

Safety Innovations Through Industry Engagement

Multi-Purpose Offshore Bulk Lifter
27 November 2023



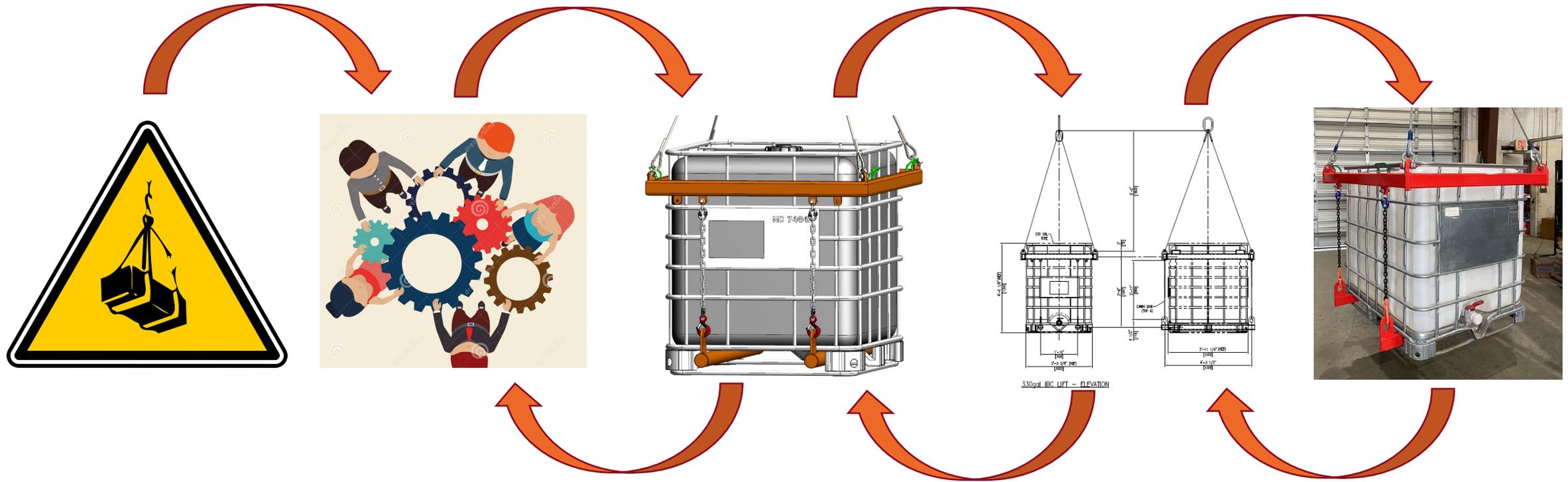
The offshore workforce is our R&D team.

Leveraging years of friendships in the industry to partner in product development.



DESIGN PROCESS EMPLOYED

How do we get from a problem to a product?



Hazard Defined

Iterative process involving the field

3D concept design created for review

2D construction drawings with calcs

Prototype build for field testing

INDUSTRY CHALLENGES

IBC Containers are gaining popularity offshore without safe lifters



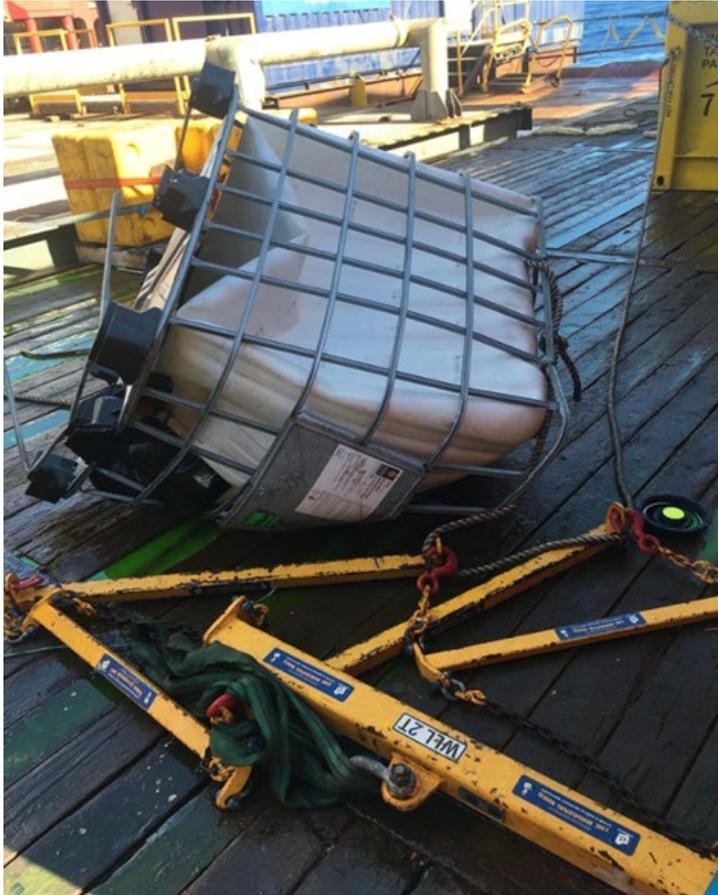
Intermediate Bulk Container “IBC”



