BILLY PUGH COMPANY

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IBC-1 RECOMMENDED PRACTICE AND INSPECTION

Multi-Purpose Offshore Bulk Lifter · BPC-RP-IBC1

TIER 2 · RECOMMENDED PRACTICE · GOVERNING DOCUMENT

Document no.	BPC-RP-IBC1	**Revision**	Rev. 1
Issue date	06-NOV-2026	**Status**	Controlled document
Document owner	Quality & Safety Coordinator	**Approved by**	Chief Operating Officer

This is the governing document for the use, inspection and maintenance of the Billy Pugh Multi-Purpose Offshore Bulk Lifter, model IBC-1. Where any other Billy Pugh document about the IBC-1 differs from this one, this one governs.



1. INTRODUCTION

1.1 Purpose

This recommended practice sets out safe lifting technique, inspection and maintenance for the Billy Pugh Company Multi-Purpose Offshore Bulk Lifter, model IBC-1.

1.2 Scope

It applies to equipment owners and end users who lift Intermediate Bulk Containers (IBCs), Flexible Intermediate Bulk Containers (FIBCs) and palleted loads with the IBC-1, in its three modes:

- IBC, or tote mode;
- FIBC mode;
- pallet mode.

1.3 Responsibilities

The equipment owner is responsible for applying this recommended practice within its organization. This document is guidance; it does not replace the lifting regulations, the vessel or installation permit-to-work

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system, or the instructions of the crane operator in charge of the lift. Equipment owners are encouraged to adopt procedures that meet or exceed it.

2. ACRONYMS, DEFINITIONS AND REFERENCES

2.1 Acronyms

Acronym	Meaning
ABS	American Bureau of Shipping
BPC	Billy Pugh Company, LLC
FIBC	Flexible Intermediate Bulk Container
IBC	Intermediate Bulk Container
JSA	Job safety analysis
MGW	Maximum gross weight
NDT	Non-destructive testing
OEM	Original equipment manufacturer
WLL	Working load limit

2.2 Definitions

Composite IBC. Closed shipping vessels with a liquid capacity from 450 to 3,000 L (119 to 793 gallons), consisting of a rigid outer casing enclosing a plastic inner receptacle, together with any service or structural equipment, which once assembled form and are used as a single integrated unit (UN Recommendations on the Transport of Dangerous Goods, Chapter 6.5).

Flexible IBC (FIBC). A body of film, woven fabric or other flexible material, or a combination of these, with an inner coating or liner where necessary, together with any service equipment and handling devices (same source).

Maximum gross weight. The working load limit plus the weight of the lifter and its upper rigging: the load the IBC-1 places on the crane.



Typical composite IBC.



Typical flexible IBC.

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2.3 Design standards

Standard	Applied to
ASME BTH-1-2020	Design of Below-the-Hook Lifting Devices. The IBC-1 is designed, manufactured, inspected and tested to this standard as a Service Class 1, Category B lifter.
ASME B30.20	Below-the-Hook Lifting Devices. The safety standard the inspection intervals in section 6 follow.

BTH-1 is the design standard and B30.20 is the safety and inspection standard. They are separate documents and are not interchangeable.

2.4 Third-party approval

The IBC-1 holds American Bureau of Shipping Confirmation of Product Type Approval as loose gear, lifting frame, for offshore on-board lifting, under Product Design Assessment 24-2511006-PDA, with a current Manufacturing Assessment and Product Quality Assurance. The design basis assessed by ABS is ASME BTH-1-2020. A type approval covers the design and manufacture of the product; to confirm the approval scope or certification of a specific unit, contact bpc@billypugh.com quoting the model and serial number.

2.5 References

- 22-009-SD-72-003, Multi-Purpose Offshore Bulk Lifter, general arrangement drawing.
- 22-009-SD-72-004, Multi-Purpose Offshore Bulk Lifter, fabrication details.
- 22-009-SC-50-002, Structural calculations.
- PES014-369-REP-001, Lifting sling set qualification.
- ABS Confirmation of Product Type Approval, model IBC-1, 24-2511006-PDA.

