

ECCOSORB® DSF

Thin, Flexible, Weatherproof, Oxidation-Resistant, Resonant Microwave Absorbers

Material Characteristics

- Thin, flexible, narrowband resonant absorber
- Dielectrically loaded silicone rubber sheets
- Frequency range from 3-17 GHz
- Reflectivity of 1% (-20dB) or less of the normal incident microwave energy at the design frequency
- Unlike typical iron-filled silicone absorbers, no oxidation is possible due to the chemical nature of the dielectric pigmentation system
- Can be readily cut with a sharp knife and template and conforms to mild curvatures

Applications

- ECCOSORB® DSF is ideally suited for applications requiring absorption at a specific frequency or in a narrow frequency band.
- No distinction between front and back sides
- Lining radar nacelles, masts of ships, walls, etc.
- Reduction of reflections and echoes to nearby antennas and attaching to vehicles to reduce overall radar signature

Availability

- Standard sheets are 12" x 12" (30.5cm x 30.5cm)
- Thickness depends on resonant frequency desired
- Grades are designated by their suffix corresponding to the resonant frequency desired
- Other resonant frequencies up to 40 GHz can be supplied on special order
- ECCOSORB® DSF is available in customer specified configurations

Instructions for Use

- The performance of ECCOSORB® DSF requires that it be intimately backed with a metal surface. Otherwise, an aluminum backing should be bonded to the surface of the object.
- To ensure a strong bond, the metallic surface should be thoroughly cleaned with a solvent to remove any oil, grease, or dusts.
- Apply a thin coat of Primer S-11 to the metal and allow to dry. Coverage is 147 sq ft/lb per 1 mil thickness.
- Apply a thin coat of STYCAST® 4952 two-part RTV silicone over the primer.
- Firmly press ECCOSORB® DSF into place and hold until cure is complete

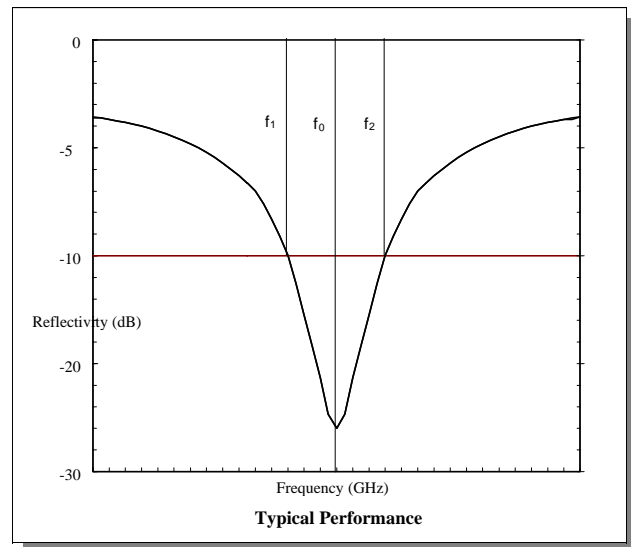
Typical Properties

Service Temperature, °F (°C)	-65 to 329 (-54 to 165)
Water Absorption after 14 days	0.001 %

Physical Characteristics

Designation	Thickness		Weight	
	inch	mm	lb/ft ²	kg/m ²
DSF-3	0.21	5.4	2.35	11.47
DSF-10	0.07	1.8	0.77	3.7

Typical Reflectivity Performance



The performance of ECCOSORB® DSF is defined by reflectivity at a single frequency. A generalized performance curve is shown above. The design frequency f_0 , has a $\pm 5\%$ bandwidth, designated as f_1 and f_2 .