Flexible Intermediate Bulk Container “FIBC”

INDUSTRY CHALLENGES

IBC Containers are gaining popularity offshore without safe lifters



INDUSTRY CHALLENGES

Super Sacks / Big Bags are being dropped too often!

Photos:



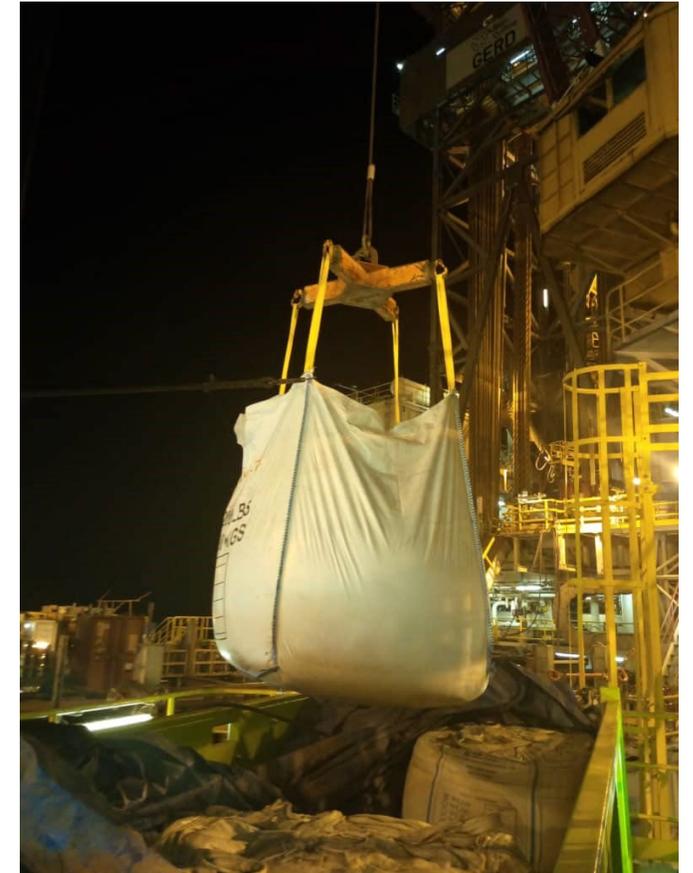
Figure 1: Lifting Arrangement



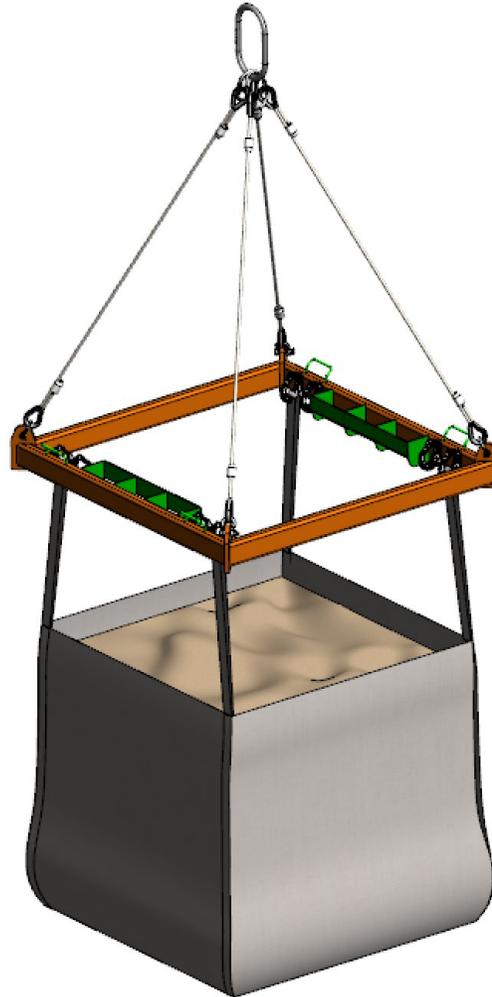
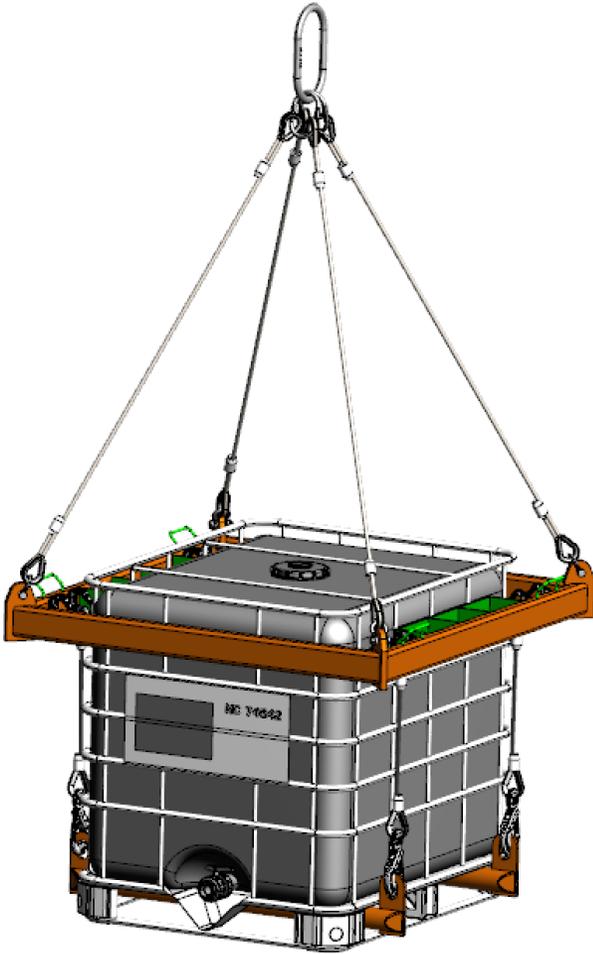
Figure 2: Failed Lifting Point



