3D DESIGNS
| GHz Narrowband

1

SHEET

The sheet is a simple but effective design for applications requiring absorption of electromagnetic waves on a **specific frequency between 1 and 20 GHz.** The flexibility and adjustable dimensions of the sheet make it an optimal solution for targeting a given frequency according to its thickness, and for easy integration on the surface or inside the system. This product is used in the **telecommunications, electronics and Defense applications.**

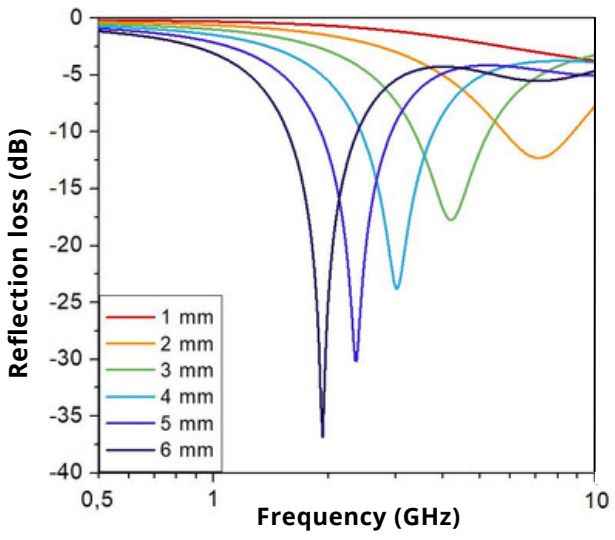
Shape: Depending on your needs, our sheets can take any form.

Dimensions: **Thickness adjusted** to target frequency.
Length and width adjustable according to specifications.

Use frequencies: Adjustable depending on the thickness, **between 1 and 20 GHz.**

Specifics: **Flexible** material, adaptable to your space constraints.

The graph below illustrates how varying thickness affects the reflection loss of the sheet. Simulations are required to **select the optimum thickness according to the required frequency, performances and system dimensions.**



Reflection loss of FILAMAG-F™ sheet structure of different thicknesses (simulated)

When thickness is equal to a quarter of the wavelength, a resonance phenomenon occurs, allowing absorption (reflection losses) thanks to the **appearance of destructive interferences.**

Why choose FILAMAG-F™ sheet structure?

- **Flexible: easy to integrate and place on any surface**
- **Adaptable dimensions**
- **No need for machining or cutting**

Example of use: Metal casing shielding is commonly used for home energy meters. However, the conductivity of the metal can cause waves to reflect on the surface of the case, interfering with the electronic components inside and disrupting the device's operation.
To mitigate these effects, an absorbing sheet can be placed within the casing to **prevent wave reflections** and at the joints to **reduce energy leakage.**

***of the filament used: here refer to FILAMAG-F™**