

Ship To Shore Operations



Creating complete flexible containment solutions

Trelleborg Flexible Containment Solutions (formerly Dunlop GRG), design, develop and manufacture polymer fabrications for many industries. For over 40 years we have been producing an extensive range of products, particularly in the field of heavy duty, rubber-coated textile, PU, TPU and PVC fabrications. Our experience in many challenging settings, industries and applications, has allowed us to continuously improve and develop our products for demanding commercial operations around the world.

Being part of the Trelleborg Engineered Fabrics division of the Trelleborg Group, one of the largest polymer processors in the world, puts us in a unique position. While working closely with you developing your project, we are supported by a large group of companies with a broad scope of technical expertise resulting in single ownership from raw material to finished product.

With direct access to a large inventory in the supply chain, we are able to maximise product availability, keeping costs and lead times to a minimum, while still providing a highly personal service delivered by an experienced team.

Based in Manchester in the UK, Trelleborg Flexible Containment Solutions has been part of the Trelleborg Group since 2005.

We supply a wide range of markets including the defence, maritime, petrochemical, power, security, agriculture and offshore industries. The Trelleborg Engineered Fabrics division works across technologically advanced industries to produce polymer-coated fabrics worldwide. By developing the optimum solution for your application we go further to engineer the fabric of industry.



PRODUCT OVERVIEW

The Trelleborg Dracone barge is an essential component in the ship to shore transfer of bulk liquids. In sea-based situations where a ship is too large to dock or the conditions are unsuitable, these units provide a unique, easily accessible system of liquid storage and transfer. Available in a range of sizes, the Dracone barge is a flexible, towable bladder constructed from high-performance materials enabling it to withstand hostile ocean conditions. Manufactured in the UK, the flexible Dracone design can be adapted to fit many different ship to shore applications including, military and commercial fuel movement, water transport and remote liquid storage.

The Dracone barge, whose name derives from the Latin and Greek words for 'serpent', was originally developed at Cambridge University in the 1950's during the Suez oil crisis in order to transport fuel from the Persian Gulf. Since that time, this unique and highly reliable product has had an unrivalled record of operational performance worldwide for nearly 40 years.

Applications - Dracone barges continue to operate extensively worldwide, providing a unique system of bulk liquid transport for a range of applications and industries.

Originally used for military purposes for the bulk transportation of refined fuels, they have many commercial and military applications and one of the key functions of the Dracone barge today is in the ship to shore transfer of bulk liquids.

Over 500 units have been produced and some key customers that have used Dracone barges are the **UK Ministry of Defence, the United States and Indian Coast Guards, the US Navy** and the **Marine Spill** Response Corporation. In UK military operations, they are used to quickly transfer fuel from a ship to the shore. Commercial uses include offloading waste water from ships that are unable to dock because the conditions are unsuitable.



FEATURES & BENEFITS

Dracone barges

- Large capacity floating liquid storage
- Durable and able to withstand harsh conditions
- Specially designed to store fuels
- Easily towed in open water
- Flexible and easily deployed

Strong and reliable under harsh conditions - the Dracone barge is constructed from synthetic rubber-coated nylon fabric, making it highly resistant to all weather conditions, abrasion, sunlight, oil and sea water. The construction of the nose and tail mouldings, based on modern composite technology and extensively tested under stress analysis, is essential to the overall strength of the unit. For use in pollution control, the inside has a nitrile coating that is specially designed to store distillate fuel oils of up to 30% aromatic content.

Easily towed in open water - with non-inflatable buoyancy panels, the Dracone barge will float whether empty or full and will follow the exact course of the towing vessel, allowing tight manoeuvres to be executed. Designed for towing in open seas, the unit has undergone intensive stress analysis to determine the optimal design for maximum stability in water.

Rapidly deployable and adaptable - with a large capacity and 'fold away' flexibility the Dracone barge is an essential part of the oil spill first response kit. Easy to set up and quick to launch from a quayside, the deck of an offshore vessel, or drop launched by crane or helicopter with minimal lifting equipment, it can be quickly transported to critical areas, filled to an enormous capacity to limit oil spill movements, and then easily towed for safe disposal.

