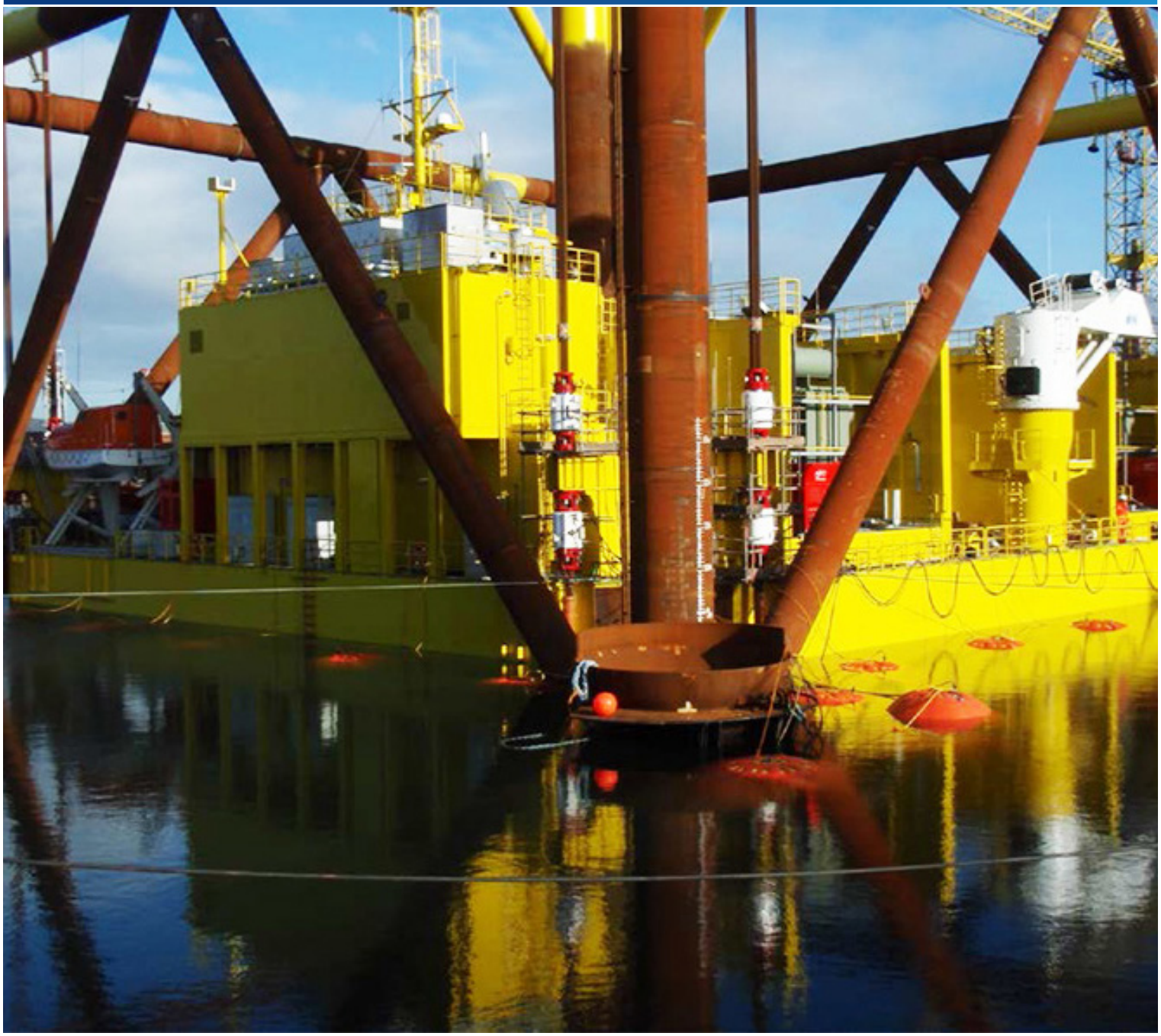
Unique Group

Buoyancy Solutions

APPLICATION NOTE

The Use of Seaflex Buoyancy for Draft Reduction



Buoyancy & Ballast

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APPLICATION NOTE

Introduction

Use of Seaflex Buoyancy for Draft Reduction

Background

+ Whilst most often used for pipeline installation projects or salvage operations, Seaflex buoyancy units are finding a growing market in the field of draught reduction projects.

  This is often linked to dry-docking scenarios, where the drydock itself can have a lip which may potentially foul the underside of the vessel on the way in and / or out unless additional buoyancy is applied to ensure sufficient clearance.

