

Ea

EMI MICROWAVE ABSORBERS



**LEADER
TECH** 
a HEICO company

EMI/RFI Board, Enclosure, Cable Shielding and Thermal Solutions



Leader Tech's absorbing products are utilized to attenuate microwave energy from 500 MHz to 80 GHz. The unwanted electromagnetic energy is converted into a miniscule amount of heat.

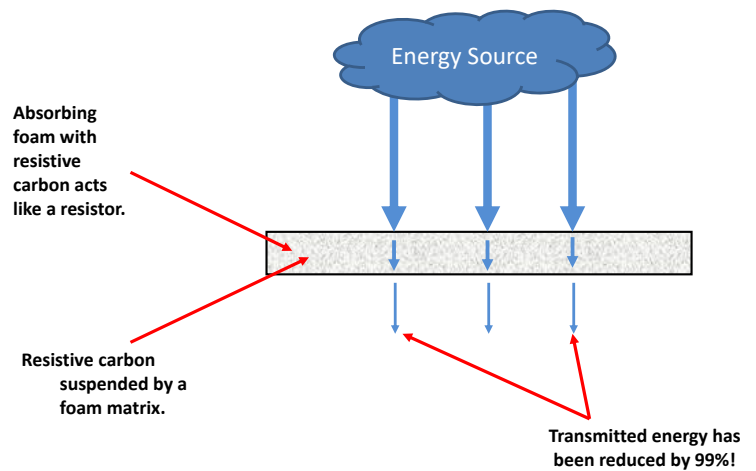
Absorbers are composed of either iron-infused silicone or carbon-coated polyurethane foam. Greatest performance is achieved when absorber thickness is comparable to a quarter of the wavelength of the offending frequency.

| ABSORBER COMPARISON CHART | | | | | | |
|---------------------------|-----------|------------------|-------------|-------------------|-------------------|-------------------|
| Parameters | Tuned | Cavity Resonance | Low Profile | Lossy | Reticulated | Pyramidal |
| Binder | Silicone | Silicone | Silicone | Polyurethane Foam | Polyurethane Foam | Polyurethane Foam |
| Filler | Iron | Iron | Iron | Carbon | Carbon | Carbon |
| Moisture Resistant | Yes | Yes | Yes | No | No | No |
| Attenuation Level | Excellent | Very Good | Fair | Good | Good | Good |
| Design Flexibility | Very Good | Very Good | Excellent | Good | Fair | Fair |
| Standard Format | Sheet | Sheet | Roll | Sheet | Sheet | Sheet |
| Die/Kiss Cut Option | Yes | Yes | Yes | Yes | Yes | No |
| Cost | \$\$ | \$\$ | \$\$ | \$ | \$ | \$ |
| Lead Time | Very Good | Excellent | Excellent | Excellent | Excellent | Excellent |

FORMAT OPTIONS: SHEET - DIE CUT - KISS CUT

LOSSY FOAM RETICULATED PYRAMIDAL

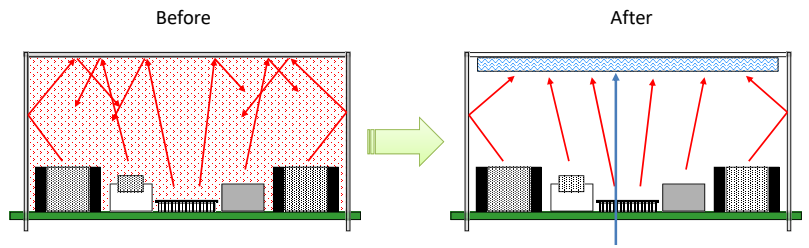
How do foam based absorbers work?



Cavity Resonances

(Spurious Harmonics, Noise Spurs, Cavity Oscillations)

NARROWBAND WIDEBAND CAVITY RESONANCE



Totally enclosed by metallic conductors, have a physical size that can cause them to resonate at a discrete frequency or multiple frequencies.

