

## **THE ULTIMATE ECONOMY IN PACKAGING AND HANDLING.**

Packaging, transport and handling constitute a substantial cost in the final cost of material. To minimise these costs, we offer you *Container liners*. Container liners can be used for packaging of any kind of dry bulk materials like, Petrochemicals, Wheat, Rice, Coffee, Fertilizers, Malt, Oilseeds, Pulses, Sugar, Urea, Soda Ash, etc. These liners substantially reduce your packaging and handling costs and at the same time provide you with a safe and clean packaging.

### **WHAT IS CONTAINER LINER.**

The Container liner is a bag of the size of a standard 20 feet, 30 feet or 40 feet ISO container. The liner lines the inside of the container walls and hence the packed material is safer than in any sack or FIBC (Jumbo bags/Big Bags/1 ton bags). The walls of the container support the weight of the material packed and therefore there are no chances of material damage or loss.

The liner bag is placed inside the ISO container and fixed by straps/loops provided on the liners to all sides of the container. The material is stuffed thru loading ports provided on the front side of the liner. After filling the port is tied or stitched closed. To prevent the bulging of the liner after the material has been filled there are various provisions.

When the container reaches the destination, the importing customer opens the liner mouth and unloads the material by tilting the container on trailers equipped with tilting arrangement or by parking the trailer on a ramp or by using cranes/hoists. The material can then be taken directly into the silos/tanks or could be loaded directly onto the packaging machines.

### **WHAT DO YOU GAIN BY USING CONTAINER LINER?**

- Lower cost of packaging. As high as 90% cost savings.
- Low handling costs. More than 95% saving in handling costs, both at loading end and unloading end.
- Lower transportation cost. About 20% more material can be packed in a 20 feet ISO container resulting in lower freight per ton.
- Lower time consumed to fill and discharge the container.
- 100% safety. Material is as safe as the 20 feet container itself. No chances of spillage or accidents, which may be observed while using sacks or FIBC.
- Problem of disposal of packaging material is greatly reduced. (We agree to take it back if required.)
- Custom made packaging solution as we make the liner to suit your exact needs.
- Material remains clean, as the surface area exposed is minimum.
- No need to clean the container prior to loading and no hassle of cleaning the container after unloading. Just remove the liner after unloading and your job is done.

## **DIFFERENT TYPES OF CONTAINER LINERS.**

Material used for liner: Based on the product that is to be transported, the material used for liner is decided. There are 3 basic materials.

1. Laminated woven PP/PE fabric. This is a woven PP/PE fabric with lamination on both sides or on single side. Liners made out of this fabric give complete protection against moisture, dust etc. this fabric does not allow air to pass thru it or in other words its not breathable.  
Laminated liners are used usually for transport of Malt, Petrochemical products, Chemicals etc.
2. Unlaminated woven PP/PE fabric. This is a woven PP/PE fabric without lamination. This fabric allows some air to pass through it or in other words its breathable. This property of the fabric helps in dissipating heat if the product filled is hot or gives out heat. Also this liner is useful for transport of agro products as fresh air is always in contact with the product, extending its shelf life. Used in coffee, wheat, rice, potato, carrot, seeds, non sensitive industrial products such as soda ash, fly ash,
3. PE Film. Liners made out of PE films offer 100% protection against moisture and dust. The high quality welds ensure that not even air can pass thru the joints. The front of the liner is attached with a woven flexible Bulk Head with arrangements for hanging steel bars. This liner is used for highly sensitive products in petrochemicals and chemical industry.

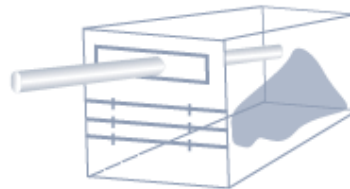
Size of container liner. Usually the standard ISO containers are used. Basic 3 sizes are available.

1. 20 feet.
2. 30 feet.
3. 40 feet.

