

Engineered to Perform

ESS syntactic foams are engineered to provide the lowest possible density for any given depth. Designed to withstand high hydrostatic pressure with extremely low water absorption, these lightweight foams meet the depth and buoyancy requirements of a wide range of floatation applications, with extensive use in AUVs, ROVs and HOVs.

ESS offers two distinct types of buoyancy materials: microsphere and macrosphere syntactic foams. They range in construction and density from 18 lbs/ft³ to 45 lbs/ft³ and are operational from the surface down to the ocean floor.

Macrosphere Syntactic Foam

These specially engineered MacroFoam products integrate fiber reinforced spheres into the standard syntactic matrix, allowing for lower densities, lower cost buoyancy and the fabrication of larger structures. MacroFoam is available in standard, off-the-shelf sheets and near-net shape or finished geometries. Macrosphere foams are offered in a range of densities and specialty grades. MacroFoam safely operates from the surface down to depths of 1,600 meters.

Microsphere Syntactic Foam

Typically provided in block form, this isotropic material is offered in a range of densities and is formulated to meet depth and buoyancy requirements below 10,000 meters. It is available in four grades which are based on service depth and correspond with the oceanic zones. Densities may vary within layers or overlap zones.

MZ Grade	BZ Grade	AZ Grade	HZ Grade
Mesopelagic Zone	Bathypelagic Zone	Abyssopelagic Zone	Hadal Zone
200 - 1,000m	1,000 - 4,000m	4,000 - 6,000m	> 6,000m

Highlights

- Operational Depth Range (Surface - Deepest Ocean Depth)
- Lowest Density Available in the Entire Industry
- High Compressive and Hydrostatic Strength
- Wide Range of Densities and Grades
- Low Water Absorption at Depth