Flexible Intermediate Bulk Container

Frequently Asked Questions

Content

1. General Information

What is an FIBC?

A FIBC (Flexible Intermediate Bulk Container) commonly referred to as a "Bulk Bag", "Big Bag" or "Tote" is an intermediate bulk container, having a body made of a flexible woven material (typically polypropylene), which

- Is handled mechanically by fork lift trucks, cranes or hoists when filled.
- Is designed to be lifted from the top by means of integral, permanently attached devices (lift loops, stevedores or sleeves).
- Is intended for shipment of solid material in powder, flake, or granular form.
- Does not require further packaging

The dimensions, handling, filling, discharging and barrier features of a FIBC can be customized based on the needs of the customer. FIBCs typically hold anywhere from 1000 – 4000 lbs (500 – 2000 kg) of product.

What are FIBCs commonly used for?

FIBCs are commonly used for dry flowable products such as, but not limited to grains, seeds, salts, powdered coatings, sands, clays, cements, ferro alloys and resins. They are frequently used in the food, pharmaceutical, agricultural and chemical industries.

2. FIBC Design and Selection

What product information is needed to select the correct FIBC design?

Additional details will be required for the filling and discharging environment but here are a few product details that will be needed to help ensure you get a FIBC that will meet the basic requirements of your product.

- Product bulk density (lbs. per cubic foot or kg per cubic meter)
- Safe working load (SWL) / Net fill weight needed per FIBC
- Is the product a hazardous material / dangerous good
- Does the FIBC need to meet food safety requirements
- Does the FIBC need to meet pharmaceutical industry requirements
- Product mesh size
- Moisture percentage
- Special barrier needs (i.e. hydroscopic?)
- Product characteristics (free flowing, bridging, static build up)
- Filling temperature

What are the basic design options for FIBCs?

- **U-Panel:** A U-Panel bag requires 2 seams along 2 opposite sides to create a „U" Panel shape.
- **Circular:** Also called a tubular bag, it is made from fabric woven on a circular loom, which is then cut to the proper length for a specified bag height, thereby eliminating the vertical seams on each of the bag's sides.
- **Four Panel:** Four separate pieces of fabric are sewn together to create the body of the bag.
- **Baffle:** Pieces of fabric or other material sewn across each corner of a tubular or four – panel bag to improve a bag's squareness, appearance, improve the stability of the load and to more efficiently utilize storage or shipping space.

Can a liner be added to a FIBC?

Yes, FIBCs can be used with or without liners depending on the needs of the product and the distribution environment. Should a liner be needed, there are two basic styles of liners:

- **Tubular:** A liner with no spouts or contours, it is a straight cylinder, which may or may not have one end heat-sealed.
- **Form Fit:** Designed to take the exact shape of the FIBC. Form-Fit Liners will allow improved filling and complete discharging of product. Unlike a basic "tube liner", Form-Fit Liners offer a flat top and bottom and incorporate a spout diameter and length to best compliment the FIBC'S fill and discharge spouts.

Both of these liners can be loosely inserted or secured with ties, tabs or glue. Liners can also provide antistatic or barrier properties such as oxygen, moisture or UV.

What is the difference between a coated and uncoated FIBC?

A coated bag incorporates an interior or exterior layer of polypropylene (PP) to reduce moisture intrusion or sifting of the contents. Also called non-breathable or laminated fabric/bags. The uncoated FIBC has no poly coating.

What is Sift-Resistant Construction?

A type of FIBC construction that provides resistance from product sifting when the bag is filled with very fine materials. Also referred to as "Sift-proof' construction. This typically utilizes coated fabric and filler cord in the sew lines. Commonly used in combination with a coating or an interior liner.

What is "UV protection"?

A feature of an FIBC fabric that provides protection from prolonged exposure to the sun's degrading UV rays. An additive blended with the resin prior to extrusion of the yarns to provide this protection. UV protection performance should be evaluated per the procedures set forth in the ISO 21898 standard.

3. Standards and Regulations for FIBC

What standards apply for the use of FIBCs?

- EN ISO 21898 Packaging - Flexible intermediate bulk containers (FIBCs) for non-dangerous goods
- IEC 61340-4-4 Electrostatics - Part 4-4: Standard test methods for specific applications - Electrostatic classification of flexible intermediate bulk containers (FIBC)
- UN Recommendations for on the Transport of Dangerous Goods (ADR, RID, IMDG-Code, Orange Book, Chapter 6.5)

What has to be considered for FIBCs having food contact?

