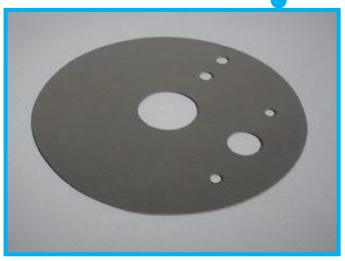
Absorbers AHF-MLE

Flexible microwave elastomer absorber



The AB2E AHF-MLE is a thin urethane absorber with magnetic loading. The absorber is designed for the suppression of surface currents and cavity resonances applications for a very broad frequency range. The urethane based material is easy in bonding. For harsh environments and high temperature applications also the silicone based AHF-MLSE can be applied.

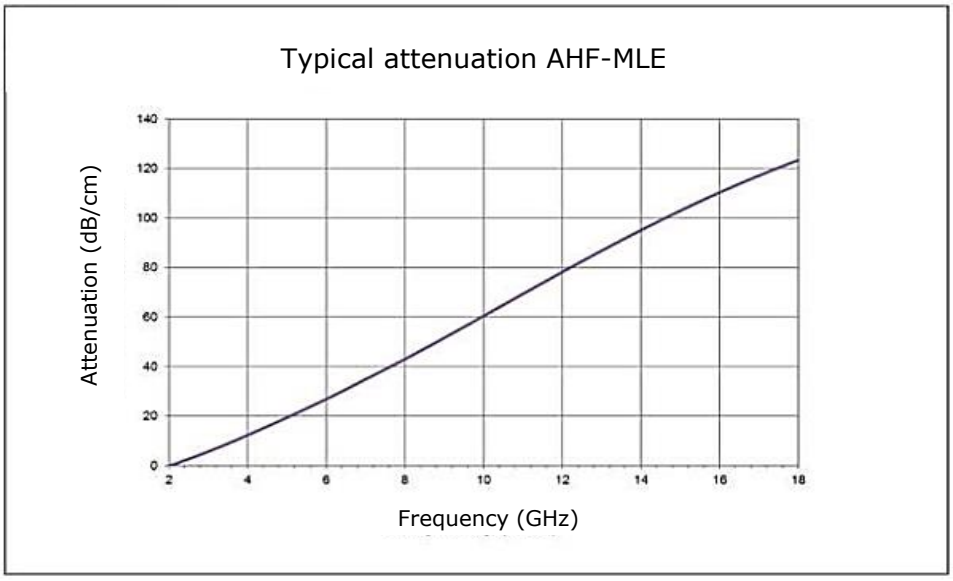
Applications

- Lining cavities typically to supress standing waves and surface currents.
- When bonded to a metal surface the material will reduce the reflectivity level of the metal object.
- Antenna elements are often equipped with AHF-MLE to reduce side lobes and improve the antenna pattern.
- LNB's, waveguides, amplifiers, converters and oscillators are often equipped with AHF-MLE to improve RF-stability by improving attenuation.

Properties

- Frequency range : > 4 Ghz up to 60 GHz.
- Hardness : 90 Shore A.
- Maximum service temperature : -40°C up to 120°C.

Specifications



Availability

Besides standard outside dimensions (305x305x1mm) also specific or customized thickness, sizes and shapes can be supplied. AHF-MLE is available in several thicknesses to suite the available space in the applications. The urethane version assures a good and easy bonding process using self-adhesive tape. By itself the material has very high mechanical strength and excellent abrasion resistance.

Absorbers AHF-LFE

Thin flexible microwave elastomer absorber

The AB2E AHF-LFE is a thin urethane absorber with magnetic loading. The absorber is designed for the suppression of surface currents and cavity resonances applications in the lower frequency range but is also used on reflectivity applications. The urethane based material is easy in bonding. For harsh environments and high temperature applications also the silicone based AHF-LFSE can be applied.

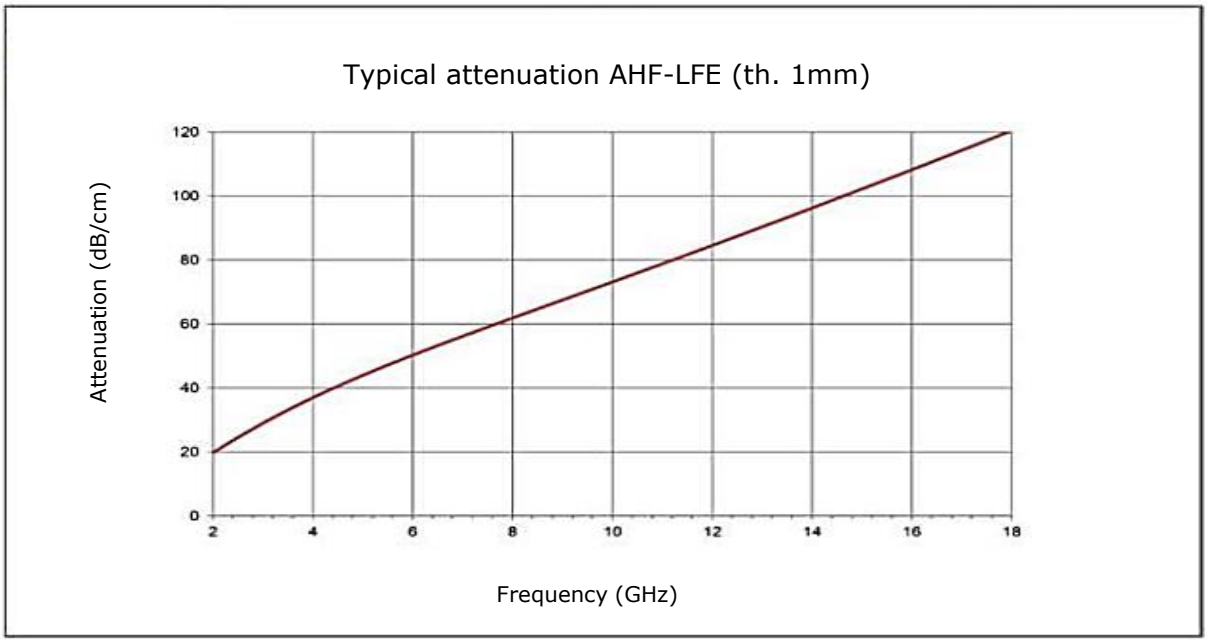
Applications

- Lining cavities typically to supress standing waves and surface currents.
- When bonded to a metal surface the material will reduce the reflectivity level of the metal object.
- LNB's, waveguides, amplifiers, converters and oscillators are often equipped with AHF-LFE to improve RF-stability.

Properties

- Frequency range : > 800 Mhz up to 12 GHz.
- Hardness : 95 Shore A.
- Maximum service temperature : -40°C up to 120°C.

Specifications



Availability

Standard outside dimensions are : 305x305x0.5 and 1mm but also specific or customized thickness, sizes and shapes can be supplied.
AHF-LFE is available in several thicknesses to suite the available space in the applications. The urethane version assures a good and easy bonding process using self-adhesive tape. By itself the material has very high mechanical strength and excellent abrasion resistance.

Absorbers AHF-SCSE

Thin flexible microwave elastomer absorber

The AB2E AHF-SCSE is a thin silicone absorber with high loss properties. The absorber material is a non-conductive silicone based material designed for the suppression of surface currents and cavity resonance applications in the higher frequency range. The absorber sheets can be supplied with a self adhesive backing or can be installed using an adequate liquid adhesive. Silicone material is typically used for harsh environments, high temperature applications and applications where low outgassing is a requirement.

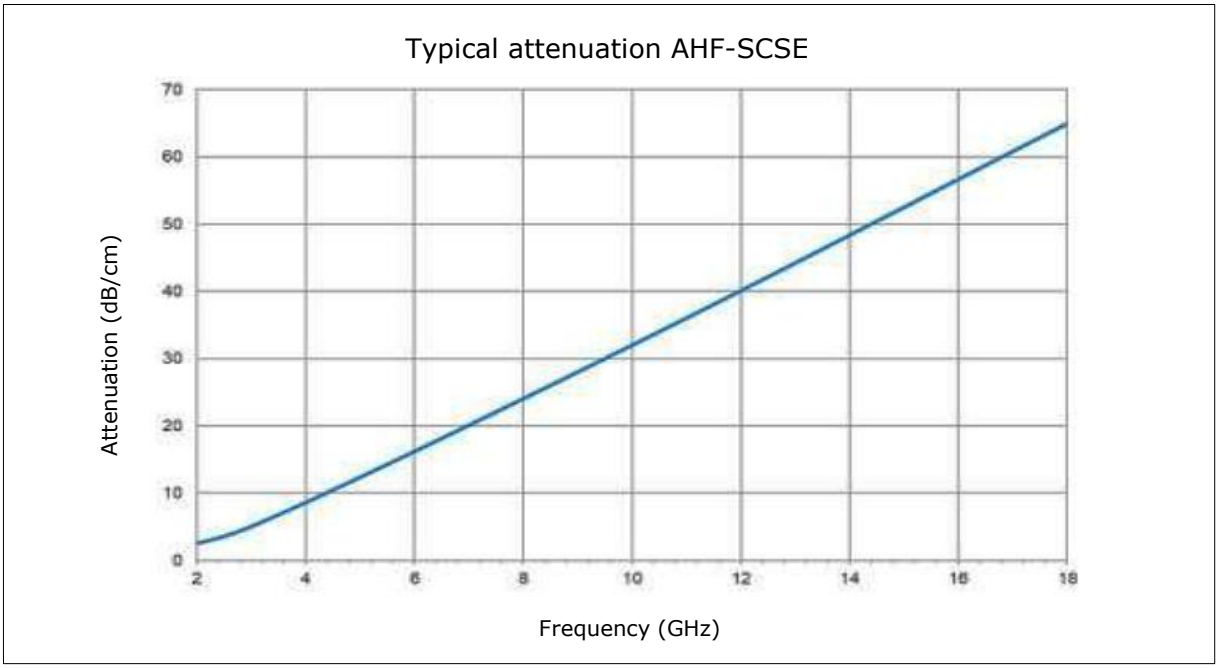
Applications

- Lining cavities typically to supress standing waves and surface currents, the material is not designed nor intended to be used in reflectivity mode.
- AHF-SCSE is typically installed in applications in the frequency range above 8 GHz.
- High frequency sensor systems, LNB's, waveguides, amplifiers are often equipped with AHF-SCSE to assure RF-stability.

