

ECCOSORB® SF-U

THIN, FLEXIBLE, RESONANT, MICROWAVE ABSORBER

Description:

Eccosorb SF-U 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.

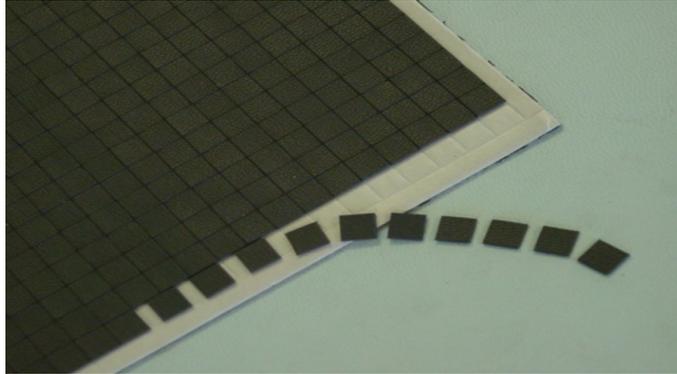
It concerns magnetically loaded polyurethane rubber sheets which are designed to be bonded to flat or curved metallic surfaces to reduce the reflectivity in a narrow band of frequencies

The main advantages of the polyurethane version are its ease of bonding to various substrates and the availability of a self-adhesive version.

Further they offer high mechanical strength and excellent abrasion resistance.

In corrosive environments its dielectrically loaded counterparts Eccosorb DSF and DSF-U are recommended.

Eccosorb SF-U will withstand temperatures from -40°C to 120°C.



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-U 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-U, Eccosorb MCS-U, and Eccosorb FGM-U are recommended due to their high magnetic loss properties.



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Physical Properties:

Colour	grey
Dimensions (mm)	305x305
Thickness range (mm)	0.6 to 7.8
Surface density range (kg/m ²)	1.8 to 34
Density range (g/cm ³)	2.5 to 4.7
Tensile strength (MPa)	2.5 to 5.1
Elongation at break (%)	15 to 100
Tear strength (N/mm)	3.0 to 15
Hardness (Shore A)	80

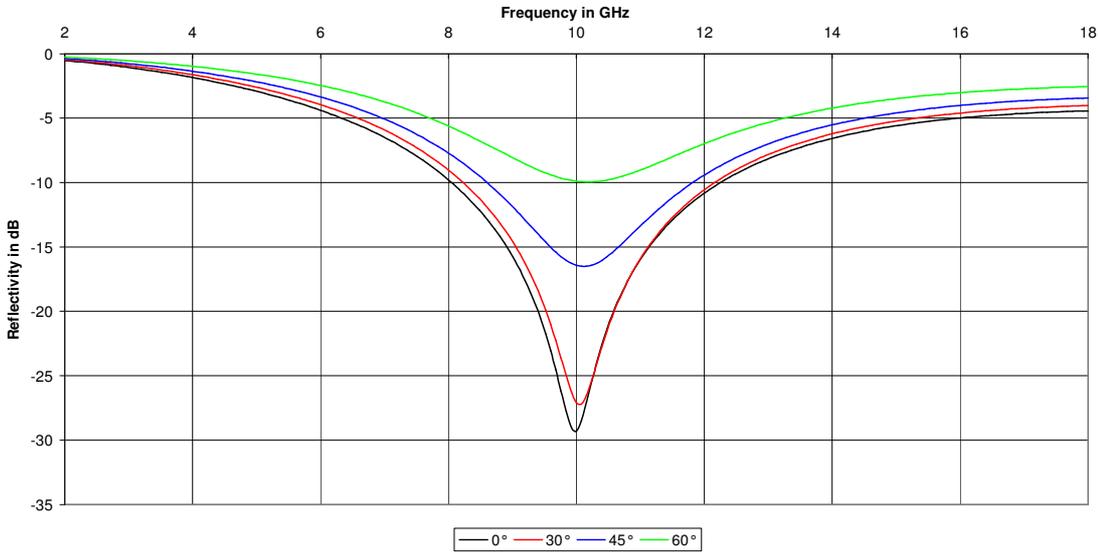


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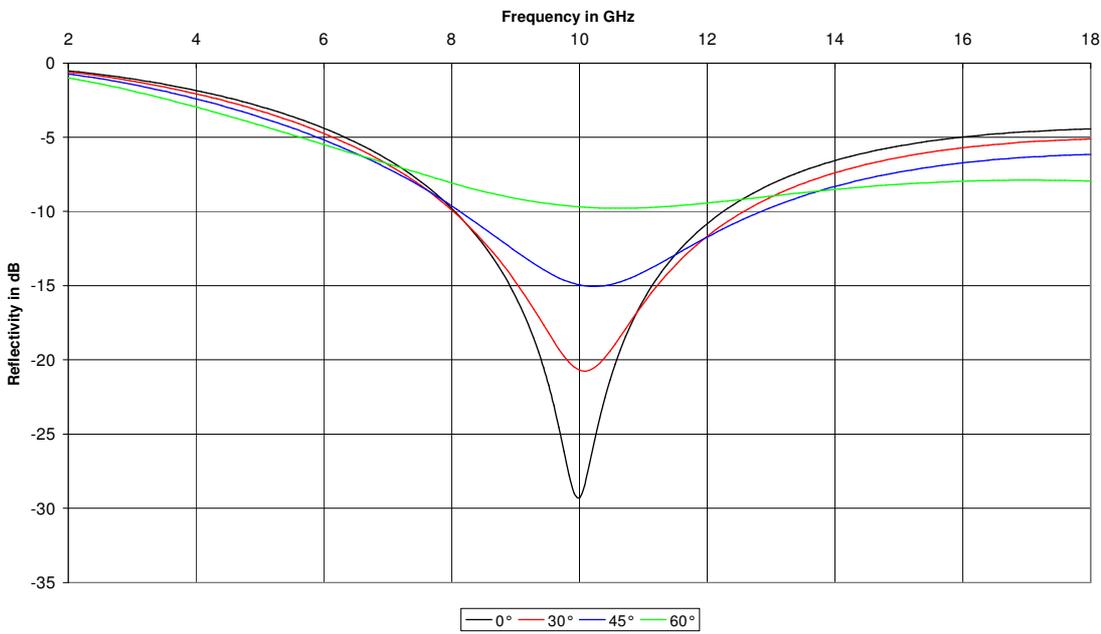
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Electromagnetic properties:

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



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



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Availability:

Eccosorb SF-U 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-U-10.0 will be resonant at 10 GHz.

It can be supplied with a pressure sensitive adhesive designated as Eccosorb SF-U-xx-SA, where the -SA suffix stands for **Self-Adhesive**.

On special order the material can also be supplied in other shapes or sizes.

Instructions for use:

Eccosorb SF-U 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.

Epoxy and acrylic adhesives are recommended or use the self-adhesive version.

Eccosorb SF-U 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 ce.
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