The overriding principles behind regulations on FIBCs coming into direct or indirect contact with food are the protection of human health and the composition of the food and its perceivable properties. EU-Regulation 1935/2004 lays down requirements on all kinds of packaging materials, including plastics, to ensure human health. There is another very important specific regulation for food contact materials made from plastics: the EU-Regulation 10/2011. The FDA in the US follows the same principles.

Furthermore, process-related quality systems such as GMP (Good manufacturing practices) and Hygiene Management should be applied for the production of food contact FIBCs. Please note that national legislations may apply and should also be considered. Discuss your and your end-user's requirements with your supplier to ensure you receive the quality you need.

Can I get a FDA approved FIBC?

While many users of FIBCs may request an "FDA Approved" bulk bag, it is important to note that such a product does not exist. The U.S. Food & Drug Administration does not issue any approvals or certifications of FIBCs or FIBC liners. With regard to polypropylene resin, a major component of most FIBC fabric, FDA Food Contact Regulation 21 CFR 177.1520 states that it must be 100% virgin.

The topic of food safety in the packaging industry is constantly evolving, with tougher industry standards and increased government regulations becoming the norm. Therefore it is recommended that all manufacturers, distributors and users of FIBCs confirm that their process is adequate for each FIBC application.

4. Marking and Labelling FIBC

How should FIBCs be marked?

According to norm EN ISO 21898:2005 FIBC should bear a durable marking (either in the form of a label or printed 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 and legibly (minimum 12mm print size) marked as follows, (see example):

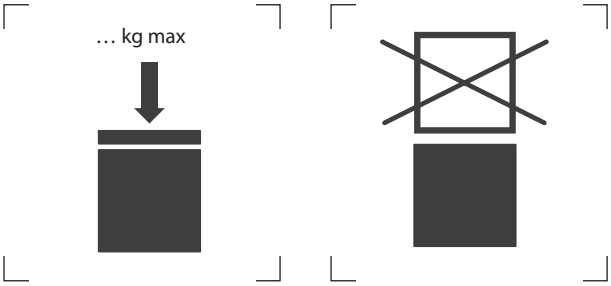
u

n 13H1/Y/02.11/D/PA-03/producer/301688/7200/1000

1 2 3 4 5 6 7 8 9 10

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 and 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 kg (in case of FIBC that are not designed for stacking, it should indicate "0")
10 maximum gross mass in kg (FIBC plus content)

In addition, according to ADR 2009 (section 6.5.2.2.2), the maximum permitted stacking load shall be displayed as a symbol on FIBCs intended for dangerous goods (see figure 1). The mass marked above the symbol shall not exceed the load imposed during the design test divided by 1.8.



FIBCs capable of being stacked | FIBCs NOT capable of being stacked

Figure 1: Stacking symbols according to ADR 2009

What is meant by "SWL"?

SWL or Safe Working Load is the amount of load, (in pounds or kilograms), which a bag is designed to carry. The design of the FIBC and the sewing method used, combine with the strength of the fabric to determine the Safe Working Load. This SWL is printed on the manufacturing label.

5. Filling and Discharging FIBC

What filling and discharging design options are available for FIBCs?

Common filling design options include an open top, duffle top, conical top or a spout top. Discharging/bottom design options include a duffle bottom, conical bottom or a flat bottom. The filling and discharging design options selected are going to be dictated by a number of factors including:

- Filling Method (i.e conveyer, gravity, bulk bag filler)
- Where FIBC will be filled (clearance, electro static con-

cerns, flammable products, etc.)
- The FIBC filling equipment desired or currently used
- Desired fill or packaging rate
- Sizing restrictions / constraints
- Fill spout dimensions required
- Controlled discharge desired
- Discharge method (i.e. gravity, screw, conveyor, bottom cut, full dump)
- Where FIBC will be discharged (clearance, manual, electro static concerns, flammable products, etc.)
- Desired discharge rate
- Discharge spout dimensions required
- Handling preference: Existing hoist and trolly frame fork loaded frame

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. 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 filling height of the FIBC should be between 0.5 and 2 times the shortest horizontal dimension of the FIBC, typically
- the diameter for FIBC with a round base,
- the length of the shorter side for FIBC with a rectangular base.

Note: While filling or discharging a FIBC, an electrostatic charge may occur, which under certain circumstances can lead to an explosion.

How do I securely discharge FIBC?

