Butyl Products Group

Installation and Operation Manual

BPG200 Redeployable Fuel Bladders & Secondary Containment System

Manufactured in the UK by Butyl Products Group

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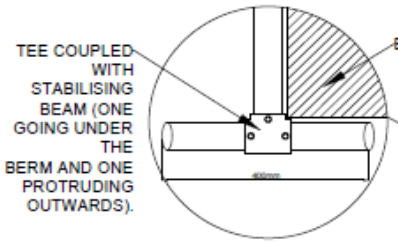
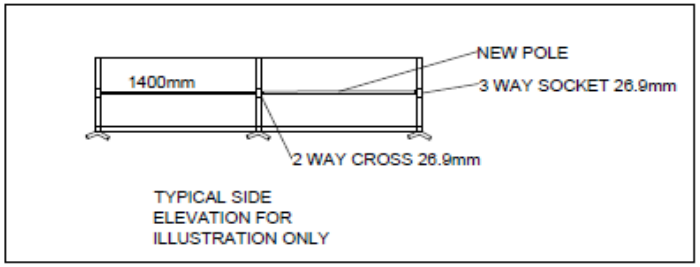
Manual XFB1
Manual No. 8
Revision No. 3

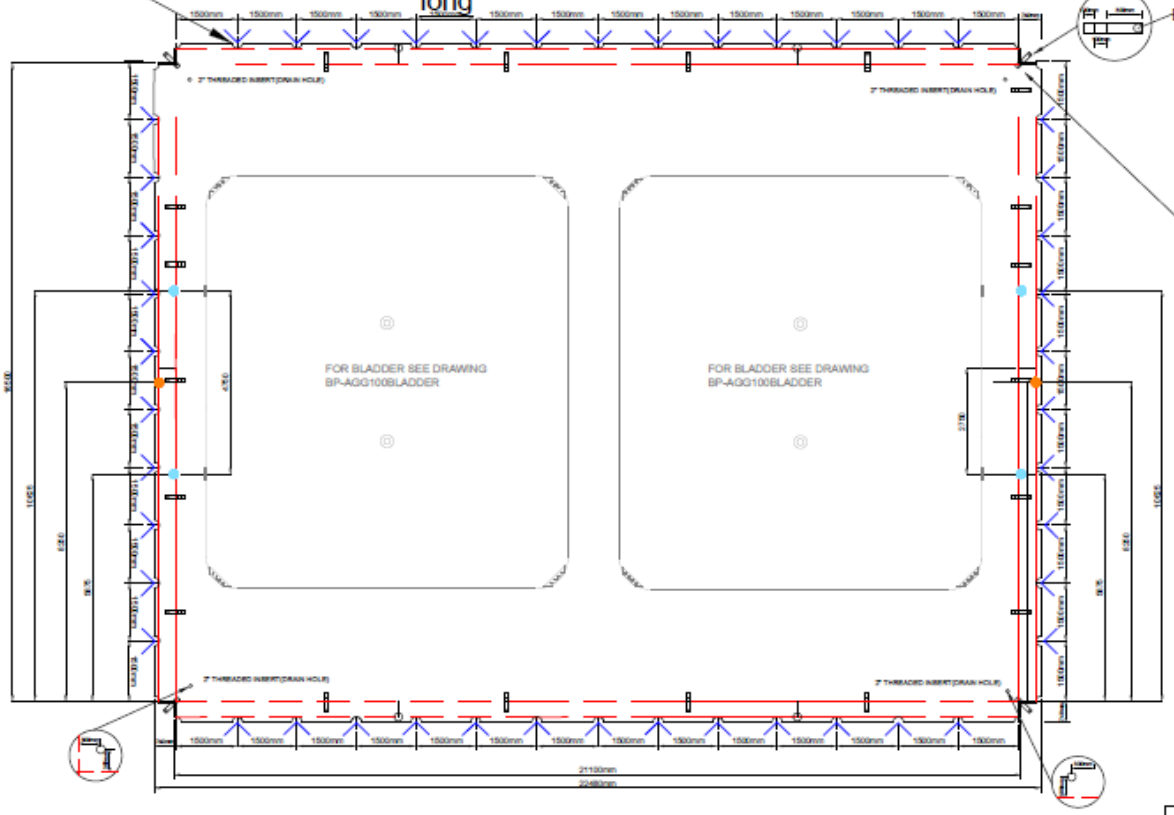
Contents

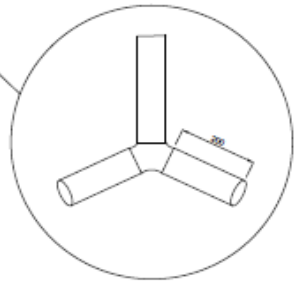




Quick Berm 21m x 16.5m x 0.6m long

Item	Qty
0.2M Tube	8
0.4M Tube	47
3" Skin	8
0.575M Tube	51
1.5M Tube	51
Long Tee	93
3 Way Elbow	8
2" Skin	4
2" Plug	4
Brass Eyelets	16
Allen Keys	2
Quick Berm Case	1





: Position for Stability feet

: Orange Alignment Tab

: 3" Outlet Positions

Drawing number: BP-AGG200BERM

JOB 213915

GENERAL NOTES:
- Third angle projection
- All dimensions in millimetres unless otherwise stated
- Burrs and sharp edges are to be removed

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TITLE: Quick Berm 21M x 16.5M

Material Specification:

Scale: NTS

Drawn by: PRS

Date: 28/03/18

Checked by:

Date:

ITEM	CODE NO.	Description	NO. REQD PER UNIT

REV.	Description	By	Date
A	ADDITIONAL BRACE ADDED	CB	SEPT18

Overview & Specifications

BPG200 - A reusable 200k litre fuel storage solution

A modular fuel tank farm for 2 x 100,000 litre bladders (total 200k litres) and connections using the Butyl Easy-Up Berm solution. Each bladder is to be supplied with the necessary procedural documentation for cleaning and re-packing of the bladders and berms, for short and long term storage of the bladders and for future redeployment.

Stowing equipment for future deployment

Our system is designed for multiple deployments and each kit is supplied with end user Quality Assurance Procedure documents.

Service Life

Our standard warranty for exported goods is 12 months from receipt by client.
The Butyl Easy-Up Berm system has an estimated service life of 5 to 10 years. See appendix for life expectancy information.

Heavy Duty Bladder Tank Specification

Description: Fuel storage tanks manufactured from welded polymer membrane.

Material: 1250 g/m^2 Polyurethane coated both sides of a high tenacity polyamide.

BP Landflex 1P U4-U4 GR/AR

Single ply nylon fabric with Polyurethane film on both sides. 940 Decitex yarn count, 1.20mm thick, 1250 grammes / m^2.

Polyurethane is a membrane liner primarily designed for containment of fuel. Polyurethane is extremely flexible, puncture resistant and provides exceptionally good heat sealing characteristics.

All joints are sealed using high frequency welding equipment including a fully automated state of the art 16.0m bed Fiab 22kW HF machine.

Fittings:
3 x 3" BSP (F) Skin fittings with Camlock Type F (male) couplings.
3 x 3" V75 PP Locking butterfly valve giving 3" BSP (F) outlet with plug.
2 x 2½" BSP (F) Skin fittings with mushroom vent and alternative plug.
1 x 2" Drain with plug.
2 x 3" Fuel hoses, 2.0m long.