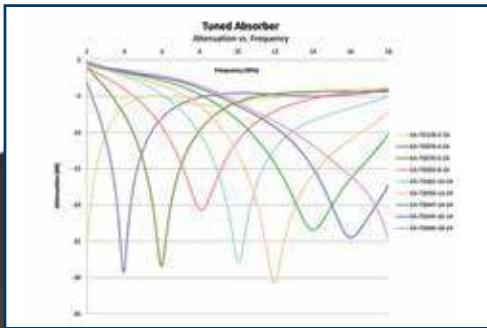
Absorber will change the Q of the cavity disrupting the energy and dampening the resonance



NARROWBAND

Tuned

Tuned – In addition to our off the shelf Tuned absorber series (1-18 GHz), Leader Tech can customize absorbers for discrete frequencies (1.3 GHz, 6.5 GHz, 10.9 GHz, etc.) by modifying the thickness and formulation at no additional cost. Tuned absorbers offer the highest amount of performance, providing an average of 20-30 dB of attenuation.



EA-TD165-1-XX

| Part Number | PSA | Base | Thickness (in.) | Frequency |
|-----------------|-----|----------|-----------------|-----------|
| EA-TD175-0.9-XX | Yes | Silicone | 0.175 | 0.9 GHz |
| EA-TD165-1-XX | Yes | Silicone | 0.165 | 1 GHz |
| EA-TD128-2-XX | Yes | Silicone | 0.128 | 2 GHz |
| EA-TD095-3-XX | Yes | Silicone | 0.095 | 3 GHz |
| EA-TD078-4-XX | Yes | Silicone | 0.078 | 4 GHz |
| EA-TD081-5-XX | Yes | Silicone | 0.081 | 5 GHz |
| EA-TD070-6-XX | Yes | Silicone | 0.070 | 6 GHz |
| EA-TD062-7-XX | Yes | Silicone | 0.062 | 7 GHz |
| EA-TD053-8-XX | Yes | Silicone | 0.053 | 8 GHz |
| EA-TD072-9-XX | Yes | Silicone | 0.072 | 9 GHz |
| EA-TD065-10-XX | Yes | Silicone | 0.065 | 10 GHz |
| EA-TD060-11-XX | Yes | Silicone | 0.060 | 11 GHz |
| EA-TD056-12-XX | Yes | Silicone | 0.056 | 12 GHz |
| EA-TD051-13-XX | Yes | Silicone | 0.051 | 13 GHz |
| EA-TD047-14-XX | Yes | Silicone | 0.047 | 14 GHz |
| EA-TD045-15-XX | Yes | Silicone | 0.045 | 15 GHz |
| EA-TD043-16-XX | Yes | Silicone | 0.043 | 16 GHz |
| EA-TD041-17-XX | Yes | Silicone | 0.041 | 17 GHz |
| EA-TD046-18-XX | Yes | Silicone | 0.046 | 18 GHz |

Note: XX = sheet size, available in 12" x 12" and 24" x 24" XX = 12 for 12" x 12" XX= 24 for 24" x 24"

CAVITY RESONANCE

Cavity Resonance – Off the shelf absorber that targets specific frequency increments when exact frequency is unknown. Cavity resonance absorbers typically provide 15-25 dB of attenuation.

Features & Properties

- Magnetically loaded silicone
- High Reflection Loss when mounted to a conductive surface
- Operating Temp: -60 F to 375 F (-51 C to 191 C)
- Flammability Rating : UL94 V-0
- Hardness: Shore A 60-80
- Halogen Free

Common Applications:

- Antenna Cross Talk Reduction
- Radar Cross Section Reduction
- Instrument Housings
- Aircraft Seals/Ducts
- Cavity Resonance
- Inside EMI Shields
- Traveling, Creeping, Surface Wave Reduction

