



Oil & Gas Buoyancy Application: Optimal performance at any depth

The high pressures of deepwater environments place enormous challenges on flowlines, risers and critical equipment. 3M™ Glass Bubbles have become an industry-standard additive for syntactic foams used in buoyancy modules, buoys or buoyancy blocks for undersea vehicles.

Key Customer Challenge

Enable smaller modules with the same net lift, taking up less deck space to improve operational efficiency for installation.

3M Solution

3M Glass Bubbles

Buoyancy modules for drill risers

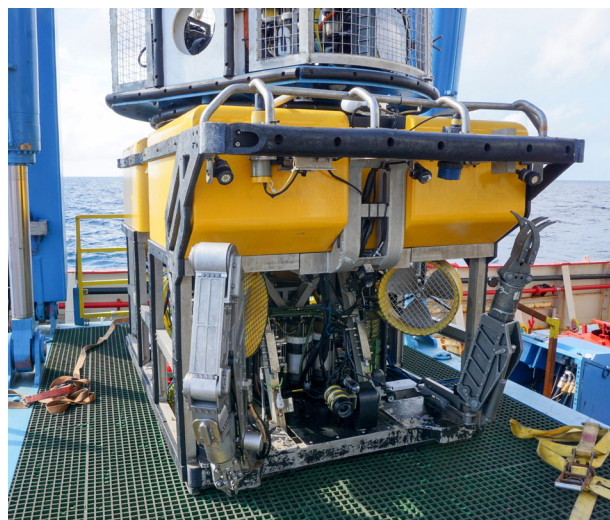
The inherent properties of 3M Glass Bubbles assist drill riser manufacturers with their production of deep-water drill riser buoyancy modules

Distributed Buoyancy Modules (DBMs)

3M Glass Bubbles provide some of the lowest density syntactic foams which can help drill riser manufacturers maximize their positive buoyancy (lift) in some of the deepest waters

Buoyancy blocks for Remote Operated Vehicles (ROVs)

The inherent properties of 3M Glass Bubbles helps to enable ROV manufactures produce high net buoyancy syntactic foams rated for some of the deepest waters to any ocean depth



Recommended Products		Calculated density of syntactic foam (g/cc)*	Strength		Density (g/cc)	Particle size (µm) d50
			(psi)	Survival		
New!	3M™ Glass Bubbles K15HSN	0.65	600	80%	0.15	40
	3M™ Glass Bubbles K20HS	0.67	750	90%	0.20	55
	3M™ Glass Bubbles XLD3000	0.69	3,000	90%	0.23	30
	3M™ Glass Bubbles S28HS	0.71	3,000	90%	0.28	30
New!	3M™ Glass Bubbles S32HSN	0.73	6,000	90%	0.32	26
	3M™ Glass Bubbles iM16K	0.80	16,000	90%	0.46	20
	3M™ Glass Bubbles iM30K	0.87	27,000	90%	0.60	18

Not for specification purposes. These products are globally available through multiple regional supply channels.

*Assumptions for calculated density: 50% by volume loading of 3M Glass Bubbles in a resin system with a cured density of 1.14 g/cc, assuming no air entrainment in the final foam and no Glass Bubbles volume losses during processing.

IMPORTANT NOTICE: The results and outcomes of case studies or testimonials should not be interpreted as a guarantee or warranty of similar results. You are responsible for evaluating the product and determining whether it is suitable for your application. Please refer to applicable 3M specifications for product and warranty information.

Consult a 3M Expert.
3M.com/insulationbuoyancy



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