



Technologies  
For Logistics (PTY) LTD

Grow Your Business Trade  
Turnover, Increase Your  
Margins, Resolve Logistics  
Challenges and Positively  
Impact the Environment  
with...

# Flexible Bulk Container

FBC-14-10





## About us

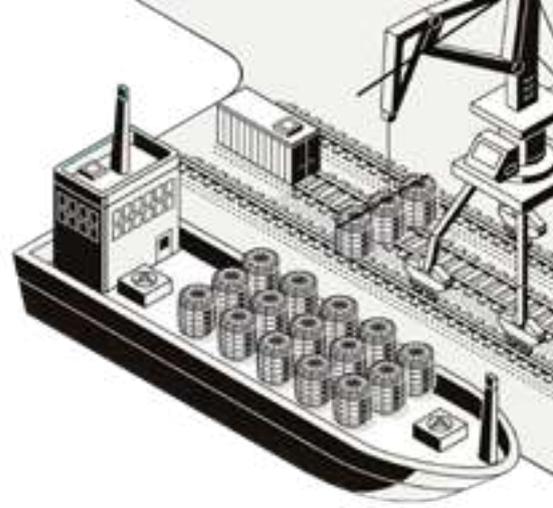
We produce unique reusable flexible containers for bulk materials with a lifting capacity of up to 14 tons. Our clients are the largest global manufacturers, traders, logistics companies and carriers who save up to 50% on transportation, transshipment and warehousing with the help of our containers. The reliability, safety and intermodality of our containers are confirmed by appropriate certificates.

We have already transported more than 30 million tons of cargo and our containers are successfully used in various modes of transport. Important advantages of FBCs are water resistance, convenience of storage, the possibility of transporting hazardous materials and ease of transition from other types of logistics solutions.



# Unlocking value for our clients

The Flexible Bulk Container (e.g. [FBC-14-10](#), [FBC](#)) offers numerous advantages over conventional methods of transporting and handling bulk cargo. This unique product empowers our clients to boost sales, expand into new markets, enhance logistics efficiency, and optimize both operational costs and capital expenditures.



## Measurable Economic Benefits

- FBC enables a client to achieve up to a 50% acceleration in freight transportation, minimizes losses during transport and handling, and...
- ...delivers an economic profit of up to \$5.0 per ton of freight to a bulk materials producer or trader.



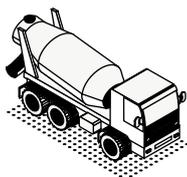
## Access to New Markets

- Due to the additional margin delta typically recovered by a client when integrating FBC into its logistical chain, your company can significantly boost cargo throughput, and efficiently transport products to previously inaccessible geographic markets.



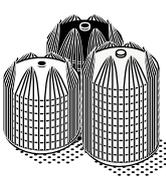
## Freedom From Infrastructure Bottlenecks

- FBCs are stackable up to 4x levels, no covered warehouses or special storage infrastructure is required.
- FBC is transportable on flat auto- and rail platforms, ships, and transport aviation.



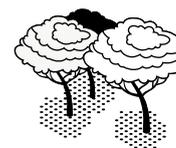
## Reduced Dependence on Specialized Transport

- FBC minimizes the reliance on specialized transport, such as cement trucks or vehicles for transporting hazardous materials (sulfur, chemical salts, sodium, etc.), as well as specialized freight solutions for sensitive goods like food (grains, seeds, sugar, etc.).



## Distinctive Technological Advantages

- Volume Capacity: 6.5 m<sup>3</sup> & 12.5 m<sup>3</sup>, Load Capacity: up to 14 tons per each FBC.
- Lifespan: Up to 10 years and reusable up to 1000 times.
- IP65: dust tight, protected from light pressure water jets and liquids from any angle.



## Environmentally Friendly and Enhancing Corporate ESG Scores

- Reusable FBC is optimal for hydrophobic cargo, optimal for circular economy.
- UN-recommended for transporting hazardous goods, significantly reduces waste compared to the environmental impact of common 1,5-ton jumbo bags.

