

FIBC Safe Handling Guidelines





FIBC General Handling Guidelines

FIBC = Flexible Intermediate Bulk Container or Bulk Bag

General Guidelines

- » Consult with your manufacturer or supplier to select the right FIBC for your product and distribution environment.
- » Ensure the FIBC is approved for the product (i.e., dangerous goods / hazardous materials, food, pharmaceuticals, etc.) and it is appropriate for the filling & emptying environment (i.e., electrostatic concerns in flammable or explosive environments).
- » Ensure the product going into the FIBC is compatible with the FIBC and all of its components.
- » Ensure every FIBC is free from any damage that would compromise its strength. Never handle a damaged FIBC without consulting your FIBC manufacturer or supplier first.
- » Adhere to all FIBC manufacturer's recommendations and any information printed on the label or FIBC.
- » Adhere to all applicable regulatory and safety requirements.
- » Operators using FIBCs must be trained to respect all instructions contained in this document. It's the user's responsibility to comply with all recommendations indicated. FIBC handling guidelines can be displayed by scanning the QR code on the label of each FIBC.
- » Operators handling FIBCs must wear all necessary PPEs and the operators must be placed in conditions to handle FIBCs in a safe way, avoiding any injury.
- » Inspect FIBCs at each step of the handling process and engage in necessary action to keep the situation safe and under control if any deviation is observed. FPS teams are here to support you in such analyses and risk management.
- » In case of any product leakage observed on an FIBC, the FIBC must be isolated, not stacked, and all protection must be respected to avoid any injury to people or damage to appliances. All necessary precautions must be taken to prevent any risk to people, products or appliances.

This set of safe handling guidelines has been drafted as part of our commitment to guide our customers on how to safely handle FIBC/Bulk Bags. The guidelines assess some common situations, but always consult your FIBC supplier regarding your particular FIBC and handling environment.

This guideline was prepared by FPS Flexibles for all the business partners to be used for informative purposes only. None of the explanations herein will give rise to any additional obligations for FPS Flexibles or will be construed as waiver of FPS Flexibles' business partners' contractual or legal liabilities, unless otherwise is explicitly stated in the contracts between the parties or legislation in force.

When selecting an FIBC for use, consideration should be given to the following:

- a) The physical and chemical properties of the intended contents of FIBC, such as
 - Bulk density,
 - Flow characteristics,
 - Degree of aeration,
 - Particle size and shape,
 - Compatibility with the materials used for the construction of the FIBC,
 - Product fill temperature,
 - Whether the intended contents are foodstuffs when special conditions normally apply.
- b) The methods to be used for filling, handling, transporting, storing and emptying the FIBC.
- c) The number of trips required, the number of times the bag is lifted on each trip and the environmental conditions likely to be encountered.
- d) General environmental considerations.

Filling & Emptying

- » FIBCs are normally filled while suspended by (a) lifting device(s) and with the base of the bag resting on or near the ground or a pallet. Other methods may be applicable in consultation with the manufacturer or supplier.
- » Prior to filling, the FIBC should be inspected for visible damage which may render it unsafe.
- » Ensure the FIBC is appropriate for the filling & emptying environment (i.e., electrostatic concerns in flammable or explosive environments). Refer to static protective FIBC guidelines below.
- » If the FIBC has a discharge spout or other discharging device, verify the bottom discharge spout is closed correctly prior to filling the FIBC. Closed correctly means according to the FIBC manufacturer's instructions.

- » The minimum environment temperature that our FIBCs preserve their safety characteristics; both for the stability and for the filling is -10°C.
- Filling, discharging, storage, transportation and environment temperatures above 60 °C and below -10 °C is not recommended for the FIBCs having glued-in liner or if the liner is attached to the FIBC with adhesive tapes without stitching since the adhesive may lose its characteristics and the inner liner can become detached from the FIBC.
- » Before filling the material at temperatures above 60 °C and below -10 °C, the manufacturer or supplier should be consulted.
- » Devices used to handle FIBCs must be designed for FIBCs, have safety latches, be rated for the safe working load (SWL) of the filled FIBC and adhere to approved handling methods.
- » Open filling spout of liners for efficient unloading and to avoid tearing on liners.
- » Never cut any part of the fabric, loops, ties, etc. Those cuts will affect the mechanical performance of the bag and generate risks for operators or/and create some risk of contamination of the product or environment.
- » Don't handle the bag in a way that can damage the seams' mechanic properties or the seams' dustproof performance.