Standard ports are anodised aluminium 2" / 3" BSP (F) as specified.
Mushroom vents located top centreline of tank.
Quarter turn valves - Polypropylene safelok with Viton fuel resistant seals.
3" Fuel hose to enable connection from bladders to berm wall. Fuel oil & S&D 10 bar (150 psi).

- Tube: Black conductive NBR, high tensile textile cords with embedded steel helix wire.
- Cover: Black CR - abrasion, ozone and hydrocarbon resistant.
- Temperature: -30C to +80C (-22F to +176F).

Butyl Easy-Up Berm Secondary Containment System

Description: Fuel storage secondary containment berm manufactured from welded polymer membrane with galvanised steel frame.

Material: An HF welded, prefabricated 0.91mm (36mil) nylon reinforced, petrochemical resistant BP Landflex EE material with encapsulated edges, preventing delamination through wicking or fuel spills. (Material specifications and chemical resistance charts attached).

Fittings: The Butyl Easy-Up Berm is constructed using a galvanised tubular steel frame, 26.9mm NB pipe.
The steel tubes are simply locked together with robust G/S Easi Clamps and supplied with all the necessary tools and instructions.

Pipe & fittings conform to:

Galvanised pipe - BS EN ISO 1461
Galvanised fittings - BS 6681 (ISO 05922) and BS2789 (ISO 0183)

4 x 3" BSP (F) Skin fittings with Camlock quick hose couplings.
2 x 3" Fuel hoses, 3.0m long (for ancillary cross connections between bladder tanks).

Quarter turn valves - Polypropylene safelok with Viton fuel resistant seals.
3" Fuel hose to enable connection from bladders to berm wall. Fuel oil & S&D 10 bar (150 psi).

- Tube: Black conductive NBR, high tensile textile cords with embedded steel helix wire.
- Cover: Black CR - abrasion, ozone and hydrocarbon resistant.
- Temperature: -30C to +80C (-22F to +176F).

Bill of Materials for BPG00 Redeployable Fuel Storage & Secondary Containment

Item:	**BPG Part No.**	**Quantity:**	**Notes:**
100m³ Fuel Bladder Kit	BP-AGG100Bladder	2	
200m³ Easy-Up Berm (21 x 16 x 0.6m)	BP-AGG200Berm	1	
Accessories per Bladder	**Item Code:**	**Quantity:**	**Notes:**
3" BSP Female skin fittings	BTSF3	6	
3" V75 Lockable butterfly valve	BTFC3MCOMP	6	
3" Camlock male - 3" BSP male type F	BTF3MM	6	
3" Camlock female - 3" BSP female type D	BTF3FF	6	
3" Camlock cap type DC	BTF3C	6	
2½" Mushroom with skin fitting	BTFMV2.5 + BTFSF2.5	4	
Sun shade	YAGGFBC	2	
Fuel monitoring plate	BTFFSAK	2	
Accessories for Berm	**BPG Part No.**	**Quantity:**	**Notes:**
3" Skin fitting male	BTSFM3	4	
3" V75 Lockable butterfly valve	BTFC3MCOMP	4	Part of assembly BP-3AsyC02
3" Camlock female - 3" BSP male type B	BTF3FM	4	
3" Camlock male - 3" BSP female type A	BTF3MF	8	Part of assembly BP-3AsyC02
3" Fuel hose assembly - 2 mtrs C/w Camlock female hose tails with ferrule	HS3X2MF	4	
3" Fuel hose assembly - 4 mtrs C/w Camlock female hose tails with ferrule	HS3X3MF	1	
Drain fitting 2" (1 in each corner) with 2" Skin	BTSFM3 + BTSFP2	2	
Berm filter and hose kit	WCAP6L	1	

Bill of Materials for BPG200 Redeployable Fuel Storage & Secondary Containment

Spares for Bladders	BPG Part No.	Quantity:	Notes:
2" Plug Camlock type DP	BTFP2	1	
3" Plug Camlock type DP	BTFP3	1	
3" Camlock male - 3" BSP male type F	BTF3MM	1	
3" Camlock female - 3" BSP male type B	BTF3FM	1	
3" S/st Jubilee clips	BLTHJC080	4	
3" Male Camlock hose insert type E	BTF3MH	1	
3" Female Camlock hose insert type C	BTF3FH	1	
Strap wrench	BTSPANSW140	1	
Allen keys	TBAK005	1	
Roll of PTFE tape (Diesel)	DTPTFE002	10	
3" V75 Lockable butterfly valve	BTFC3MCOMP	1	
Spares for Berm	**BPG Part No.**	**Quantity:**	**Notes:**
Allen keys for pipe work	TBAK007	1	
Club hammer	THAM	1	
Spare poles x 2	QB150 + QB040	2	
1 x Corner	QBA22	1	
1 x T-Piece	QBTEE	1	

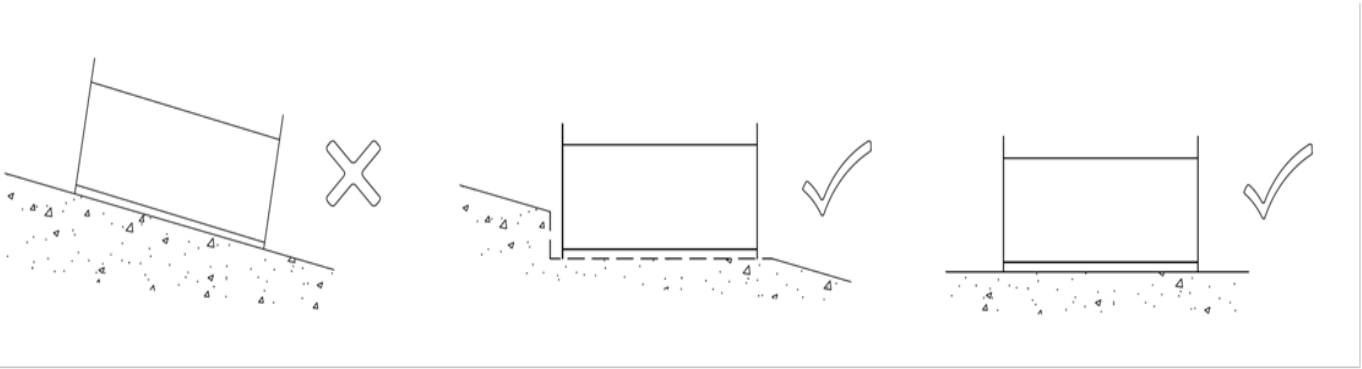
To be used in conjunction with QA procedure FBQAP:010

