



Smart Technology. Delivered.

Injection Molded Microwave Absorber Solutions

Laird has the capabilities to develop thermoplastic absorber compounds, tool design and realize finished products.

FROM G·R·A·N·U·L·A·T·E TO **APPLICATION**



Injection Molded Microwave Absorbers

Eccosorb® MF-Thermoplast is an injection molded absorber for medium and high volume applications. It is used for terminations, caps and covers, RF filters and cavity resonance absorbers. Eccosorb® MF-Thermoplast is using the same magnetic fillers as its thermoset counterparts Eccosorb MF and Eccosorb MFS.

Advantages of Using Thermoplastics

- Low cost of production
- Complex 3D shape designs are possible
- Ideal solution for production of high quantities
- RF properties are similar to traditional thermoset material
- Tool cost amortized and optimized with production parts
- Different choices on base material to meet mechanical requirements
- Short lead-time and high throughput when tooling is available
- Fixation element/lip can be foreseen in the design
- Specific tool design to optimize material usage
- Special products are possible through overmolding, over-wire or metal insert molding



Characteristics of Molded Absorbers

- General tolerances: +/-0.1mm
- Shrinkage: <0.3%
- Draft angles on specific surfaces <2°
- Product design ideally with uniform wall thickness
- Tool design related to annual quantities and product complexity
- MOQ's at 1000 pieces are economical when complex in shape
- Need for DXF-drawing for optimization of mold design

Physical Properties



	ECCOSORB® MF-PP-120	ECCOSORB® MF-TPE-120	ECCOSORB® MF-PBT-120
Thermoplastic Matrix	Polypropylene	Thermoplastic Elastomer	Polybutylene Terephthalate
Colour	Dark Grey	Light Grey	Black
Tensile Strength (Mpa)	10,5	6	33
Service Temperature (°C)	85	85	170
Density (g/cm ³)	4,2	4,1	4,2
Durometer Hardness	80 (Shore D)	60 (Shore A)	85 (Shore D)
Typical Application	General Use	Flexible	High T TM
Product Application	Cover / Terminator	Terminator	Cover / Terminator
Linear Attenuation 2-18GHz (-dB/cm)	10 up to 80	10 up to 80	10 up to 80

Eccosorb® MF-PP-120

Eccosorb® MF-PP products are used as attenuator and termination in waveguides, coaxial or stripline application. Other applications include phase shifters in phased array antennas and structural absorbers for board-level and above board EMI suppression. Board-level solutions include high-loss chip cap structures which combine both shielding and absorption. Above board, structural covers in Eccosorb® MF-PP-120 material are a cost-effective alternative for traditional solutions where an absorbing material is glued on the metallic cover.



Eccosorb® MF-TPE-120

Eccosorb MF-TPE-120 is the flexible variant of Eccosorb MF-PP-120 and can be used for the same applications. For easy installation a flexible material can be an advantage.



Eccosorb® MF-PBT-120

Eccosorb MF-PBT is the high temperature variant of Eccosorb MF-PP. It has been successfully used in situations where assemblies with Eccosorb MF-PBT had to pass a reflow process during a short period.

Applications

- **Waveguide Termination** | Absorber terminators on Vsat LNB application

Eccosorb® MF-PP-120 is used to produce Tx and Rx KA-band terminators. Features include high-performance, high-tolerance, mechanical fixing and sharp tip design.

- **Automotive** | ACC radar sensor

Thermoplastic absorbers have been used by a Tier 1 automotive supplier in their long range radar since 2001.

- **Telecom** | Absorber cover on radio-link application

Eccosorb® MF-PP-120 has been specially designed for use as a shield cover. The absorber can be fixed with bolts or simply clicked on the application.

Absorber covers will replace traditional BLS with an elastomer absorber attached on the inside which will result in a significant cost reduction.



Our application engineers will assist you in the complete process, from prototype design to finished series product.



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