

ドライコンテナ用貨物濡損防止シート (PATENTED)

DEW SAFE

WET DAMAGE PREVENTIVE SHEET FOR DRY CONTAINERS

BULK DEW SAFE

WET DAMAGE PREVENTIVE INNER BAG FOR DRY CONTAINERS



株式会社船装
SENSO CO., LTD.

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In case of dry container transportation in areas with large changes in temperature and humidity, shippers and shipping companies are troubled by wet damage caused in cargoes because up to now there was no efficient protection system. Wet damage is usually caused by water drops which are formed by saturated air released by the cargo, or by leaks in the container itself. This especially occurs in the case of dry container transportation of cargoes with a high moisture content, such as grains, coffee beans and rice, when they are packed in bags and loaded directly onto the floor of the container. In the conventional methods desiccants, water-absorbing sheets or cardboard are usually used to prevent wet damage, but these methods are very costly and time-consuming. For several years we have been taking part in the transport of malt and other bulk cargoes with “BULK SAFE” (PAT.) system, while at the same time continuing to develop a system to prevent wet damage, finally succeeding in making an inexpensive yet highly effective method. “DEW SAFE” is a new patented system which can prevent wet damage caused by water drops in dry containers. “BULK DEW SAFE” is also a new patented system which, using the techniques of “BULK SAFE” (PAT.) and “DEW SAFE (PAT.)”, can prevent wet damage caused by water drops in dry containers.

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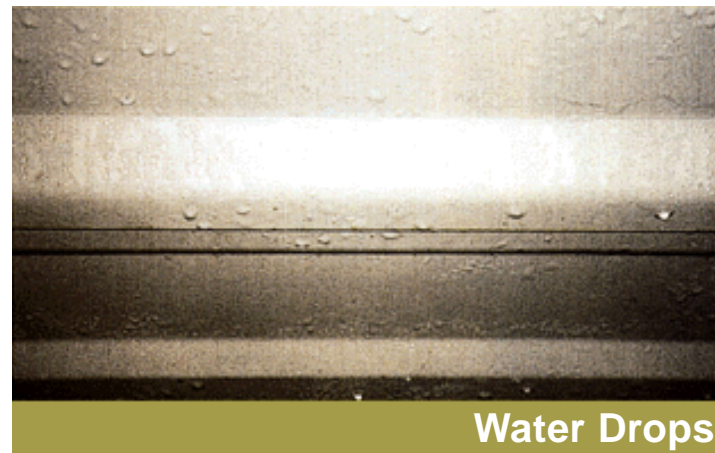
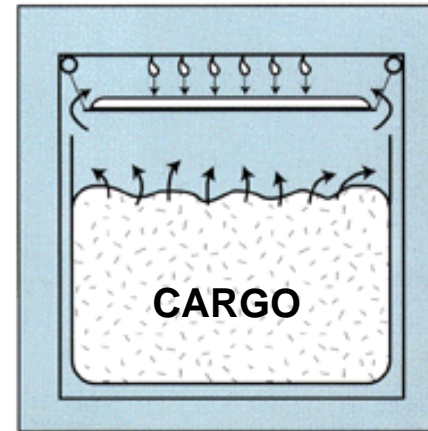
Prevention System From Wet Damage

This new system consists of waterproof sheets made of water-impermeable polyester materials, which cover the ceiling and the four sides of a container, and of polymeric water-absorbing material which is stuck to the ceiling-part of the waterproof sheets. Waterproof sheets are hooked onto the ceiling of the container like a mosquito-net. Air holes (PAT.) are provided for near the top of the sheet, so that the saturated air from the cargo is easily discharged out of the sheet. When the saturated air comes in contact with the steel sides of the container, it cools down and forms water drops. These water drops are absorbed by the water-absorbing sheets. Once the water is absorbed, it cannot be released again. To ensure that no water enters the by special technique. Since the absorption of the water drops which are formed when saturated air condenses is a continuous process, the absolute humidity and water content of the cargo will gradually decrease. The waterproof sheet and the water-absorbing sheet are perfectly safe for use in the transport of all kinds of food. This “DEW SAFE” and “BULK DEW SAFE” system are kinds of cargoes over any period of trans-

(Referece Data) Water absorption ability
(Depends on the number of water-absorb-
ing sheet used, 20litres per sheet)

20ft Container : 20 ℓ ~ 60 ℓ

40ft Container : 40 ℓ ~ 120 ℓ



Water Drops

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“DEW SAFE” is especially suitable for the cargo loaded on a palette. The polyester waterproof sheets are hung down from the ceiling of the container like a mosquito-net, and cover the ceiling and the four sides of the container. Since there are no sheets on the floor and this “DEW SAFE” cannot prevent wet damage on the floor, it is not suitable for the cargo which is bulk or loaded directly onto the floor of the container.