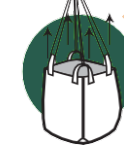
- » **Never suspend an FIBC using fewer lifting loops, sleeves, etc. than have been provided.**



- » **Never gather lifting loops to lift with one hook, unless the FIBC is specifically designed and approved by the manufacturer for doing so.**

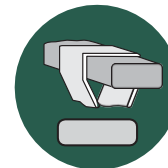


If lifting with one hook, slings or other lifting devices must be used to ensure the loops are vertical and to prevent damaging lateral forces.



- » **Ensure all forklift tines, crane hooks, bars or handling devices used, are free of sharp edges or protrusions.**

Edges must be rounded to at least the thickness of the lifting loops, sleeves etc. used to support the FIBC. The radius should be a minimum of 5 mm.



- » **Never allow personnel to stand or place any appendage under a suspended FIBC.**



All personnel must be safely clear of any potential hazards when lifting, handling or emptying an FIBC.

- » Take appropriate measures with regard to dust control.
- » Never exceed the safe working load (SWL) / rated capacity specified for an FIBC.
- » Don't fill an FIBC to a level that adversely affects its stability and/or exceeds the height to width limitations set forth in applicable industry standards or regulatory codes. A maximum ratio of 2:1 is typical, however current industry standards or regulatory codes should be referenced.
- » The fill spout or duffle of the FIBC must be closed in accordance with the FIBC manufacturer's instructions.

STATIC PROTECTIVE FIBCS

- » Ensure that the FIBCs are tested and labeled in accordance with the current version of the IEC 61340-4-4 Standard and that the type of static protective FIBC and liner being used are appropriate for the flammable or explosive environment.
- » If FIBCs are to contain combustible or flammable powders or products emitting potentially flammable solvents or gases, it is essential that all conductive objects and materials (personnel, plant, machinery and tools etc. be properly and securely grounded at all times.
- » If it has been determined that Type B or Type D static protective FIBCs are required; reference the IEC 61340-4-4 Standard for requirements; these bags do not require grounding.
- » If it has been determined that Type C static protective FIBCs are required; reference the IEC 61340-4-4 Standard for requirements; these bags must be securely grounded before and during the filling and emptying process according to manufacturer's instructions.
- » Never begin filling or emptying a Type C static protective FIBC with, or in the presence of, flammable or combustible materials unless a secure ground connection to the FIBC has been established.
- » Never re-connect a detached ground cable to a Type C static protective FIBC after filling or emptying has started. Stop the process immediately and allow charge to relax before any further handling of the FIBC. This may take several hours or days. The process of charge relaxation can be accelerated using suitable ionizers (static eliminators).

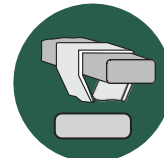
LINERS

- » Pre-inflate liners prior to filling for ease of use. Extend liners past the fill spout or duffle when filling.
- » Ensure liners are properly attached or secured to prevent them from coming out during discharge.
- » Tie off liners within the fill spout or duffle per the manufacturer's closure instructions.
- » Do not excessively pull out the inner liner fill spout while attaching it to the filling station, to prevent stress to the liner's attachment points to the FIBC.
- » During the filling and discharging process, make sure inner liner spout is supported by FIBC spout. Otherwise, stress will be applied to the welding of the inner liner spout which can result in a tear issue.
- » Do not inflate the bag in a way it can damage the liner.
- » Don't inflate air blowing connection system in a way it can damage the liner or the fabric by tearing too much.

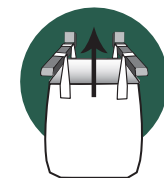
- Use a forklift truck, crane or hoist with a rated capacity sufficient to support the filled FIBC.
- Devices used to handle FIBCs must be designed for FIBCs, have safety latches, be rated for the appropriate SWL of the filled FIBC and adhere to approved handling methods.

- **Ensure all forklift tines, crane hooks, bars or handling devices used for lifting are free of sharp edges, burrs or protrusions which may cut into the lifting loops.**

Edges must be rounded to at least the thickness of the lift loops, sleeves, etc. used to support the FIBC. The rounded edges should have a minimum radius of 5 mm.



- **The distance between the forklift tines must be adjusted to the correct width to ensure all lift loops or sleeves are vertical to prevent damaging lateral forces.**



- **Maintain a clear line of sight when moving an FIBC. Never move the FIBC if your line of sight is blocked.**



- **When handling by forklift, hold the FIBC close to the mast and as low as possible with the mast tilted back to an appropriate angle.**

- Keep the FIBC clear of the floor so there is no contact with the floor or the wheels of the forklift.
- Never drag or push an FIBC.
- Never tilt the mast of a forklift truck forward when handling an FIBC.