3. PRODUCT

3.1 Description

The IBC-1 answers a need in offshore oil and gas for a more robust and certified way of lifting IBCs, FIBCs and pallets. It consists of an upper lifting frame from which the load is suspended, lifted from a sling set attached at the corners of the frame. It is designed for:

- composite IBCs of 275 gallon (1,040 L) and 330 gallon (1,250 L);
- FIBCs with a footprint from 30 in. x 30 in. to 48 in. x 48 in. (height matters only in determining overall mass);
- pallets of 40 in. x 48 in. and 48 in. x 48 in.

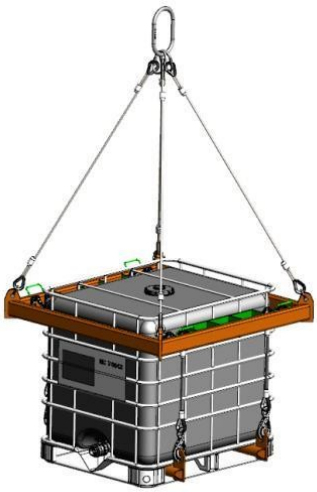
3.2 Ratings

Item	Detail
Working load limit	2,500 kg (5,512 lb), IBC and FIBC modes
Working load limit, pallet mode	2,268 kg (5,000 lb), reduced by the greater length of the pallet lifting bars
Maximum gross weight	2,651 kg (5,846 lb), WLL plus lifter and upper rigging; use for crane capacity
Pallet lifting bar	1,250 kg working load limit each
Operating temperature range	0 °C to 50 °C (32 °F to 122 °F)
Recommended soft sling	3 in. wide, 3-ply polyester with a Cordura cover for chafe protection

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Caution. The working load limit in pallet mode is 2,268 kg (5,000 lb), not 2,500 kg. Rig to the lower figure whenever the pallet lifting bars are fitted.



Lifter in tote mode.



Lifter in FIBC mode.

3.3 Safety features

Green handles. Billy Pugh Company recommends a policy of no hands on loads. Push-pull poles or tag lines are used to control and position a load. Where final positioning requires someone to touch the lifter, it is done as a last resort, with the load at the lowest position possible, and never where it places a person in a compromising position. The upper frame carries eight handles on its top surface, colored green for quick identification, giving a safe place to grasp the lifter without risk of a pinching injury.

Internal tote bumper. The upper frame carries an internal bumper that centers the tote in the frame. It is made of pipe, so the radiused surface eases the frame on and off the tote frame, and it gives a safe hand position for fitting the lifting slings or straps into the excavator hooks.

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Green handles on the upper frame.

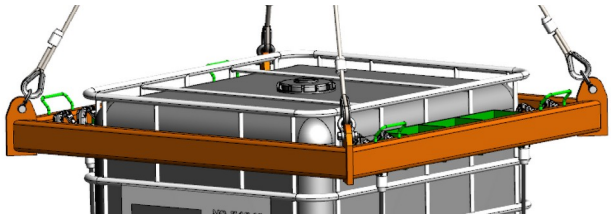


Radiused internal bumper and hook pocket.

4. LIFTING MODES

4.1 IBC tote mode

In tote mode the upper frame is lowered over the IBC so that it fully encapsulates the tote. This prevents lateral loads, common when transporting sloshing fluids, from overturning the IBC.



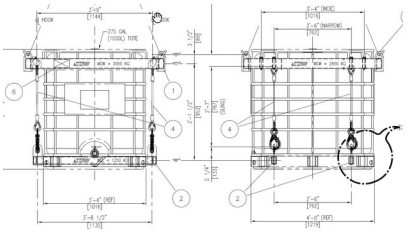
Upper frame encapsulating the IBC tote.

4.2 Lifting with pallet bars

Pallet bars are inserted into the forklift pockets in the base of the tote, and four vertical slings are suspended from the weld-on excavator hooks integrated into the upper frame. A single set of vertical slings of the specified length encapsulates both 275 gallon and 330 gallon totes. Refer to drawing 22-009-SD-72-003 for the tote lifting configuration.

