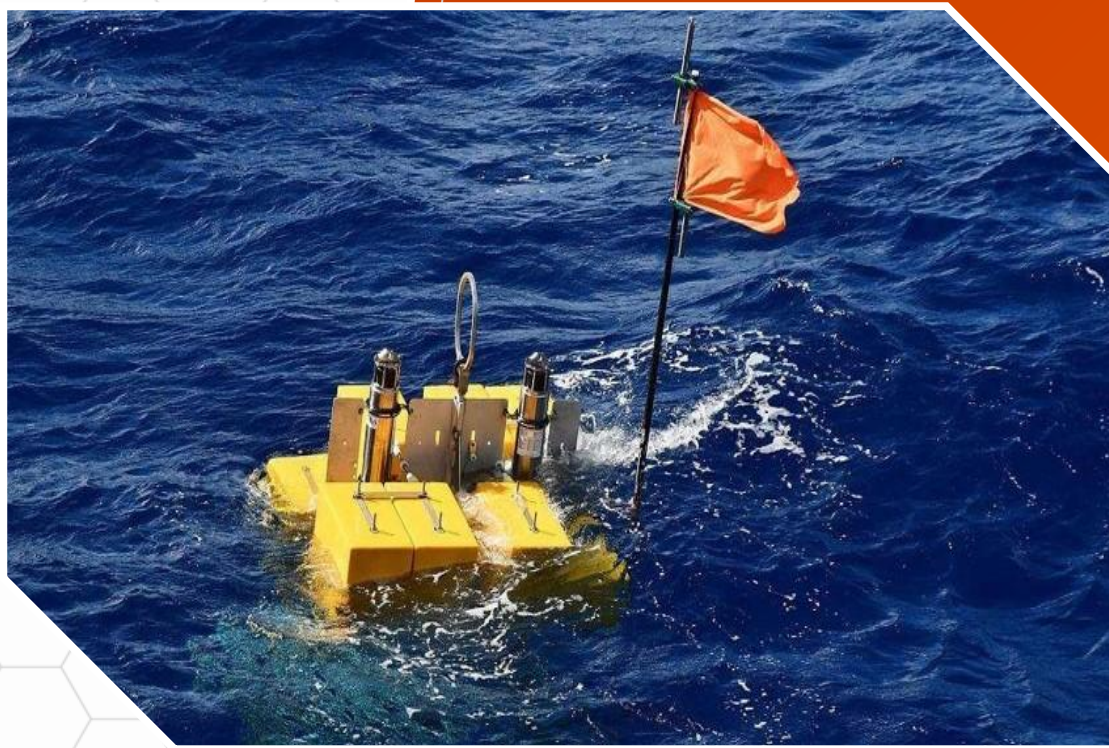


Syntactic Foam Buoyancy

Engineered for ultra-deep subsea environments



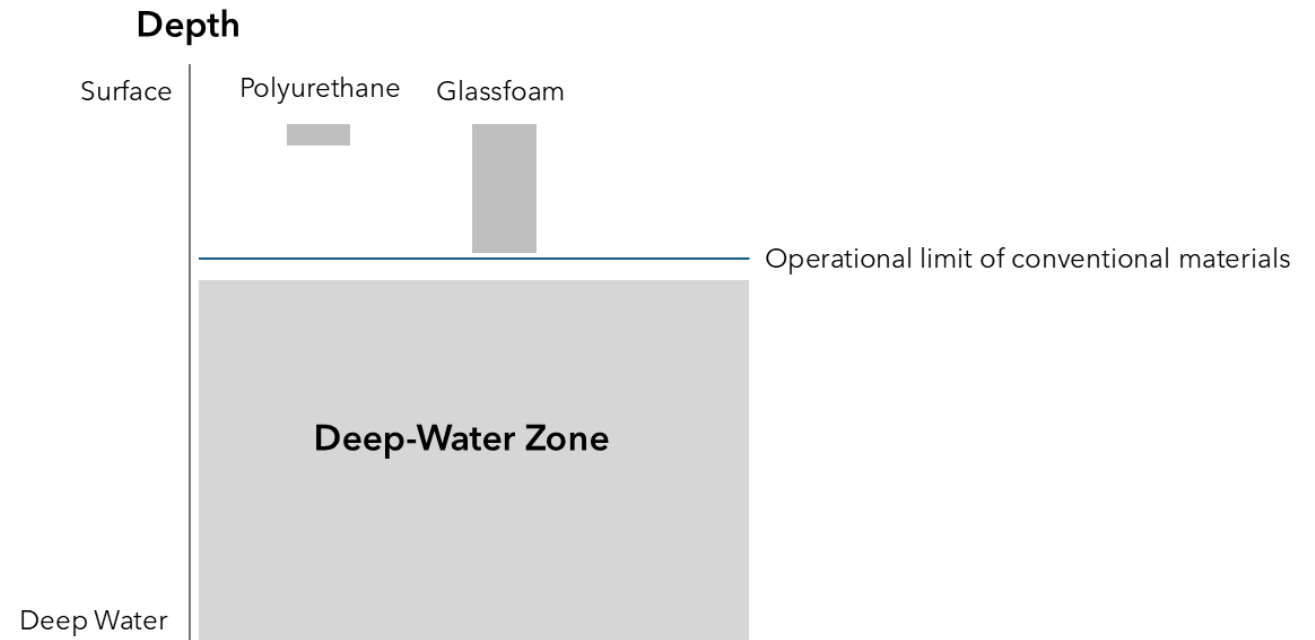
Deep-Water Buoyancy Challenges

Deep-water operations are increasingly required in offshore energy, subsea infrastructure and oceanographic applications. As operating depth increases, buoyancy systems are exposed to extreme hydrostatic pressure, which can lead to compression, loss of uplift and structural failure.