| Part Number | PSA | Base | Thickness (in.) | Frequency |
|-------------|-----|----------|-----------------|-----------|
| EA-CR020-XX | Yes | Silicone | 0.020 | 14-18 GHz |
| EA-CR030-XX | Yes | Silicone | 0.030 | 13-17 GHz |
| EA-CR040-XX | Yes | Silicone | 0.040 | 9-12 GHz |
| EA-CR050-XX | Yes | Silicone | 0.050 | 6-11 GHz |
| EA-CR060-XX | Yes | Silicone | 0.060 | 5-9 GHz |
| EA-CR070-XX | Yes | Silicone | 0.070 | 4-7 GHz |
| EA-CR080-XX | Yes | Silicone | 0.080 | 3-7 GHz |
| EA-CR090-XX | Yes | Silicone | 0.090 | 2-5 GHz |
| EA-CR100-XX | Yes | Silicone | 0.100 | 2-5 GHz |
| EA-CR125-XX | Yes | Silicone | 0.125 | 1-3 GHz |

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EA-CR020



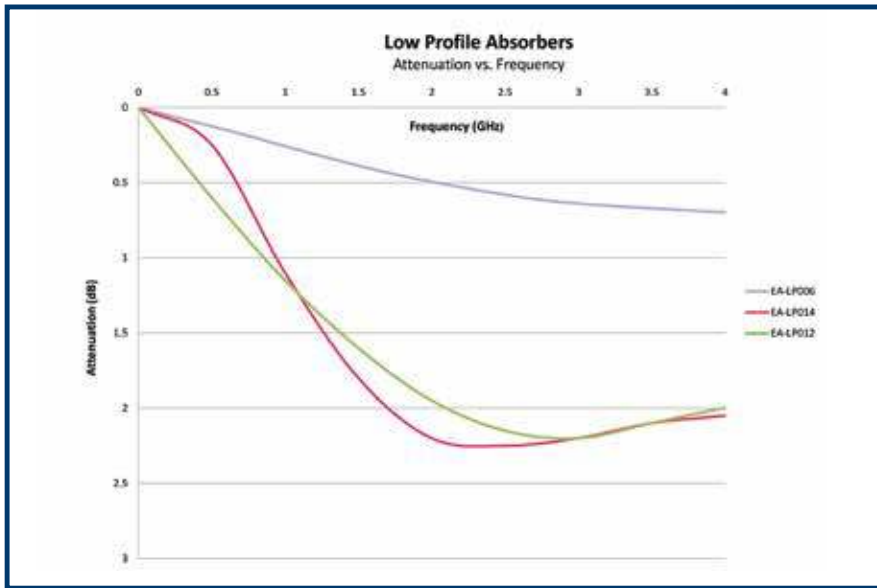
WIDEBAND

LOW PROFILE

Low Profile – Slender, flexible absorber that can easily be added to an array of applications with little or no design modification.

| Part Number | PSA | Base | Thickness (in.) | Frequency |
|-------------|-----|----------|-----------------|------------------|
| EA-LP014 | Yes | Silicone | 0.014 | 500 MHz – 10 GHz |
| EA-LP012 | Yes | Silicone | 0.012 | 500 MHz – 10 GHz |
| EA-LP006 | Yes | Silicone | 0.006 | 800 MHz – 4 GHz |

*Low Profile Material comes on rolls, available by the foot



EA-LP014

Features & Properties

- Magnetically loaded silicone
- High Power Loss when mounted to a conductive surface
- Operating Temp: -13 F to 194 F (-25 C to 90 C)
- Hardness: Shore A 75-85

Common Applications:

