max. gr. wt. [kg]	Tare weight [kg]	Max. payload [kg]	[m ³]
5895	2350	2392	2340	2292	30480	2250	28230	33.2
5895	2350	2385	2338	2292	24000	2250	21750	33.2

Standard container of steel: 40' long and 8'6" high with corrugated walls and wooden floor

Internal dimensions			Door openings		Weights			Volume
Length [mm]	Width [mm]	Height [mm]	Width [mm]	Height [mm]	Max. gr. wt. [kg]	Tare weight [kg]	Max. payload [kg]	[m ³]
12029	2350	2392	2340	2292	30480	3780	26700	67.7

Annex 2: Product specifications

1. Materials

Kraft paper sheeting - specifications

Kraft paper: this is made of at least 90% fresh, usually unbleached, sulfate pulp (Kraft pulp). It is characterized by high strength and resistance.

Desiccant – specifications

- Calcium chloride based
- Able to absorb more than 200 percent its weight at 25°C / 80% r.h¹.
- Complies with FDA, EPA, EFSA regulations for food safety, environmental safety, and non-toxic disposal
- The desiccant must be free from DMF² (see EU directive 2009/251/EC)

2. Material application

Objectives

Kraft paper should be placed to prevent contact between the container walls or floor and the commodity.

Desiccant should be placed in the area with the greatest concentration of moisture vapor, therefore the following two options are available:

Option 1 – Placement of desiccant on container walls

1. Seal all passive container vents with duct-tape.
2. Cover floor of container with Kraft paper.
3. Place Kraft paper along all walls as high as the commodity, but approximately 20 cm below the container ceiling.
4. Place Kraft paper sheeting on top tier of commodities after they are loaded.
5. Affix desiccant horizontally along each container wall at the top, in the 20 cm between the container ceiling and the Kraft paper sheeting.
6. Desiccant should be evenly spaced around the container walls.

Option 2 – Placement of desiccant on Kraft paper sheeting

1. Seal all passive container vents with duct-tape.
2. Cover floor of container with Kraft paper.
3. Place Kraft paper along all walls at least as high as the commodity.
4. Affix desiccant to Kraft paper for the top of the commodity before placing it in the container.
5. Desiccant should be evenly spaced over the Kraft paper sheet or sheets.
6. Slide Kraft paper with desiccant facing up over the top tier of the commodity.

3. Miscellaneous

¹ Relative humidity.

² Dimethyl Fumarate is a biocide used to prevent mould growth on products but can leak from the desiccant bag and contaminate the food.

Excess desiccant: if there is any desiccant left over after all containers are stuffed, place the remainder back in the plastic bag it came in and tie so that the bag is airtight to prevent moisture contact with the desiccant during storage.

4. Monitoring

During discharge the logistic officer will survey sample containers as indicated, including information regarding:

- The conditions of containers, Kraft paper and desiccant
- The condition of commodities and their moisture level
- Damage to containers, bags, desiccant bags and Kraft paper
- Provide digital photos of commodities when possible

Logistic officer or Inspector surveys will notify WFP HQ / OMLP & OMLS of findings via email.

5. Disposal

A licensed contractor or carrier should dispose of desiccant according to country regulations.

The desiccant (Calcium Chloride) can be disposed with regular waste.