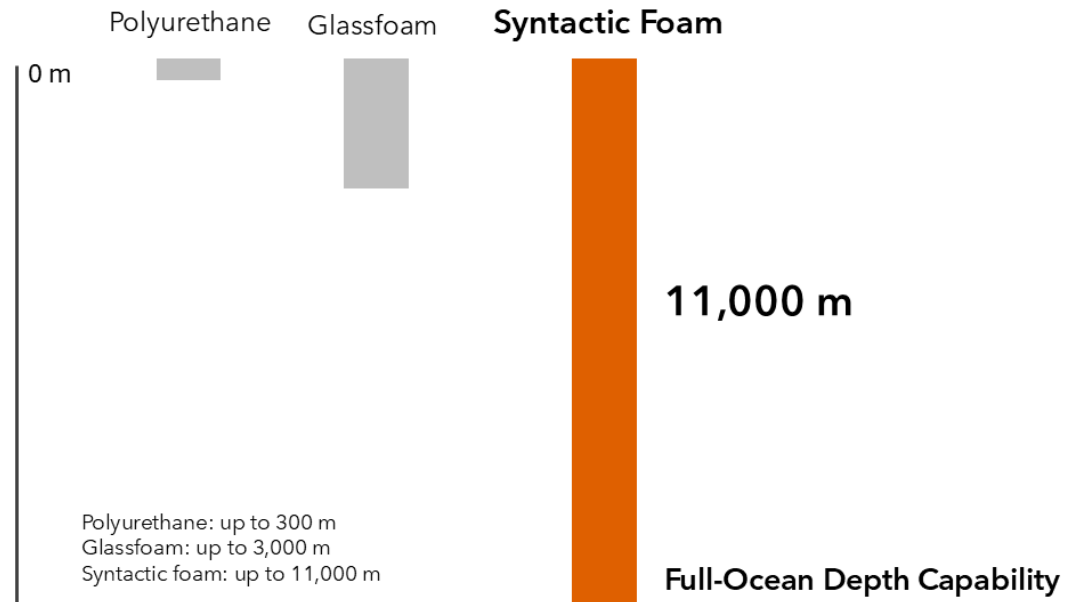
Limits of Conventional Buoyancy Materials

Conventional buoyancy materials are suitable for shallow and medium depths, but their performance is limited under high hydrostatic pressure. As depth increases, these materials may compress, absorb water or lose structural integrity, resulting in reduced buoyancy and increased operational risk.



