



Flotec™ Distributed Buoyancy

Providing customized production buoyancy solutions

AFGlobal is one of the largest manufacturers of subsea buoyancy and insulation products in the world. The broad variety of materials and manufacturing methods developed over the years helps ensure the best selection of products and materials in the market.

The foundation of AFGlobal's buoyancy portfolio stems from the acquisition of two industry pioneers—**Flotation Technologies** and **Cuming Corporation**. These well-established brands feature deep experience in designing and delivering deepwater deployment solutions and form the basis of today's Flotec™ series of buoyancy and insulation technologies.



DESIGN AND MANUFACTURING

We offer comprehensive, innovative design solutions for any buoyancy project. Our products can be customized to meet the end user's design criteria. Our technologies can address virtually any flotation challenge—simple to complex and single-piece to modular design.

CAPABILITIES

- Build-to-print
- Design to specifications
- Manufacture directly from CAD files

MATERIALS

Full line of specialty composite materials, including:

- Syntactic foam
- Polyurethane elastomer
- Rubbers and plastics
- Standard and specialty metals
- Carbon fiber and specialty
- Glass fiber

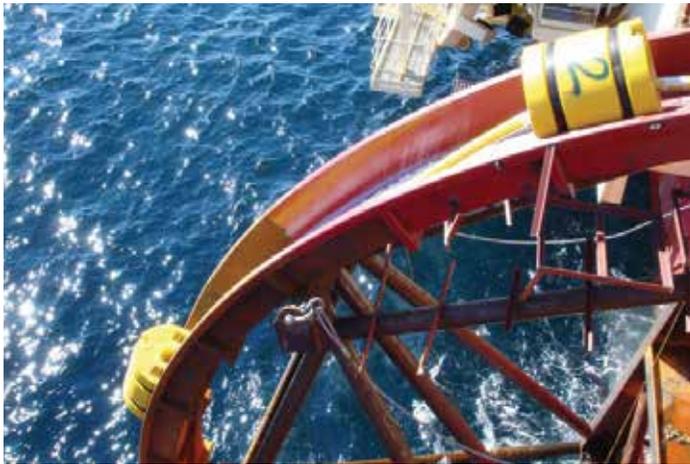
R&D FACILITY

AFGlobal's state-of-the-art R&D facility enables simulation of the most challenging conditions, improving our knowledge and capabilities with each new project. Supported by sophisticated computer technology, our engineers are continually working to make our material better, stronger, and more cost effective.

DISTRIBUTED BUOYANCY

Distributed buoyancy modules are a critical component of deepwater production systems and are used to maintain a pre-defined riser configuration. These configurations allow the vessel a full range of surface movement without putting undue stress on the subsea lines while decoupling wave action from the seabed.

Manufactured to meet the stringent requirements of long term service, our **Flotec™ distributed buoyancy modules** are comprised of two major components—an internal clamp and buoyancy elements.



CLAMPS

The clamp body is made of high-density syntactic foam that is extremely resistant to creep. Through careful modeling, the clamp is designed to resist axial movement throughout all design conditions. It securely attaches to the riser and transfers the buoyancy uplift from the elements.

BUOYANCY MODULES

The buoyancy elements—manufactured from rotationally molded polyurethane shells—have a syntactic foam core and contain tapered openings at both ends to allow local bending of the riser without concern of contacting the riser. Both the internal clamp and buoyancy elements are held in place by aramid fiber straps, and all tensioning hardware is super duplex stainless steel, providing superior corrosion resistance and high strength.

STRAKES

Our buoyancy modules may also be manufactured with integral strakes to suppress vortex induced vibration. Also designed as two half shells, when assembled lock

to the adjacent module at 10 degree offset to create a continuous helix. This design offers the buoyancy required for structures such as jumper spools while suppressing potentially destructive vortex induced vibrations (VIV).

BUCKLE MITIGATION BUOYANCY MODULES

At higher temperatures and pressures, a pipeline's natural tendency is to relieve its axial stress by buckling. Left uncontrolled, the buckling can damage the integrity of the pipeline. Our Flotec™ buckle mitigation buoyancy modules control the formation of lateral buckles along the pipeline and alleviate stress on buckles. This cost-effective solution helps decrease lateral friction and reduce severity of buckle bending by using buoyancy to decrease the operational submerged weight of the pipeline.

Flotec™ buckle mitigation modules are custom designed based on customer specifications and provide integral clamping systems that are able to meet axial and torsion load requirements.

ABOUT AFGLOBAL

For decades, AFGlobal has created reliable, highly effective solutions to difficult challenges in the oil and gas industry. Our unique approach combines conventional OEM processes and technology with unconventional thinking, to quickly find the best solutions for our clients.

Technologies and products for the oil and gas industry are trusted by many of the industry's best known companies to reduce downtime, mitigate risk, and improve ROI. Our proven solutions are packaged intelligently and delivered with the highest levels of customer service.



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