WARNING

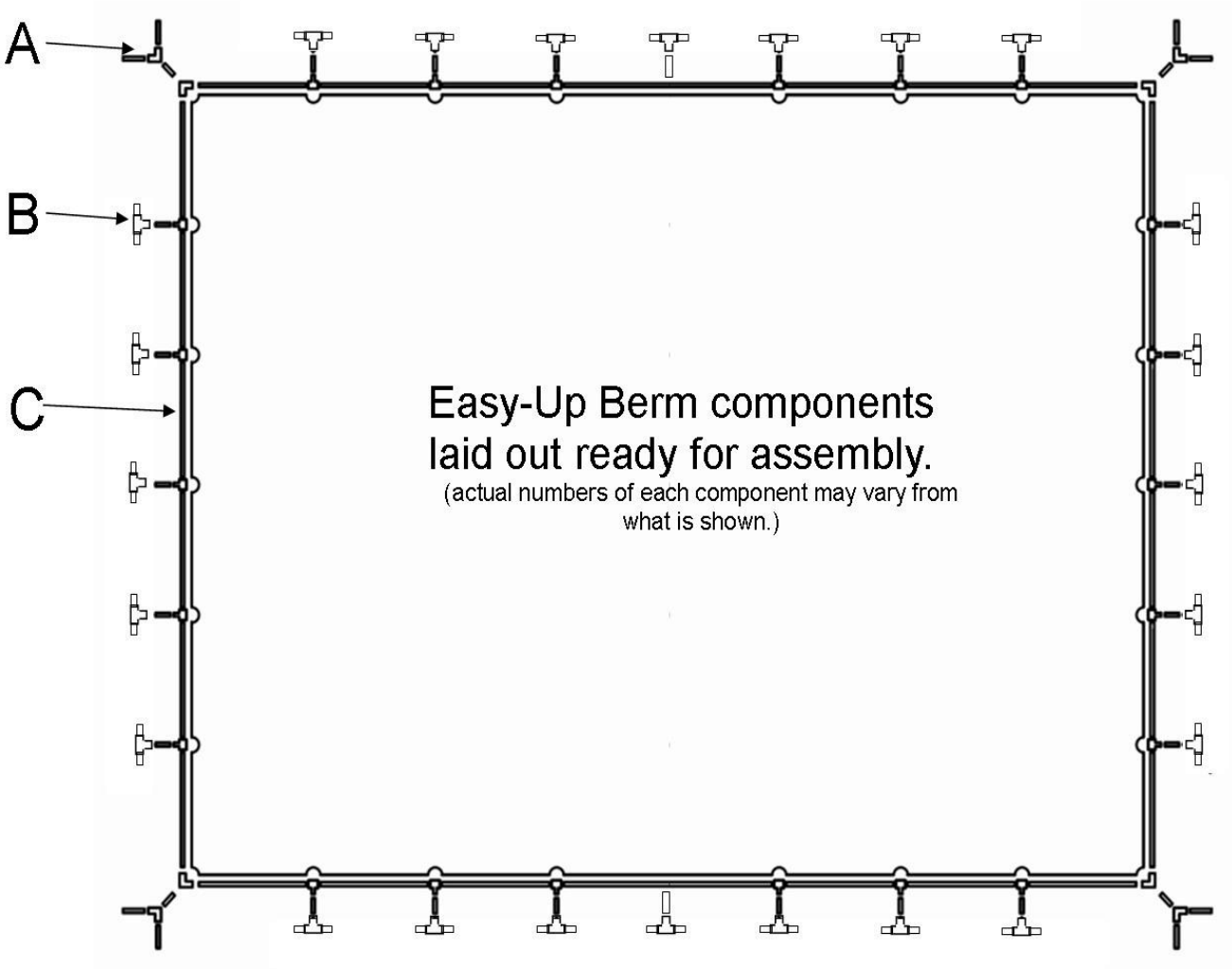
Installing the Easy-Up Berm in high winds could result in lifting, possibly causing serious injury.

1. Select a site that is level and firm enough to support the Easy-Up Berm. It may be necessary to cut or fill earth to produce this as illustrated below.

   Clear away all vegetation, roots, stones and other debris. Ensure the ground is well compacted.

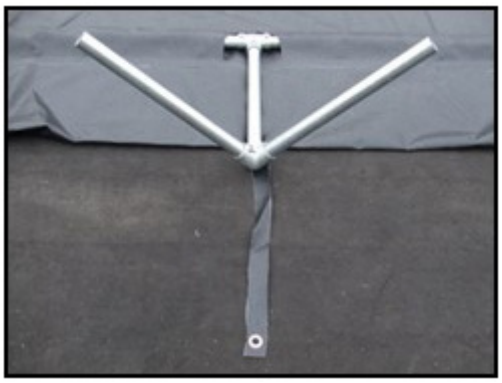


2. Lay out the Easy-Up Berm liner and check for any damage.
   Lay the pipes and fittings around the perimeter of the berm liner next to each semi-circle cut out as shown below.



A - 4 off

0.6m Vertical bar with corner support



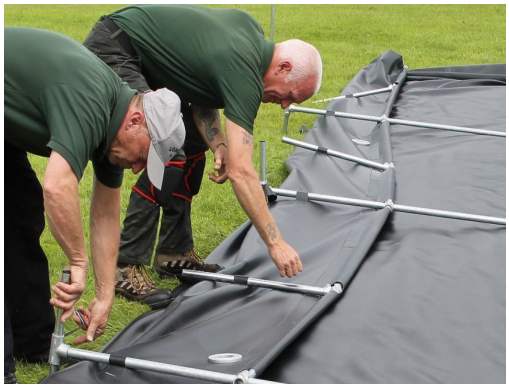
B - 46 off

0.6m Vertical bar with stabiliser support

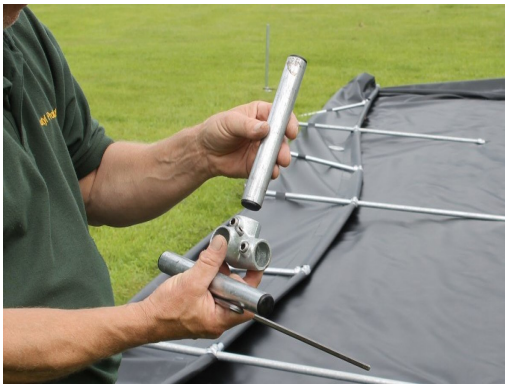
3. Slide 1.5m long pipe **C** through top hem and join with galvanised tee at each cut out in hem.

Ensure pipes are pushed centrally into galvanised tee and tighten with Allen key provided.

4. Attach vertical support pipes into equal tees and then attach bottom tee or elbows with stabilisers as illustrated.



Tee stabiliser feet



Corner elbow stabiliser feet

5. Raise perimeter wall to its vertical position and adjust legs to support the wall as illustrated.

6. Attach corner elbow once both adjacent sides are vertical and fit leg as illustrated.

7. Adjust all external feet to 90° angle with the side of the berm.

8. The vertical poles can be adjusted to take out any slack in the Berm liner or to prevent it being stretched. Taller poles (*shown above right*) are optional and can be placed at intervals around the berm to support overhead shades or canopies.

9. Any minor adjustments can be made to the fittings to ensure that the Berm is square and true and is not over-stretched. Check the tightness of the grub screws as necessary.

10. Anchor the Easy-Up Berm liner by the anchor tabs and pegs provided.

11. Secure stabiliser feet by locating steel peg over stabilising horizontal foot.

Connecting the Drain Filter

1. Connect the filter unit to the short hose section and elbow.

2. Unscrew the plug from one of the drain outlets in the Easy-Up Berm. (If one outlet is at a lower level gradient to the other choose this one).