Properties

- Frequency range : > 8 GHz.
- Hardness : 70 Shore A.
- Maxi service temperature : -40°C up to 170°C.

Specifications



Availability

Standard outside dimensions are : 305x305x0.75mm but also specific or customized thicknesses, sizes and shapes can be supplied to suite the available space in the application. Typically for low outgassing applications it is preferred to bond the material using a liquid silicone adhesive, in most cases a primer needs to be applied prior to adhesive.

Absorbers AHF-LFSE

Thin flexible microwave elastomer absorber

The AB2E AHF-LFSE is a thin silicone absorber with magnetic loading. The absorber is designed for the suppression of surface currents and cavity resonances applications in the lower frequency range but is also used on reflectivity applications. The absorber sheets can be supplied with a self-adhesive backing or can be installed using an adequate liquid adhesive. Silicone material is typically used for harsh environments, high temperature applications and applications where low outgassing is a requirement.

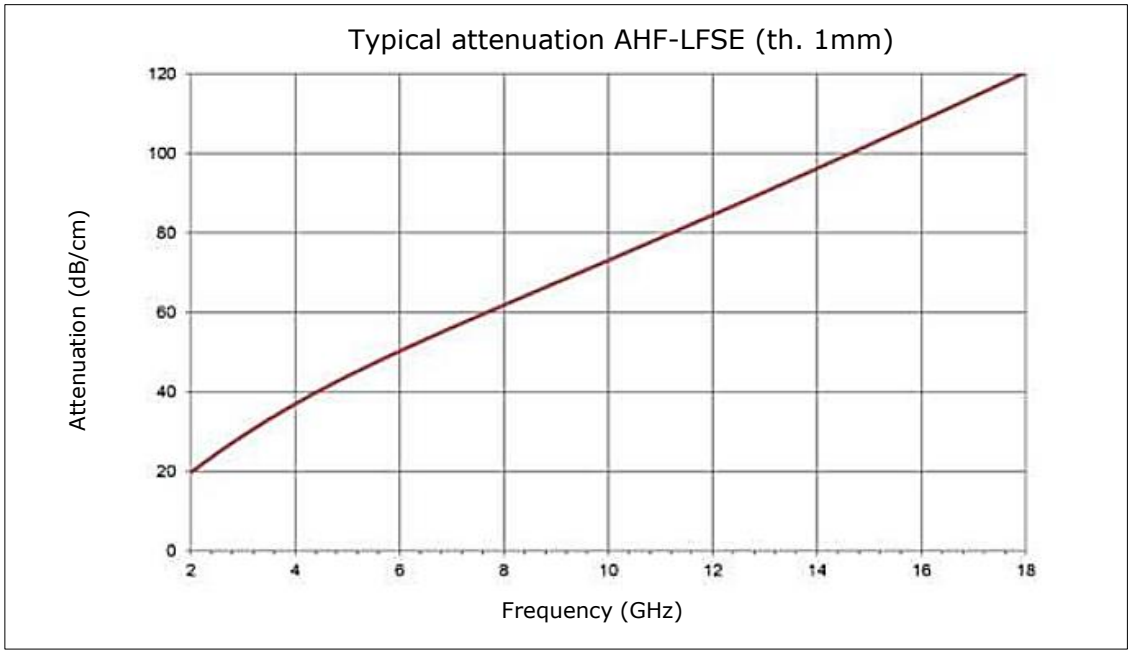
Applications

- Lining cavities typically to supress standing waves and surface currents.
- When bonded to a metal surface the material will reduce the reflectivity level of the metal object.
- LNB's, waveguides, amplifiers, converters and oscillators are often equipped with AHF-LFSE to improve RF-stability.

Properties

- Frequency range : > 800 Mhz up to 12 GHz.
- Hardness : >94 Shore A.
- Maximum service temperature : -40°C up to 170°C.

Specifications

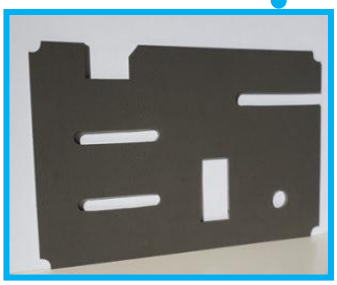


Availability

Standard outside dimensions are 305x305mm with available thicknesses 0.5 and 1mm.
Also customer specific thicknesses, sizes and shapes can be produced to suite the available space in the applications.
Typically for low outgassing applications it is preferred to bond the material using a liquid silicone adhesive, in most cases a primer needs to be applied prior to adhesive.

Absorbers AHF-FLE

Flexible microwave elastomer absorber



The AB2E AHF-FLE is a thin urethane absorber with magnetic loading. The absorber is applied in the lower frequency range for reduction of reflections but also for the suppression of surface currents and cavity resonances applications. The urethane based material is easy in bonding. For harsh environments and high temperature applications we recommend to select the silicone version type AHF-FLSE.

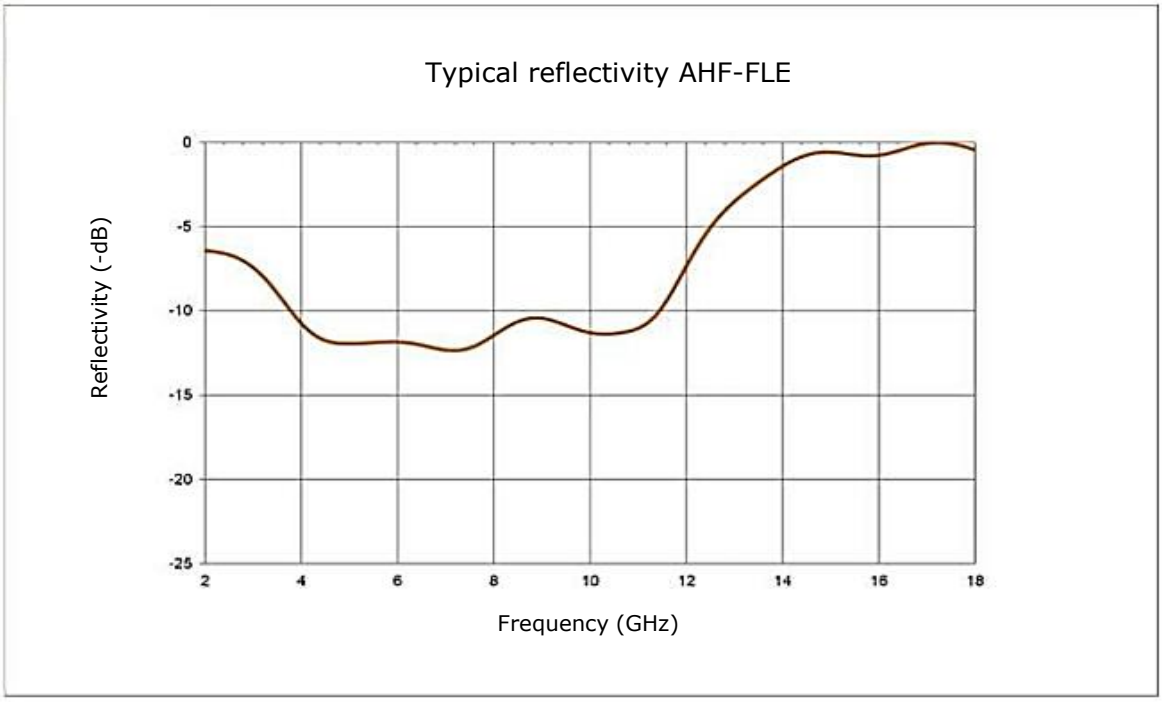
Applications

- When bonded to a metal surface the material will reduce the reflectivity level of the metal object.
- Antenna elements are often equipped with ABS-FLE to improve the antenna pattern.
- AHF-FLE is often used to line the housing of antenna systems, the absorber material will supress both standing waves and surface currents.

Properties

- Frequency range : 1 Ghz up to 12 GHz
- Hardness : 90 Shore A.
- Maximum service temperature : -40°C up to 120°C.

Specifications



Availability

Standard outside dimensions are 305x305mm available thicknesses are 1, 2 and 3mm. Also customer specific thicknesses, sizes and shapes can be produced to suite the available space in the applications. The urethane version assures a good and easy bonding process using self-adhesive tape. By itself the material has very high mechanical strength and excellent abrasion resistance.

Absorbers AHF-HLE

Thin flexible microwave elastomer absorber

The AB2E AHF-HLE is a thin urethane absorber with high loss properties. The absorber material is a non-conductive urethane based material designed for the suppression of surface currents and cavity resonance applications in the higher frequency range. The urethane based material is easy in bonding. For harsh environments and high temperature applications also the silicone based AHF-HLSE can be applied.