BULK DEW SAFE

“BULK DEW SAFE” is especially suitable for bulk cargoes and cargose which are loaded directly onto the floor of the container. The polyester waterproof sheets are hung down from the ceiling of the container like a mosquito-net, and cover the ceiling, floor, and the four sides of the container to form an inner bag. Various types of inner bag are available, depending on whether the cargo is bulk or not. In case of cargo packed in bags and loaded directly onto the floor of the container, the filling mouth can be completely opened from top to bottom. Because there are sheets on the floor, this “BULK DEW SAFE” is not suitable for the cargo which is loaded on a palette.

Cost reduction through repeated Use

Since the saturated air can constantly circulate inside the container, it is not necessary to use expensive material like the impermeable sheets which are being used in the conventional methods. Moreover, it is possible to reuse the waterproof sheets. Only the water-absorbing sheets need to be replaced. This means a considerable cost reduction compared to the conventional methods, which make use of waterproof sheets and desiccants which can be used only once.

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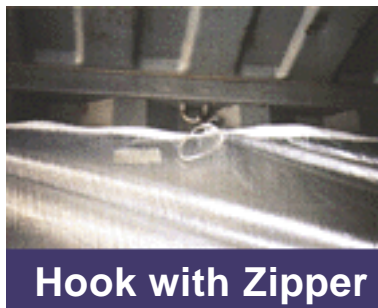
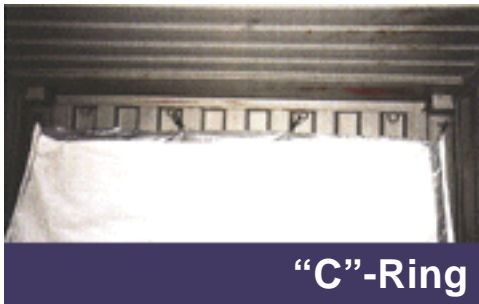
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“DEW SAFE” can be installed by just hooking the “C”-rings directly to the hooks in the corners of the container. By attaching the hooks, which are attached with a zipper on the ceiling side of the sheets, to the hooks fixed to the ceiling of the container, the sheets can be hung down like mosquito-net. After attaching a belt on the door side of the sheets with buckles, to ensure that the sheets are not loosed, it is necessary to pull the entire sheets toward the door side of the container.