- **Never suspend an FIBC using fewer lift loops, sleeves, etc. than have been provided.**



- » Handle FIBCs in a way that doesn't create any brutal mechanic impact (lift bags too quickly and with brutal movement, drop bags too quickly on the pallet, stack FIBCs too quickly).
- » Don't damage FIBCs by forks during handling, loading, and unloading.
- » During the handling process of FIBCs, the forklift driver must remain in the forklift, and any operators must be present at a distance equal to the minimum height of the FIBC plus 2 meters.
- » Forklift drivers handling FIBCs on pallets or via handling appliances must drive at a low and fitted speed and mustn't give any brutal impact such as brake, acceleration, and slowdown in turn. Also, horizontal rotation of FIBCs must be done in a way that's not brutal movement which could impact the FIBCs' mechanic performance.
- » Loops or any handling devices can't be turned, or folded multiple times on a fork or hook. It is the operator's responsibility to use all loops or handling devices in the same way on an FIBC so as not to create an unbalance of weight inside the bag.
- » Any FIBC can be handled with a crane, hoist in a way in case of any issue the FIBC or the product contain can drop on people present in a distance equal to the minimum height of the FIBC plus 2 meters.
- » Stop the forklift before raising or lowering the FIBC.
- » Never withdraw the forklift tines without removing all of the load from the loops or sleeves.
- » Never subject an FIBC to sudden lifts or sudden stops.

- **Never gather loops to lift with one hook, unless the FIBC is specifically designed and approved by the manufacturer for doing so.**

If lifting with one hook, slings or other lifting devices must be used to keep the loops vertical and prevent damaging lateral forces.



- **Always ensure personnel are safely clear of any potential hazards and never allow personnel to stand or place any appendage under a suspended FIBC.**



- **Always use slings and all lifting loops when righting an FIBC that has tipped**



- Ensure any pallets used for handling are:
 - Free from nails or protrusions that could damage the FIBC.
 - Of appropriate size so the FIBC does not overhang the side, unless specifically designed and approved to do so by the manufacturer.

STATIC PROTECTIVE FIBCS

- Crane hooks, forklift tines or other devices used as a means of grounding Type C static protective FIBCs during handling shall be kept clear of any substances (paint, oil, dust, etc.) that might otherwise impede the connection with FIBC lifting loops.

- » Ensure any pallets used for storage & transportation are:
 - » Free from nails or protrusions that could damage the FIBC.
 - » Of appropriate size so the FIBC does not overhang the side unless specifically designed and approved to do so by the manufacturer.
- » Don't damage FIBCs by friction on a surface (wall, pallet,..)
- » Use appropriate system to maintain FIBCs in trucks, containers and any other transport system used, to guarantee stability and avoid any accident risk.
- » Use appropriate protection systems for products contained in FIBCs including but not limited to coated fabrics, liners, and barrier materials.
- » In the case of FIBCs stocked in high-ceiling warehouses or on shelves it's the customer's responsibility to determine the right design of FIBC for necessary stability. For any handling of those FIBCs, necessary precautions and appliances including a forklift must be used to guarantee safe handling.
- » Don't damage FIBCs or/and any part with a heating system or hot point including but not limited to electric resistances.

» **Only stack FIBCs if they are designed to be stacked, you are sure of their stability and that they are stacked using a "Pyramid" or "Supported" stacking method:**

Pyramid Stacking

Each bag above the first layer must sit on at least four lower bags. Each layer is subsequently aligned inwards forming a pyramid structure.

Supported Stacking

Bags are stacked against two retaining walls of sufficient strength.

» **Never approach or repair a damaged bag without first removing all bags stacked on top.**

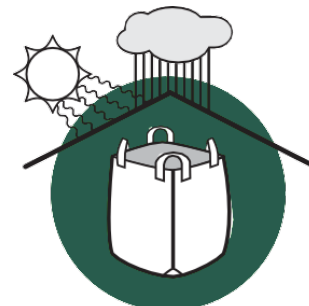
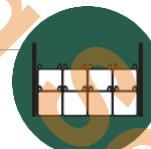
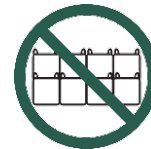
- » Beware of water or moisture contamination inside storage facilities.
 - » Always try to store your FIBCs inside a covered facility or warehouse that is free from any water or moisture contamination that could come into contact with your FIBCs and damage them.

» **Beware of sunlight & UV rays:**

- Always protect your FIBCs from sunlight and the harmful effects of UV rays.
- Exposure to UV rays will weaken the strength of an FIBC.