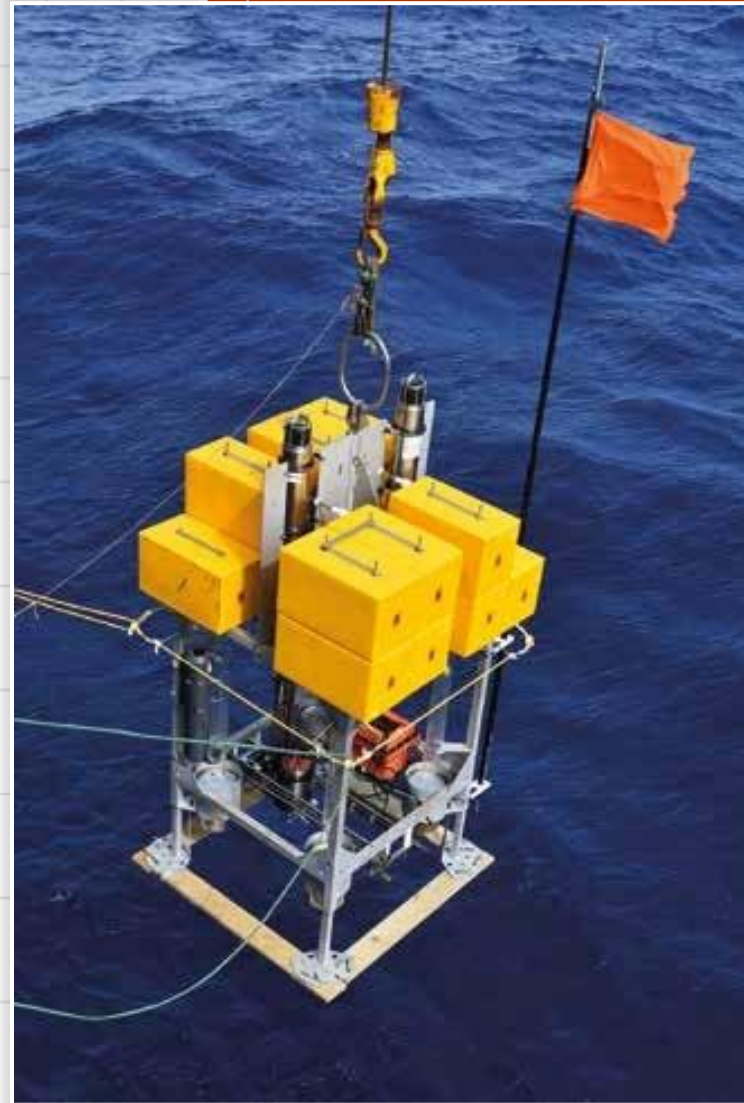
From Surface to Full-Ocean Depth

Resinex buoyancy solutions operate from shallow waters to full-ocean depth, with proven deployments up to **11,000 m**.



What is Syntactic Foam?

Syntactic foam is a composite material made of hollow microspheres embedded in a polymer matrix. This closed-cell structure combines low density with high compressive strength, allowing the material to withstand extreme hydrostatic pressure while maintaining dimensional stability and reliable buoyancy.



Key Performance Advantages

High compressive strength

Resists extreme hydrostatic pressure without structural failure

Minimal water absorption

Closed-cell structure prevents water ingress and density variation

Dimensional stability

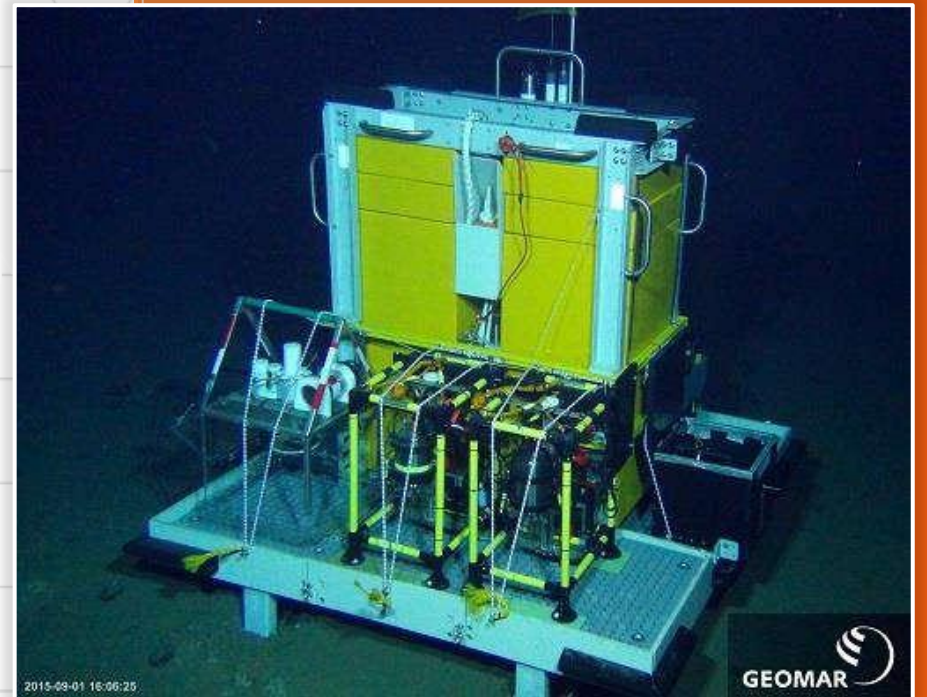
Maintains geometry and mechanical properties at full-ocean depth