# We Addressed Unique Challenges of Our Clients and Helped Some of Them Reduce Logistics Costs by up to 50%



CLIENT:

## Belarusian Potash Company

OUR SOLUTION:

Transportation of potash fertilizers in 14-ton FBCs by railroad. A new logistics framework was developed due to limitations of the previous one. The FBCs with potash are shipped to a port and then potash is unloaded into ships. Client chose us because FBC total cost of ownership proved to be 50% less than jumbo bags.



CLIENT:

## BASF

(end users are offshore oil projects)

OUR SOLUTION:

We have been assisting BASF in the transportation of a specialized cement concentrate (MBS) using FBCs, carefully preserving this expensive formula. Our service contract encompasses on-shore loading of cement at BASF's premises, followed by the safe transportation of MBS in our FBCs and the precise unloading of cement at offshore oil projects.



CLIENT:

## RUSAL

OUR SOLUTION:

We are grateful to RUSAL for entrusting us with the transportation of alumina for the past 20 years. This trust has allowed us to deliver a reliable and efficient service tailored to meet RUSAL's specific needs. RUSAL has recognized the reliability of our FBCs and made them part of the company's ESG framework.



CLIENT:

## Polymetal

OUR SOLUTION:

Polymetal has adopted our FBC for the transportation of flotation concentrate. Our solution involves multimodal transportation, with different modes utilized during winter and summer. Importantly, our loading, accumulation, and unloading methods remain consistent throughout the year.



CLIENT:

## CemRoss

(former EuroCement group)

OUR SOLUTION:

We addressed the client's need for river vessel transportation by developing special moisture-protected FBCs. Our solution helped the client to enter into four new regions, and also optimized its cost structure. This optimization allowed the client to adjust cement prices, resulting in increased sales volume. As a result, the client has achieved a significant increase sales volume.



CLIENT:

## STG

(international conglomerate)

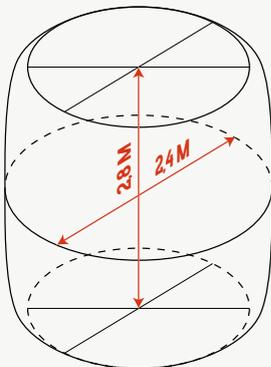
OUR SOLUTION:

We have delivered a turn-key solution for the transportation of mineral fertilizers to this client. This project posed unique challenges, including the complete absence of infrastructure at both the desert mining site and the shipping port. To overcome these challenges, we designed a logistics chain centered around the use of FBCs and successfully implemented it.



## Our Clients Have Chosen Us Because We Address Client's Business Needs

- Up to 2x savings in Total Costs of Ownership per ton of freight;
- Accelerated loading and unloading operations – up 50% more cargo can be handled with FBC as compared to a 2.5-ton jumbo bag;
- On average 4 minutes to unload cargo from flexible containers (e.g. freight train cars);
- Can be stored anywhere and stacked up to 4x levels;
- Store bulk items in a container for up to 90 days;
- Can be used in the temperature range from +60°C to -50°C;
- Multimodality: compatible with all common freight platforms;
- Environmentally conscious and sustainable, reusable, lifespan up to 10 years;
- IP65: it is dust tight (no ingress of dust) and waterproof.



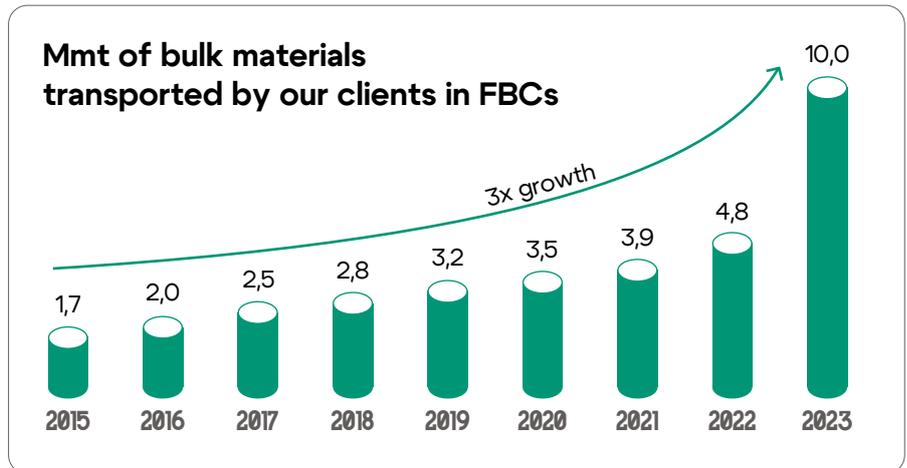
### Unique Features of FBC

- Life span: up to 10 years, a flexible container may be used up to 1000 times
- Volume capacity 12.5 m<sup>3</sup>
- Load capacity up to 14-tons per container
- Recommended and certified by the UN
- ESG-Compatible Material: Rubberized Polypropylene