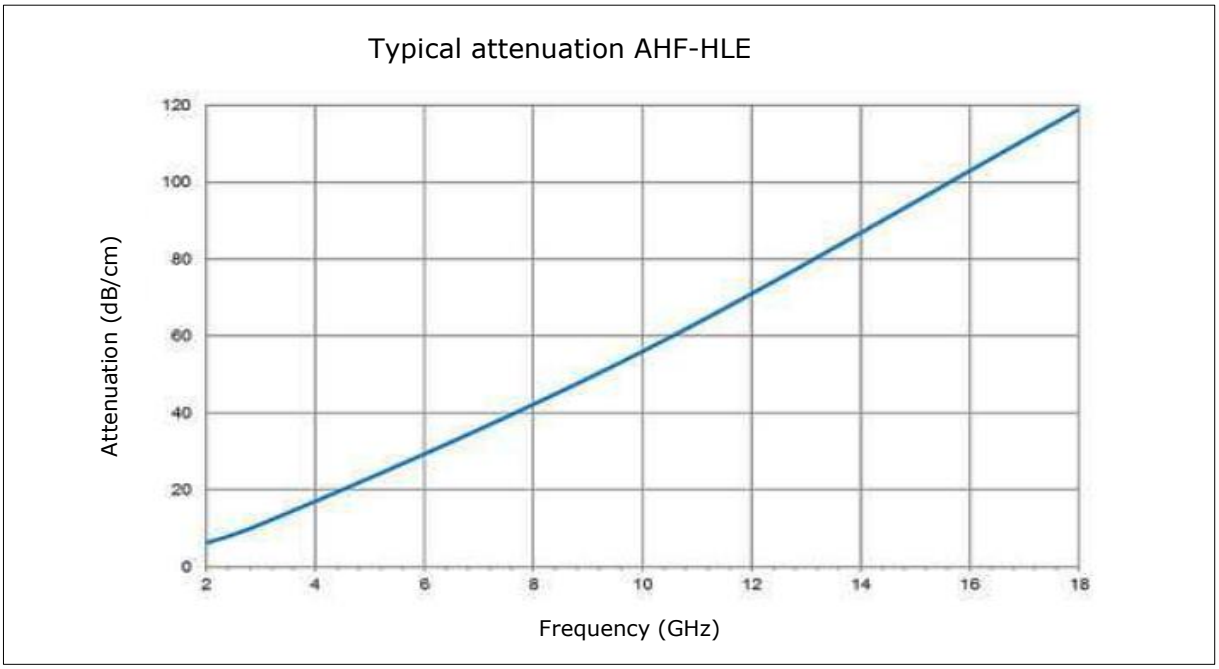
Applications

- Lining cavities typically to supress standing waves and surface currents, the material is not designed nor intended to be used in reflectivity mode.
- AHF-HLE is typically installed in applications above 4 GHz.
- High frequency sensor systems, LNB's, waveguides, amplifiers, oscillators are often equipped with AHF-HLE to improve RF-stability.

Properties

- Frequency range : > 4 GHz.
- Hardness : 80 Shore A.
- Maxi service temperature : -40°C up to 120°C.

Specifications



Availability

Standard outside dimensions are 305x305mm available thickness is 0.5mm. Also customer specific thicknesses, sizes and shapes can be produced to suite the available space in the applications. The urethane version assures a good and easy bonding process using self-adhesive tape. By itself the material has very high mechanical strength and excellent abrasion resistance.

Absorbers AHF-SCE

Thin flexible microwave elastomer absorber

The AB2E AHF-SCE is a thin urethane absorber with high loss properties. The absorber material is a non-conductive urethane based material designed for the suppression of surface currents and cavity resonance applications in the higher frequency range. The urethane based material is easy in bonding. For harsh environments and high temperature applications also the silicone based AHF-SCSE can be applied.

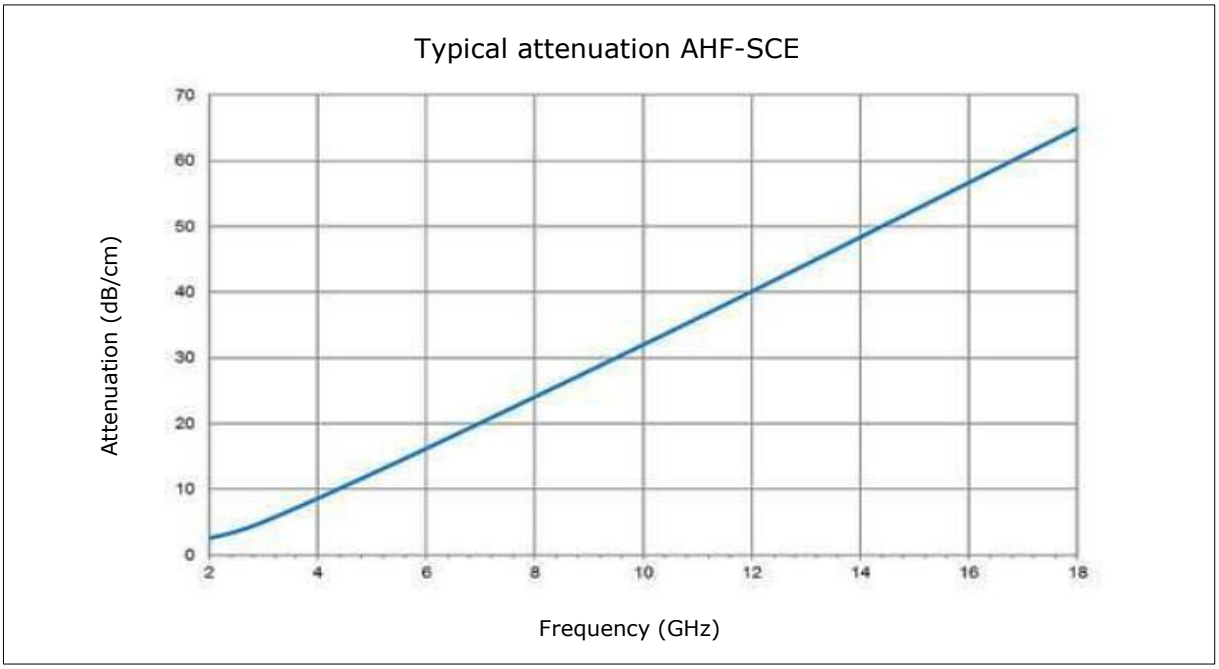
Applications

- Lining cavities typically to supress standing waves and surface currents, the material is not designed nor intended to be used in reflectivity mode.
- AHF-SCE is typically installed in applications in the frequency range above 8 GHz.
- High frequency sensor systems, LNB's, waveguides, amplifiers are often equipped with AHF-SCE to assure RF-stability.

Properties

- Frequency range : > 4 GHz.
- Hardness : 80 Shore A.
- Maxi service temperature : -40°C up to 120°C.

Specifications



Availability

Standard outside dimensions are : 305x305x0.75mm but also specific or customized thickness, sizes and shapes can be supplied. AHF-SCE is available in several thicknesses to suite the available space in the applications. The urethane version assures a good and easy bonding process using self-adhesive tape. By itself the material has very high mechanical strength and excellent abrasion resistance.

Absorbers AHF-ESF

Convoluted microwave broadband foam absorber

The AB2E AHF-ESF is an open cell and 3D shaped light weight foam absorber. The front side has a convoluted shape which improves its RF-performance level for the higher frequency range. Due to its specific shape the reflectivity level will not degrade for higher angles of incidence of the signal. We supply 3 different types respectively ESF-3, ESF-4 and ESF-6 with thickness, respectively : 3, 4 and 6 inch. Due its open cell structure the material has good resistance to humidity and excellent for usage at high power levels.

Applications

- AHF-ESF are often mounted on removable walls in test areas.
- Covering of metal structures in anechoic test environments.
- AHF-ESF are used in anechoic test boxes or to line area's nearby RF-systems to supress reflections.
- The absorber sheets can be shaped around structures for indoor or semi open anechoic applications.

Specifications

- Maximum service temperature : +90°C.
- Power handling : 1.5 Kw/m².
- Frequency range typically above 3 GHz up to 40 GHz.

Properties

- AHF-ESF is specified by its reflectivity level for each type of thickness.
- Reflectivity levels start at -20dB at lowest frequency and thickest material up to -40dB in the higher frequency range.

Availability

Besides standard outside dimensions 610x610mm also specific or customized sizes and shapes can be supplied. The front side can be painted white, however for mm-wave applications we recommend to apply the material unpainted as the paint will degrade the reflectivity level.

Absorbers AHF-TLF

RFID Absorber for UHF applications

The AB2E AHF-TLF is a multilayer absorber material designed to absorb reflected signals on RFID applications in the UHF frequency range (800 MHz up to 1 GHz).

Applications

- AHF-TLF is typically used on RFID tunnels and truck loading stations.
- By covering adjacent reflecting metal structures and separate RFID reading systems it optimises the applications RF readings.

Specifications

Typical reflectivity performance is -18dB on the UHF frequency band. In order to obtain optimum reflectivity performance the absorber material must be installed on a metal backing, this can be a metal plate or conductive foil.

Properties

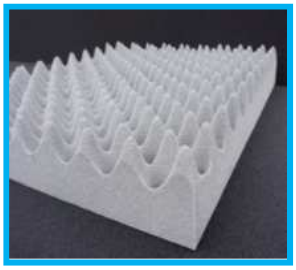
- Thickness of the multilayer sheet material : 60 mm.
- The back side is indicated or on request the front surface is painted white.
- Maximum service temperature : 90°C.
- Typical density : 45 Kg/m^3.

Availability

AHF-TLF has a standard dimension of 610 x 610 x 60 mm (W x L x H).
On special request the material can be supplied to customer specific required dimensions.
The material can also be supplied already equipped with a metal backing : a thin galvanised plate (+ suffix - GB) or a conductive foil (+ suffix - CF).
AHF-TLF can also be supplied with a self-adhesive tape.

Absorbers AHF-CSF

Convoluted microwave broadband foam absorber



The AB2E AHF-CSF is a series of 3D shaped light weight foam absorber. The front side has a convoluted shape which improves its RF-performance level for the higher frequency range. Due to its specific shape the reflectivity level will not degrade for higher angles of incidence of the signal. We can supply 3 different types respectively CSF-3, CSF-4 and CSF-6 with thickness of respectively : 3, 4 and 6 inch.

