

ECCOFLOAT® DS-33

High Performance Syntactic Foam

Eccofloat DS-33

Is an ultra high performance syntactic foam comprised of tiny hydro-space quality hollow glass microspheres in a resin matrix. The material is homogeneous in that pieces cut from a block will have the same properties as the original block.

Usage

The primary use for Eccofloat® DS-33 is as a buoyancy material. Due to its strength, however, it should also be considered for structural and acoustic applications.

Forms Available

The standard commercial form is molded blocks one cubic foot (0.028 cu. m.) in volume. Standard dimensions are 6"x 12"x 24" (15.2 cm x 30.5 cm x 61 cm). Alternate shapes are available within certain limits of volume and dimensions. Larger shapes can be made by adhesive bonding or mechanical attachment of these blocks. The material is readily machined with conventional tools and the cut surfaces do not require any preparation before use.

Tolerances

Specific weight of a production lot of blocks will average ± 1 lb per cu. ft. (± 0.016 g/cc) from nominal. Individual blocks may exhibit greater variation. Dimensional tolerance is typically ± 0.25 " (± 0.064 cm), resulting in a volume tolerance of approximately ± 8 percent.

Quality Assurance

The density of all blocks is measured. The standard hydrostatic pressurization test is 9,030 psi for 24 hours. This test is run on one block from every 10 blocks in a production lot. The weight gain specification is less than 1.0 % weight gain.

Typical Properties

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Density, lb/ft ³ (g/cc)	31-33 (0.50)
Service Depth, ft (Meters) Note 1 and 2	20,000 (6,100)
Hydrostatic Crush Depth, ft (Meters)	29,000 (8,840), min.
Weight gain % 9,030 psi (622 bar) 24 hrs	1.0% max.
Weight gain % 1,000 cycles 0 - 9,030 psi (0 - 622 bar)	2.0% max.
Weight gain % 10,500 psi (723 bar) 24 hrs	3.0% max.
Uniaxial Compressive Strength, psi (kg/cm ²)	8,500 (597) min.
Uniaxial Compressive Modulus, psi (kg/cm ²)	375,000 (26,360) min.
Bulk Modulus, psi (kg/cm ²)	390,000 (27,420)
Shear Strength, psi (kg/cm ²)	3,900 (274) min.
Poisson Ratio	0.325
Acoustic Impedance, Rayls	1.436
Speed of Sound, ft/sec (m/sec)	9,236 (2,815)

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Notes

- 1) The rated service depth of 20,000 ft (6,100 m) is for general information only. It is the sole responsibility of the user to select material based on depth, time at depth, nature of the payload and appropriate safety factor.
- 2) Eccofloat® materials are designed and tested for service in ordinary tap water or sea water and may not be compatible with other liquids. It is the sole responsibility of the user to test and verify performance and compatibility of the materials system.



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