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

Note: While filling or discharging a FIBC, an electrostatic charge may occur, which under certain circumstances can lead to an explosion.

6. Handling and Transport of FIBC

How is an FIBC handled?

FIBC's are commonly mechanically handled by one of the following means:
- **Lift Loops:** Loops are located at the corners of the FIBC. The loops are either sewn onto the body of the FIBC or they are sewn into the side seam. The size of the loop opening, the length of the ends and strength of the webbing can be customized depending on the handling needs and safe working load.
- **Stevedore Straps:** A belt or rope connecting either two adjacent lift loops, or all four loops, used for single point lifting.
- **Single Point Lift:** Created by extending the lift loop material or body fabric so it can be gathered at one point above the bag.
- **Sleeve Lift:** The tubular sleeves running along two opposite edges of the FIBC.

How do I safely lift FIBC?

Before lifting, please check your FIBC for transport damage. In general, FIBCs should be lifted according to the instructions given on the label. As a rule, the FIBC should be lifted and lowered symmetrically avoiding any abrupt or 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 FIBCs by steel wires, fibre ropes or similar devices. The loops of the FIBCs could tear due to such handling.
Several FIBCs can be lifted simultaneously – as long as this is technically feasible. The vertical position of the loops is crucial in this case.

What do I need to consider when handling FIBCs by forklift?

In order to avoid damage to the loops, the forks should be free from sharp edges and, if necessary, covered with suitable material. When driving FIBC hanging from a forklift, the vehicle is in danger of tipping over. As a precaution, the FIBC should be transported close to the pole at the lowest level possible and with the pole bent slightly backwards. The FIBC should be positioned on the forklift so that the wheels of the forklift do not damage the FIBC and the driver's view is not obstructed.

How do I safely transport FIBCs by truck or in a freight container?

When transporting FIBCs by truck or in a freight container, the cargo must be stowed in a safe and stable fashion. FIBCs must not be stowed next to cargo with sharp edges or rough surfaces which might harm the FIBCs. Legal regulations and recommendations for the transport must be followed.

7. Storage and Stacking of FIBC

How should I stack my FIBCs in storage?

Only stack FIBCs if they are designed to be stacked, you are sure of their stability and 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 tiered inwards forming a pyramid structure.
- **Supported Stacking:** Formed against two retaining walls of sufficient strength. The general rule is: the higher the stack, the more supporting walls are necessary.

Be sure to consider the special characteristics of the material filled in the FIBC before stacking to avoid undesired effects (e.g. compression). Please make sure that the FIBCs at the base are able to bear the pressure of those stacked upon them. If in doubt, please ask your supplier.

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

Are there additional precautions I need to take when storing FIBCs?

Always protect your FIBCs from the harmful effects of UV rays (sunlight) and inclement weather (rain, snow, etc.). Over time, exposure to UV rays and inclement weather will weaken the strength of a FIBC. Always try to store your empty 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. Storing empty or filled FIBCs outside is not recommended, but if you do, you should always cover them with some type of material that will prevent their exposure to UV rays and inclement weather. There is no

guarantee that FIBCs stored outside and unprotected from the UV rays and inclement weather will be safe to handle.

8. Safety

What is a Static Protective (Static Dissipative or Antistatic) FIBC?

A static protective FIBC is a bag that incorporates design features to protect against the hazards created by static electricity. An evaluation of the materials used, machinery, and process is required to determine the static discharge hazard and the level of static protection required.

A static dissipative FIBC is a type of static protective bulk bag made from fabric that allows static electricity to discharge safely. Static electricity may be dissipated to ground via conduction through a grounding cable, or may be dissipated into the atmosphere via a process called air ionization or corona, without the need for grounding.

The term "antistatic FIBC" is sometimes used as a synonym for static protective FIBC. It is also used to describe FIBC that offer some protection against static electrical hazards, but do not incorporate the charge dissipation mechanisms found in bulk bags that offer full static protection.

IMPORTANT NOTE! Always ensure that the FIBCs are tested and labeled in accordance with IEC 61340-4-4 Ed. 2.0 and that the type of static protective FIBC being used is appropriate for the flammable or explosive environment.

There are primarily three types of bags for controlling the static charge associated with some processes:

Type B

A type „B" bag is constructed from insulating fabric but has a breakdown voltage less than 6 kV. This provision prevents the risk of energetic propagating brush discharges which can ignite dust-air mixtures and flammable gases and solvent vapors. Type „B" bags may be used in the presence of the combustible dusts with MIE of greater than 3mJ but only in the absence of flammable vapors of gases. Type "B" bags are sometimes called antistatic bags, but it should be noted that type "B" only provide limited protection against static electricity and they do not provide any mechanism for dissipating static charge.

