

ECCOSORB® SF

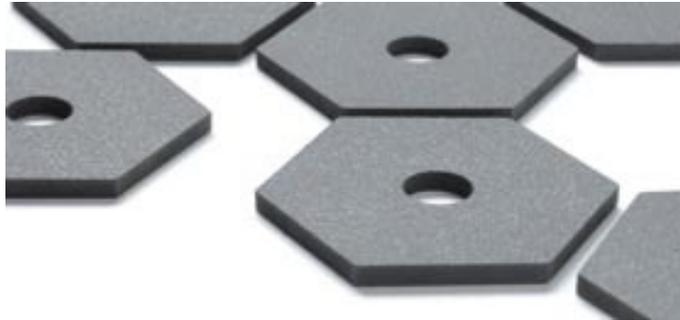
THIN, FLEXIBLE, RESONANT, MICROWAVE ABSORBER

Description:

Eccosorb SF is a series of thin, flexible, flat-sheet, resonant absorbers which reflect -20 dB or less of normally incident microwave energy at the design frequency in the range of 0.7 to 40 GHz.

It concerns magnetically loaded silicone rubber sheets which are designed to be bonded to flat or curved metallic surfaces to reduce the reflectivity in a narrow band of frequencies.

Silicone absorbers have high service temperature capability (165°C continuous) and allow short exposures to higher temperatures. The product offers advantages for high power and low out-gassing applications and can be subjected to outdoor environments and high altitudes, including space, with no adverse effects. However, in corrosive environments its dielectrically loaded counterparts Eccosorb DSF and DSF-U are recommended. If a self-adhesive backing is required, the urethane version Eccosorb SF-U is recommended.



Designed to fit the application. Emerson & Cuming Microwave Products develops specialized microwave absorbers in a myriad of forms to suit every specific application.

Application:

Eccosorb SF is suited for applications requiring absorption at a specific frequency or in a narrow frequency band, including:

- lining radar nacelles, particularly where high power is present
- attaching to masts of ships, walls, etc. to reduce reflections and echoes from nearby antennas
- attaching to vehicles to reduce radar signature.
- lining magnetron housings to prevent detuning.
- fabricating into tapered shapes for impedance matching in waveguide or microstrip applications.
- suppressing reflections, surface currents and cavity resonances inside microwave modules.
- lining of cavity backed and shrouded telecommunication antennas where narrowband performance is required e.g. waveguide feeds.

For module interference, cavity resonance and surface current problems where no specular reflectivity performance is required, Eccosorb GDS, Eccosorb MCS, Eccosorb BSR and Eccosorb FGM-40 are recommended due to their high magnetic loss properties.



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Physical Properties:

Colour	grey
Dimensions (mm)	305x305
Thickness range (mm)	0.7 to 7.0
Surface density range (kg/m ²)	2.2 to 31.0
Density range (g/cm ³)	2.3 to 5.1
Tensile strength (MPa)	1.0 to 6.0
Elongation at break (%)	20 to 100
Tear strength (N/mm)	1.1 to 2.0
Hardness (Shore A)	73
Maximum service temperature (°C)	165