# Our Clients Have Tripled Their Demand for Our Product in the Past Five Years

Our clients are from the EU, the MENA region and the CIS, they are bulk materials producers, traders of bulk materials, and logistics companies who benefit from a substantial reduction in transport, handling, and storage costs.

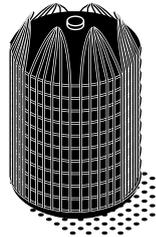
Over the last 5 years, our flexible, reusable containers for bulk goods have facilitated the transport of over 30 million tons of cargo across various transportation modes and countries.



## Our FBCs Were Adapted to Serve Critical Needs of Customers from Various Industries

Industrial and chemical materials

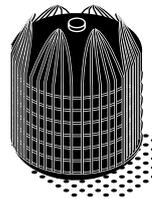
FBC-14-10



Ø 2.45    ↕2,8

Industrial and chemical materials with high density

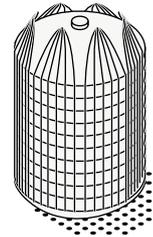
FBC-14-10Y



Ø 2.45    ↕1,4

Agricultural products

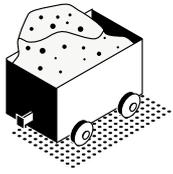
FBC-14-10PP



Ø 2.45    ↕2,8

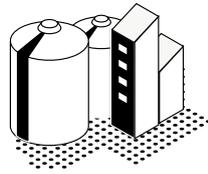
<b>Design</b>	Reusable Multipurpose Flexible Container for Bulk Materials and Aggregates		
<b>Cargo load</b>	14 metric tons		
<b>Safety factor</b>	8:1		
<b>Weight per unit</b>	75 kg	55 kg	42 kg
<b>Tare volume</b>	0.3 – 0.33 m <sup>3</sup>	0.28 m <sup>3</sup>	0.24 – 0.63 m <sup>3</sup>
<b>Loading capacity</b>	13 m <sup>3</sup>	6.5 m <sup>3</sup>	13 m <sup>3</sup>
<b>Inner liner</b>	Rubberized PES	Rubberized PES	Polypropylene
<b>Water resistant</b>	Yes	Yes	no
<b>Dangerous goods</b>	UN certified	UN certified	N/A
<b>Stackable (levels)</b>	4	4	4

# We Take Great Satisfaction in Providing Our Clients with the Opportunity to Ship a Diverse Range of Goods



## Raw materials

- Phosphorus;
- Potassium;
- Apatite;
- Metal ores and concentrates;
- Quartz sand, limestone, etc.



## Industrial cargo

- Cement, clinker, soot, GGFBS,
- Sulfur;
- Industrial salts;
- Complex fertilizers;
- Sodium carbonate and bicarbonate;
- Aluminum oxide.



## Agricultural products

- Grains;
- Raw sugar;
- Feed additives;
- Flour, starch;
- Biofuel (pellets, briquettes);
- Gravel, peat;
- Charcoal.