Long-term buoyancy performance

Provides stable uplift over extended service life

Low maintenance and lifecycle cost

Long-term material stability minimizes inspection and replacement requirements



Deepwater Applications

Deepwater mooring systems

Stable buoyancy for subsea structures and long-term deepwater positioning

Offshore energy systems

Support for cables, risers and subsea structures

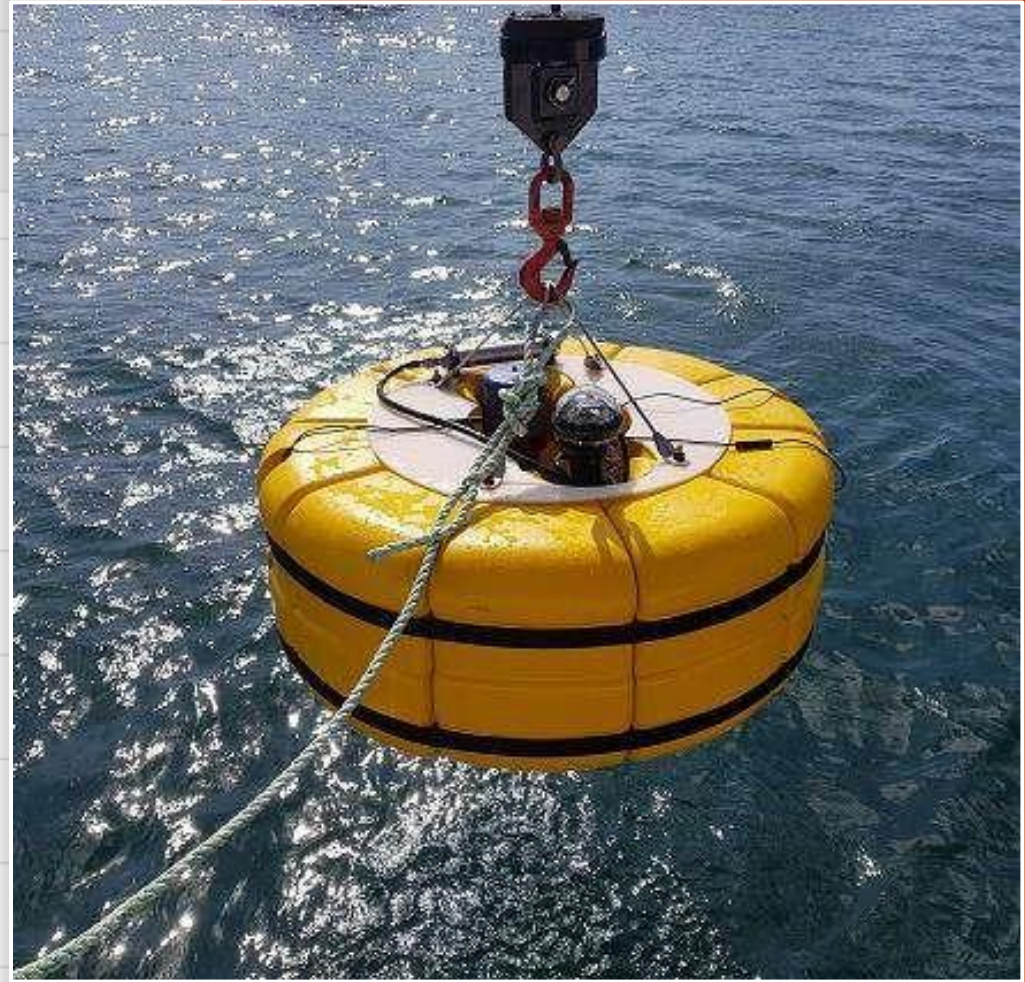
Subsea instrumentation and oceanographic systems

Long-term dimensional stability for scientific monitoring equipment at full-ocean depth



Proven Deepwater Experience

Resinex syntactic foam solutions have been successfully deployed in demanding subsea environments, including full-ocean depth operations up to 11,000 m. Their long-term dimensional stability and reliable buoyancy performance have been proven in scientific, offshore and monitoring applications worldwide.