Applications

- AHF-CSF are often mounted on removable walls in test areas
- Installation in anechoic test boxes or to line area's nearby RF-systems to supress reflections
- Covering of metal structures in anechoic test environments

Specifications

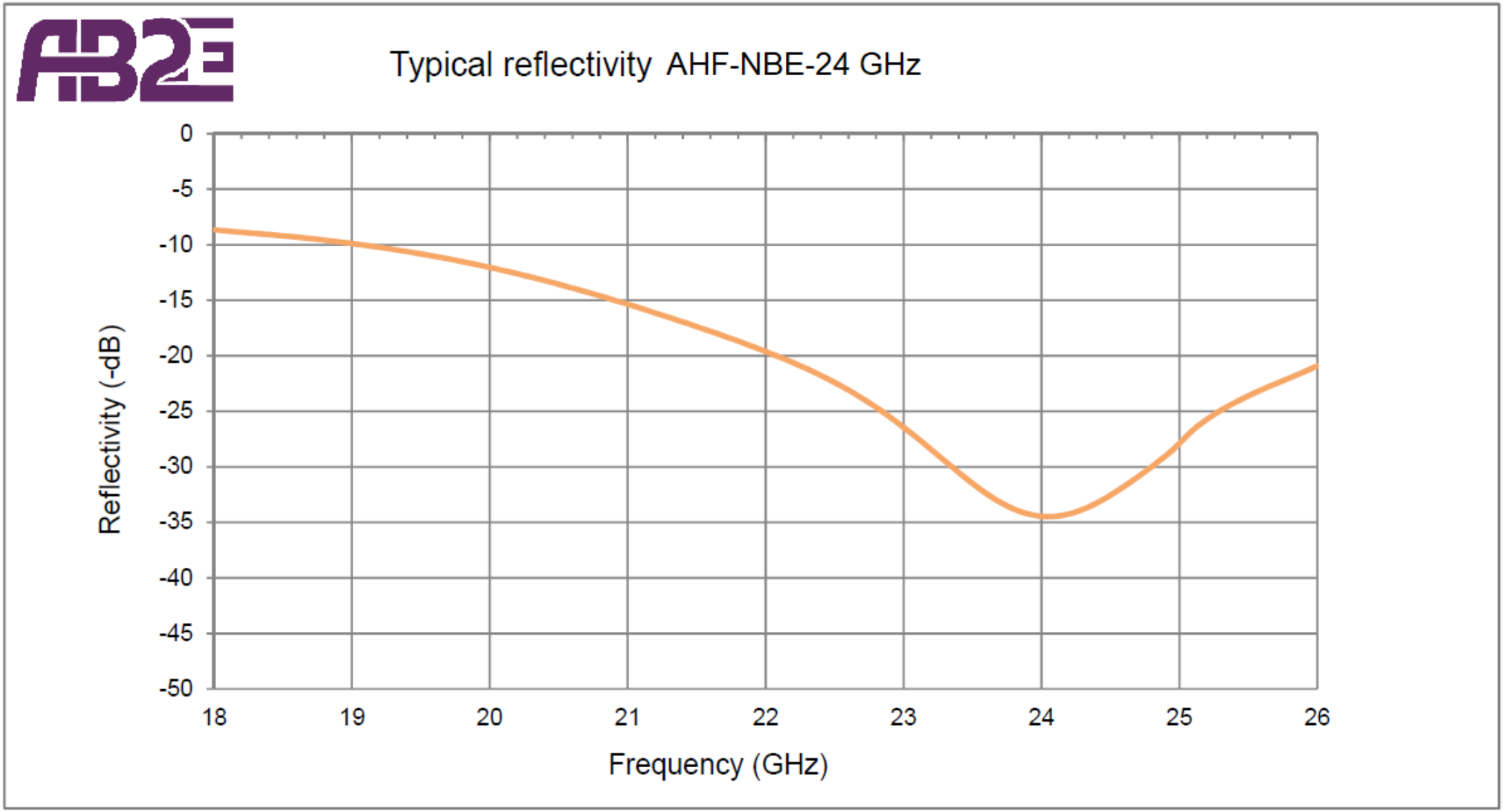
- Max. service temperature : +90°C
- Power handling : 1,5 Kw/m²
- Frequency range typically above 3 GHz up to 40 GHz

Properties

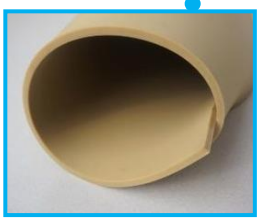
AHF-CSF is specified by its reflectivity level for each type of thickness.
Reflectivity levels start at -20dB at lowest frequency and thickest material up to -40dB in the higher frequency range.

Availability

Besides standard outside dimensions 610x610mm also specific or customized sizes and shapes can be supplied. AHF-CSF can also be supplied with a self-adhesive tape. The front side is painted white, however for mm-wave applications we recommend to apply the material unpainted as the paint will degrade the reflectivity level.


Typical reflectivity AHF-NBE-24 GHz
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
Reflectivity (-dB)
18
19
20
21
22
23
24
25
26
Frequency (GHz)

Absorbers AHF-NSA



X- and Ku-dual band rubber sheet absorber

The AB2E AHF-NSA is a flexible rubber dual frequency band absorber. Based on a nitrile rubber elastomer, this absorber reflects less than -20 dB of normal incident energy relative to a metal plate, at 10 and 16 GHz and better than -15 dB over the entire X- and Ku-bands.

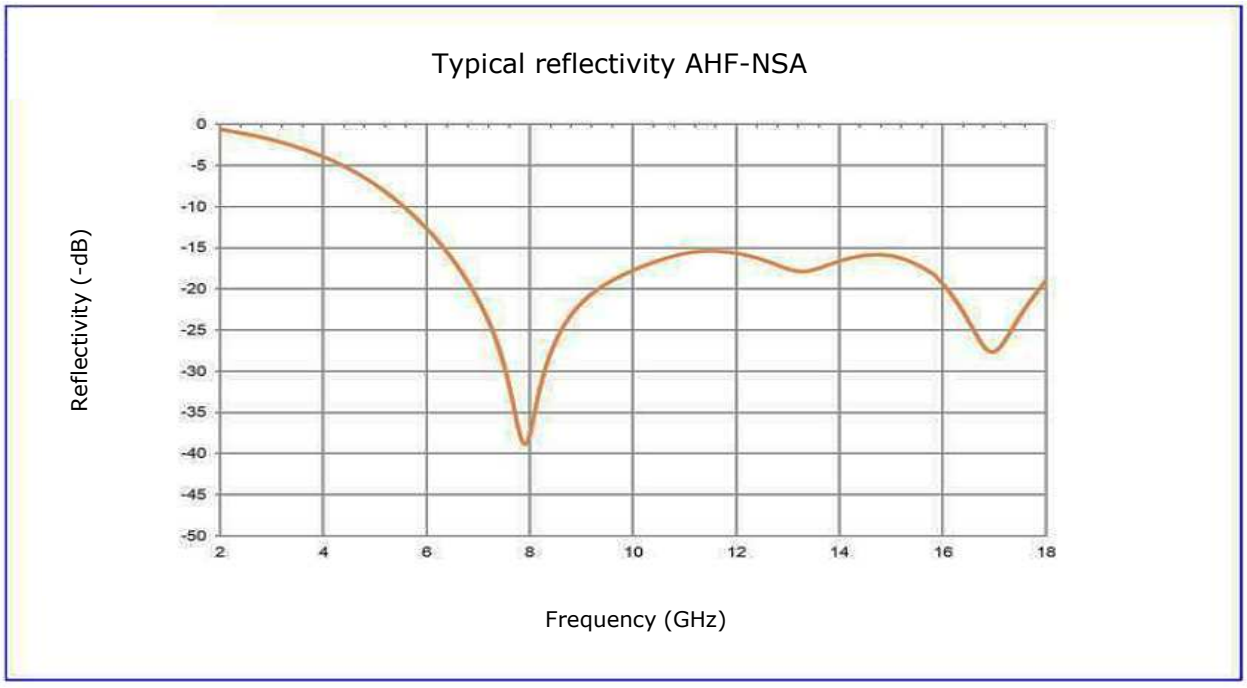
Applications

- The rubber absorber is common used on metal structures in harsh environments such as naval applications.
- AHF-NSA is used on outdoor applications which require a reduction of their reflectivity level.
- It has good outdoor weathering characteristics, it is abrasion resistant and has an excellent resistance to moisture and hydraulic fluids.

Properties

- Dimensions : 610 x 610 x 6,8 mm
- Nominal weight : +/- 6,5 Kg/m^2
- Composition base material : Nitrile rubber
- Colour : Brown / Grey
- Tensile strength : 11,2 Kg/cm^3
- Elongation % : + 300 %
- Maxi service temperature : -50 up to 130°C

Specifications



Availability

AHF-NSA is produced and available as sheets with dimensions 610 x 610 x 6,8mm (WxLxH). Not only standard dimensions also specific or customized sizes can be supplied. AHF-NSA can also be supplied with a conductive back side (= suffix -CF). The material can also be supplied with a self-adhesive backside (=suffix -SA).

Absorbers AHF-ASF

Flexible frequency tuned microwave absorber

The AB2E AHF-ASF is a series of single layer polyurethane sheets available in different thicknesses and different lossy grades. The sheets are individually specified with a level of insertion loss (-dB) at a given frequency, typically in S-band as shown in the below measurement graph.