## FBC Demonstrates Overwhelming Efficiency Compared to Traditional Jumbo Bags

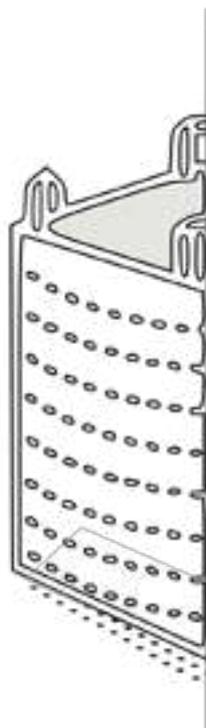
### Common 2.5-ton jumbo-bag

14 tons loading  
35 minutes

14 tons unloading  
10 minutes

Total Cost Ownership per ton \*  
\$10

Capex per ton  
\$4.7



### Patented & Multipurpose FBC-14-10

14 tons loading  
5 minutes

29 minutes  
faster

14 tons loading  
5 minutes

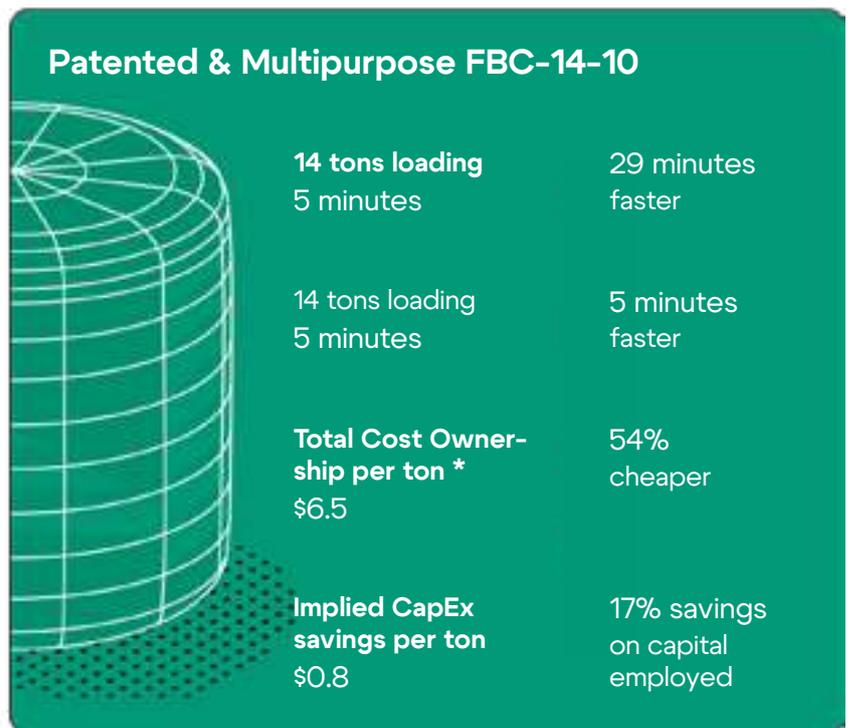
5 minutes  
faster

Total Cost Ownership per ton \*  
\$6.5

54%  
cheaper

Implied CapEx  
savings per ton  
\$0.8

17% savings  
on capital  
employed



\* Total Cost Ownership includes full container's cost and service

# Distinctive Excellence in Handling Bulk Cargo\*



Loading cargo into FBC  
**up to 3 000 tons/  
working shift**



Unloading cargo from FBC  
**up to 6 000 tons/  
working shift**



Loading/unloading 1 FBC  
on a railcar/auto platform  
**3 minutes**



Transshipment of cargo to spe-  
cialized transport (e.g. cement  
truck)  
**7 minutes**



Loading FBC onto the vessel,  
unloading onto the pier  
**up to 5 000 tons/  
working shift**



Unloading bulk cargo from  
the vessel into the FBC  
**up to 3 000 tons/  
working shift**



Loading and unloading 1 rail-  
car with filled FBC  
**20 minutes**

\* These operational metrics are derived from real-time client cases, wherein flexible bulk containers sometimes operated under 11-hour working shifts as per clients' requests.

\*\* The above figures are not calculated generally, each of the parameters requires clarification during the pilot project and test operation



## FBC Can Serve As...



### ...a Solution for Warehousing and Storage of Bulk Goods

We empower our clients to make a conscious choice between investing in a silo for bulk product storage or opting for FBC as a substitute solution, the latter typically saving up to 50% of clients' investment capital as compared to investment in a silo; FBC is well suited for open yard storage and in this case is 5-7x more capital efficient\* as compared to a covered warehouse

As a storage solution, FBC stands out for the following advantages:

- Quick setup;
- Stackable up to 4 tiers;
- Eligible for the storage of bulk goods for up to 90 days;
- Streamlines loading operations from an FBC storage into freight transport;
- Can be organized in the area beyond the port's territory, offering a cost-effective solution.