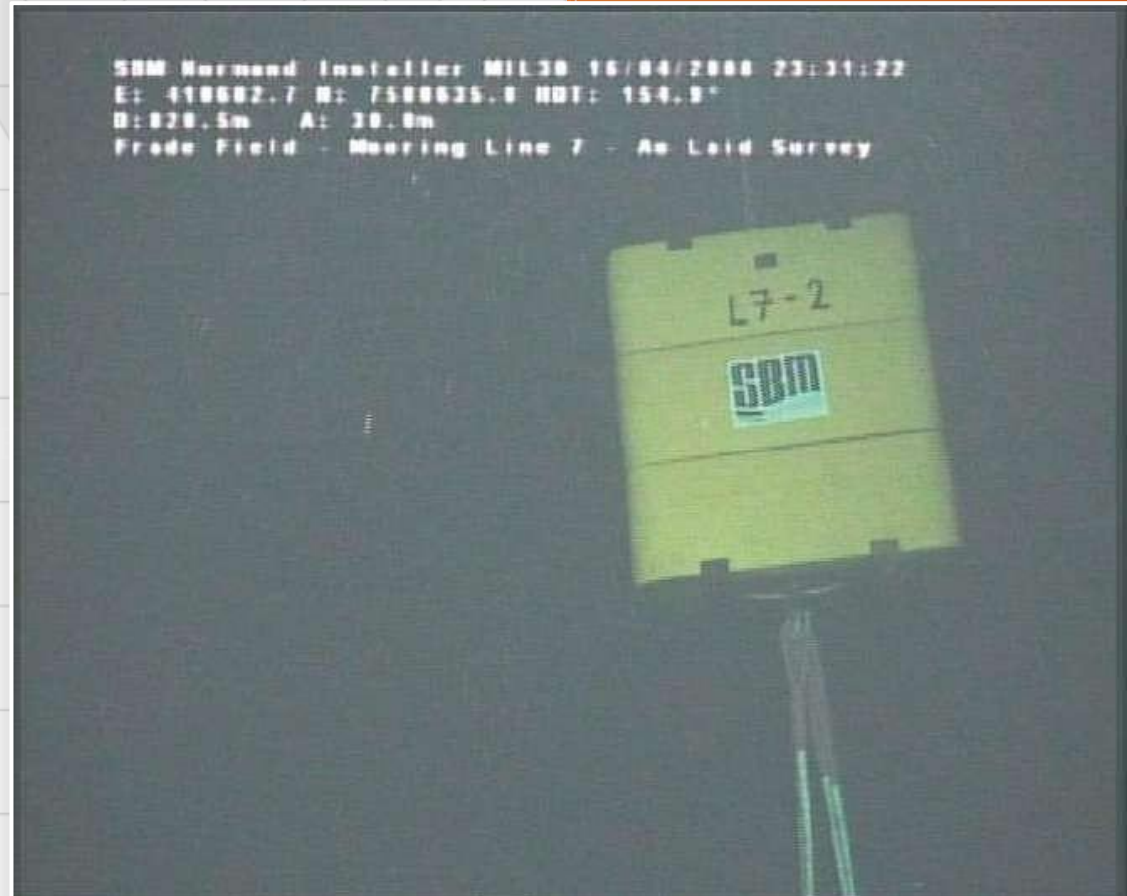


Oil & Gas

Frade Field Project

Brazil

2.000 m WD



Oil & Gas

Jack St. Malo Project

Gulf of Mexico

2.200 m WD



Oil & Gas

Scarabeo 9 Vessel

Cuba

3.700 m WD



Oil & Gas

Phoenix Project

Gulf of Mexico

300 m WD

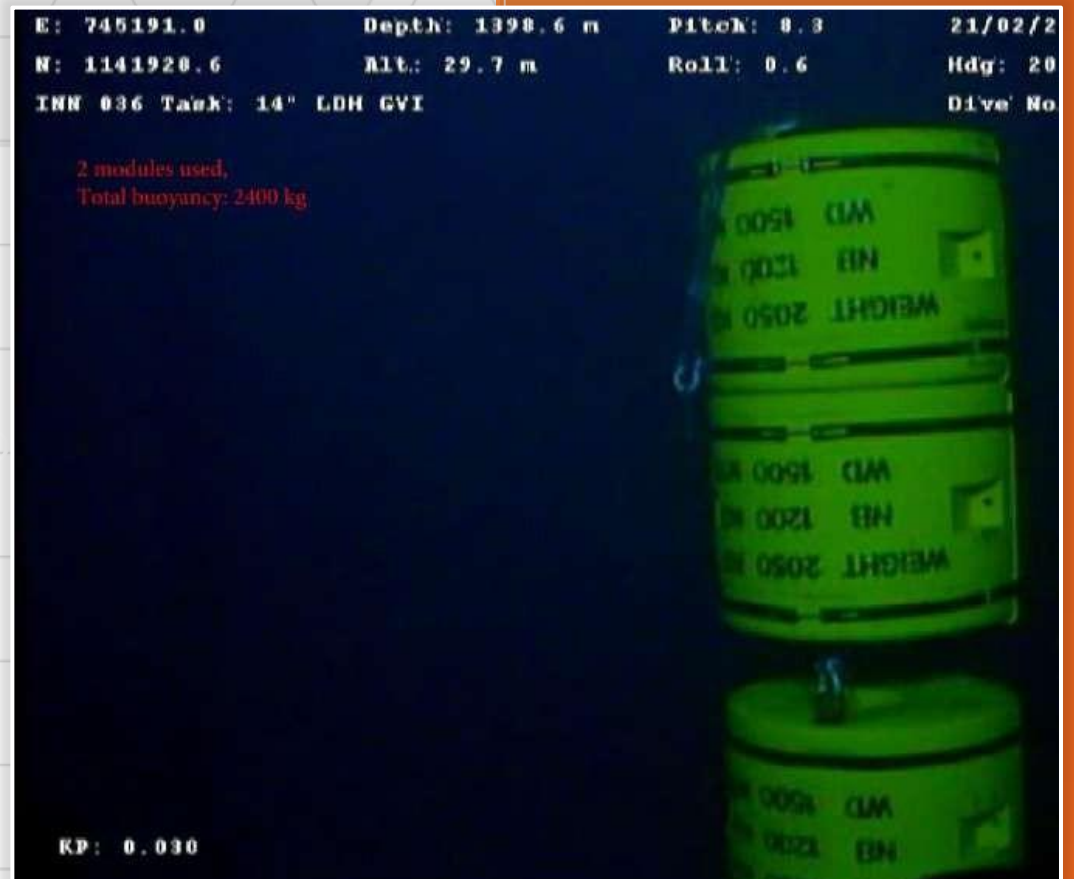


Oil & Gas

Zohr Project

Egypt