Applications

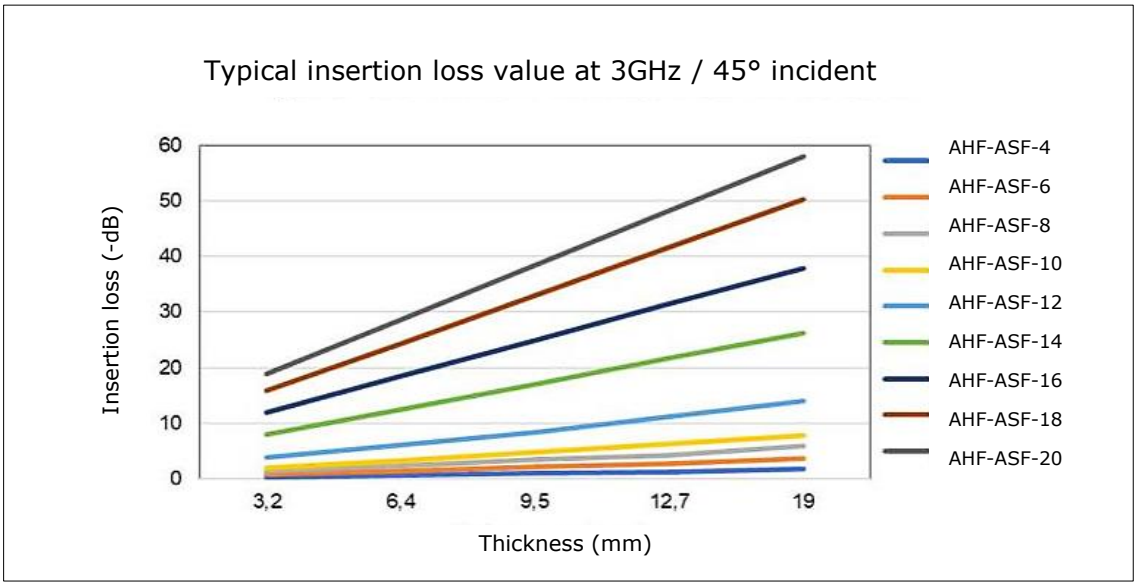
- AHF-ASF sheets are mainly used in closed cabinet applications such as amplifiers, RF-radio's, oscillators to improve their Q-factor.
- AHF-ASF is also used to attenuate surface currents on metal structures.
- Isolation between RF-systems and also improvement of reflectivity level of reflecting objects.

Properties

- Different grades with tuned losses and standard thickness are available.
- The base material is a flexible urethane foam.
- Mechanically low density and ease of application.
- Maximum service temperature : +90°C.

Specifications

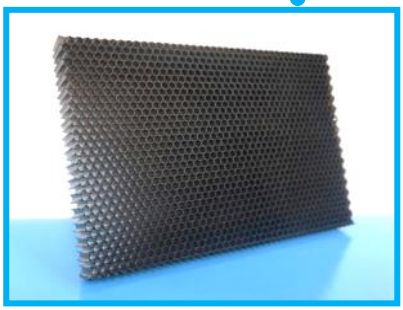
AHF-ASF is typically specified by its loss properties, insertion loss or attenuation both expressed in dB/thickness.



Availability

Standard outside dimensions : 610 x 610mm with thicknesses from 3,2 to 19mm.
Besides standard dimensions also specific or customized sizes and shapes can be supplied.
AHF-ASF can also be supplied with a self-adhesive tape to ease installation.

Absorbers AHF-WK



Broadband microwave honeycomb absorber

The AB2E AHF-WK is a flat sheet broadband microwave absorber. Due to the hexagonal open cell structure the material has high mechanical strength. The tubular shapes are coated with a gradient of conductive absorber coating to obtain its microwave absorber properties. Its mechanical strength and light weight makes the material an ideal products for airborne applications. With or without ventilation the material is also often used for high power applications.

Applications

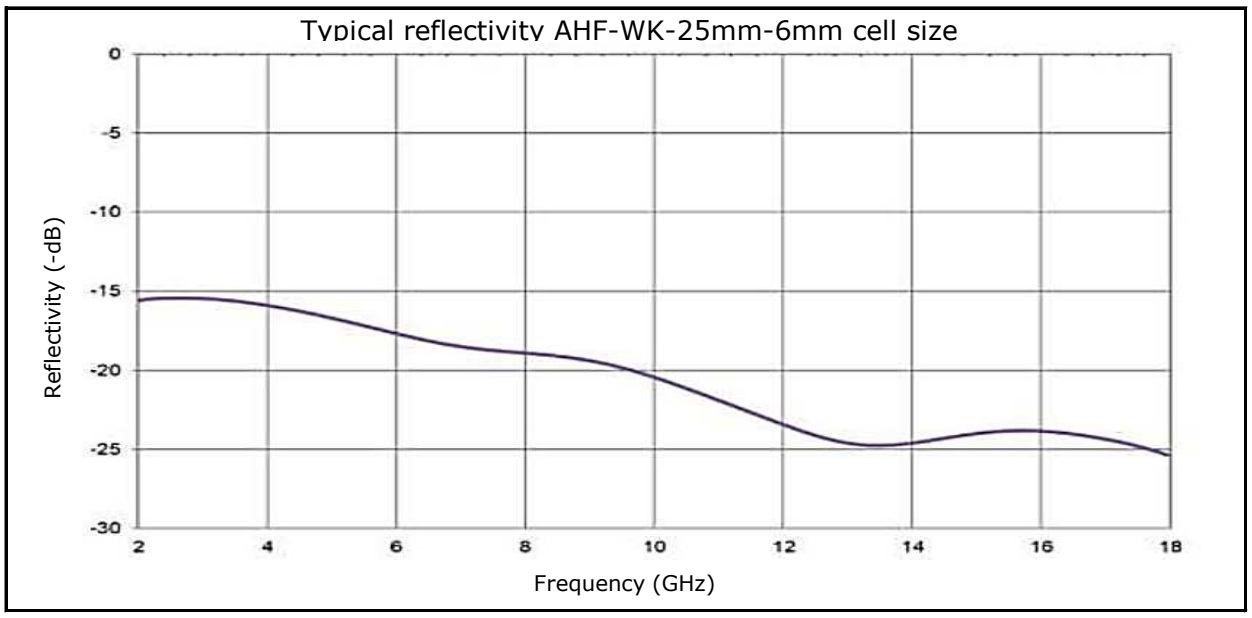
- AHF-WK sheets are used in low weight structures, typically on airborne applications.
- The material is also used on low frequency spiral antennas systems to improve back lobe radiation.
- Due to its open cell structure the sheet material can be integrated into a laminated system.
- High power microwave absorber wall and structures.

Properties

- Hexagonal cell size : 1/4" or 1/8".
- Maximum service temperature : 110°C.

Specifications

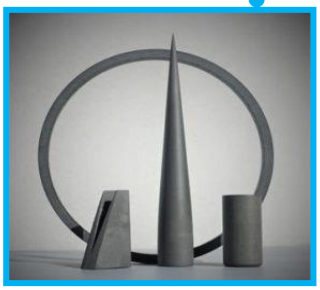
AHF-WK is always used installed to a metal backside, this can be a metal plate or a conductive foil. Reflectivity level is also measured in metal backed condition.



Availability

Standard sheet sizes are 305 x 305mm. Two different thicknesses are available 13 and 25mm, both in cell size 3 or 6mm. For specific applications the sheet material can also be supplied in different sizes and shapes. Due to its rigid structure the material is difficult to bend.

Absorbers AHF-SRB



Machinable resin based microwave absorber

The AB2E AHF-SRB is a series of resin based magnetically loaded microwave absorber. The absorber material is supplied in different forms such as sheets, bars and rods with different dimensions. The standard stock material is typically used for machining specific 3D-shapes.

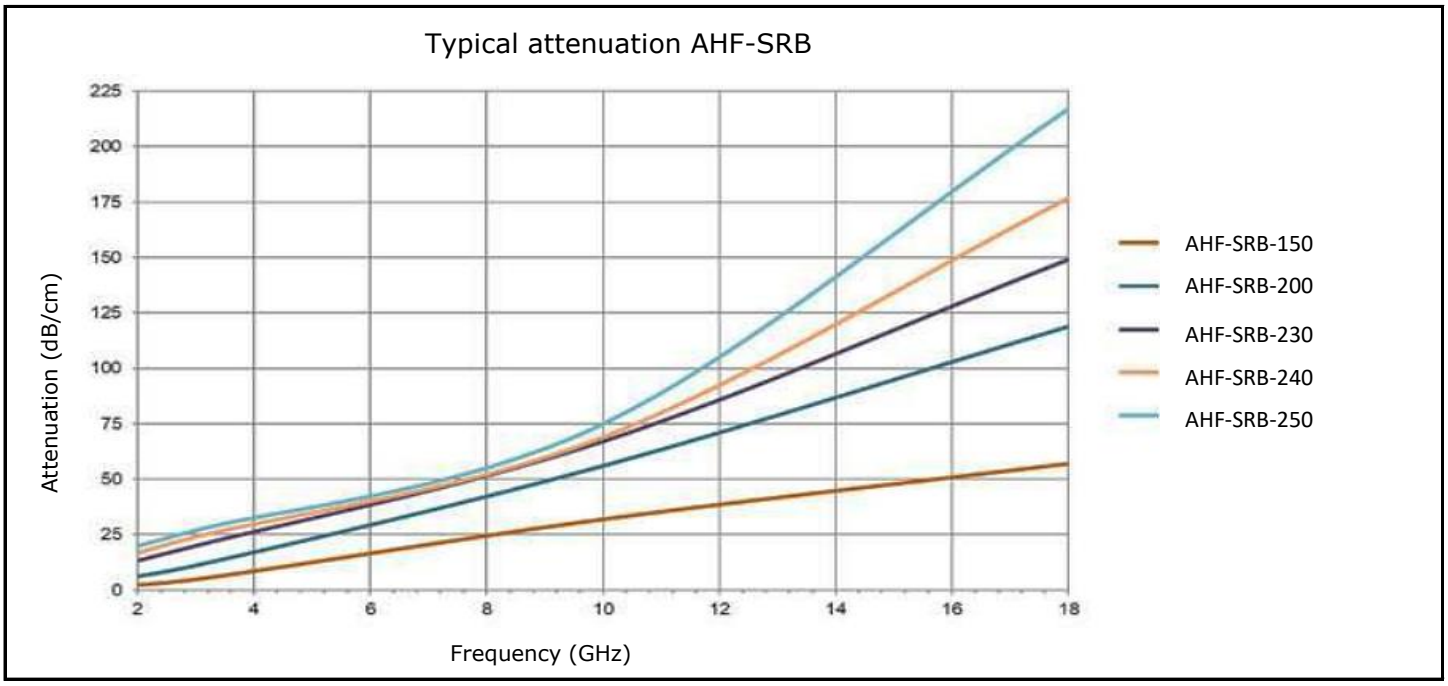
Applications

- AHF-SRB is used as finished or customised part in many RF-applications such as terminators in waveguides end sections and as attenuators on waveguide walls, on strip lines and in cavities.
- Due to its excellent absorber properties AHF-SRB can also be used to supress surface currents on antenna array elements, shape and type of grade are very important.