\* Was calculated for a client's case in Tansania and Kenya: warehouse rent is \$5 per sq.m. per month vs open yard ~\$0,8 per sq.m. per month



### ...a Versatile Multimodal Logistics Solution

Our clients overcome bottlenecks in the logistics chain by enabling the transportation of their goods shipped within FBC-14-10n various platforms, including flat auto- and rail platforms, ships, and transport aviation, adhering to the principles of logistical multimodality.

- Forklift
- Transport for Bulk Material
- Cargo Ship
- Auto Platform
- Storage
- Railway Cart

## Plug & Play: Adaptable to Existing Freight Loading Infrastructure

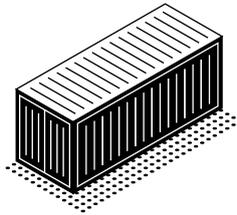
Cranes with lifting capacity of 16-32 tons and higher, or Heavy-Duty Forklifts.



Compatible with storage silos, port hoppers, and ready for standard means of transportation.

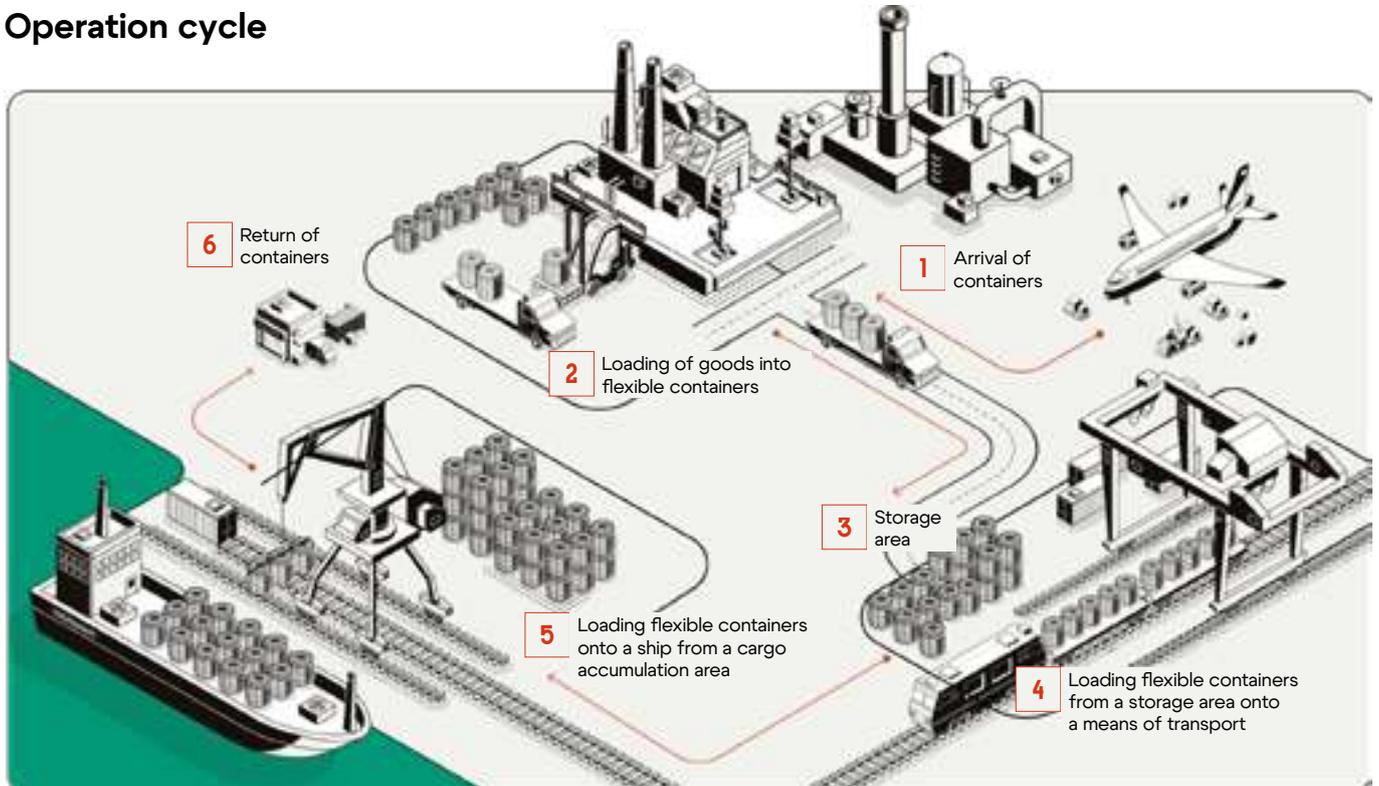


# FBC is **Easy to Handle** Even by **Untrained** Personnel

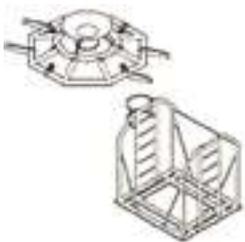


It takes one standard 40ft metal container to transport up to 250 folded FBCs back to a client loading facilities.

## Operation cycle

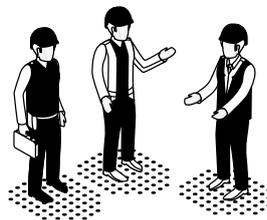


## **Minimal Operational Costs** and **Capital Investments** are Required to Start Operations with FBC



### Bootstrap node

Traverse, cassette, basket.



### Personnel

Three people per bootstrap node – a slinger, an operator, and a foreman.



### Crane

Recommended lifting capacity 16-32 tons, gantry manipulators or truck mounted manipulators



## ESG Compliance and Support for Environmental Goals

The utilization of reusable FBC containers for bulk materials transport, as opposed to single-use big bags, showcases significant environmental advantages.

Research indicates that transitioning to reusable packaging can lead to a reduction in waste by up to 40% per ton of cargo transported. This is especially crucial considering the annual global production of plastic waste exceeding 300 million tons.

Furthermore, the adoption of reusable containers contributes to the reduction of greenhouse gas emissions and aids in achieving NET Zero targets for bulk material producers.