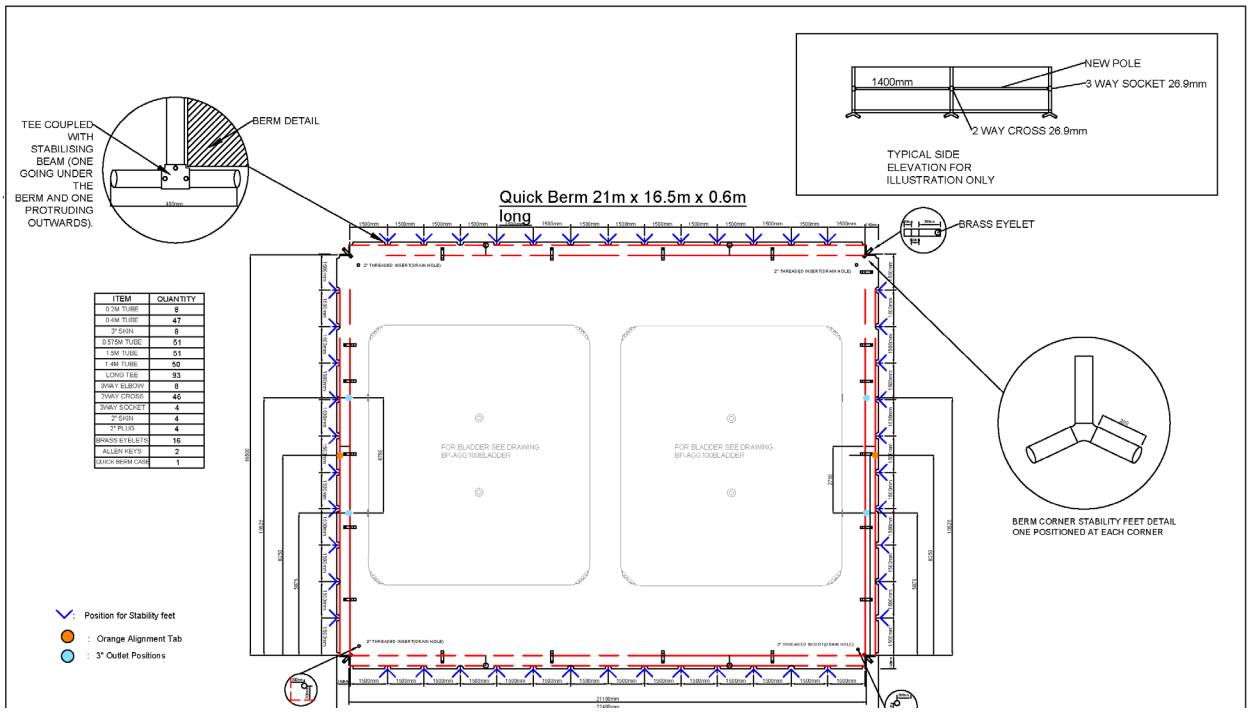
3. Attach the threaded elbow to the underside of the drain fitting. Cutting a shallow trench for the drain assembly will enable the berm to be kept drained of all water.

Installing the Fuel Bladder Tanks

To be used in conjunction with QA procedure FBQAP:010

Carefully remove the bladder tanks from the box and position in the Berm. Manually roll out to present the main fill / empty ports in line with the Easy-Up Berm outlets. Adjust the bladder position so that the orange register tags ▶ on the bladder tank, line up with those on the sides of the Berm.

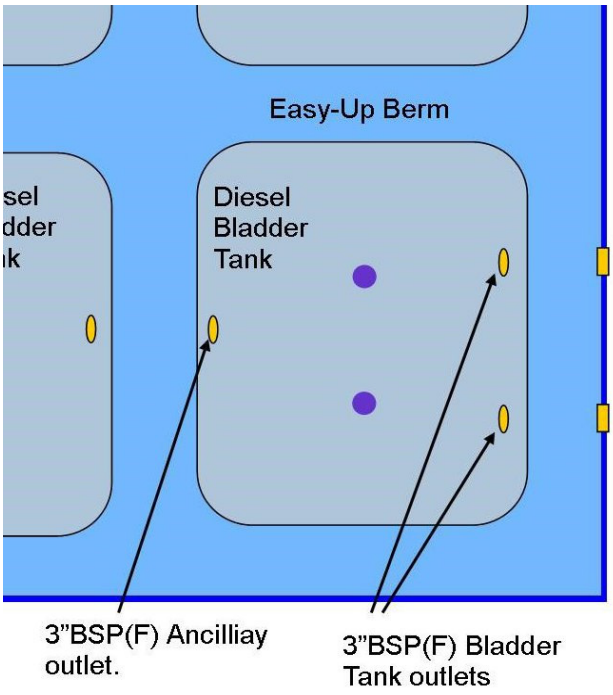
Ensure the tank is free to fill without restriction. Use the handles on the bladder tank to pull the bladder flat. If necessary tie the ropes to the corner of the bladder to assist with this.

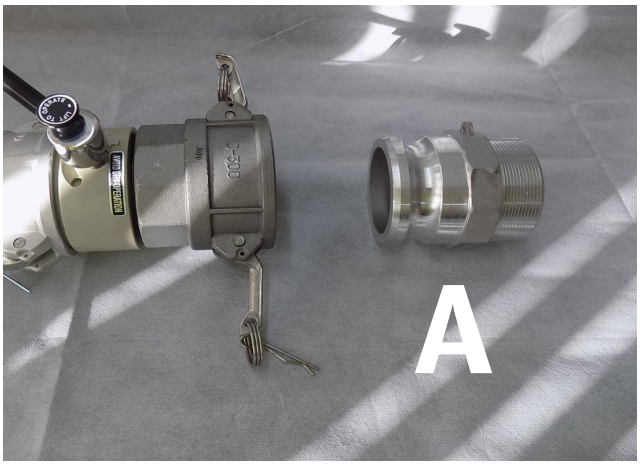


ITEM	QUANTITY
0.2M TUBE	8
0.4M TUBE	47
3" SKIN	8
0.575M TUBE	51
1.0M TUBE	51
1.4M TUBE	50
LONG TEE	93
3WAY ELBOW	8
2WAY CROSS	46
3WAY SOCKET	4
2" SKIN	4
3" PLUG	4
BRASS EYELETS	16
ALLEN KEYS	2
QUICK BERM CASE	1

2 x bladder tanks BPG200

Fitting the Outlet Assemblies



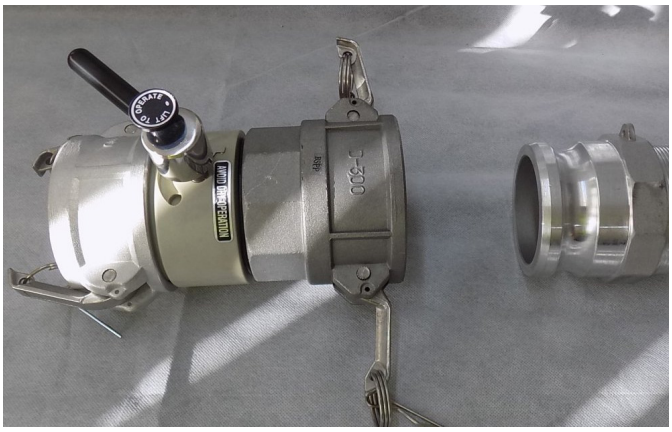


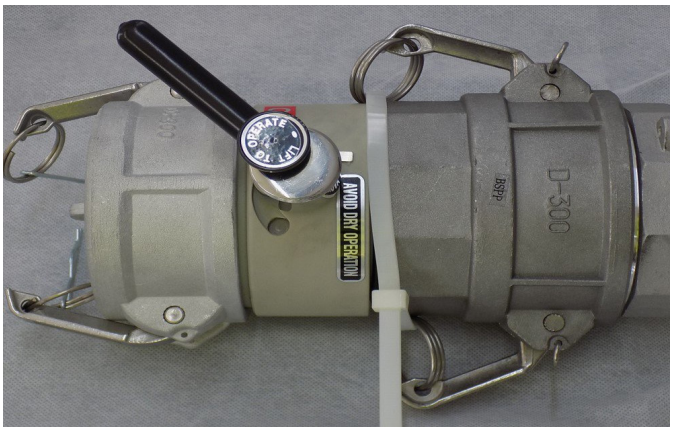
At each bladder tank 3" outlet assign a bladder tank outlet assembly (**BP-3AsyC01**). Connect the assembly to the bladder tank by releasing the 3" Camlock adaptor '**A**' and carefully screwing into the bladder fitting. The correct PTFE tape is supplied to ensure a diesel tight seal.