Properties

- Frequency range: >1 GHz
- Maximum service temperature : 170°C.
- Hardness (shore D) : 85.
- Density (g/cc) : 3,5 to 4,8.
- Water absorption: < 0,3% (24 hrs)

Specifications



Availability

As shown on the above graph AHF-SRB is available in different grades indicated from 150 up to 250. In function of its grade for a similar thickness, performance will evolve linearly with the frequency. Standard available shapes are sheets, bars and rods. Flat sheets are available with dimensions 305x305mm and thickness between 6mm and 75mm. Bars and rods can be supplied to different diameters and sections, maximum available lengths are 305mm. Specific customized 3D shapes can be produced on request to customer drawings.

Absorbers AHF-NBSE

Flexible frequency tuned microwave absorber

The AB2E AHF-NBSE absorbers are a range of single frequency tuned microwave absorbers with magnetic loading. Tuned absorbers or resonant frequency absorbers are produced for specific frequencies and a narrow frequency band. ABS-NBSE is produced for a range of frequencies from 1 to 26 GHz. The resonance or the absorbers reflectivity performance at the discrete frequency is obtained by installing the absorber sheet on a metal background. The absorber sheets can be supplied with a self-adhesive backing or can be installed using an adequate liquid adhesive. Silicone absorber material allow a temperature applications and applications where low outgassing is a requirement.

Applications

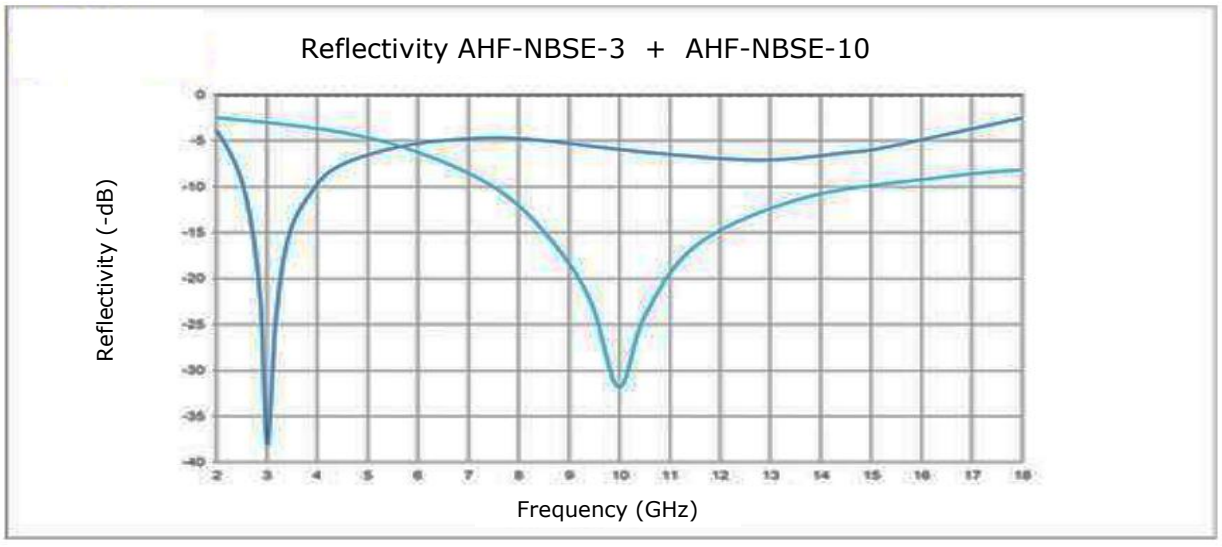
- AHF-NBSE is produced for a range of frequencies from 1 to 26 GHz.
- Lining of metal structures such as ships masts and air craft applications
- Treatment of specific frequencies.
- RCS (radar cross section) reduction.
- Typically used in free space applications with respect to far field conditions.
- Occasionally AHF-NBSE is also used to supress surface currents and cavity resonances.

Properties

- Thin and flexible absorber sheets based on a silicone rubber.
- Max. service temperature : 170°C.
- Hardness (shore A) : 75.
- Density (g/cc) : 2,5 to 4,2.
- Thickness : 1 to 5 mm.

Specifications

The absorber is designed to obtain a reflectivity level of -20 dB at the given specific frequency. Related to the frequency of operation ABS-NBSE is produced in different thicknesses, typically between 1 and 5mm.



Availability

Standard outside dimensions are 305x305mm, the thickness is related to the frequency and varies from 1 mm up to 5mm. Specific customized shapes are available on request. Customized parts can be delivered die-cut or kiss-cut. If required the absorber sheet material can be supplied with a self-adhesive backing. Typically for low outgassing applications it is preferred to bond the material using a liquid silicone adhesive, in most cases a primer needs to be applied prior to adhesive.

Absorbers AHF-LCF

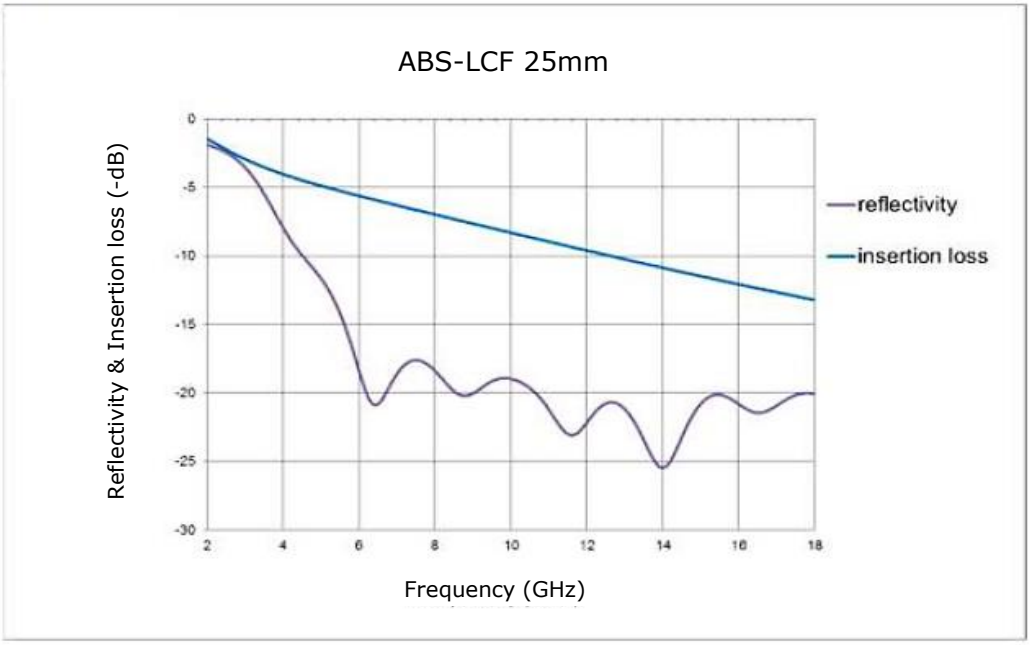
Flexible open cell microwave foam absorber

The AB2E AHF-LCF is a series of light weight, flat, flexible, open cell microwave absorber comprised of polyurethane foam with a conductive and lossy gradient. Related to the frequency of operation different thicknesses are available.

Applications

- AHF-LCF are widely used in many RF applications in a broad frequency range, RF-performance of the material is related to its thickness and frequency of operation.
- AHF-LCF is typically used on antenna systems to improve the antenna pattern, reduction of side lobes and back radiation.
- Isolation between RF-systems and also improvement of reflectivity level of reflecting objects.

Specifications



Properties

- AHF-LCF is typically specified by its loss properties, insertion loss or attenuation both expressed in dB/thickness. Different grades in losses and thickness are available. Although thickness and carbon loading are not designed to obtain best possible reflectivity level the material is occasionally applied for its reflectivity level.
- The base material is a soft foam, so mechanically low density and ease of application are its most important features.
- Standard outside dimensions : 610 x 610mm with different thicknesses.
- Maximum service temperature : +90°C

Absorbers AHF-LCF

Availability

- Typical available thicknesses are 10, 15 & 25mm.
- Besides standard outside dimensions (610x610mm) also specific or customized sizes and shapes can be supplied.
- We are able to supply the material ready to be wrapped on curve shaped applications.
- Some applications require a dust free material, ABS-LCF can also be supplied with a protective coating.
- AHF-LCF can also be supplied with a metal backside as a galvanised steel plate or conductive foil.
- AHF-LCF can also be supplied with a self-adhesive tape.