Another favorable aspect is the decrease in environmental contamination, achieved by preventing toxic spills or dusting of bulk materials when employing FBC, particularly in the context of bulk transportation and loading at ports. This approach saves natural resources and also minimizes adverse impacts on ecosystems

and biodiversity in the vicinity of discharge sites.

It is evident that FBCs are well-suited to be part of the ESG and circular economy playbook. FBCs are reusable, recommended by the UN for transporting hazardous materials, contribute to mitigating product loss during transportation, serve as a sustainable alternative to one-use jumbo bags, and help reduce dust emissions from bulk material conveyors when used as a primary or auxiliary logistics solution in ports.

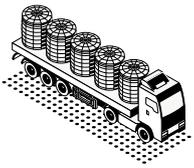
## Among Our Clients

- Manufacturers of bulk materials – cement, fly ash, fertilisers, sodium (bi) carbonate, industrial salts, alumina, wood pellets, etc.
- Traders
- Logistics and transport companies
- Ports and logistics hubs
- Mining companies and carriers

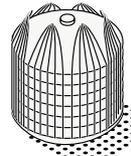
## Services and Co-operation Options

- Long-term rental of soft containers
- Sale of soft containers
- Leasing of FBCs
- Services for transporting, transshipment and storage of bulk materials in soft containers
- Service maintenance of soft containers

## It Takes a Client **Just Several Weeks** to Integrate FBC into it's Logistic Framework



**Client** — bulk materials manufacturer or large logistic company with its own means of transportation (ships, wagons). Provides site and volumes of bulk cargo transportation



**Innovations in Logistics** may act as a contractor for bulk cargo transportation services, con firming patents and certificates issued by organizations such as the UN an LLoyd's, and fulfilling service commitments.

### Typical process

	TIME	STAGE	RESULT
6 weeks		<b>Netogiations</b>	
	1 week	<b>Questionnaire, calcullations</b>	Economic model
	3 weeks	<b>Pilot projects, tests</b>	Trial loading and technical analysis of the site
	2 weeks	<b>Signing up a contract</b>	Signed agreement
	up to 7 weeks	<b>Fully operational</b>	Smooth integration of FBCs into a client's business processes



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## Contact Us

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▶ Video