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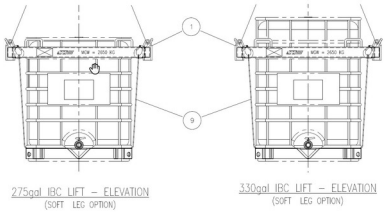
Tote lifted on pallet bars — general arrangement.



Tote lifted on pallet bars.

4.3 Lifting with soft slings

Two polyester soft slings may be used in a basket configuration instead of pallet bars. The sling eyes are suspended from the weld-on excavator hooks and the slings run underneath the tote through the forklift pockets. This configuration is useful where the frame of a tote is damaged and pallet bars will not enter the forklift pockets, which is common offshore, and where a tote sits in a container or a tight space with no room to introduce a bar.



275 gallon and 330 gallon tote lifts, soft sling option.



3 in. 3-ply polyester sling, 12,300 lbs. capacity in basket configuration.

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Tote lifted on soft straps.

4.4 FIBC mode

In FIBC mode the frame carries a cargo net that surrounds and contains the bag in transit. If a bag handle fails, the FIBC slumps into the net rather than falling: this is the dropped object protection the mode exists to provide. Examine every FIBC before lifting (section 5.2).



FIBC contained in a cargo net.



Bag handle on the weld-on excavator hook.

4.5 Spacer slings and pull angle

Bag handles may be affixed directly to the weld-on excavator hooks, or the IBC vertical slings may be used as spacer slings. Spacer slings raise the frame above the load, accommodate odd bag shapes and reduce outward

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pull on the bag handles. The upper frame carries two sets of hanging hooks, one narrow and one wide: use the narrow set for smaller bags and the wide set for larger bags.



FIBC lifted using IBC spacer slings.



FIBC lifted using IBC spacer slings.

Keep outward pull on the FIBC straps to a minimum; inward pull is not normally a concern. The length of each lifting leg, being the FIBC handle and the IBC sling combined, must always be greater than the minimum length given on drawing 22-009-SD-72-003. This keeps the outward pull angle within 10 degrees.

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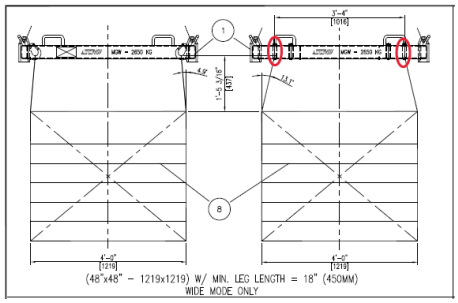
LIFT LEG LOADING FOR FIBC

FIBC SIZE (4)	HOOK SPACING	MIN LEG LENGTH	UPPER HOOK LOAD ANGLE		FIBC LEG			SUPPLEMENTAL SLING LENGTH	MIN LOOP LENGTH
			θx	θy	DROP	ANGLE (2)	LOAD AMPLIFICATION (3)		
		(IN / MM)	(DEG)	(DEG)	(MM)	(DEG)	x:1	(IN / MM)	(IN / MM)
48"x48"	WIDE	18 / 450	13.1	−4.9	437	76	1.03	31 / 768	N/A
45"x45"	WIDE	12 / 300	12.2	0.1	293	78	1.02	31 / 768	N/A
42"x42'	WIDE	10 / 250	5.9	8.9	246	79	1.02	31 / 768	N/A
39"x39"	WIDE	18 / 450	1.6	9.8	443	80	1.02	31 / 768	N/A
36"x36"	WIDE	28 / 700	4.2	9.5	689	80	1.02	31 / 768	N/A
36"x36"	NARROW	28 / 700	6.3	9.5	686	79	1.02	31 / 768	N/A
33"x33"	NARROW	36 / 900	2.5	9.8	886	80	1.02	31 / 768	5 / 127
30"x30"	NARROW	44 / 1100	0.0	10.0	1083	80	1.02	31 / 768	13 / 330

