



AI-42 Syntactic Foam

Technical Data Sheet

AI-42 grade of syntactic has been formulated specifically to meet the requirements outlined in NAVSEA Drawing number 5856846 REV B defining the requirements for rigid syntactic foam for acoustic isolation and pressure release applications. Properties of the material are provided below.

Property	Units	Requirement	Actual
Density	lbs/ft ³	44 Max	42 +/- 2
Uniaxial Ultimate Compressive Strength	lbs/in ²	12,500 min	16,300
0.2 % Offset Uniaxial Compressive Strength	lbs/in ²	10,000 min	11,800
Compressive Modulus	lbs/in ²	425,000 min	568,000
Tensile Strength	lbs/in ²	4,000 min	5,215
Shear Strength	lbs/in ²	4,000 min	4,725
Sound Velocity (Longitudinal) at 21° C	meters/sec	2800 ± 150	2,740



Syntactic foams are a unique combination of hollow spheres, a resin matrix, and other additives. When combined and processed properly, the constituents form a lightweight homogeneous material having high compressive and hydrostatic strengths. This yields a product able to withstand the extreme hydrostatic pressures experienced by today's manned and unmanned subsea vehicles.