Other products - alongside the Dracone barge, Trelleborg also provide other essential products for pollution control:

- Flexible pillow tanks - primarily for use on land for the temporary storage of large quantities of liquid fuels, flexible tanks can be manufactured to specified sizes to fit available space on oil spill collection ships. The tanks are easily filled and once emptied can be folded or stored away.
- Bund liners - used in conjunction with flexible tanks they provide a reliable containment around the tanks to prevent fuel spillage.



GENERAL DESCRIPTION

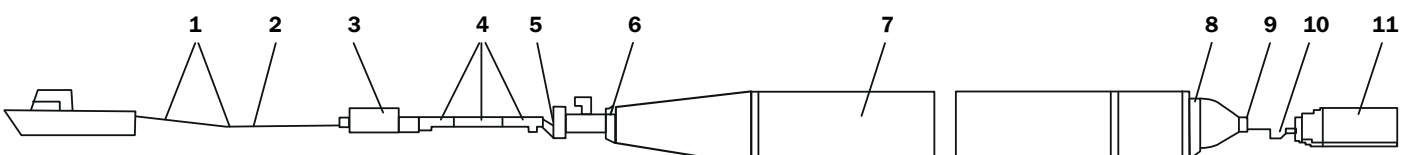
| | |
|-----------------------------------|--|
| UNIT SPECIFICATION | Available in a range of sizes and capacities, but can also be custom made to fulfil a specific client need. Table below. |
| MATERIALS AND CONSTRUCTION | Constructed from high-tenacity woven nylon fabric coated with polychloroprene. Interior coated with nitrile rubber for transporting distillate fuel oils of up to 30% aromatic content. Nose and tail mouldings constructed based on modern composite technology using rubber encapsulated nylon cord. |
| CONNECTIONS | Fill/discharge hoses can be offered to suit customer requirements. Standard connections include 4" or 6" (100mm or 150mm) but it is possible to modify hardware to suit. |
| TOWING | Depending on size can be safely towed at 6-10 knots in moderate seas. |

| | | DRACONE TYPE | | | | | | | | |
|----------------------|----------------|--------------|-------|-------|-------|--------|--------|--------|--------|---------|
| | | A1 | A2 | D5 | D10 | E | F | J | L | O |
| 100% CAPACITY | m ³ | 4.55 | 9.1 | 22.75 | 45.50 | 100.00 | 191.00 | 385.00 | 519.00 | 1100.00 |
| 85% CAPACITY | m ³ | 3,90 | 7.80 | 45.50 | 38.60 | 85.00 | 162.00 | 327.25 | 441.00 | 935.00 |
| LENGTH | m | 8.58 | 14.17 | 15.95 | 31.45 | 38.45 | 50.45 | 66.00 | 66.00 | 91.45 |
| DIAMETER | m | 0.94 | 0.94 | 1.42 | 1.42 | 1.87 | 2.35 | 2.82 | 3.28 | 4.23 |
| EMPTY WEIGHT | kg | 270 | 310 | 430 | 780 | 1000 | 2275 | 3540 | 4060 | 6500 |

Accessories

- Towing hose
- Recovery bend
- Cargo net
- Navigation marker
- Quick release hook
- Towing rope

LAYOUT OF A DRACONE



Accessories

- | | | |
|---------------------|-----------------|--------------------------------------|
| 1 Main towing ropes | 5 Nose cone | 9 Mooring ring |
| 2 Towing pendant | 6 Mooring ring | 10 Tow line |
| 3 Recovery bend | 7 Dracone barge | 11 Light float with navigation light |
| 4 Towing hose | 8 Stabiliser | |



Trelleborg Flexible Containment Solutions is part of the Engineered Fabrics division of Trelleborg, a world-leading engineering group developing advanced polymer technology solutions that seal, damp and protect people and processes. With 100 years of experience and continual research, we engineer the fabric of industry through customised and pre-conceived solutions adapted to your exact application.

www.trelleborg.com/flexible-containment



[https://www.facebook.com/Flexible.Containment/
@TrelleborgFCS](https://www.facebook.com/Flexible.Containment/@TrelleborgFCS)