Once the adaptor is firmly in place the Camlock fittings can be reconnected, making sure that the butterfly valve actuators are uppermost and accessible.

At each ancillary outlet a 3" Camlock adaptor '**A**', a 3" female Camlock connector, a valve and a dust cap are fitted.

Once this assembly is in place the security pins must be fitted to the Camlock lever arms and a cable tie secured around the outside to prevent accidental opening.

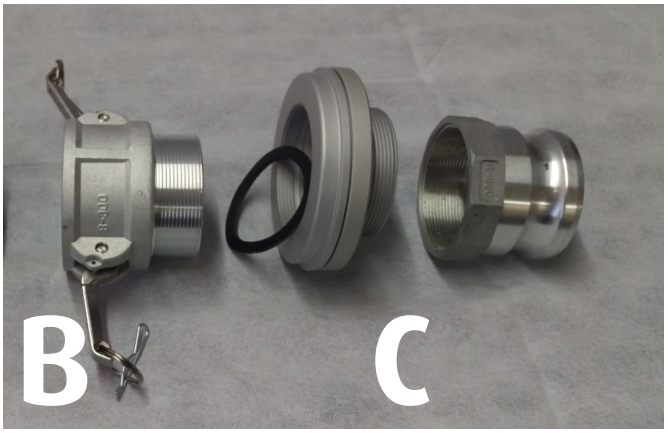


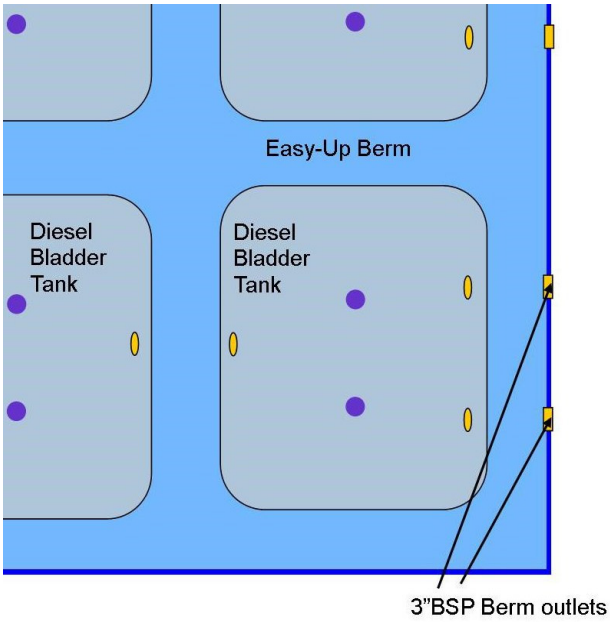


During operation the Camlock quick connection MUST NOT BE DISCONNECTED except when the bladder tank is properly isolated and empty !

Installing the Berm Connections

At each berm outlet a female Camlock adaptor 'B' is installed to the outside of the Berm wall. A male Camlock adaptor 'C' is fitted to the inside of the Berm wall. The supplied PTFE tape is used to ensure a diesel tight seal.





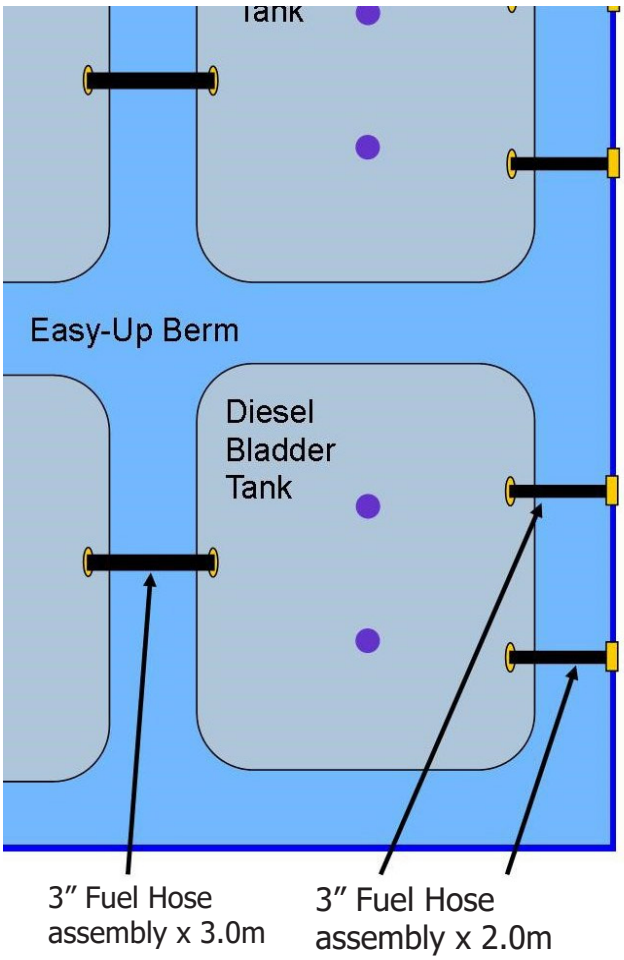
Connect assembly BP-3Asy02 to the outside of the Berm outlets. Rotate the Camlock fitting so that the valve actuator is accessible.

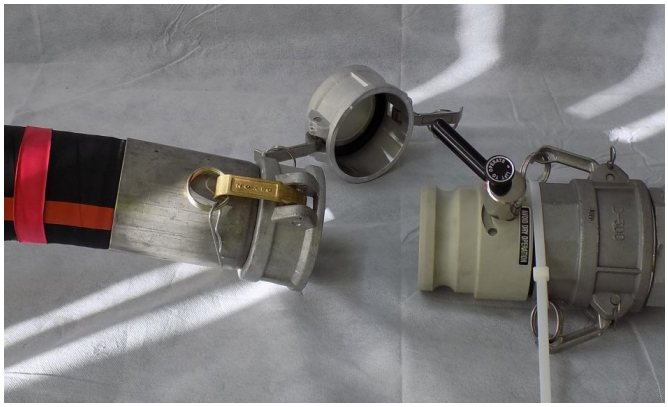
Fitting the Mushroom Vent for Diesel storage

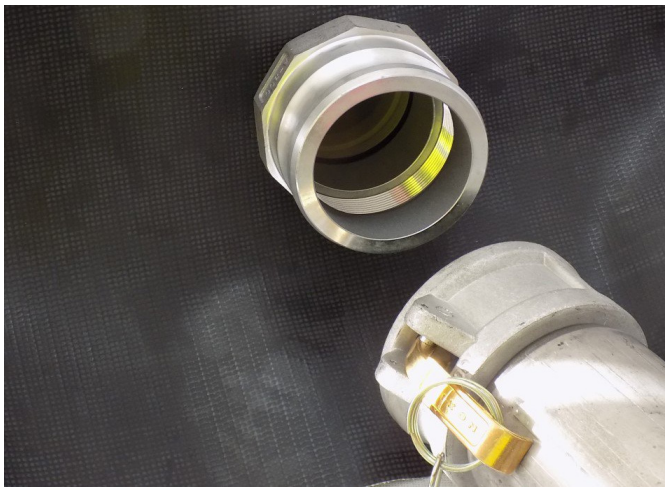
Carefully screw the 2 no. mushroom vents into the inlets at the top of the bladder tank.