- Used safely to transport dry, combustible powders (MIE > 3 mJ)
- There are to be no flammable solvents or gases present around the bag
- DO NOT USE to transport flammable products (MIE < 3 mJ)

Type C

A type „C" bag is constructed from fabrics having interconnected conductive threads. The bag must be electrically grounded during filling and emptying.

- Used safely to transport flammable powders
- Used safely when flammable solvents or gases are present around the bag
- DO NOT USE when ground connection is not present or has become damaged

Type D

A type „D" bag is constructed from static protective fabric that includes interwoven static dissipative threads. Type D FIBC's do not require grounding.

- Used safely to transport flammable powders
- Used safely when flammable solvents or gases are present around the bag
- DO NOT USE when the surface is contaminated or coated with conductive products such as water or grease.

IMPORTANT NOTE! **Type A FIBC's are made from fabric or plastic sheet without any measures against the buildup of static electricity.**

Always check with your FIBC manufacturer that your static protective FIBC is fitted with the correct anti-static liner before handling. The chart below is only a general guideline. Always reference the current IEC standard for all of the requirements.

Inner liners and FIBC: combinations that are permissible and not permissible in hazardous explosive atmospheres

	INNER LINER		
FIBC	**Type L1**	**Type L2**	**Type L3**
TYPE B	Not Permissible	Permissible	Permissible
TYPE C	Permissible	Permissible	Not Permissible
TYPE D	Not Permissible	Permissible	Not Permissible

Can a FIBC be used for hazardous materials / dangerous goods?

Yes, if it is as an approved package for your particular product, the package and any components are compatible and the FIBC selected fully complies with all the requirements contained in the applicable regulatory code.

Regulatory Codes
United Nations Recommendations on the Transport of Dangerous Goods
International Maritime Dangerous Goods Code (IMDG)
European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)
Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID)
U.S. Department of Transportation's Title 49 CFR
Mexican Secretariat of Communications and Transportation's NOM-029-SCT2
Canadian General Standards Board CAN/CGSB-43.146

What has to be considered when filling dangerous goods?

When filling dangerous goods you need to ensure that no hazardous dust is dispersed into the environment which may endanger operator health. For better containment, it is recommended to use only dustproof FIBC type 13H2 or FIBC with an inner layer liner, such as type 13H3 or 13H4.

FIBCs intended to transport dangerous goods have successfully undergone a comprehensive design type test in accordance with the UN-Recommendations and the related legislations ADR/RID or IMDG and are manufactured and tested under a quality assurance program.

9. Repeated Use and End of Life

Can FIBCs be used more than once?

FIBCs should only be reused within a ‚Closed Loop' system. In a Closed Loop system the FIBC is cleaned, reconditioned and qualified for reuse to handle the same product in the same application for which the FIBC was originally designed. A Closed Loop system usually involves the cooperation of the manufacturer of the FIBC, the customer purchasing the FIBC and the end user of the FIBC.

To safely reuse FIBCs these guidelines should be followed:

1) Cleaning

a) Remove all foreign matter from the FIBC's interior.
b) Ensure statically held dust is less than 4 ounces total.
c) Replace liner if applicable.

2) Reconditioning

a) Replace web ties.
b) Replace labels and tickets critical to safe FIBC use.
c) Replace cordlocks if necessary.

3) Reasons for Rejecting a FIBC

a) Lift strap damage
b) Contamination
c) Damp, wet, mold
d) Wood splinters
e) Printing is smeared, faded or otherwise unreadable.

4) Tracking

a) The manufacturer should maintain a record of origin, product used in the FIBC and the quantity of uses or turns.

5) Testing

a) FIBCs should be randomly selected for top lift testing. The frequency and quantity shall be determined by the manufacturer and/or user based on their specific situation.
b) The top lift testing will be conducted per the latest version of the ISO 21898 standard.
c) Test results should be maintained by the manufacturer for a minimum of three years.

For safety reasons reconditioning of FIBC for the transport of dangerous goods is not recommended. Further, FIBC which contained hazardous material are not suitable for reconditioning.

How often and how long can I reuse FIBCs?