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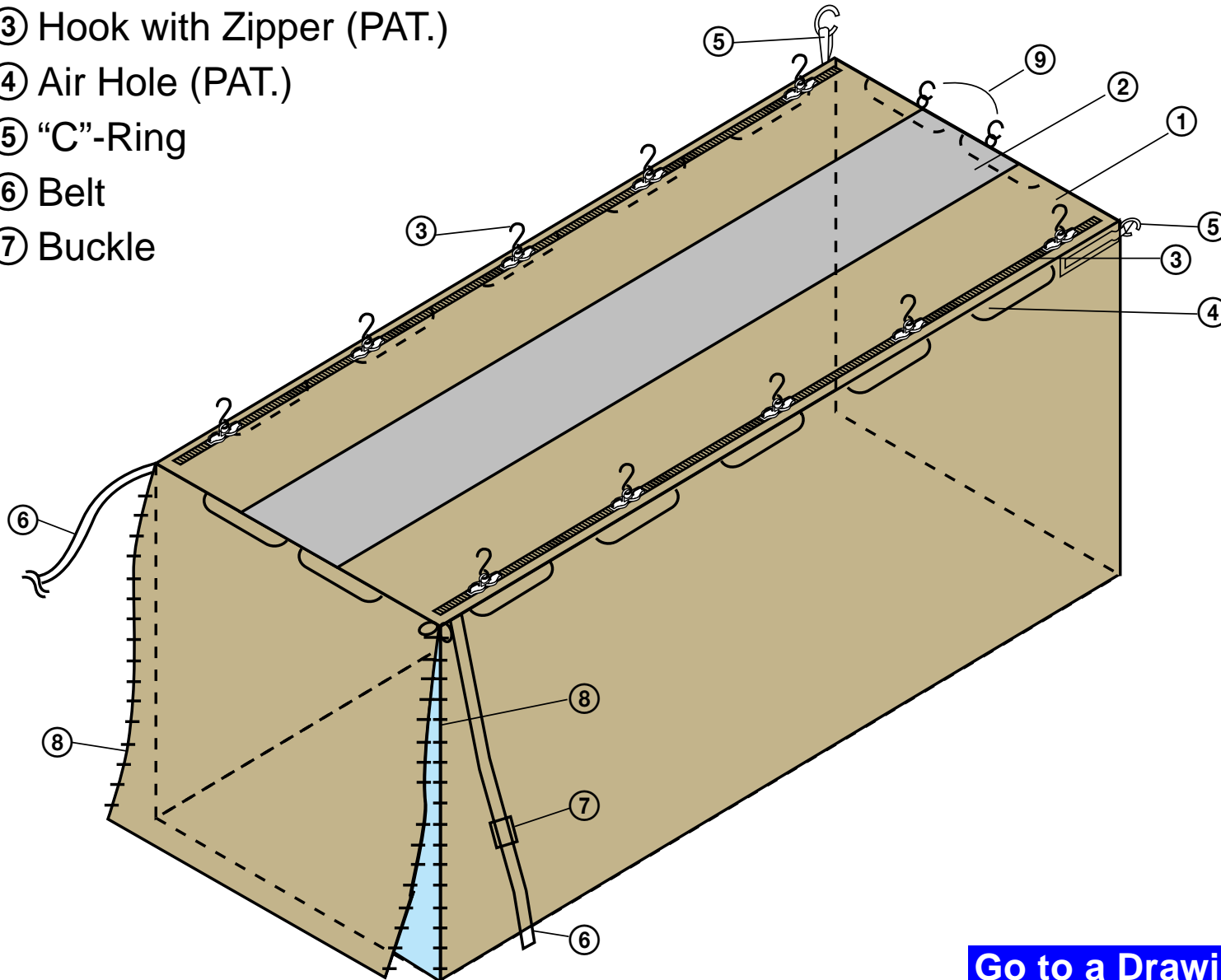
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DEW SAFE Parts of Location

- ① Water Proof Sheet
- ② Water-Absorbing Sheet
- ③ Hook with Zipper (PAT.)
- ④ Air Hole (PAT.)
- ⑤ "C"-Ring
- ⑥ Belt
- ⑦ Buckle
- ⑧ Zipper
- ⑨ Hook with rubber Band



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“BULK DEW SAFE” is especially suitable for bulk cargoes and cargose which are loaded directly onto the floor of the container. The polyester waterproof sheets are hung down from the ceiling of the container like a mosquito-net, and cover the ceiling, floor, and the four sides of the container to form an inner bag. Various types of inner bag are available, depending on whether the cargo is bulk or not. In case of cargo packed in bags and loaded directly onto the floor of the container, the filling mouth can be completely opened from top to bottom. Because there are sheets on the floor, this “BULK DEW SAFE” is not suitable for the cargo which is loaded on a palette.