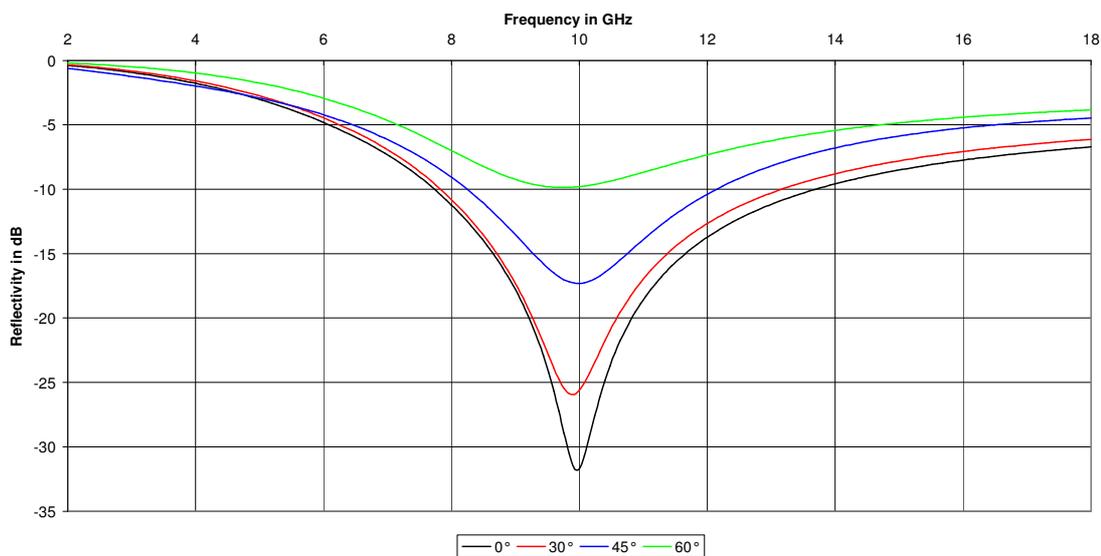


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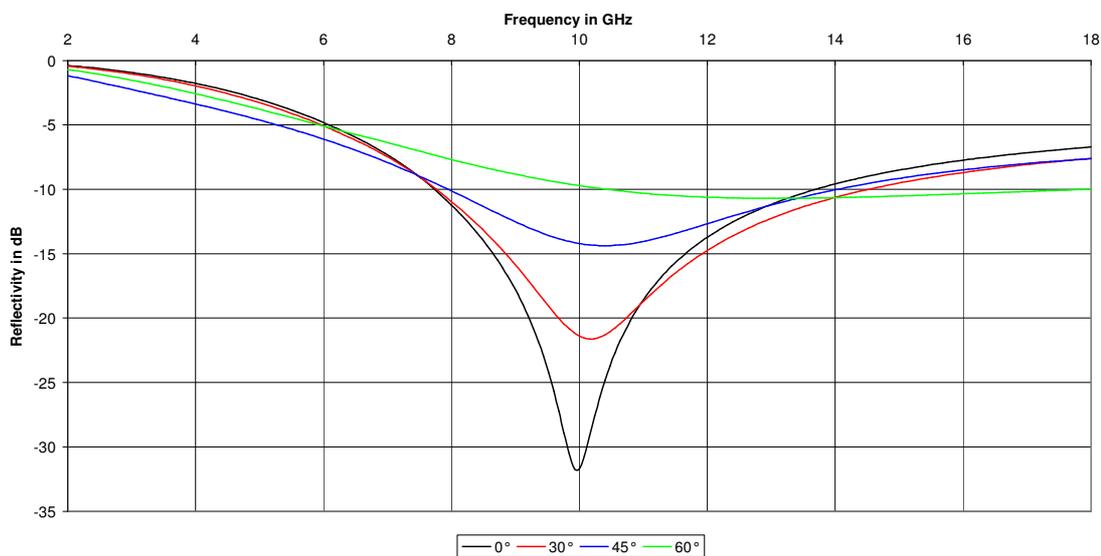
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Electromagnetic properties:

Typical reflectivity at various angles of incidence
 ECCOSORB SF-10
 Perpendicular polarization



Typical reflectivity at various angles of incidence
 ECCOSORB SF-10
 Parallel polarization



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Availability:

Eccosorb SF is available in square sheets of 305 mm x 305 mm with varying thickness according to the desired resonant frequency.

Grades are designated by a suffix corresponding to the resonant frequency.

For example, Eccosorb SF-10.0 will be resonant at 10 GHz.

On special order the material can also be supplied in customized shapes.

Instructions for use:

Eccosorb SF is designed to function directly in front of a metallic surface.

If this is not the case, a metallic foil should first be bonded to the object.

As it is a homogeneous material, there is no distinction between its front and back face.

To obtain a strong bond of the absorber to the object, the metallic surface should be first thoroughly cleaned with a degreasing solvent.

The material can be bonded by use of an RTV silicone based adhesive in conjunction with a suitable primer.

Eccosorb SF can be readily cut with a sharp knife and template.

It is a very flexible material and will conform to mild curvatures.



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Safety Considerations: It is recommended to consult the EMERSON & CUMING MICROWAVE PRODUCTS product literature, including material safety data sheets, prior to use EMERSON & CUMING MICROWAVE PRODUCTS products. These may be obtained from your local sales office.

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