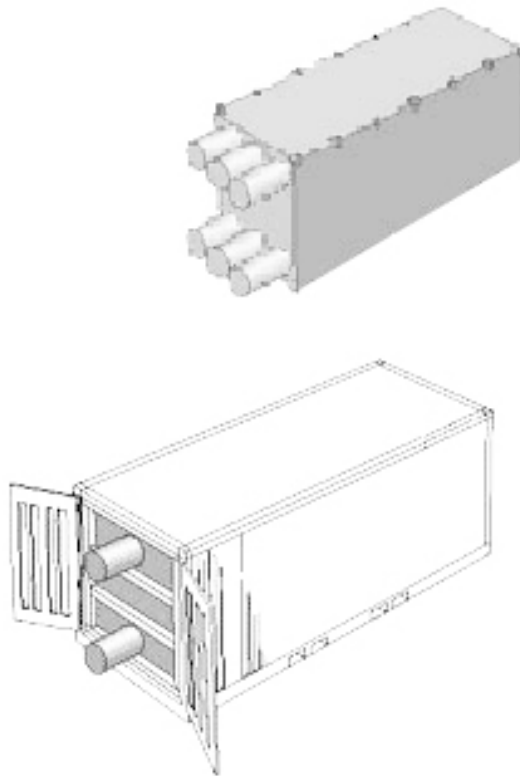
We can also supply bags or liners of any size for any container or transporting medium. Our aim is to help you carry your bulk load.

Method of loading the liner: Depending on the product and facility available at the loading point, there can be various filling methods.

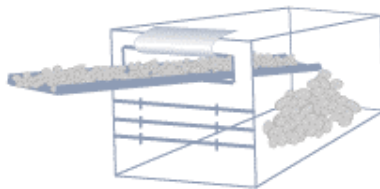
1. Blower. Pneumatic blowers blow the material along with air inside the container fitted with liner. The liner is provided with mouths having long chutes into which the blower pipes can be inserted. There can be up to three mouths in a single liner for quick filling of the containers. To let the air out there is a vent spout provided. Blower is one of the fastest ways to load a container and it also promises a contamination free filling.



PNEUMATIC LOADING



2. Conveyor. Material to be loaded is dropped onto a movable conveyor and this conveyor throws the material into the container. The liner has a wide opening on the top thru which the conveyor can enter the container. As the container gets filled the trailer on which the container is loaded is moved forward.



LOADING BY CONVEYOR

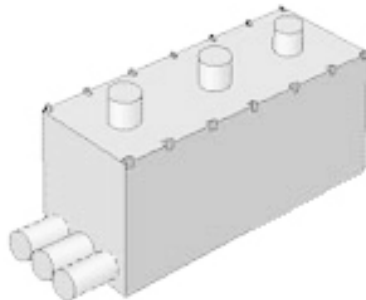
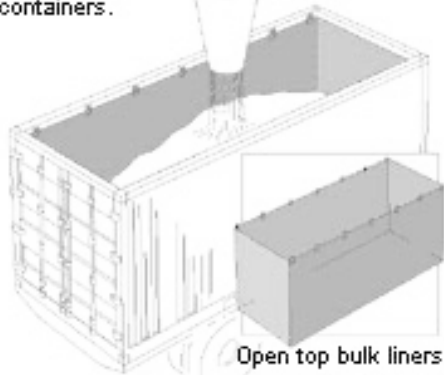
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3. Manual filling. The liner front has a large opening in the front thru which a person can manually load the material inside the container.

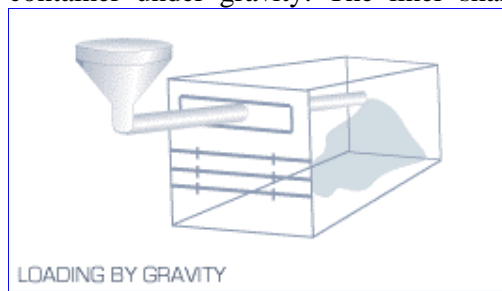


4. Top loading. The liner has chutes on the top to facilitate loading from the top. Top loading liners are usually gravity filled. The containers used are either top open or have suitable opening to fill the material.

Open top bulk liners can be fitted to either open top containers or bulk containers.