Shown above as

Installing the Hoses







The 2.0m long fuel hoses are part of assembly BP-3AsyC01 which is connected to the bladder tank outlets.

The other end of each hose connects to Camlock connector in the wall of the Berm.

The 3.0m hoses are supplied with the Berm spares kit. They provide the option to link the bladder tanks via the ancillary ports on the back of each bladder tank.

Carefully adjust the empty bladder tanks so that the hose connections are kept in line with the Berm outlets. Coil the additional hose length that will provide adjustment as the bladder tank contracts on filling.

Containment Berm Repair Kit instructions

The Berm repair kit comprises:

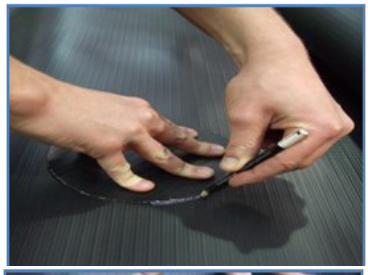
1 x Tube of glue (expires after 3 months of seal being broken)

1 x Sheet of sanding paper

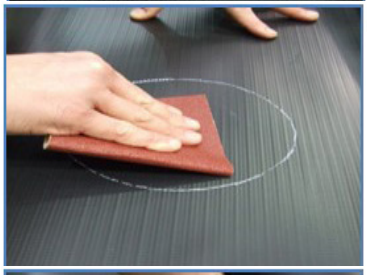
1 x Roller

Assortment of repair patches

1. Select a patch that is at least 30mm bigger than the damaged area.



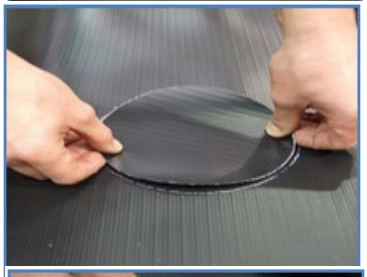
2. Place the patch in the final required position and mark with crayon on to Berm liner. It is preferable to apply the patch on the inside of the Berm liner where possible.



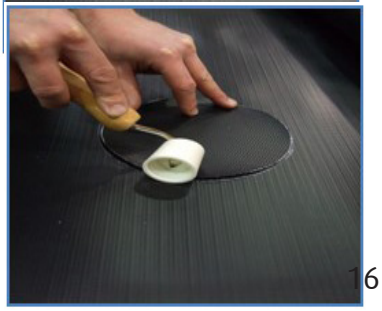
3. Using the sanding paper provided, abrade the mating areas of the patch and Berm liner or Bladder.

4. Ensure the abraded area is clean and dry and free from chemicals.

5. Apply a thin layer of adhesive to both surfaces.



6. Leave for 5 to 20 minutes (dependant on ambient conditions) until the surface becomes 'tacky'.



7. Bring the two surfaces together and using the roller provided, apply pressure to ensure a good bond.

8. The adhesive must be left for 24 hours before refilling can commence.

Fuel Bladder Repair Kit instructions

The Bladder Tank repair kit comprises:

1 x Bottle of adhesive	1 x Storage Container
1 x Bottle of hardener	Assortment of repair patches
1 x Pressure roller	1 x Instruction sheet
1 x Sandpaper sheet	1 x Mixing pot

1. Select a patch that is at least 30mm bigger than the damaged area.

2. Place the patch in the final required position and mark with crayon on to Berm liner / Fuel bladder.

3. Using the sandpaper provided, abrade the mating areas of the patch and bladder.



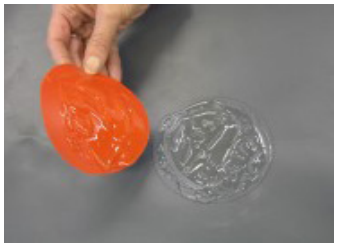

4. Ensure abraded area is clean and dry. Any residual diesel should be cleaned before any attempt to repair.

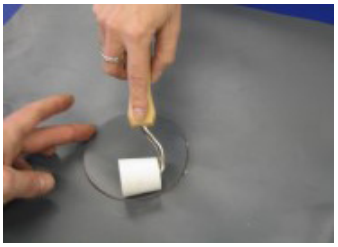
5. Mix the adhesive and the hardener in the pot provided. Apply a thin layer of adhesive to both surfaces.




6. Leave for 5 to 10 minutes (dependent on ambient conditions) then apply a second layer of the adhesive mixture to both surfaces and leave for a further 15 to 20 minutes. When the surfaces are touch dry they are ready for bonding.

7. Bring the two surfaces together and, using the roller provided, apply pressure to ensure a good bond. Seal the perimeter of the patch with the adhesive mixture to prevent liquid flowing between the layers.





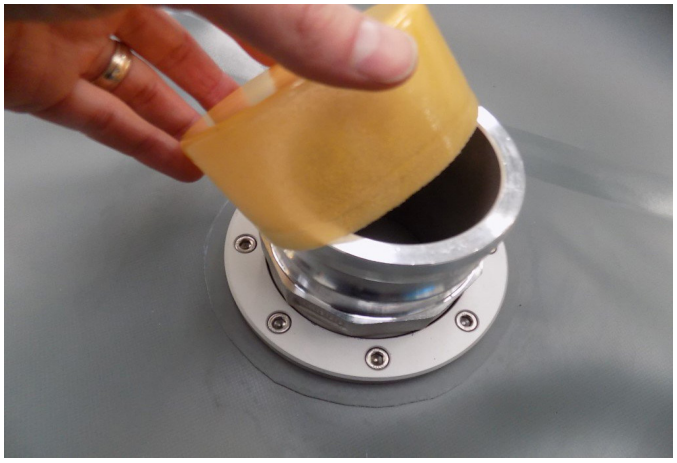
8. The adhesive must be left for 72 hours before refilling can commence.

Stowing the equipment for future deployment

Our system is designed for multiple deployments.

In order to maximise the number of redeployment cycles it is critical that the following procedures are adhered to:-

FBQAP010	Installation
FBQAP020	In-service maintenance and checks
FBQAP030	Tank cleaning and drying
	Berm cleaning
FBQAP040	Replacement of parts and repairs
FBQAP050	Repacking and storage for future deployment



Before repacking each Camlock fitting on the bladder tank must have a protection cap fitted.

The Berm liner is folded in a neat and compact manner to allow it to be re-packed within the storage case.

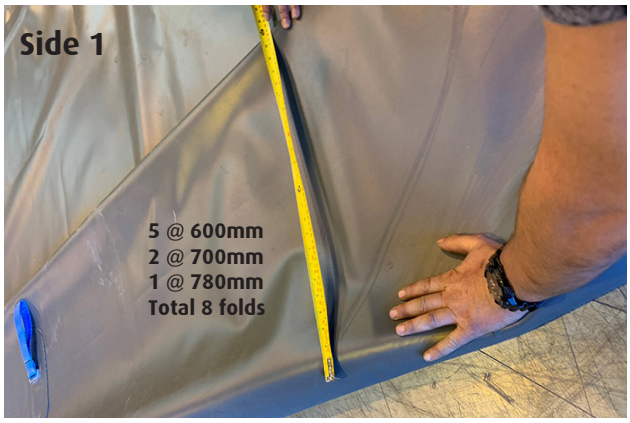
Geotextile wrap is used to protect the folded Berm liner and Bladders. Certified strops are included to facilitate packing in reusable plywood cases.