“C”-Ring & Belt



Steel Bars



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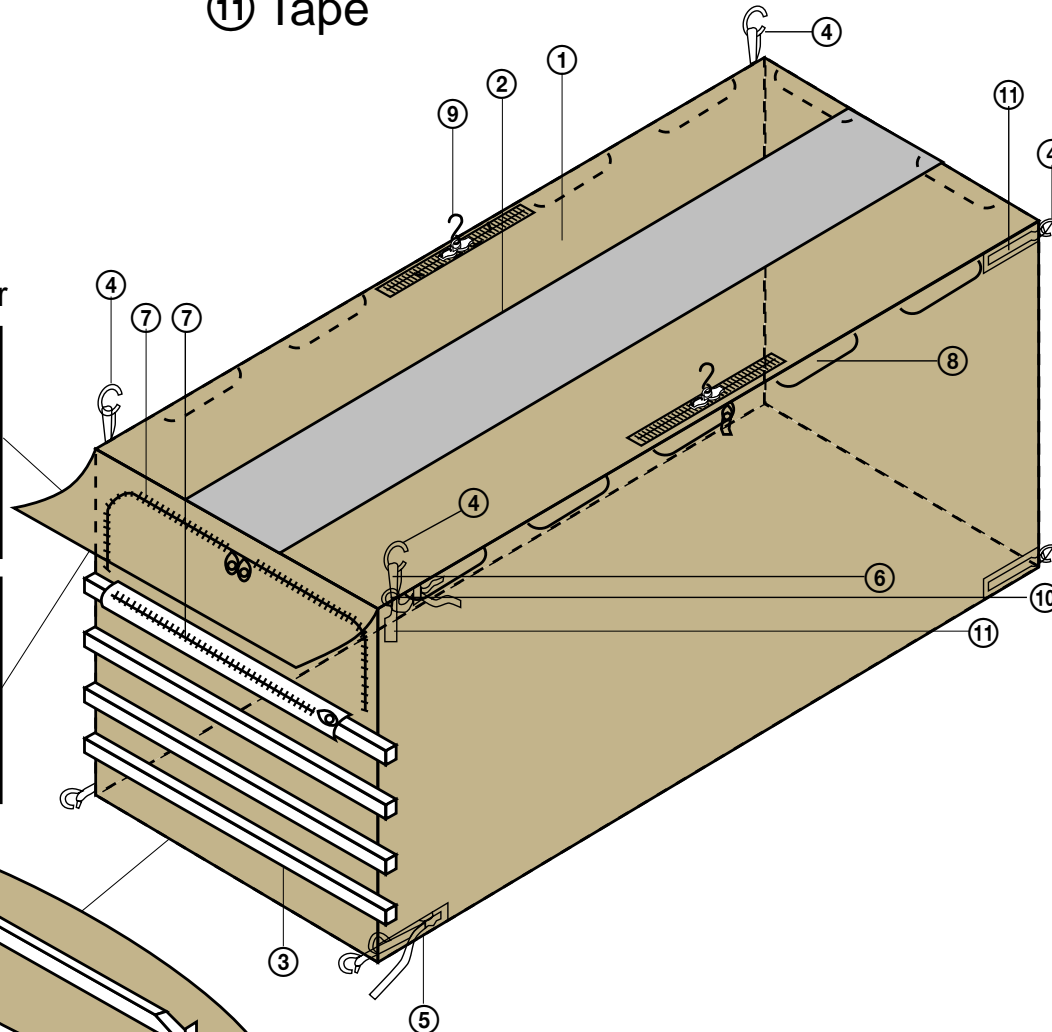
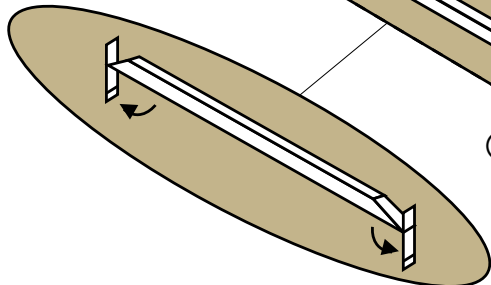
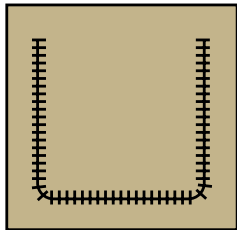
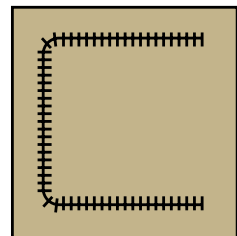
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BULK DEW SAFE Parts of Location

- ① Water Proof Sheet
- ② water-Absorbing Sheet
- ③ Steel Bar (PAT.)
- ④ “C”-ring
- ⑤ Buckle
- ⑥ Belt
- ⑦ Zipper
- ⑧ Air Hole (PAT.)
- ⑨ Hook with rubber Band
- ⑩ “D”-Ring (PAT.)
- ⑪ Tape

Types of Zipper



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DEW SAFE Suitable Cargose

1. For cargoes with a high moisture content and loaded on a palette (e.g. grain, rice, coffee beans)
2. For cargoes apt to be easily damaged by water drops (e.g. CKD cargoes, machinery)
3. For cargoes without packaging which have to be put on show or on sale immediately after transportation.
4. For lumber with a very high moisture content (35% ~ 40% content, e.g. lumber for log house from N. Z. or Finland)



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BULK DEW SAFE Suitable Cargose

1. For bulk cargose with a high moisture content (e. g. grain, rice, coffee beans)
2. For cargose with a high moisture content, and which are packed in bags and loaded directly onto the floor of the container.



Bulk Cargoes



Packed Cargoes



Grain

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