



IK Industrievereinigung
Kunststoffverpackungen e.V.

Questions & Answers

... concerning the use of Flexible Intermediate Bulk Containers (FIBC)



Questions and Answers Concerning the Use of FIBC

Selection of the FIBC

1. Which FIBC is the correct type for my needs?

In principle there are three types of FIBC: reusable FIBC for heavy duty, reusable FIBC for standard duty and single-trip FIBC. Please turn to your supplier concerning the choice of FIBC for your specific needs. The following aspects should be considered in this context: weight and type of filled product, filling temperature, number of filling cycles, preferred method of filling, transport, storage and discharge. The more precisely you are able to specify your product filled the more tailor-made your supplier will be able to provide recommendations for the FIBC of your needs. You should clarify in any case if your FIBC must respond to specific needs such as the transport of dangerous goods, electrostatic characteristics or food transport.

2. Are there standards for the use of FIBC?

Yes, there are several standards:

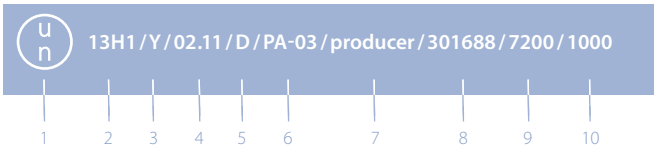
- EN ISO 21898:2005 Packaging - Flexible intermediate bulk containers (FIBCs) for non-dangerous goods
- IEC 61340-4-4:2006 Electrostatics - Part 4-4: Standard test methods for specific applications - Electrostatic classification of flexible intermediate bulk containers (FIBC)
- UN recommendations for the transport of dangerous goods (ADR, RID, IMDG-Code, Orange Book, Chapter 6.5)
- TRBS 2153 (fourth edition, 2009) – Avoidance of ignition hazards due to electrostatic charge

3. How should FIBC be marked?

According to norm EN ISO 21898:2005 FIBC should boast a durable marking (either in the form of a label or as a print onto the FIBC):

- Name and address of the supplier/reconditioning company
- Type of construction by supplier which may only apply to one particular type of FIBC
- Name and address of distributor, if applicable
- Safe working load (SWL) in kg
- Safety factor, e.g. 5:1, 6:1 or 8:1
- Indication of relevant norm
- Type of FIBC, e.g. heavy-duty reusable FIBC, standard-duty reusable FIBC
- Number of certificate of construction as well as month and year of issuance of certificate
- Name of test house
- Date of production of FIBC
- Pictograph for the recommended handling
- Indications concerning special handling following 3.7 of EN ISO 21898:2005
- In case the FIBC is certified for a special product: the description of the product

According to the UN guidelines, FIBC intended for dangerous goods have to be durably marked as follows (see example):



- 1) UN packaging symbol
- 2) Type
(13H1) FIBC without coating or liner
(13H2) FIBC coated
(13H3) FIBC with liner
(13H4) FIBC coated and with liner
- 3) Packaging group
X: for packaging group I, II and III (FIBC for solid goods only)
Y: for packaging group II und III,
Z: for packaging group III only
- 4) month and year of manufacture
- 5) country of approval
- 6) referred to approval authority
- 7) referred to manufacturer and other authorized identification of FIBC
- 8) reference number of authority
- 9) stacking test load in kgs
(in case of FIBC that are not designed for stacking, it should indicate "0")
- 10) maximum gross mass in kgs
(FIBC plus content)

Filling

4. How do I safely fill FIBC?

During the filling process FIBC should be hanging from the lifting device in a way that their bottom either touches or hangs closely above the ground or pallet. Please make sure the discharging spout of the FIBC – if featured – is closed before the filling. Please consult your supplier should you wish to fill your FIBC with hot material since not all FIBC are designed for high temperatures.

In order to ensure stability under load the FIBC should be filled in a way that the ratio between its filling height and bottom dimensions ranges between 0.5 and 2. The bottom dimensions which are taken as a basis here are:

- the diameter for FIBC with a round base,
- the length of the shorter side for FIBC with a rectangular base.

Transport

5. How do I safely lift FIBC?

Before lifting please check your FIBC for transport damage. In general FIBC should be lifted according to the instructions

given on the label. In any case the FIBC should be lifted and lowered symmetrically avoiding any jerky movements. Any form of swinging should be avoided during the lifting process. Please be aware that most transport damages occur due to improper lifting of the FIBC.

Never lift FIBC by steel wires, fibre ropes and or similar devices. The loops of the FIBC could tear due to such handling.

Several FIBC can be lifted simultaneously – as long as this is technically feasible. The vertical position of the loops is crucial in this case (see figure 1).

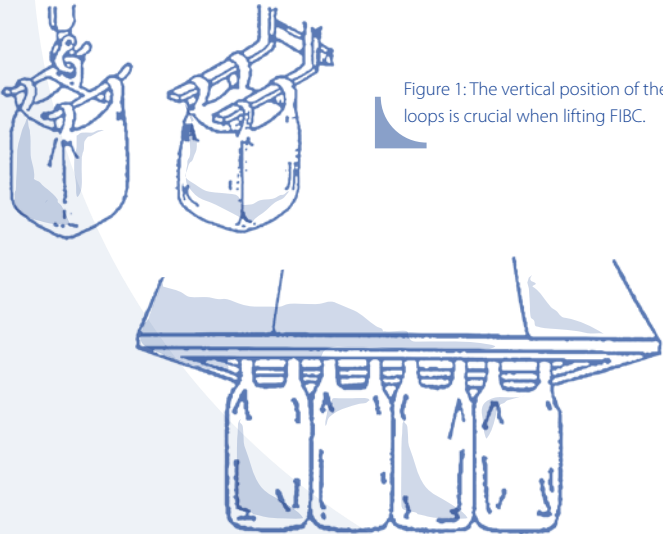


Figure 1: The vertical position of the loops is crucial when lifting FIBC.