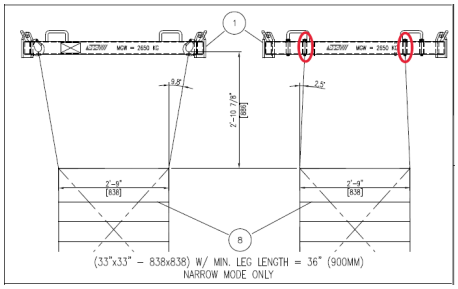
NOTE:
LIFT LEG LENGTH = FIBC LOOP LENGTH + LENGTH OF SUPPLEMENTAL SLING.

1. MINIMUM LIFT LEG LENGTH SELECTED TO ENSURE:
   - LEG ANGLE IS AT LEAST 60 DEG FROM HORIZONTAL
   - ANY LOADING ANGLES (θx OR θx) WHICH TEND TO PULL THE BAG OPEN ARE NO MORE THAN 10 DEG FROM VERTICAL.
   - −15 DEG < θx < 15 DEG LOAD ON HOOK
   - −20 DEG < θy < 30 DEG LOAD ON HOOK
2. LIFT LEG ANGLE IS GIVEN FROM THE HORIZONTAL.
3. LOAD AMPLIFICATION IS STATIC INCREASE IN TENSION FROM A VERTICAL HANG.
4. FOR ALL FIBCS GREATER THAN 36"x36" USE "WIDE MODE" HOOKS. FOR ALL FIBCS LESS THAN 36"x36" USE "NARROW MODE" HOOKS.
5. SUPPLEMENT FIBC LOOPS WITH SLINGS, AS REQUIRED, TO ENSURE THAT MINIMUM LEG LENGTHS ARE MAINTAINED. REFER TO SHEET 6 FOR DEPLOYING SUPPLEMENTAL SLINGS.

FIBC lifting leg requirements — refer to 22-009-SD-72-003.



48 in. FIBC on wide mode hooks.



33 in. FIBC on narrow mode hooks, using spacer slings to reduce outward pull.

4.6 Pallet mode

Pallets of 40 in. x 48 in. are lifted using the IBC vertical slings and hooks. Longer vertical slings and pallet bars are available for 48 in. x 48 in. drum pallets, as set out on drawing 22-009-SD-72-003. The reduced pallet-mode working load limit applies (section 3.2).

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Pallet lifted with safety net.



Pallet lifted with safety net.

5. RECOMMENDED PRACTICES

5.1 General

Lifts with the IBC-1 should be carried out under strict controls. At minimum, carry out a JSA before the task begins.

- Establish communication before the lift and maintain it throughout, by radio or hand signal, between the crane operator and the banksman or signalman.
- All lifting equipment in service carries current certification and is within its inspection and load test intervals in section 6.
- All lifting equipment is suitable for the lift and is visually inspected for condition before each use.
- No personnel pass or stand under a suspended load.

5.2 FIBC handling

Before lifting any FIBC, inspect it for damage and position the lifting loops according to the bag manufacturer's instructions. Examine the lifting loops and their attachments for abrasion, cuts, and ultraviolet degradation or chemical attack. Where damage affecting the strength of the bag is found, take the FIBC out of service immediately.

- Select the right FIBC for the job, in consultation with the manufacturer or supplier.
- Read the instruction label on the bag and work within the stated safe working load.
- Inspect re-usable bags before refilling.
- Check that the discharge spout, where fitted, is closed before filling.
- Consider the possibility of a static electricity hazard.
- Protect bags from rain and from prolonged sunlight.
- Use single-trip bags once only.
- Repair heavy duty re-usable bags only as the manufacturer instructs.
- Inspect the route of travel for objects or obstructions that would tear or puncture a bag as it is lifted.

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5.3 Pallets

Before lifting, inspect every pallet to confirm that no unsecured material is lifted with it, that the pallet is sound enough to carry the weight of the material on it, and that the goods on it are secured.

