C-STOCK 265

TECHNICAL BULLETIN 210-4

LIGHWEIGHT ARTIFICIAL DIELECTRIC MATERIAL

C-STOCK 265 is a rigid, lightweight, filled plastic material that functions as an artificial dielectric material. It exhibits controlled dielectric constant and low dissipation factor at microwave frequencies. **C-STOCK 265** is normally supplied in cast plates, bars, and rods. The material is useful in making microwave lenses, radomes, and a variety of antenna parts, particularly for aircraft applications. Its principle advantage is that it is much lower in density than conventional materials of equal dielectric constant.

The standard form of **C-STOCK 265** is based on epoxy plastic resin and glass microspheres combined to form syntactic foam, loaded with capacitive filler to achieve the desired dielectric behavior. The material is strong enough to serve as the core of load-bearing composite sandwich panels. Special formulations can be provided to meet unusual requirements. Typical properties of standard **C-STOCK 265** are given below.

TYPICAL PROPERTIES

Density, lbs/ft$_3$:	35-45
Dielectric constant, 10 GHz:	2.5 – 5.0
Loss factor, 10 GHz:	0.01 – 0.04
Max. temperature, ºC (ºF):	200 (400)
Compressive strength, psi:	2000 –3000
Thermal conductivity, BTU-in/ft$_2$-hr-ºF:	0.02 – 0.20

AVAILABILITY

When ordering **C-STOCK 265**, specify the desired dielectric constant and any other special features. The most common forms supplied are flat plates 12 x 12in., in thicknesses ranging from 0.25” to 1.00”, although many other sizes and shapes can be made. **C-STOCK 265** easily machined to complex geometries, and can be bonded to itself or to a substrate using an epoxy adhesive such as **C-BOND 245**.

See also Technical Bulletins 370-1 and 370-2 for more information on low density syntactic foams both as low loss and RF lossy materials.

Document Control Number: N-01-000-0063-D
09/13/2011

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