

ECCOSTOCK[®] LoK

Foamed, Low Loss, Low Dielectric Constant Plastic

Material Characteristics

- Low dielectric, low loss, thermosetting plastic
- ECCOSTOCK[®] LoK weighs only about half that of polystyrene and one quarter that of polytetrafluoroethylene
- ECCOSTOCK[®] LoK had better dimensional stability than other low loss plastics
- ECCOSTOCK[®] LoK has a very low thermal expansion coefficient. It will not cold flow, nor will it flow when heat is applied
- Soldering iron temperatures will not soften ECCOSTOCK[®] LoK and will only slightly degrade in the immediate area of contact.
- ECCOSTOCK[®] LoK is completely unicellular and is not affected by moisture

Applications

- ECCOSTOCK[®] LoK is specifically designed for use in coaxial, waveguide, and antenna support problems. Due to the low dielectric constant, reflections in transmission lines are minimized
- RF coils wound on ECCOSTOCK[®] LoK exhibit a higher Q than when wound on polystyrene or other plastic stock

Availability

- ECCOSTOCK[®] LoK is available in the following standard sizes:
- Sheets 12" x 12" (30.5cm x 30.5cm) in thicknesses of 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5, 2.0, 2.5 & 3.0" (0.32, 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81, 5.08, 6.35 & 7.62 cm)
- Rods 12" long (30.5cm) in diameters of 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5, 2.0, 2.5 & 3.0" (0.32, 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81, 5.08, 6.35 & 7.62 cm)
- Bars 12" long (30.5cm) in squares of 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5 & 2.0" (0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81 & 5.08 cm)
- Other sizes, shapes, thicknesses, and configurations are available on special order

Machining

- ECCOSTOCK[®] LoK has excellent machinability. Gumming does not occur and automatic screw machine operations are possible with it.

Typical Properties

Appearance	Water-white translucent stock
Service Temperature °F (°C)	-94 to 302 (-70 to 150)
Frequency	60 Hz to 10 GHz
Dielectric Constant	1.7
Dissipation Factor	<0.004
Volume Resistivity, ohm-cm	10 ¹⁴
Dielectric Strength, volts/mil (kv/mm)	300 (11.8)
Specific Gravity	0.54
Density, lb/ft ³	33.7
Flexural Strength, psi (kg/cm ²)	6,000 (420)
Coefficient of Linear Expansion, per °F (per °C)	28 x 10 ⁻⁶ (50 x 10 ⁻⁶)
Thermal Conductivity, (cal)(cm)/(sec)(cm ²)(°C) (BTU)(in)/(hr)(ft ²)(°F)	0.00024 0.70
Water absorption (%gain in 24 hours at 25°C)	0.1