  Historically, such contingency buoyancy may have been fabricated out of steel: massive structures which need to be able to support their own considerable weight before offering any reserve buoyancy. Such structures are expensive to fabricate and difficult to handle, to rig and to de-rig. They will also deteriorate rapidly between projects, requiring intensive maintenance to keep them operable. Foam-filled plastic buoyancy may also have previously been used for such operations, but again this comes with significant cost, transport, handling and storage implications compared to the short-term rental of Seaflex buoyancy bags to assist with such an operation.

Benefits

Some of the benefits of using Seaflex-style air-filled buoyancy units within this type of application are that it is:

+ Backed up with project engineering experience and guidance from the manufacturer, along with onsite support from a Seaflex technician if so required.
+ Fully compliant with IMCA D-016 guidance, and type-tested to prove minimum 5:1 factor of safety.
+ Flat-packed for efficient and cost-effective transport and stowage.
+ Weighing less than 1% of its uplift capacity: eg 5t unit less than 50kg.
+ Quick to rig, and easy to vent for ultra-safe recovery.
+ Immediately available for rental or purchase from the world's largest stock of such equipment.
+ If rented, then subject to the highest testing and re-certification standards in the industry.

The Process

+ Depending upon the water depths and the amount of towing involved in the job, our parachute-style open-ended Air Lift Bags (ALBs) may be used, or our enclosed Inflatable Buoyancy Units (IBUs), or some combination of the two.

  Working from drawings of the vessel or structure to be floated in or out, Seaflex engineers will assess and advise upon the sizes and style of buoyancy bags to be used, how best to connect them to the load and when / how they should be filled and vented.

  If required, we can work with the client on developing a method statement for the operation, we can provide schematic drawings of the process, and we can also deploy BOSIET-qualified Seaflex technicians onto site to oversee and advise upon the correct and most efficient use of our equipment on the operation. No other manufacturer of this type of equipment has the expertise to be able to offer a more thorough level of support to their customers from conception through to successful completion of such a project.

Conceptual Example

+ Over the next few pages you will find some schematics of this process, showing buoyancy calculations and positioning, taken from a recent tenders. This is all just by way of example, but it shows the way in which Seaflex buoyancy can be used within such applications as well as the types of drawings which can be produced to support such proposals.

  At the end of this Application Note you will then find a gallery of pictures taken from recent projects of this type we have worked upon.

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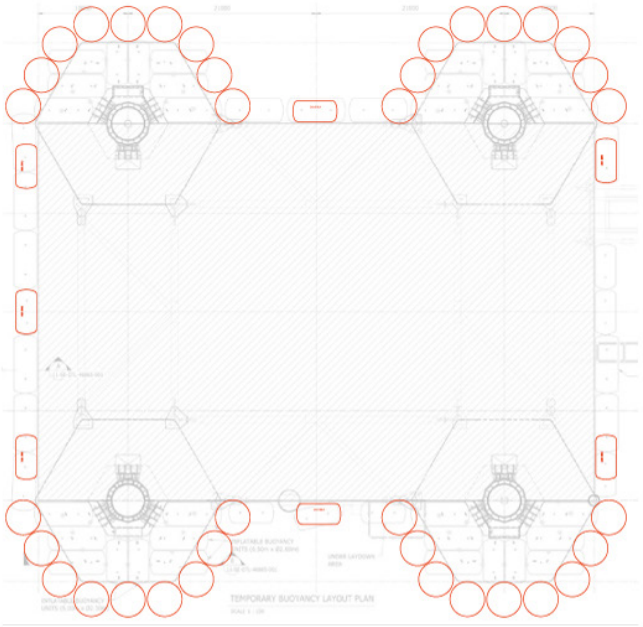
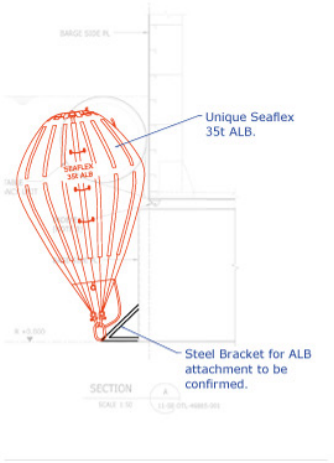
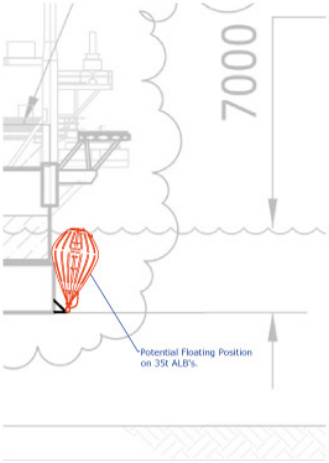
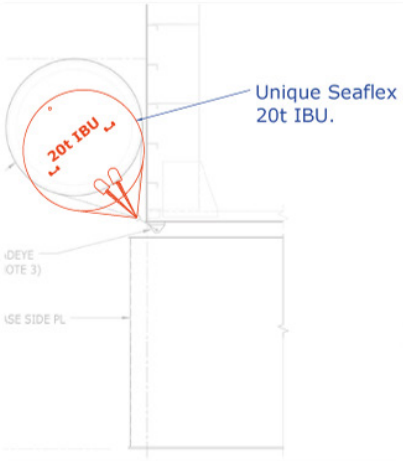
Seaflex Application Note