1.500 m WD



Oil & Gas

Deep Pioneer Vessell

Angola

1.200 m WD



Oil & Gas

Kizomba Satellites Project

Angola

2.200 m WD



Oil & Gas

Egina Project

Nigeria

2.000 m WD



Oil & Gas

Lingshui17-2 Project

China

2.000 m WD

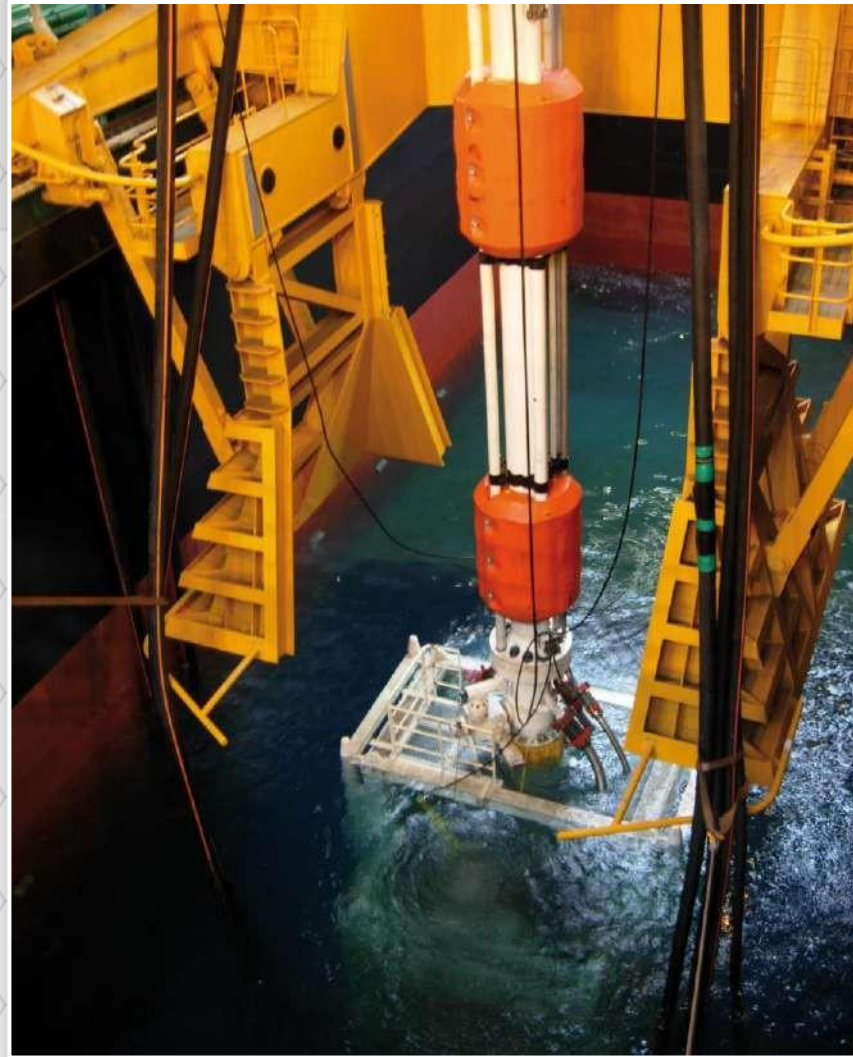


Oil & Gas

Saipem 12000 Project

South Korea

3.700 m WD