6. Points of attention for handling by forklift

In order to avoid damage of the loops the forks should be free from sharp edges and, if necessary, covered with suitable material. When driving FIBC dangling from a forklift there is the danger that the vehicle turns over. Thus, the FIBC should be transported close to the pole at the lowest level possible and with the pole slightly bent backwards. Please also ensure that the wheels of the forklift do not damage the FIBC either. Moreover the load should not hamper the view of the driver.

7. How do I safely transport FIBC by truck or in a freight container?

When transporting FIBC by truck or in a freight container the cargo must be stowed in a safe and stable fashion. FIBC must not be stowed with other cargo boasting sharp edges or rough surfaces which might harm the FIBC. Legal regulations and recommendations for the transport (e.g. according to VDI 2700) must be followed.

Storage and Stacking

8. How do I stack filled FIBC?

When stacking FIBC the necessary stability has to be considered. Generally spoken a pyramid-shaped stacking is most favourable (see figure 2). If possible FIBC should be stacked next to at least two walls, thus enabling support. The general rule is: the higher the stack the more supporting walls are necessary.

Moreover, special characteristics of the material filled have to be considered when stacking (e.g. compression etc.). Please make sure that the FIBC in the base are able to bear the pressure of those stacked upon them. In case of doubt please ask your supplier.

9. How do I store FIBC?

FIBC are in principle not suitable for storage outside since they get damaged by UV radiation and weather conditions (see figure 2). It is utmost important to follow the recommendations of the supplier in order to achieve the maximum lifespan and performance of the FIBC and to avoid damage to the FIBC and its contents.

If the FIBC should still be stored outside they have to be protected from UV radiation and weather, e.g. by a black polyethylene film or other suitable protective devices. Furthermore not all FIBC are designed for storage at extreme temperatures. Please contact your supplier in case of doubt.

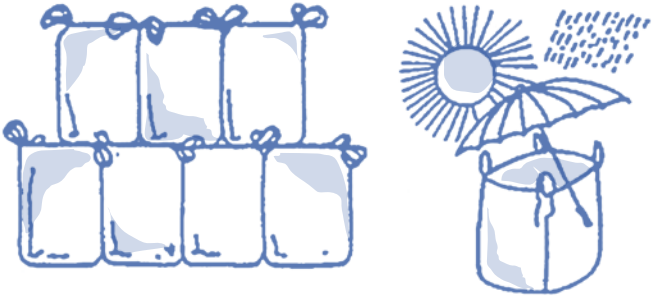


Figure 2: A pyramid-shaped stacking ensures stability. Furthermore, FIBC should be protected from UV radiation and weather impact.

Discharging

10. How do I securely discharge FIBC?

In order to discharge a single-trip FIBC, its bottom should be opened by a cutting device equipped with a suitable long grip. In case of a discharge spout featured this spout should be opened only when the FIBC is hanging over a safety support. This support prevents injury to persons also in the case that the lifting device fails. Persons should under no circumstances stand or hold body parts under any lifted or non-secured FIBC.

Figure 3: When discharging an FIBC with a discharge spout, it is important to use a safety support.



Repeated Use

11. How often and how long can I reuse FIBC?

The life span of FIBC depends on the usage and storage conditions but should normally not exceed two years from the date of manufacture. In any case, before reuse, it must be ensured that reusable FIBC still fulfil the same requirements as given before the first use. During control both visible and non visible damage, e.g. which may have resulted from previous use and storage of the FIBC (e.g. UV damage) must be considered.

The user bears the responsibility for the control and repeated use. Single-trip FIBC must not be used again under any circumstances.

12. How does reconditioning of FIBC work?

Reconditioning of FIBC comprises taking back, cleaning, sorting out, damage control, repair and exchange of service equipment (e.g. document pouch, ribbons, label, liner). A change in construction or repair is excluded.

Due to safety reasons a reconditioning of FIBC for the transport of dangerous goods is generally not recommended.

Recycling

13. Can FIBC be recycled?

The material of FIBC can be recycled. In doing so the used raw material (polypropylene fabric) is mechanically processed without changing the chemical structure. The recycled new material obtained hereby can be used as raw material for diverse applications and replaces new granules. FIBC can also be used energetically, i.e. the energy contained herein is recovered through combustion.

14. Pending Questions:

- How can electrostatic charging be avoided?
- What has to be considered when filling food?
- What has to be considered when filling dangerous goods?
- Which ethical and social aspects have to be considered concerning the production of FIBC?

Your supplier will be pleased to respond to all your questions.

This brochure is a publication of the FIBC sector group of IK Industrievereinigung Kunststoffverpackungen e. V., the German Association of Plastics Packagings and Films. The FIBC sector group consists of the following member firms:

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