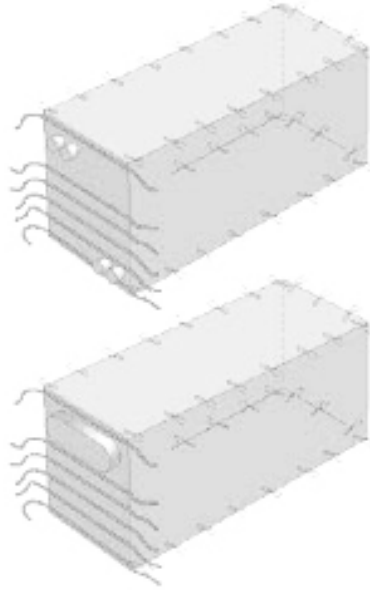
5. Gravity filling. Gravity filling can also be used to load thru the front. The material can be dropped on a conveyor, which transports it into the container, or a pipe from a overhead storage facility can carry the material into the container under gravity. The liner shall have an appropriate loading port.



Ways to protect the liner against bulging. A liner when filled bulges out in the front while loading. This is because while loading the doors of the container are open and hence there is no support. The liner is made of flexible material and therefore it bulges in the front. There are various methods to tackle this problem.

1. Belts. The liner front has heavy-duty belts sewn to it. These belts are to be tied inside the container and they hold the liner back and prevent bulging. This

is a cost effective and simple way to deal with the problem of bulging. This way the liner can be loaded with both the doors open or with one door closed.



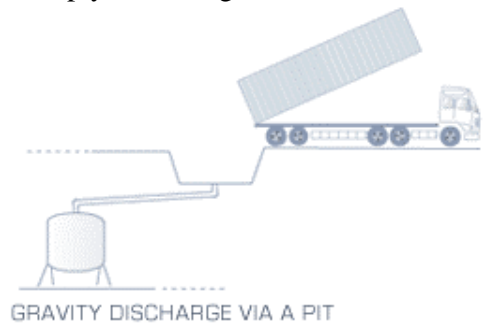
2. Metal bars. Square or round metal bars are placed in the loops provided on the liner front. These bars prevent the liner from bulging beyond the container

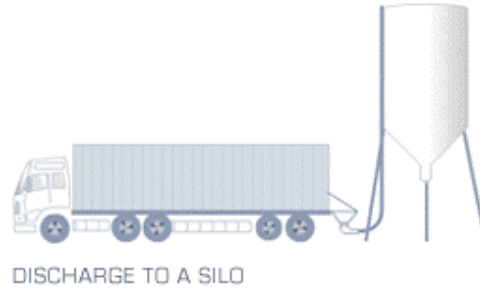
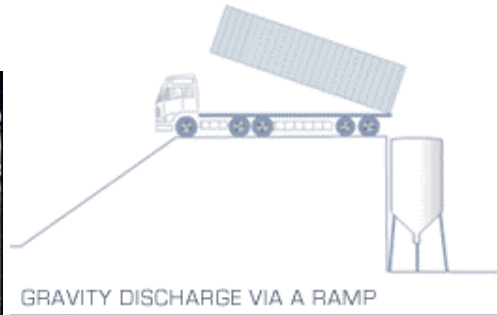
door. Both the doors of the container can be kept open.



3. Anti bulging Liners. After over 7 years of research, we have developed a liner, which has an internal provision for preventing bulging. There are neither belts attached nor any metal bars required. Just fit the liner and fill it. No need to spend time, energy and money trying to deal with bulging. The anti-bulging mechanism provided inside the liner will prevent it from bulging. It has been tested by filling 25tons of material in a 20ft container and tilting it. Anti-bulging liners are available for 20ft, 30ft and 40ft containers.

Unloading the liner. The liner can be unloaded in a number of ways. The most commonly used and simplest way is to tilt the container and allow the material to flow out under gravity or using pneumatic suction. The material flows thru a discharge chute provided or by simply slitting the liner bottom open.





Some special kinds of liner. Seen in the picture is a liner made for transportation of skin and hydres, which are transported in the standard ISO containers. These skin and hydres are applied with salt to preserve them. When this salt comes in contact with the container body there is a galvanic cell formed and this leads to heavy corrosion of the metal container body. To solve this problem this special liner was designed which has a leak proof strong bottom on which pallet trucks and forklifts can move. The forklift goes right into the container fitted with the liner and stacks the material. After the container is loaded the liner front is closed. This liner also finds use when someone has to transport material equivalent to half a container load. The material is loaded and then tying the end closes the liner. Your material is safe inside the liner and separate from the rest of the container.