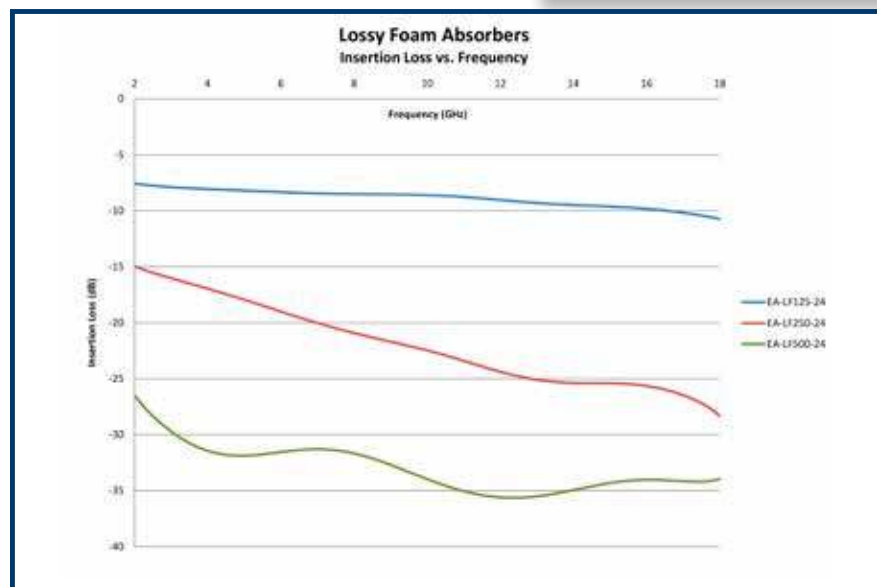
- Inside EMI Shields
- Mobile & Digital Devices

LOSSY FOAM

Lossy Foam – Lowest cost solution for attenuating a wide range of frequencies.

Note: XX = sheet size, available in 12" x 12" and 24" x 24"
XX = 12 for 12" x 12" XX = 24 for 24" x 24"
*Thicker material available by request.

| Part Number | PSA | Base | Thickness (in.) | Frequency |
|-------------|-----|-------------------|-----------------|-----------|
| EA-LF125-XX | Yes | Polyurethane Foam | 0.125 | 1-18 GHz |
| EA-LF250-XX | Yes | Polyurethane Foam | 0.250 | 1-18 GHz |
| EA-LF500-XX | Yes | Polyurethane Foam | 0.500 | 1-18 GHz |



EA-LF125

Features & Properties

- Dielectrically loaded polyurethane foam
- High insertion loss when mounted to a nonconductive surface
- Operating Temp: -60 F to 250 F (-51 C to 121 C)
- Flammability Rating: UL94-HF1 available
- Halogen Free

Common Applications:

- Antenna Isolation
- Sidelobe/Backlobe Reduction
- EMI Reduction
- Radar Cross Section Reduction
- Test Boxes



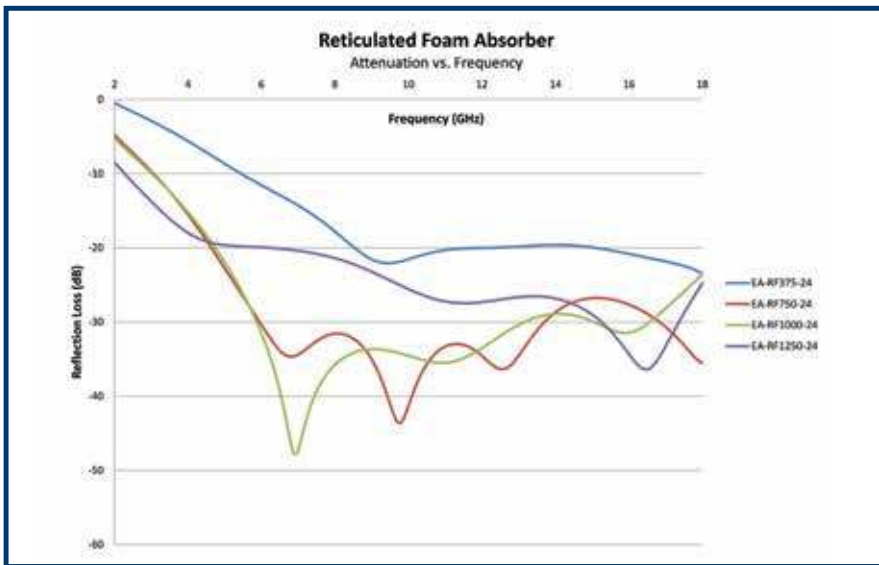
WIDEBAND

RETICULATED

Reticulated Foam – Open-cell, light weight, low cost solution which can be used as an air filter as well as an EMI absorber.