Beware of inclement weather:

- Always protect your FIBCs from inclement weather (rain, snow, etc.)
- Exposure to inclement weather could significantly weaken the strength of an FIBC.



- » Outside storage is not recommended.
 - » FIBCs are prone to damage and loss of strength if exposed to extreme weather conditions (sunlight, inclement weather, extreme temperatures etc.) As a general rule, FIBCs should always be protected from sunlight and the harmful effects of UV rays. Over time, exposure to UV rays will weaken the strength of an FIBC.
 - » Storing FIBCs outside is not recommended, however, if you do so, you should always cover them with some type of material that will prevent their exposure to UV rays and inclement weather. However, FPS Flexible Packaging Solutions does not support or endorse this type of outdoor storage, and this would be solely at your own risk. There is no guarantee that FIBCs stored outside and unprotected from UV rays & inclement weather will be safe to handle.
- » Adequately secure FIBCs during transportation. Place a cardboard slip sheet in between the filled bag and the pallet to protect the base of the FIBC and to prevent slippage during transport.
- » Avoid subjecting an FIBC to sudden lifts or sudden stops during transportation.
- » Storage of filled FIBCs at temperatures above 50°C or below -10°C should be avoided, except with the approval of the manufacturer or supplier.

FIBC SHELF-LIFE

The best method for determining if an FIBC remains suitable for use is to conduct periodic performance testing (top lift, UV, etc.) on samples to compare the test results with those of newly manufactured samples from the same lot. Samples should continue to meet industry standards such as those set forth in ISO 21898.

STATIC PROTECTIVE FIBCS

Whereas most static protective FIBCs do not need special storage, some designs of FIBC and inner liners rely on anti-static additives, which may be added during manufacturing of fabric or coatings or applied as a topical finish. Such additives typically have a reduced shelf life and are more sensitive to environmental hazards than are non-anti-static FIBC materials. Advice should be obtained from manufacturers or suppliers on how to properly store FIBCs and/or inner liners that contain anti-static additives, and how such FIBCs can be checked prior to use in a safety critical application.

Shelf life of the FIBC is 18 months under normal storage conditions if the inner liner has temporary antistatic property.

The inherently conductive or dissipative materials used in most Type C static protective FIBCs or in Type D static protective FIBCs do not require special storage.

It is expressly noted that it is the customer's responsibility to select the appropriate packaging and packaging film, based upon all information at their disposal including but not limited to the specific application, regulatory compliance, product compatibility and handling, filling, discharging, storing and shipping requirements. FPS expressly excludes any and all responsibility or liability as a result of improper selection, improper usage, non-respect of above recommendations or changes to the content of the flexible packaging goods supplied by FPS as a consequence of (chemical) reactions or otherwise. FPS hereby expressly advises, that any contact between printing ink and food products must be avoided.

FPS HEREBY DISCLAIMS AND EXCLUDES ANY LIABILITY RESULTING FROM THE SELECTION OF IMPROPER TYPE OR QUALITY OF PACKAGING MATERIAL FOR A PARTICULAR PURPOSE, AND EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Safety

FPS FIBCs (bigbags) are UV stabilized in accordance with the ISO 21898:2004 Standard



Due to the sensitivity of woven polypropylene fabric against UV light, we advise you to protect the FIBCs from rain and/or prolonged sunlight.

How to use FIBCs for non-dangerous goods

Do

- DO** select the right FIBC in consultation with your contact person at FPS
- DO** read the FPS instruction label on the FIBC
- DO** inspect reusable FIBC's before (re)filling
- DO** check if discharge spout is closed before filling
- DO** ensure that the filled FIBC is stable before transport
- DO** close the top inlet correctly after filling
- DO** use lifting gear of sufficient capacity to take the suspended load
- DO** adjust the distance between forklift arms to the correct width before the FIBC being handled
- DO** tilt the mast of the forklift truck rearwards to an appropriate angle
- DO** ensure that crane hooks, bars or forklift arms used for lifting are of adequate size and are rounded to at least the thickness of the sling, belt or rope suspension, with a minimum radius of 5 mm
- DO** take appropriate measures with regard to dust control
- DO** consider the possibility of static electricity hazards
- DO** protect the FIBC's from rain and prolonged sunlight
- DO** ensure the FIBC's are adequately secured in transportation