6. INSPECTION

6.1 Inspection intervals

The intervals below follow ASME B30.20. The equipment owner is recommended to adopt procedures that meet or exceed them.

Inspection	Before each use	6 months	12 months	48 months
Routine (6.2)	●			
Detailed sling inspection, by third party (6.3)		●		
Detailed lifter visual (6.4)			●	
Load test and NDT (6.5)				●
Cargo nets (6.6)		●		

Remember. When inspecting any safety equipment, err on the side of caution. The cost of a replacement lifter is very small compared with the consequences of putting a damaged one into service.

6.2 Routine inspection

Carried out before each use. Disassembly is not required unless the inspection finds a possible problem.

1. Placards and labels: all are present and intact.
2. Frame: free of bends, damage, corrosion or any deformity that would affect the strength or performance of the lifter.
3. Green handles: secure and undeformed.
4. Shackles: nuts and cotter pins in place on all lifting shackles.
5. Lifting sling set: free of kinked wire and deformed components.
6. Weld-on excavator hooks: undamaged, and all spring-loaded latches work.
7. Vertical sling and hook assemblies: sound, and the hooks latch positively.
8. Pallet lifting bars: free of visible deformation, bending or distortion.

6.3 Detailed sling inspection

Remove the sling set from the lifter and inspect it to accepted industry practice, including the master links, master link assemblies and shackles. Look for excessive wear, damage and corrosion, and replace the sling or hardware where any of these is present.

6.4 Detailed lifter visual

Review the overall condition of the lifting device and the use it has had over its service life. If the upper frame or the pallet bars look as though they should not go back into service, or have a generally worn appearance, take the device out of service. The inspector is to be qualified, with knowledge of accepted welding and fabrication practice. All welds are to be sound, with no cracks, excessive corrosion or damage.

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Inspect the whole device for deformation, cracks and corrosion. Clean the painted surface thoroughly and examine the following welds in particular. Investigate any sign of cracked paint at a weld seam further by removing the paint.

- The welds on the lifting pad eyes.
- The welds of the lugs on the lower pallet bars.
- The welds of the weld-on excavator hooks.

6.5 Load test and NDT

Load test the device at 125% of the working load limit using the normal operating slings: 3,125 kg for a working load limit of 2,500 kg. Inspect the welds securing the lifting lugs to the frame visually, and by magnetic particle or dye penetrant examination.

6.6 Cargo nets

Cargo nets are inspected every six months by a qualified inspector. Service life depends heavily on storage, maintenance and use: a net kept dry and out of the sun, and used infrequently, should last several years.

1. Ropes: inspect each rope for excessive wear, cuts and degradation from sunlight, and for any other damage that could affect its performance.
2. Hardware: where fitted, inspect for damage.
3. Splices: confirm every splice in the net has a minimum of three tucks.
4. Non-OEM components or modifications: check for modifications or components not supplied by Billy Pugh Company, and remove any that are found.

If the net fails any of these criteria, take it out of service immediately. If in doubt about a net, do not use it until a second qualified inspector has seen it. Look at the overall appearance of the net as well as the individual criteria.

7. REVISION HISTORY

Rev.	Date	Description of change	Issued by
0	23-APR-2024	First issue as BPC-RP-IBC-01.	Billy Pugh Company
1	06-NOV-2026	Reissued under controlled document number BPC-RP-IBC1 on the current template. Drawing reference, company name and design-standard wording corrected; ABS type approval and maximum gross weight added; pallet-mode working load limit stated to the structural calculations (2,268 kg / 5,000 lb); IBC capacities corrected to 1,040 L and 1,250 L. No recommended practice, inspection interval or acceptance criterion changed.	R. Siqueira, CEO

8. APPROVAL

	Name and title	Signature	Date
Prepared by	Rodrigo Siqueira, Chief Executive Officer		06-NOV-2026
Approved by	Ray Coleman, Chief Operating Officer		09-Nov-2026