Note: XX = sheet size, available in 12" x 12" and 24" x 24"
XX = 12 for 12" x 12" XX= 24 for 24" x 24"

| Part Number | PSA | Base | Thickness (in.) | Frequency |
|--------------|-----|-------------------|-----------------|-----------|
| EA-RF375-XX | Yes | Polyurethane Foam | 0.375 | 1-18 GHz |
| EA-RF500-XX | Yes | Polyurethane Foam | 0.500 | 1-18 GHz |
| EA-RF750-XX | Yes | Polyurethane Foam | 0.750 | 1-18 GHz |
| EA-RF1000-XX | Yes | Polyurethane Foam | 1.000 | 1-18 GHz |
| EA-RF1250-XX | Yes | Polyurethane Foam | 1.250 | 1-18 GHz |



EA-RF375

Features & Properties

- Dielectrically loaded polyurethane foam
- High reflection loss when mounted to a conductive surface
- Operating Temp: -60 F to 250 F (-51 C to 121 C)
- Flammability Rating: UL94-HF1 available
- Halogen Free

Common Applications:

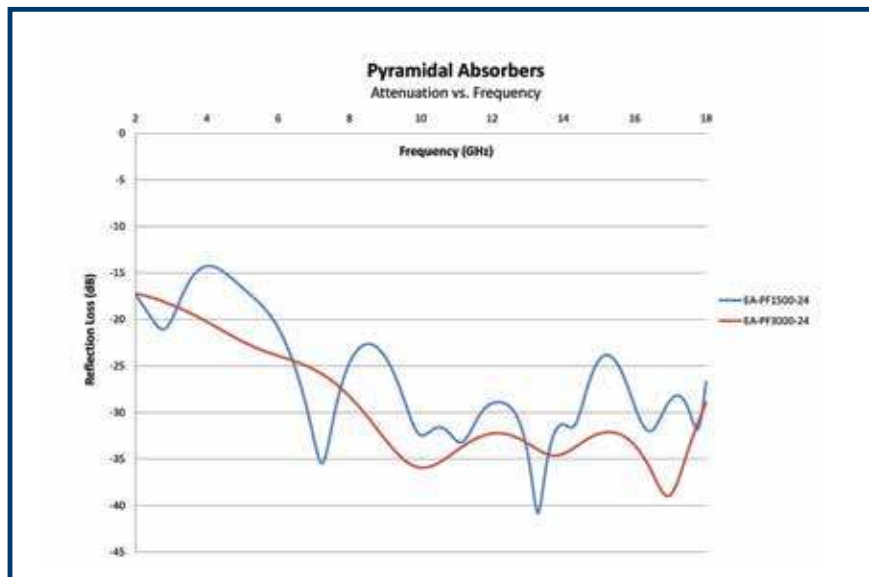
- Antenna Isolation
- Sidelobe/Backlobe Reduction
- EMI Reduction
- Radar Cross Section Reduction
- Test Boxes

PYRAMIDAL

Pyramidal Foam - Gradual transition of impedance through the cones provides excellent reflection loss, specifically when applied to the walls of anechoic chambers.

| Part Number | PSA | Base | Thickness (in.) | Frequency |
|--------------|-----|-------------------|-----------------|-----------|
| EA-PF1500-XX | Yes | Polyurethane Foam | 1.500 | 1-18 GHz |
| EA-PF3000-XX | Yes | Polyurethane Foam | 3.000 | 1-18 GHz |

Note: XX = sheet size, available in 12" x 12" and 24" x 24" XX = 12 for 12" x 12" XX= 24 for 24" x 24"



EA-PF1500

Features & Properties

- Dielectrically loaded polyurethane foam
- High reflection loss when mounted to a conductive surface
- Operating Temp: -60 F to 250 F (-51 C to 121 C)
- Flammability Rating: UL94-HF1 available
- Halogen Free

Common Applications:

- Antenna Isolation
- Sidelobe/Backlobe Reduction
- EMI Reduction
- Radar Cross Section Reduction
- Test Boxes

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ISO 9001: 2015 CERTIFIED 



Products and Capabilities



Thermal Gap Fillers



Conductive Elastomers



Enclosure Shielding



FerriShield Ferrites



Board Level Shielding

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