Figure 3: Damage to ACU



IBC / FIBC Combination Offshore Lifter



Safety Features:

- Two designs available:
 - DNV 2.7-3
 - AMSE B30.20
- Lateral load protection
- 4-leg sling to engineered padeyes
- Safe hand placement
- Easy hooks to attach lift bars
- Full load containment

BPC PRODUCTS

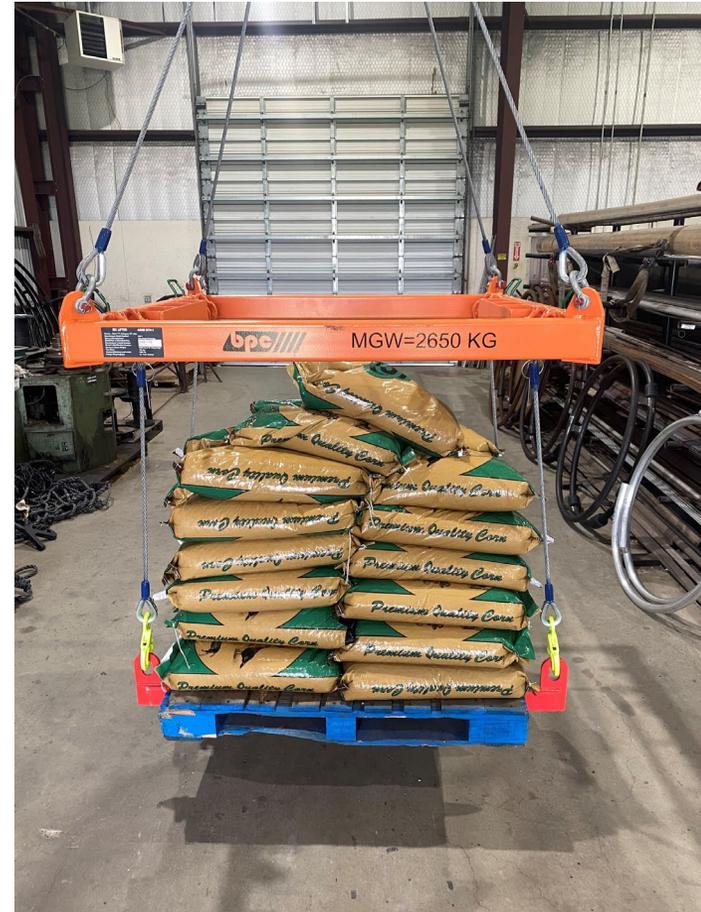
Multi-Purpose Offshore Bulk Lifter (Patent Pending)