The life span of FIBCs depends on the usage and storage conditions but should normally not exceed two years from the date of manufacture. Only bags with a minimum safety factor of 6:1 are reusable. Before reuse, ensure that reusable FIBCs still meet the same requirements as before the first use. When examining FIBCs, control for both visible and non-visible damage which may have resulted from previous use and storage of the FIBC (e.g. UV damage).

The user bears the responsibility for the examination of the FIBC and the decision for repeated use. Single-trip FIBC must not be reused under any circumstances.

The FIBC label contains relevant information to help determine the reusability of your FIBC, e.g. safety factor, class of FIBC and date of manufacture.

Are FIBCs recyclable?

FIBCs are constructed out of polypropylene fabric and can be recycled. The raw material (polypropylene) can be mechanically processed without changing the chemical structure. The new material obtained through recycling can be used in diverse applications and replaces new granules. However, FIBCs with hazardous material contact must not be recycled.

Some portions of an FIBC might not be 100% recyclable and facilities specializing in recycled plastic may or may not require these items/parts to be separated.

FIBCs can also be used energetically, i.e. the energy content of the material they contain can be recovered through combustion.

What is the shelf-life of a FIBC?

As of this present date, there are no data, test reports, or studies determining the shelf life of an FIBC. Any recommendations in regards to the shelf life of an FIBC, are solely the responsibility of each company making such declarations. Variables such as UV inhibitor used, construction (fabric weight, thread, webbing, etc.), exposure to environmental hazards (UV, temperature and humidity), storage methods, handling methods and the contents of the FIBC can dramatically impact the shelf life of a FIBC. The best method for determining if a FIBC remains suitable for use is to conduct periodic performance testing (top lift, UV, etc.) on samples and compare the results to the results from the newly manufactured samples from same lot. Samples should continue to meet industry standards such as those set forth in ISO 21898.

10. Glossary of Additional Terms:

All industries have their own language and knowing how people refer to things will help you identify available options and communicate with supplier. Below are some more bulk bag/FIBC terms that you may encounter:

Approval Drawing – A drawing supplied by the plant for the prospective customer's review and approval, prior to production, in order to assure compliance with the customer's needs and expectations.

Bag Height – Height dimension of an FIBC measured from the top Seam to the Bottom Seam.

Belt Patch – A piece of fabric sewn either between the main fabric of the bag body and the Lift Belt, or on top of the Lift Belt, within the belt sewn portion, used to improve sift resistance and/or the safe working load (SWL).

Bias Strap or Tape – Made of multifilament yarns, (MFY), polyester or polypropylene, and used to tie inlet and outlet spouts. Also called a Web Tie or Tie Strap.

Body Fabric – Main Fabric used on the body of a u-panel, four panel or circular bag.

Bottom Fabric – The bottom material of a tubular or four panel bag.

Bottom Spout – Also called a Discharge Spout, used as an outlet to empty the contents of the FIBC.

Breathable Fabric/Bags – Uncoated or non-laminated fabric/bags.

Circular Woven Bag – Also called a tubular bag, it is made from fabric woven on a circular loom, which is then cut to the proper length for a specified bag height, thereby eliminating the vertical seams on each of the bag's sides.

Cone Top – A variation of an inlet, where the top is a pyramid-type to allow over filling of the bag. Also called a Conical Top.

Coated Fabric/Bags – Fabric or bag which is coated/laminated with polypropylene (PP) to reduce moisture intrusion or sifting of the contents. Also called Non-breathable or laminated fabric/bags.

Cord lock – A closure device to hold the rope or cord in place on the spout – typically used on the discharge of bags. They come in a variety of sizes and eliminate the need for hand tied knots.

Denier – The weight of yarn in grams per 9,000 meters.

Discharge Spout – Also called a Bottom Spout, used as an outlet to empty the contents of the FIBC.

Document Pouch – Typically made of either polyethylene or polypropylene, it is where shipping or identifying documents are usually placed. Also called a Pocket or Envelope.

Drawstring Closure – A type of spout construction similar in purpose as to a petal closure, but with the loop/string along the circumference of the closure.

Duffel Top – A type of FIBC top similar to a duffel bag whose inlet extends from the top seam and follows the bag's base dimensions. Also known as a skirt top

Extended Belt – A type of FIBC construction where the webbing extends around the bottom of the FIBC. This construction is not applicable for U-panel FIBC'S.

Fabric Mesh – The measure of the density of the fabric weave, measured as the number of yarns per inch in both the Warp and Weft directions. A typical construction is a 12×12 mesh.