Absorbers AHF-FGA

Ceramic microwave absorber

The AB2E AHF-FGA is a broadband ceramic based microwave absorber. This absorber is mainly used for high power and high temperature applications. The absorber can be installed on applications having an operational temperature from -50°C to 340°C. Typical values for power handling are 1,5 to 2,5 W/cm². Maximum power handling is related to the real heat dissipation in the applications, the absorber is foreseen with holes which can be used for fixation but also to allow extra ventilation.

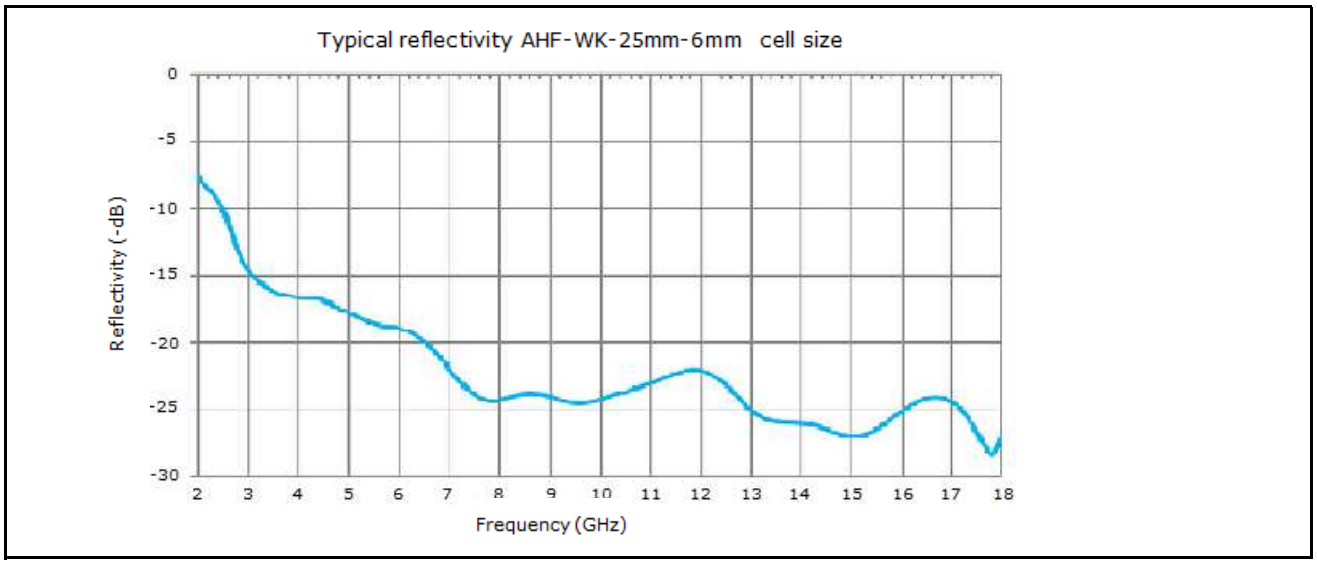
Applications

- AHF-FGA is typically installed in RF measurement boxes to evaluate applications such as high power radar systems.
- Protected from rain and sun the absorber material can be installed on outdoor applications.
- The absorber material is also used in laboratories to protect people from high RF-power.

Properties

- Typical dimensions : 30x45x5cm (WxLxH).
- Service temperature : from -80°C to 340°C
- Density : 130 Kg/m²
- Thermal conductivity : < 0,045W/(m.K)
- Fire retardancy (EN 13501-1) : class A1
- Pressure resistance : > 900 kPa

Specifications

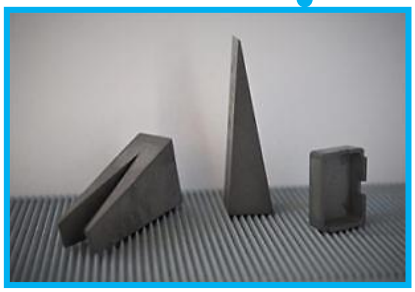


Availability

AHF-FGA absorbers are supplied as blocs produced from a lightweight ceramic brick. The ceramic brick is equipped with arrays of conical holes.One must make sure the back side of the cone is also the back side of the absorber block, as such the tip of the cone is the front side of the absorber material.The inside of the cones is foreseen with a high temperature absorber coating.

AHF-FGA has standard outside dimensions as specified above however also specific or customized sizes and shapes can be supplied. Although a metal backside is not required to obtain its reflectivity performance, if needed the material can also be supplied with a metal backing, galvanised steel plate or conductive foil. The absorber blocs can be installed by stacking on each other. Depending on the requirement the blocs can be glued using a high temperature mortar or the blocs are also often installed loose. The material can easily be cut at site to the required dimensions.

Absorbers AHF-STB-PP



Thermoplastic based microwave absorber

The AB2E AHF-STB-PP is a thermoplastic based magnetically loaded microwave absorber, intrinsically comparable with the resin based product AHF-SRB . The material is based on a polypropylene thermoplastic which is modified with a specific magnetic loading to obtain a balanced product with excellent mechanical and RF-properties. AHF-STB-PP can be applied in a wide range of applications and in a broad frequency range.

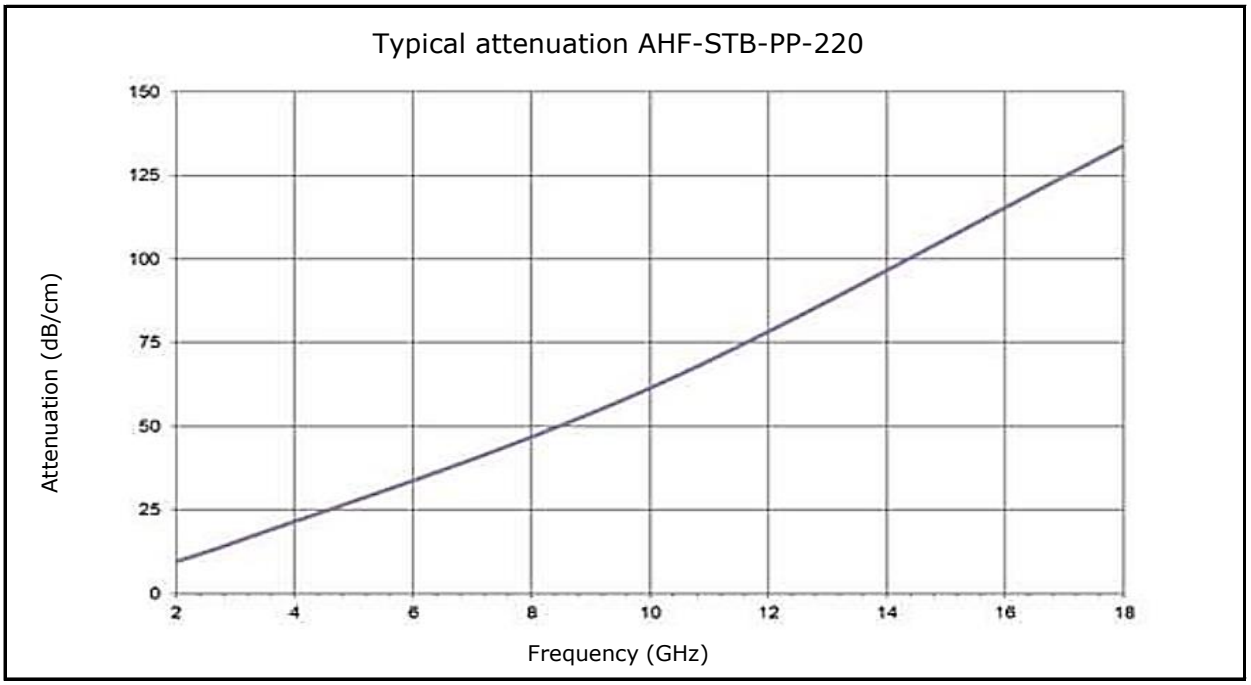
Applications

- AHF-STB-PP are finished 3D shaped parts, ready for installation in a variety of RF-applications.
- AHF-STB-PP products are typically used as RF-terminations in waveguide systems.
- Also on circuit board level 3D shaped covers or inserts can be produced. In case AHF-STB-PP material is used as RF-absorber it will also show shielding effectiveness related to the wall thickness of the product and the operating frequency.

Properties

- Frequency range: >1 GHz - 60 GHz
- Maximum service temperature : 80°C.
- Hardness (shore A) : 80.
- Density (g/cc) : 4,2.

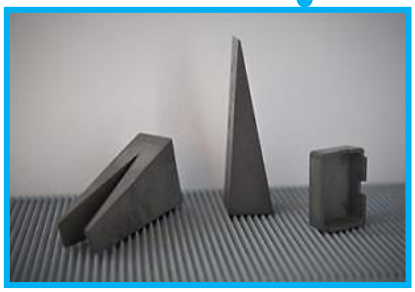
Specifications



Availability

AHF-STB-PP is available as 3D-shaped injection moulded products, the compound itself is not available. All products are well designed to allow injection moulding and to meet customers mechanical and RFrequirements. AHF-STB-PP is available as injection moulded products, produced as complex 3D shapes in a cost effective manner.

Absorbers AHF-STB-TPE



Thermoplastic based microwave absorber

The AB2E AHF-STB-TPE is a thermoplastic based magnetically loaded microwave absorber, intrinsically comparable with the resin based product AHF-SRB . The material is based on a flexible thermoplastic which is modified with a specific magnetic loading to obtain a balanced product with excellent mechanical and RF-properties. AHF-STB-TPE can be applied in a wide range of applications and in a broad frequency range.