Don't

- DON'T** choose FIBC's without consulting your contact person at FPS
- DON'T** exceed the SWL (Safe Working Load) in any circumstances
- DON'T** fill the FIBC's unevenly
- DON'T** stop or start suddenly during transporting
- DON'T** subject FIBC's to sudden movements
- DON'T** drag FIBC's
- DON'T** allow personnel under suspended FIBC's
- DON'T** allow FIBC's to project over the side of a vehicle or pallet
- DON'T** tilt the mast of the forklift forward
- DON'T** withdraw the forklift arms prior to relieving all the load on the lifting devices
- DON'T** stack FIBC's unless certain of their stability
- DON'T** use FIBC's in new conditions without consulting the manufacturer or supplier
- DON'T** re-use single-trip FIBC's
- DON'T** repair heavy-duty reusable FIBC's

1. Warranty period only runs for one year after passing risk to the buyer. In case of willful violations of obligations, in case of claims arising of tortious acts, in case of missing of guaranteed features, in case of taking over exercise risk or in case of bodily harm, statutory limitation periods shall apply.
2. FPS warrants that the products comply with the agreed specifications. This warranty is only valid in case of first use of the products unless a product was specifically designated as multi-use. FPS disclaims and excludes all other warranties, express or implied, including without limitation fitness for a particular purpose or merchantability. To the extent permitted by law, the warranty against hidden defects is limited as set forth below. It remains the buyer's responsibility to select the appropriate product based upon all information at its disposal.
3. The buyer cannot claim under this warranty if it (or a third party on its behalf) has used the products for another purpose than for which they are fit, it has not properly stored or handled the products, or has repaired, processed, or assembled the products, nor in case of normal wear and tear, defects caused by moisture, extreme differences in temperature or other weather influences or without respecting recommendations indicated on this handling guide.
4. Minor deviations in size (an allowance of +/- 2 cm on all measurements is allowed), weight, print quality and color that do not influence the functionality of the product are allowed and cannot be considered a defect.
5. Warranty claims will be dealt with provided these have been filed in writing and within the stipulated time frame and provided that the products in question remain available in the state in which they were delivered.
6. Buyer is obliged to inspect the products and their packaging at delivery in order to evaluate whether they conform to the agreement and are free from defects. Any visible shortages or defects detected during such inspection must be notified on the delivery notice, failing which Buyer loses its right to claim under this warranty.
7. Buyer must inform FPS of any claims regarding quantities and measures in writing within 48 hours after delivery, failing which the information on the delivery order, freight documents, invoice etc. are deemed to be correct. Without prejudice to clause 5, claims regarding visible defects must be notified to FPS in writing within 8 days after delivery. Claims regarding defects that are not visible, must be notified to FPS in writing within 8 days after discovery of the defect, but in any case, within 12 months after delivery.
8. If a claim of the buyer under the provision herein is considered to be justified by FPS, FPS is, at its discretion, only obliged to either deliver the lacking part or quantity, replace the Products delivered or to credit the buyer the amount paid for the relevant products, without any compensation becoming due.
9. The buyer is not relieved from its payment obligations upon filing a warranty claim. Defects in part of the delivered products do not entitle the buyer to refuse acceptance of the entire delivery. If a warranty claim is made regarding the number of products delivered in deviation of the buyer's order, the actual number of products delivered shall be invoiced.
10. Return of products delivered under the provisions herein is only permitted after FPS has given its prior written consent and under the conditions as prescribed by FPS.
11. Without prejudice to the provisions above and except in case of (i) gross negligence or willful intent, (ii) death or personal injury, or (iii) mandatory product liability which cannot be limited or excluded by contract, FPS's liability is limited to the amount invoiced (excl. VAT) under the purchase order relating to the Products, which caused the damage, or, at FPS's sole option, to the amount actually paid out by FPS's insurers.
12. FPS shall never be liable for indirect losses or damages, including but not limited to loss of profits, incurred losses, costs and expenses, loss of contracts, loss of savings or losses caused by disruption or stoppage of the production and/or the business.
13. FPS stipulates all legal and contractual defenses that it can invoke in respect of its liability towards Buyer also for the benefit of its employees.
14. The buyer is obliged to indemnify and hold FPS harmless against any and all claims of third parties related to the delivered Products, except to the extent the damage is caused by willful intent or gross negligence of FPS or where FPS is liable under mandatory statutory provisions of product liability.
15. Dutch law shall be applicable to all legal relationships between FPS and the buyer. The provisions of the United Nations Convention on the International Sale of Goods (1980) shall not apply.
16. All disputes arising under or in connection with an agreement or agreements resulting there from or the performance thereof between FPS and Buyer as well as any disputes regarding these general conditions, shall be exclusively settled by the competent court for the corporate seat of FPS.