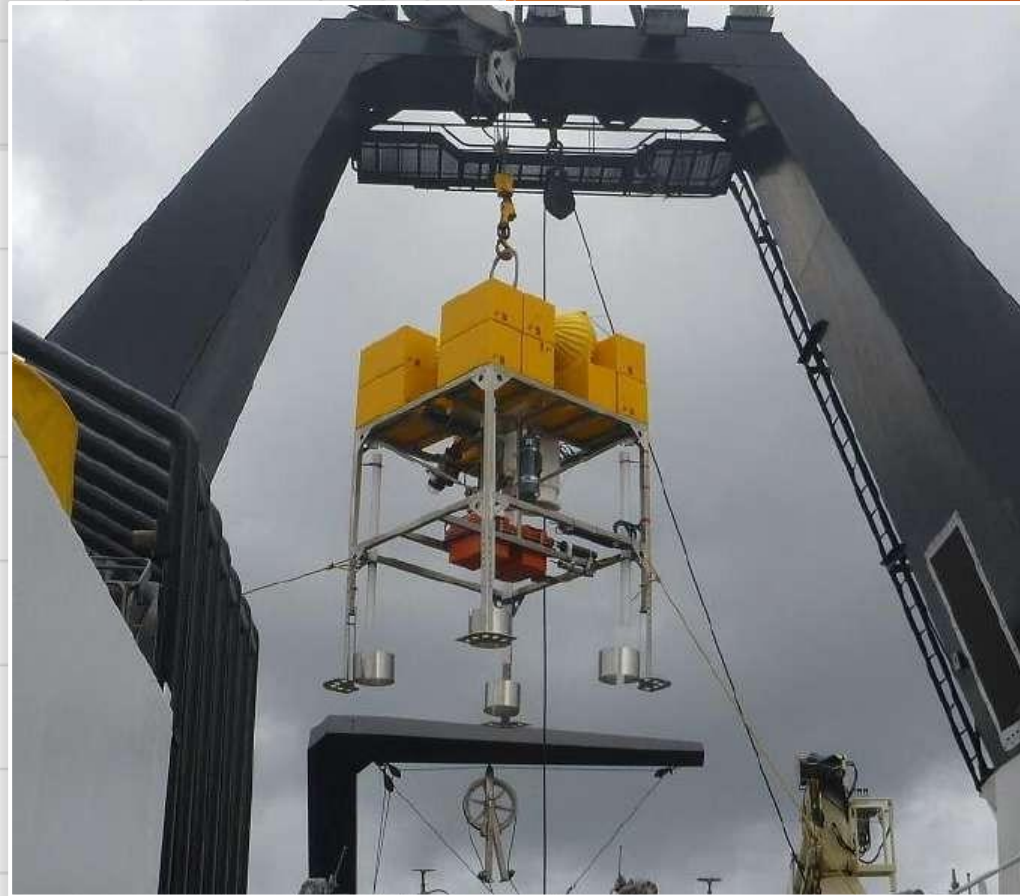


Oceanology

NIWA

New Zealand

6.000 m WD

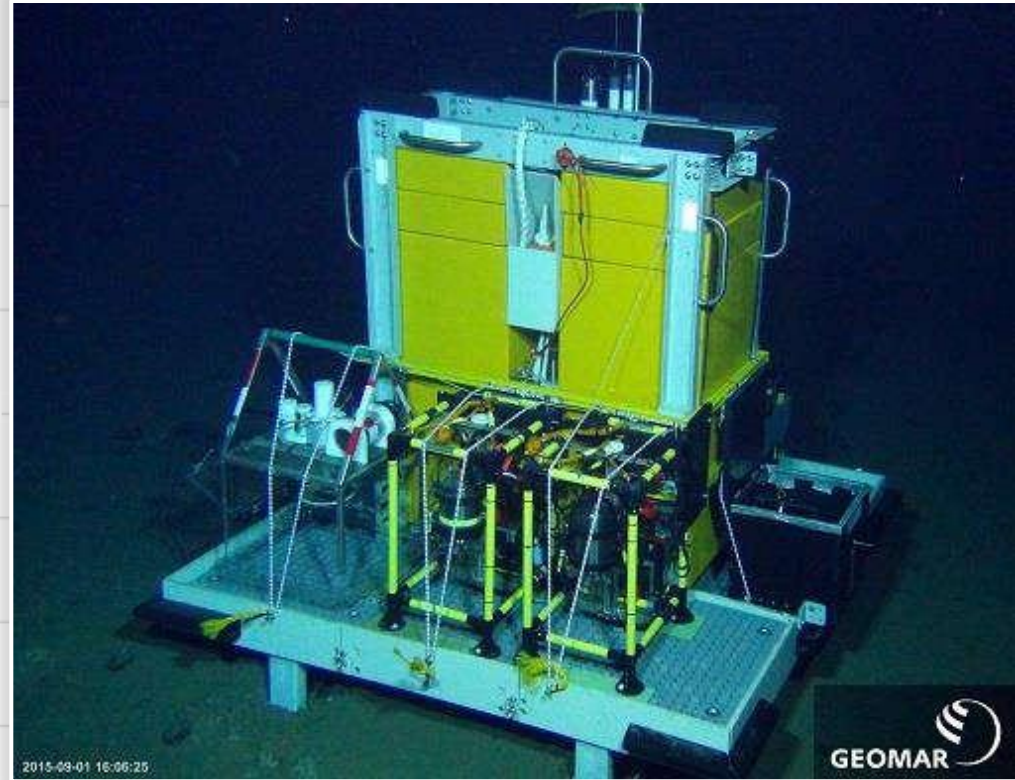


Oceanology

Geomar, Expedition SO242-2

South America

6.000 m WD



Oceanology

ESTOC Station

Canary Island

500 - 3.700 m WD



Oceanology

NEMO Project (INFN)

Southern Italy

3.500 m WD



Oceanology

EMSO MedIT Project (INGV)