Stowing the bladders for future deployment

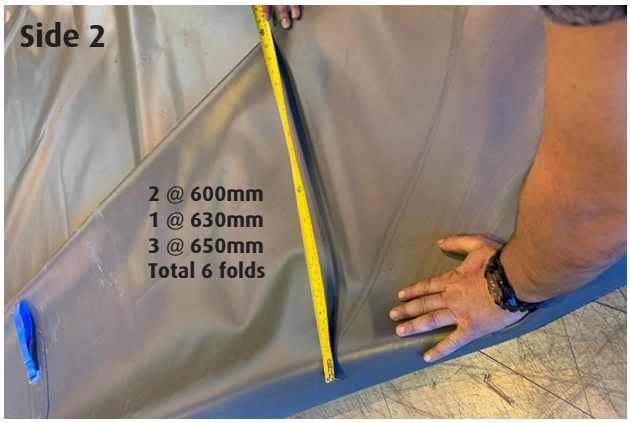
Please follow the folding procedure as closely as possible to ensure a good fit into packing crate for stowage.

1. Folding from one side of the bladder towards the middle, make 5 folds at 600mm widths, followed by 2 folds at 700mm and a final fold at 750mm.

Note: Fold carefully so that skin fittings are all in line.



2. Folding from the opposite side of the bladder towards the middle, make 2 folds at 600mm widths, followed by 1 fold at 630mm and 3 further folds at 650mm. Fold this side onto the top of the previous side folds.



3. Folding from one end, make folds of 1800mm along the length of the bladder. This may be three or four folds depending how well the folds are made. If there is a small area at the end of the length, this should be tucked in under the final fold to secure it.

4. The fuel bladder should finally be wrapped in protective geotextile before stowing securely in its crate.

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Quality Assurance Procedure	**Fuel Bladder Installation**

1. **Purpose**

This procedure describes the necessary controls and actions needed to be carried out by the end user to ensure safety and longevity of Fuel Bladder systems.

2. **Scope**

This procedure is applicable to all Fuel Bladders manufactured and supplied by Butyl Products Ltd.

3. **Responsibility**

The client should ensure that these procedures are closely followed and subjected to audit.

4. **Procedure**

4.1 Select a site which has been cleared of all vegetation, roots and sharp stone and is flat with no slope greater than 5°

4.2 The prepared area must be at least 10% longer and wider than the layflat dimensions of the bladder.

4.3 If using the Berm system the civil engineering must include ground compaction to a minimum of 80% proctor.

4.4 Carefully open the packing crate with a pozi head screwdriver bit to prevent damage and retain the crate for future use. Carefully remove the contents and check against the component packing list. Immediately report any issues or concerns to the 24 hour BP helpline +44 (0) 1277 653 281.

4.5 Position the Berm liner in one corner and unroll and pull out flat to the edge of the base. Assemble the frame in conjunction with the Berm manual supplied. The Berm lining should be fitted with a Hydrocarbon filter such as the BPG-*BF filter unit to enable accumulated rainwater to pass through the lining without causing groundwater pollution.

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4.6 Carefully remove the outer wrapping of the bladders and unroll to present the fill / empty ports to the required area. Use the positioning handles to pull the bladder flat (**THESE HANDLES SHOULD NOT BE USED FOR LIFTING THE BLADDER**). Ensure that the tank is located square to the side of the Berm using the orange sighting tags, and free to fill without restriction.

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4.7 Connect the hose assembly to the fill point. Make connections between the Bladder and the Berm. Ensure that a suitable thread sealing tape is used to prevent possible leakage.

4.8 Check and tighten all flanged ports to the prescribed torque. Re-pack all loose items and safely store adjacent to the tank, such as the repair kit.

4.9 Attach the fill line to the Berm inlet. Ensure that a suitable thread sealing tape is used to prevent possible leakage. While filling, monitor the tank, fittings and vent for possible leakage.

4.10 Pump the fuel into the tank at a reasonable pressure, checking that no items become entangled during filling. If the tank displays a tendency to roll, cease filling immediately and revert back to Civil Engineering procedure.

4.11 Continue pumping until the nominal volume has been metered in or until the surface of the tank becomes hard, or until fuel spills from the vent valve. Stop pumping, close valve and remove hose if necessary. It is recommended that a plug is screwed into the discharge valve to prevent accidental or malicious opening.

4.12 To empty the tank, remove safety plug and reconnect hose, open the ball valve and commence pumping. To remove the last few litres, lift or roll the opposite tank end and force the fluid towards the discharge fitting.

4.13 For cleaning, packing and general maintenance, please refer to the relevant FBQAP.

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Quality Assurance Procedure	**Fuel Bladder In-Service Maintenance & Checks**

1. Purpose

This procedure describes the necessary controls and actions needed to be carried out by the end user to ensure continued safety and longevity for Fuel Bladder Systems.

2. Scope

This procedure is applicable to all Fuel Bladders manufactured and supplied by Butyl Products Ltd.

3. Responsibility

The client should ensure that these procedures are closely followed and subjected to audit.

4. Procedure

4.1 A visual inspection should be completed after each filling to check for any damage or leaks.

4.2 All flanged plates and fittings should be tightened once a month to the recommended torque.

4.3 The vent system must be kept clear and fully operational. All fittings and tank surface should be kept clean and free from debris as practicable.

4.4 The tank should be inspected every month and kept in a well repaired condition. Any exposed fabric, tears, punctures and abrasions should be repaired immediately - minor damage treated early can prevent major damage.

4.5 All parts, including hose assemblies and valves should be inspected once a month for mechanical damage, wear and decline. New parts should be ordered as necessary.

4.6 An inspection of the ground should be conducted once a month to identify whether ground subsidence or vegetation growth has occurred.

4.7 All monthly inspections should be recorded and documented.

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Date	26/09/14	25/11/16				
Approved	GM	APH				

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Quality Assurance Procedure	**Tank and Berm Cleaning and Drying**

1. Purpose

This procedure describes the necessary controls and actions needed to be carried out by the end user to clean deployed equipment prior to re-packing.

2. Scope

This procedure is applicable to all Fuel Bladders manufactured and supplied by Butyl Products Ltd., which are required for redeployment.

3. Responsibility

The client should ensure that these procedures are closely followed and subjected to audit.

4. Procedure

4.1 Before commencing cleaning operations the Berm outlet must be fitted with a hydrocarbon filter such as the BPG-*BF filter unit to enable safe discharge of liquid into surrounding ground. *Rev. 3 5/4/18 TJD*

4.2 Hose off all debris from the outside of the Bladder and Berm. The top of the bladder can be gently cleaned using a water / mild detergent mix and a mop - do not use abrasion as this will damage the bladder.

4.3 Fill the bladder with a water / mild detergent mix to 1% of its nominal capacity, e.g: 500 litres in a 50,000 litre tank.

4.4 Close off all the outlets and slosh the liquid back and forth. This can be achieved by turning the tank over 4 or 5 times by pulling the side handles and taking the tank back across the top.