Use of Seaflex Buoyancy for Draft Reduction









36No. 35t ALB Units = 1260t of Lift
7No. 20t IBU Units = 140t of Lift
Total Lift Generated = 1400t

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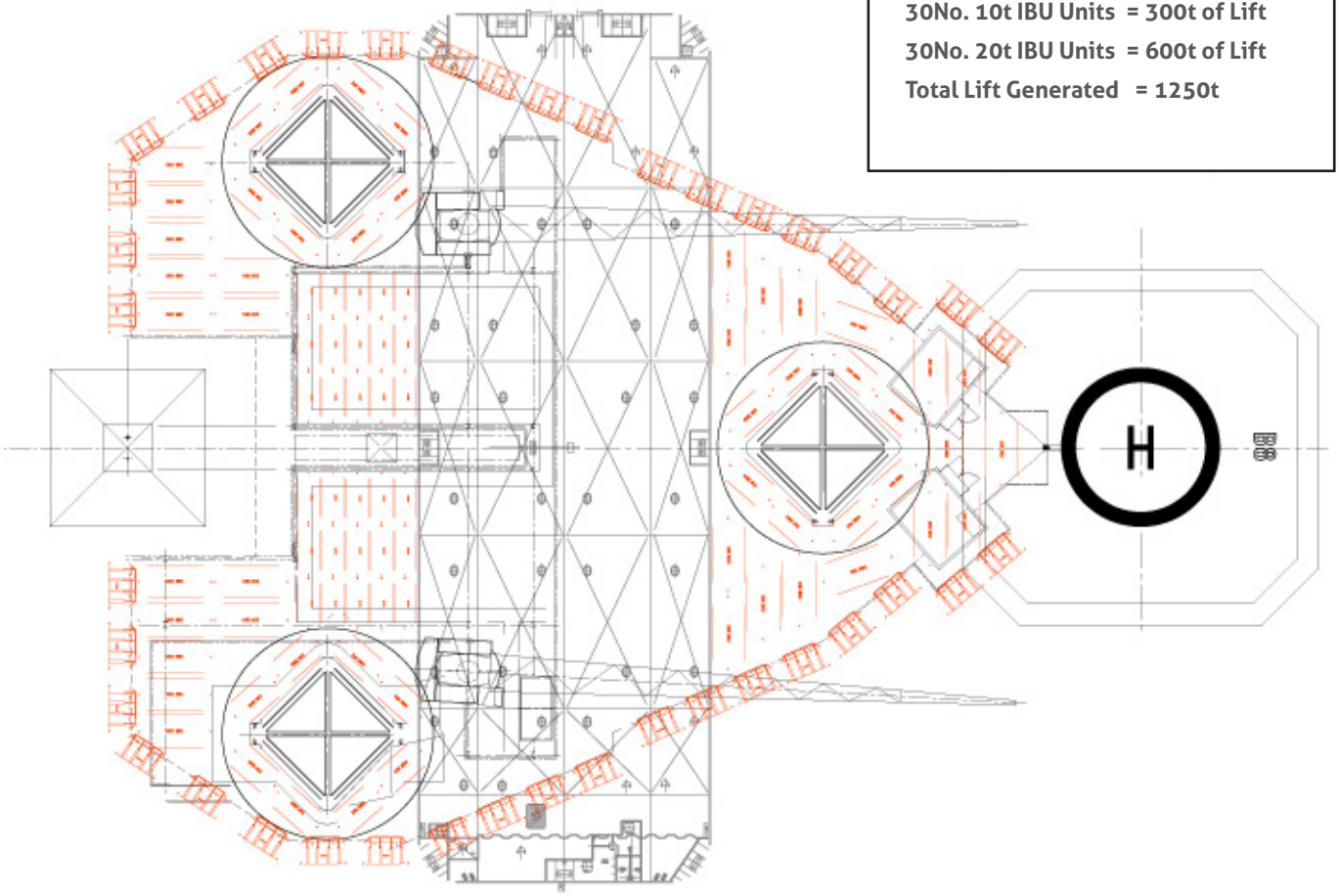
Seaflex Application Note