Southern Italy

6.000 m WD



Oceanology

University Of Atzores

The Atzores

500 m WD



Oceanology

iXBlue

France

3.000 m WD

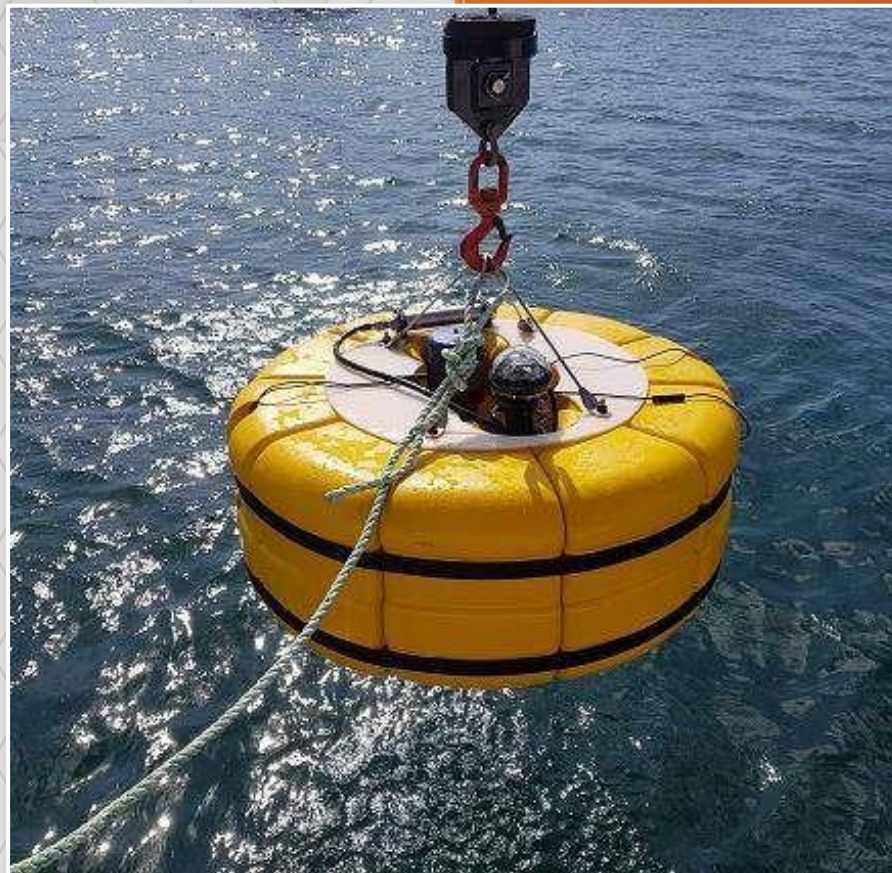


Oceanology

GURALP

United Kingdom

6.000 m WD



Oceanology

Sonardyne

United Kingdom

3.000 m WD



Oceanology

LOCEAN

France

3.000 m WD

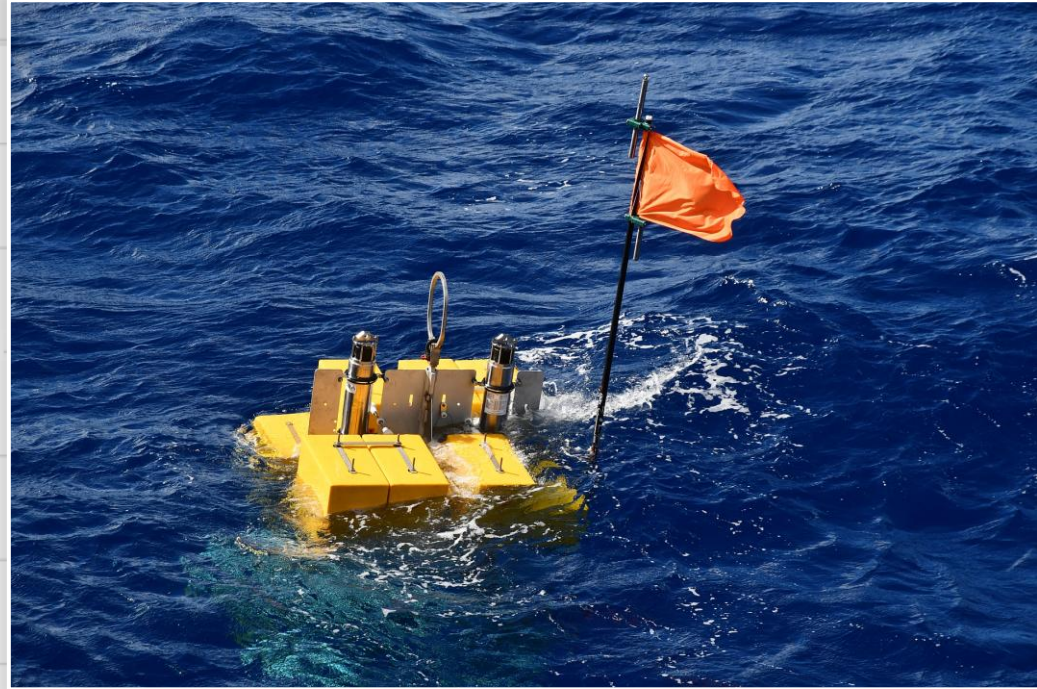


Oceanology

ALFRED WAGNER INSTITUTE

Arctic Circle

11500 m WD



Oceanology

KC DENMARK

Pacific Ocean

11500 m WD



Oceanology

NIOT

India

3.000 m WD



Quality Assurance & Testing

Resinex syntactic foam solutions are manufactured under a certified quality management system and verified through dedicated inspection and testing procedures. Each project follows a defined inspection and test plan, with hydrostatic pressure testing performed at the Resinex Marine Research Centre to validate long-term performance under extreme deepwater conditions.



Quality Assurance & Testing

- ISO 9001 certified (Lloyd's Register)
- Project-specific Inspection & Test Plan (ITP)
- Hydrostatic pressure testing up to 950 bar
- Certificate of Conformity issued for each delivery



Tensile Strength Test at Break



Deep-water hydrostatic testing

Contacts

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