IBC "Tote" Mode

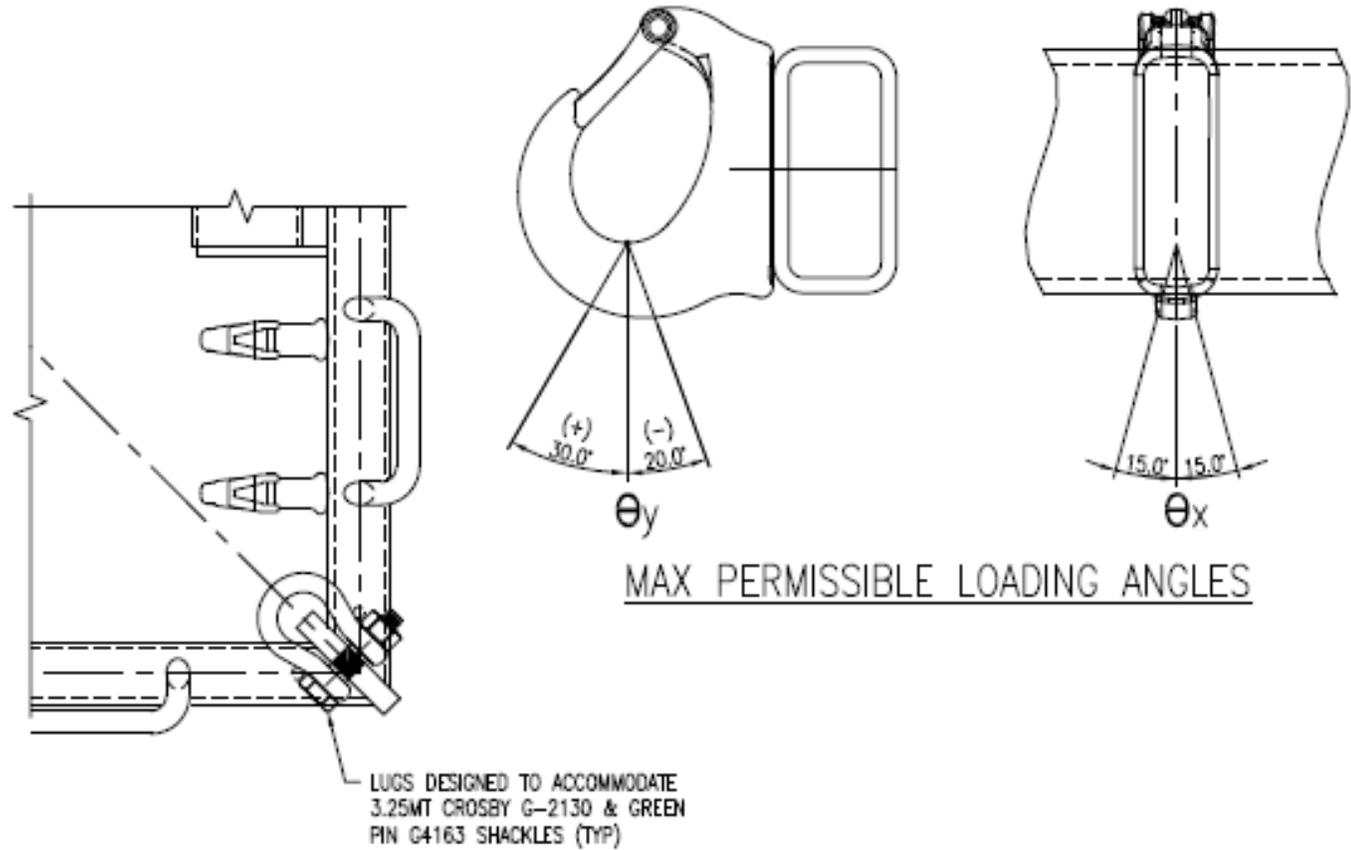


FIBC Mode



Pallet Mode

3MT Weld-on Excavator Hooks provide maximum versatility



BPC PRODUCTS

IBC Lifting Options (Patent Pending)



IBC Lifting with Pallet Bars



IBC Lifting with Polyester Slings

IBC LIFTER FIELD TRAILS

IBC Lifting: Key Takeaways

- During field testing rig preferred use of the Soft Slings over the Pallet Bar for IBC lifts
- It became very clear many IBCs were damaged and could not accommodate the pallet bars
- Soft Slings proved easy to insert and enabled lifts in tight spaces
- Soft Slings also eliminated majority of basket entries when backloading as slings could be removed from outside the basket