4.5 Discharge the contaminated liquid in the Berm allowing it to pass through the BPG-*BF Hydrocarbon filter. Remove the last amount of liquid by pulling the handles and lifting the bladder towards the outlet. *Rev. 3 5/4/18 TJD*

4.6 Repeat 4.3 to 4.5 with a clean detergent solution and then rinse the bladder through with clean water.

4.7 Anchor the bladder through the handles to prevent the bladder from turning or catching any wind. **DO NOT INFLATE THE BLADDER WHERE WIND SPEED EXCEEDS 15km/s**.

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4.8 Close the outlet valves and inflate the bladder by connecting to the inlet using the BP Billow Master connected to a suitable power source. Once the bladder is fully inflated, open the outlet valve to promote air flow through the bladder. Leave the blower on for at least one hour and then deflate and check whether the bladder is internally dry. The length of time needed for this operation will vary enormously with the ambient conditions of the site.

4.9 Wash through all remaining liquid within the Berm using a mop to clean off and discharge through the Berm filter.

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Quality Assurance Procedure	**Replacement of Parts and Repairs**

1. Purpose

This procedure describes the necessary controls and actions needed to be carried out by the end user to repare for future deployments of Fuel Bladder systems.

2. Scope

This procedure is applicable to all Fuel Bladders manufactured and supplied by Butyl Products Ltd., which are required for redeployment.

3. Responsibility

The client should ensure that these procedures are closely followed and subjected to audit.

4. Procedure

4.1 Once the cleaning operation has been completed a final check of the bladder, Berm and all related parts needs to be carried out. A checklist can be submitted back to Butyl Products Ltd., who can make recommendations for repair and replacement of parts. This service is free of charge and part of our ongoing products support service.

4.2 Check surface of the bladder on both sides, repair any damage following the procedure in the supplied repair kit.

4.3 Tighten all flange plates to recommended torque.

4.4 Check all valves and hose assemblies for damage and degredation. Lubricate all moving parts.

4.5 Submit checklist to Butyl Products Ltd.who will make recommendations for repairs and replacement of damaged items.

4.6 Once recommendations have been received and agreed the replacements can be ordered, delivered and packed with kit ready for future deployment.

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Approved	GM	APH				

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Quality Assurance Procedure	**Repacking and Storage for Future Deployment**

1. Purpose

This procedure describes the necessary controls and actions needed to be carried out by the end user to prepare for future deployments of Fuel Bladder systems.

2. Scope

This procedure is applicable to all Fuel Bladders manufactured and supplied by Butyl Products Ltd., which are required for redeployment.

3. Responsibility

The client should ensure that these procedures are closely followed and subjected to audit.

4. Procedure

4.1 Remove all heavy fittings from the bladder and pack securely in a well padded box.

4.2 Tape protective cloth or foam over light fittings to prevent abrasion during rolling.

4.3 Fold and roll bladder tank to the footprint of the packing crate, gently brushing away stones or other debris that may accumulate during folding.

4.4 Generously shrink film the bladder to prevent leakage of any residual diesel odour.

4.5 Wrap the bladder in 3000CBR puncture resistant geotextile sheet. Pack the tank neatly into the previously stored shipping crate.

4.6 Disassemble the Berm, hoses, fittings and components. Pack securely into the shipping crate.

4.7 Place one copy of inspection sheet FBIC001 Rev. A inside the box, affix one copy to the outside of the box and send the third copy to Butyl Products Ltd, including inspector name and date. Screw the lid shut and store the crate in a cool dark area (recommended temperature between 0C and 32C short term, and 10C to 27C for long term storage).

4.8 After 36 months in storage it is recommended that the units are returned to Butyl Products Ltd. for complete integrity testing prior to redeployment.

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Fuel Bladder Inspection Checklist

	YES	NO	Comments
Is the tank clean and dry?			
Have all the flange plates been tightened to 7 kilo-newtons using a calibrated torque wrench?			
Have all repairs been completed satisfactorily where applicable?			
Are all shut-off valves in full working order?			
Have valves been lubricated where appropriate?			
Are all hoses in good order?			
Have damaged or missing parts been repaired / replaced?			
Have heavy fittings been removed from bladder and placed securely in a padded box?			
Has protective cloth or foam been taped over bladder fittings to prevent damage during rolling / storage?			
Has the bladder been wrapped in shrink film?			
Has the bladder been wrapped in puncture resistant matting?			
Is the berm clean and dry?			
Are all components intact for redeployment?			
Has the berm liner been wrapped in shrink film?			
Has the berm liner been wrapped in puncture resistant matting?			
Have all components, bladder and berm been successfully packed in packing crate?			
Has a copy of the inspection sheet been affixed to the crate and another copy placed inside the crate?			

Additional equipment available from Butyl Products Group

NATO Codified Galvanised Steel Water Storage Tanks

- Ideal where large capacity and depth are required.
- Applications include firewater storage, water supply to field hospitals, construction camps, festivals, exploration and temporary camps.
- Extensively used in conflict zones where peacekeeping forces are stationed.
- Capacities range from 1,960 litres to 1.2 million litres.

Water Storage Bladders / Pillow Tanks

- Standalone item or full kits offered.
- Easily and rapidly deployed in any climate.
- Suitable for potable or raw water.
- Supplied with instructions, repair kit and all necessary tools for simple installation.
- Capacities range between 1,000 litres and 150,000 litres.

Pump Range

- Designed for fresh, potable or sea / salt laden water, mud and sludge, diesel, Jet A fuels and other similar products with a flash point of less than 35C.
- 1½" to 8" Inlets / Outlets with solids handling to 72mm Ø.
- Flow rates from 400 to 10,000 litres / minute.
- Rugged construction for durability in the field.
- Capacities range between 1,000 litres and 150,000 litres.
- Diesel, Petrol or Electric powered models.

Self Contained Raised Latrine Structures

- Secure and private latrine stations.
- 1,500 litre integral sewage isolation bag contains waste and reduces odours. Waste can be easily emptied and trucked away for disposal.
- Can be built on any area of flat ground; does not require pits or trenches.
- Simple assembly with no power tools required.
- Designed with UV stable, completely washable materials.
- External dimensions when assembled: 2.27m Ø x 2.85m high.

Additional equipment available from Butyl Products Group

Flexigester - Anaerobic Digestion Systems

- Isolate and treat organic waste. Converts into biogas and biofertiliser.
- Improved vector control, less odour, so less vermin nuisance.
- Attaches directly to pur flush toilet systems, less risk of ground contamination.
- Simple, cost effective waste management.

Emergency Lighting & Generator sets

- Standalone item or full kits offered.
- Easily and rapidly deployed in any climate.
- Product range from 5.0kVA to 117kVA.
- Both closed (with acoustic canopy) and open sets available.
- 12 month warranty on all BPG range generators.

Aircon & Refrigeration Units

- Suitable for all remote camp environments.
- Rugged and durable models for the harshest of conditions.
- Auto restart function for most units, means that if there's a power outage, the units will automatically restart and remember your settings once power is restored.

For further details and our full range and scope, please visit our website or contact our team to discuss your requirements

www.butylproducts.co.uk **T: +44 (0) 1277 653 281**

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After Sales Service

Butyl Products Ltd. has built its reputation by providing high quality products and outstanding service.

If for any reason you are not completely satisfied please contact our efficient and friendly team who will respond to your needs immediately.

Replacement parts and technical advice is also available by contacting us on any of the following channels:-

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