Fabric Weight – The measure of the fabric weight in ounces per square yard or grams per 100 square centimeters. An example of a fabric weight is 6.5-ozs/sq. yd. Fabric weight is also reference in GSM or grams per square meter.

Fill Spout – Also called an inlet spout or top spout, used as the inlet for filling an FIBC. It is designed to fit the customer's filling chute during loading.

Filler Cord – Typically a polypropylene material used in manufacturing sift-resistant FIBC'S. A rope or braided yarn-like cord that is sewn into a seam to help prevent the escape of fine dusts and powders.

Full Open Discharge – A type of discharge whose outlet extends from the bottom seam and follows the bag's base dimensions. Also called a Full Open Dump.

Hem/Hemming – A fold and sew, or glue operation, which prevents fraying of cut fabric and will add lift strength and seam strength to each bag. This also provides a clean finish to the FIBC. It may be either towards the inside or outside of the bag. Hemming can be used to achieve desired FIBC dimensions.

Lay Flat Width – The width of tubular fabric if stretched or laid flat from edge to edge. A 14" diameter Fill spout would have a lay flat width of 22".

Loop Height – When laid flat the measurement from top of bag to apex of loop.

Main Fabric – U panel of a U panel style bag.

MFY – Multi-filament yarns, used in the weaving of bias tape/straps and lift belts. May be constructed of polypropylene or polyester threads.

Multi-Trip FIBC's – Bags designed in accordance with ISO 21898 for multiple trips.

Perimeter Belt or Band – Bias tape/strap sewn around the top seam as a reinforcement or identifying mark. Also known as Safety Belt.

Petal Closure – A four-petal like spout construction used to hold in the spout during transport.

Petal-Type Patch – A type of petal closure that is separate from the bottom fabric used to hold in and protect the spout during transport. Also referred to as reinforcement square.

Polyester – A type of polymer often used in producing monofilament multifilament yarns and threads. It is typically not easy to recycle with a polypropylene FIBC, since the polymers are virtually incompatible.

Polypropylene – A type of polymer used in producing monofilament and multifilament yams and threads.

Port Hole – A type of outlet construction without a spout. The hole cut is reinforced with bias tape/strap.

Production Drawings – A set of documents prepared by the manufacturer which contains the detailed description of an FIBC's dimensions, features, components and special instructions as approved by the customer.

Reinforced Section – Section of the FIBC where the lift belt is sewn onto the fabric. This section of fabric has additional Warp yarns, which contributes to the strength of the bag. It is also called a Tramline.

Remote Open Discharge (R.O.D.) – A type of outlet that has provisions for discharge of material without an operator reaching under the bag to open the spouts.

Safety Factor – It is an industry standard requiring the FIBC to handle five or six times its Safe Working Load, (SWL), normally written as a ratio, "5:1 or 6:1 SF".

Sanitary Flap – A bottom diaper that protects the entire bottom surface of the bag for cleanliness and wearing. May also be referred to as a protective bottom.

Seam – A sew line made by the attachment/assembly of two or more components.

Side Panel – A fabric component of a sewn bag style of construction. This can be either two pieces attached to the U-Panel, or four pieces, which form the Four Panel bag.

Single Trip Bag – An FIBC designed in accordance with ISO 21898. For one time use.

Spout Cover – Also called a petal cover, it is a piece of fabric sewn between the spout and the petal closure used to hold in/protect the spout.

Spout Diameter – A dimension of the spout measured across the circular opening.

Spout Height – Height dimension or length of the spout measured from its point of attachment on the top/bottom fabric to its free end.

Stitches per Inch – A sewing specification requiring "X" number of stitches per inch.

Top Fabric – The top fabric used on a FIBC.

Volume – The size, or amount of material, an FIBC can hold. It is generally measured in Cubic Feet.

Warp – Yarn or tape in a fabric, oriented perpendicular to the Weft yarn during weaving. This would go from top to bottom in the body fabric. Also identified as the yarn in the "machine direction".

Web Tie – Made of multifilament yarns, polyester or polypropylene and used to tie the inlets and outlets. Also called a Bias Strap, Tape, or Spout Ties.

Weft – Yarn or tape in a fabric, orientated perpendicular to the Warp yarn during weaving. This would go from left to right in the body fabric. This is identified as the yarns placed by the bobbins of the looms.

Yarn/Tape – Extruded PP sheet slit and stretched to form part of the woven fabric for the FIBC.