BPC PRODUCTS

Multi-purpose Offshore Bulk Lifter

FIBC Mode with Cargo Net:



Cargo Net protecting Super Sack (vimeo.com)



FIBC Lifting with Cargo Net for Dropped Object Protection



IBC LIFTER FIELD TRAILS

FIBC Lifting: Cargo Net designed for Mixing Hopper

- A recent bag drop incident is forcing the rig to examine use of a net while lifting the FIBC over a mixing hopper
- This has resulted in the drilling contractor and BPC swapping details of various nets and hopper designs
- 18" square opening for sack slitters in hoppers
- This should enable the net to remain on the bag/lifter when lowered onto the hopper without damaging the net



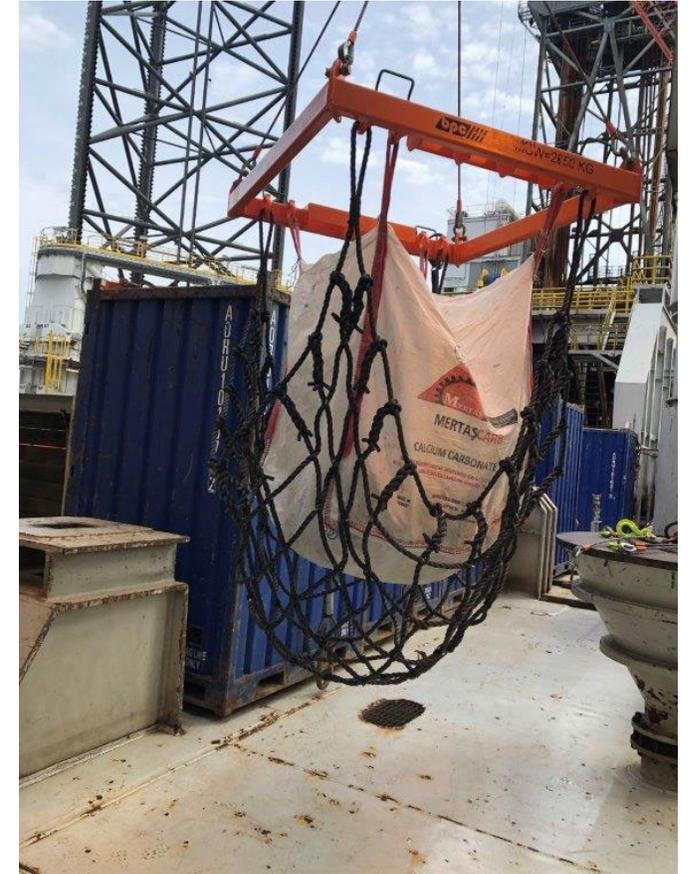
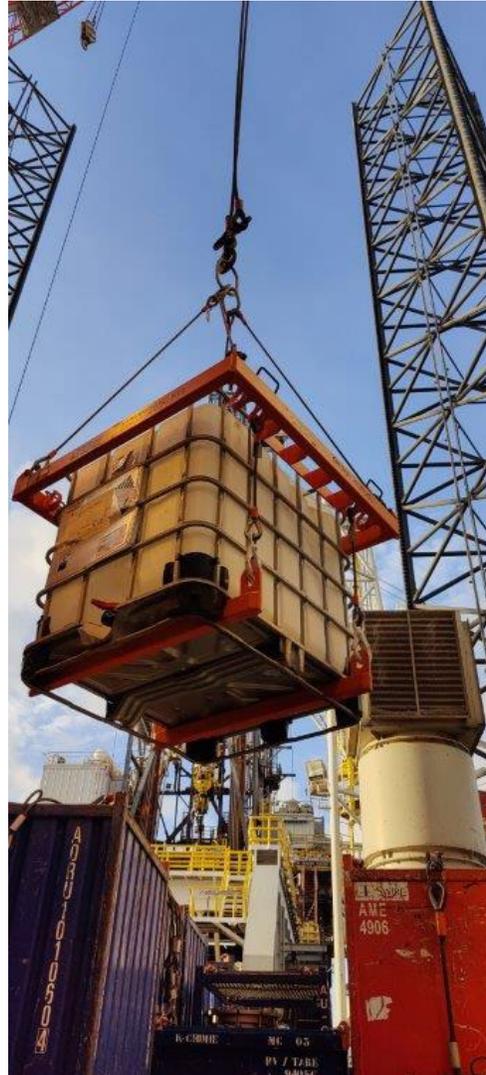
BPC PRODUCTS

Pallet Lifting with Cargo Net for Dropped Object Protection



BPC PRODUCTS

In the field since May 2023





Thank You

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