Use of Seaflex Buoyancy for Draft Reduction

70No. 5t IBU Units = 350t of Lift
30No. 10t IBU Units = 300t of Lift
30No. 20t IBU Units = 600t of Lift
Total Lift Generated = 1250t



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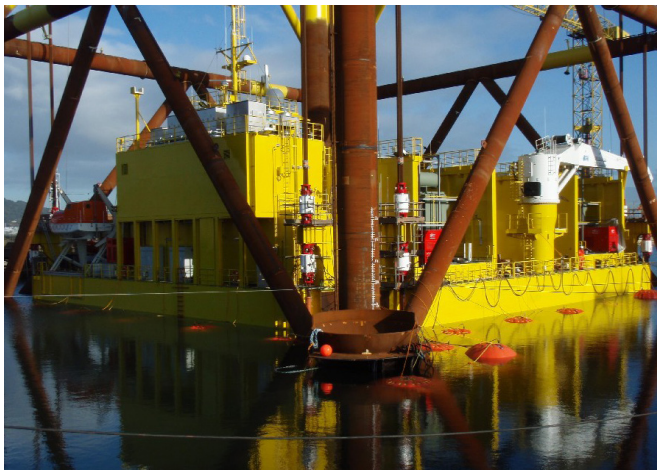
Seaflex ALBs in use

Transformer Float-Out, UK



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Seaflex IBUs in use

Vessel De-Ballasting at Damen Shipyards

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Seaflex IBUs in use

Docking of HMS Nottingham

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APPLICATION NOTE

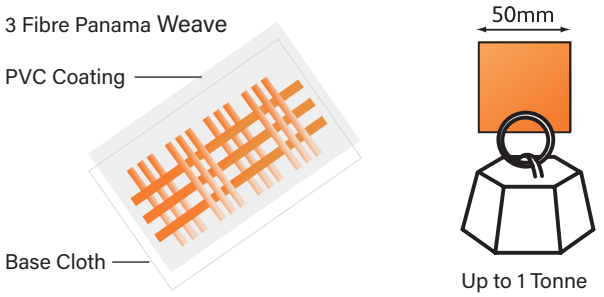
Technology, Service and Support

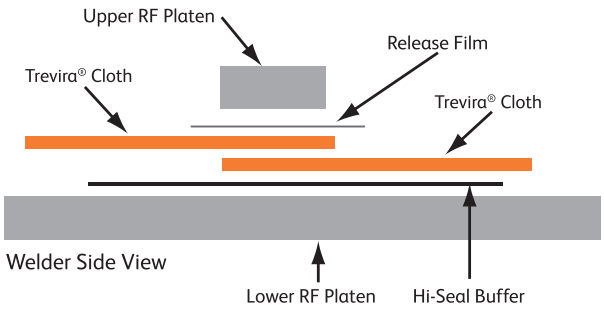
Manufacturing Technology

+ All Seaflex products are designed and manufactured in the UK. Our bag canopies are constructed from High Tensile Trevira® Polyester base cloth (either 2 /2 or 3 /3 fibre panama pattern weave) coated with heavy duty UV stabilised PVC coating or, for special applications, polyurethane. Trevira is incredibly strong; a 50 mm wide 3/3 strip has a break load of approximately 1 tonne. The panels for our bags are precision cut on our 15 metre long, 3 metre wide advanced automated table for perfect repeatability. Once inspected and approved panels are assembled by skilled personnel to using Radio Frequency welding to strict quality control standards.

Certification

+ All our work is carried out within a system which complies with the ISO 9001-2009 Quality Management Standard as audited by Lloyds Register Quality Assurance for full traceability – and we have now gained ISO 14001 and ISO 18001 accreditation.





Service

+ Whether for hire or sale, all Seaflex products are sent out fully tested and inspected against their build criteria. And we do also offer on-site support to our clients in the use of our products – this most often happens within the more complex buoyancy applications for our products.
  In the event that your Seaflex product should suffer minor damage in service, we can supply an approved, boxed field service kit comprising of patches, a professional quality heat gun and instruction manual to make good minor leaks prior to product refurbishment.
  We can also advise on the viability of carrying out more extensive repairs, which would typically be undertaken either at our factory or at one of our approved service centres.

Support

+ Our support philosophy is "Wherever, Whenever". This underlines the Seaflex commitment to not just sending out tested, proven products in proper shipping crates and with the most comprehensive documentation package in the business – but to assisting our customers in every way possible throughout their time using our products, whether the job is a hire project or an equipment sale.
  We offer worldwide support to our customers via either email or phone from head office in the UK and via our ever-growing network of offices and partners around the world.
  You can put your trust in Seaflex – we won't let you down.

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Unique Group's Buoyancy & Ballast products are available for hire or purchase from more than 20 other worldwide locations via our network of independent partners. Please contact us for more details.