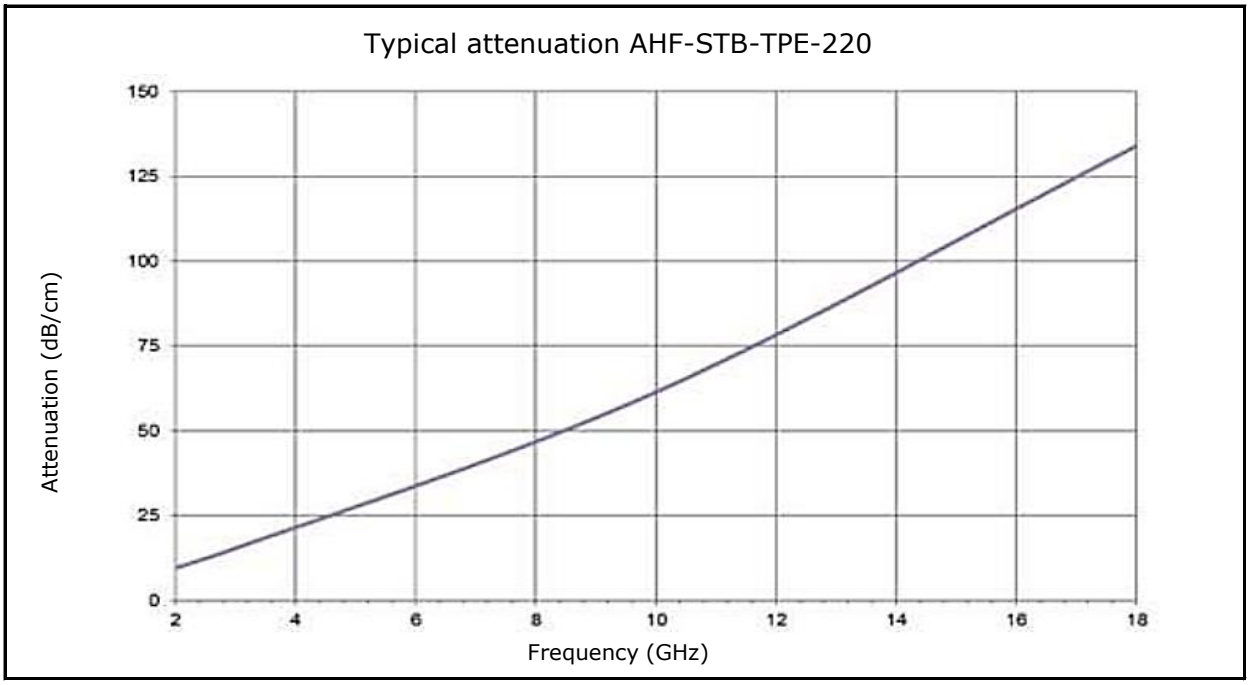
Applications

- AHF-STB-TPE are finished 3D shaped parts, ready for installation in a variety of RF-applications.
- AHF-STB-TPE products are typically used as RF-terminations in waveguide systems.
- Also on circuit board level 3D shaped covers or inserts can be produced. In case AHF-STB-TPE material is used as RF-absorber it will also show shielding effectiveness related to the wall thickness of the product and the operating frequency.

Properties

- Frequency range: >1 GHz - 60 GHz
- Maximum service temperature : 80°C.
- Hardness (shore A) : 60.
- Density (g/cc) : 4,2.

Specifications



Availability

AHF-STB-TPE is available as 3D-shaped injection moulded products, the compound itself is not available. All products are well designed to allow injection moulding and to meet customers mechanical and RF requirements. AHF-STB-TPE is available as injection moulded products, produced as complex 3D shapes in a cost effective manner.

Absorbers AHF-FLSE

Flexible microwave elastomer absorber

The AB2E AHF-FLSE is a thin silicone absorber with magnetic loading. The absorber is applied in the lower frequency range for reduction of reflections but also for the suppression of surface currents and cavity resonances applications. The absorber sheets can be supplied with a self-adhesive backing or can be installed using an adequate liquid adhesive. Silicone material is typically used for harsh environments, high temperature applications and applications where low outgassing is a requirement.

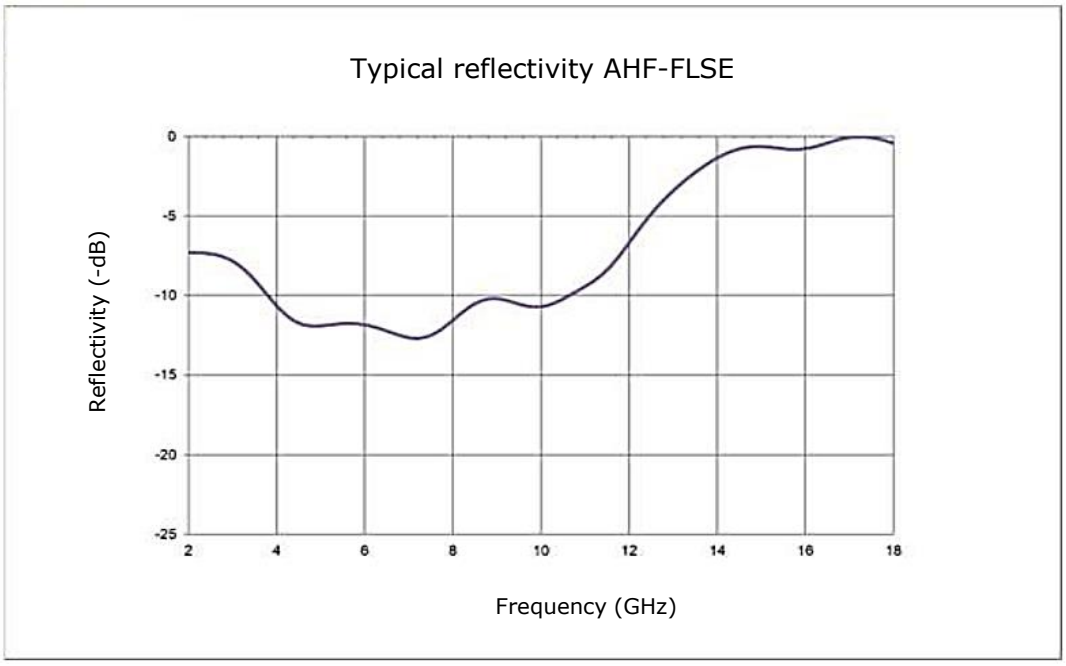
Applications

- When bonded to a metal surface the material will reduce the reflectivity level of the metal object.
- Antenna elements are often equipped with ABS-FLSE to improve the antenna pattern.
- AHF-FLE is often used to line the housing of antenna systems, the absorber material will supress both standing waves and surface currents.

Properties

- Frequency range : 1 Ghz up to 12 GHz
- Hardness : 85 Shore A.
- Maximum service temperature : -40°C up to 170°C.

Specifications



Availability

Standard outside dimensions are 305x305mm available thicknesses are 1, 2 and 3mm. Also customer specific thicknesses, sizes and shapes can be produced to suite the available space in the applications. Typically for low outgassing applications it is preferred to bond the material using a liquid silicone adhesive, in most cases a primer needs to be applied prior to the adhesive. By itself the material has very high mechanical strength and excellent abrasion resistance.

Absorbers AHF-NBE

Flexible frequency tuned microwave absorber

The AB2E AHF-NBE absorbers are a range of single frequency tuned microwave absorbers. Tuned absorbers or resonant frequency absorbers are produced for specific frequencies and a narrow frequency band. The resonance or the absorbers reflectivity performance at the discrete frequency is obtained by installing the absorber sheet on a metal background.

Applications

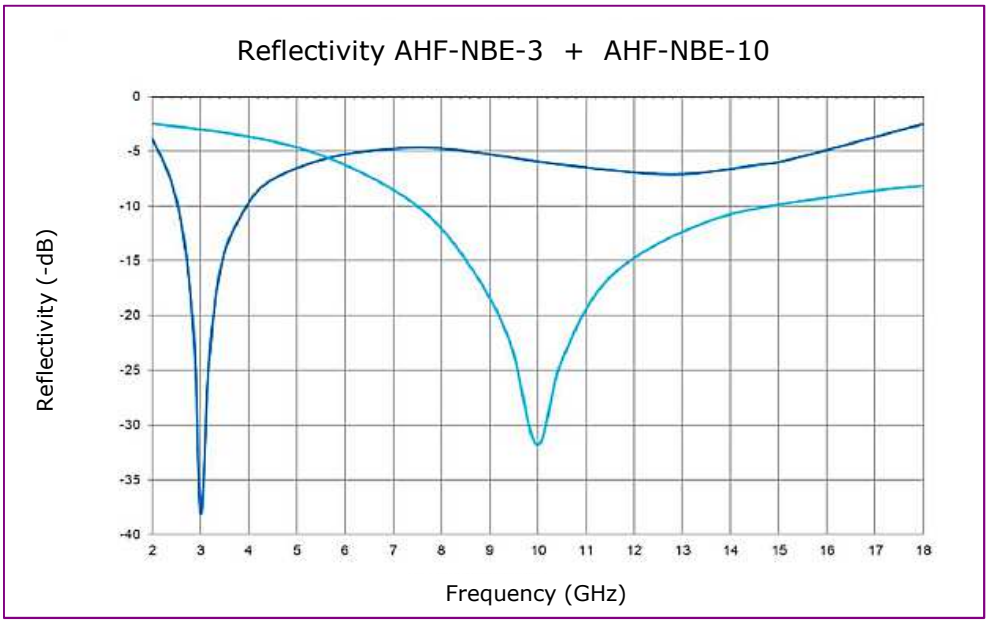
- AHF-NBE is produced for a range of frequencies from 1 to 26 GHz.
- Lining of metal structures.
- Treatment of specific frequencies.
- RCS (radar cross section) reduction.
- Typically used in free space applications with respect to far field conditions.
- Occasionally AHF-NBE is also used to supress surface currents and cavity resonances.

Properties

- Thin and flexible absorber sheets based on a polyurethane or silicone rubber (AHF-NBSE).
- Max. service temperature : 120°C.
- Hardness (shore A) : 80.
- Density (g/cc) : 2,5 to 4.

Specifications

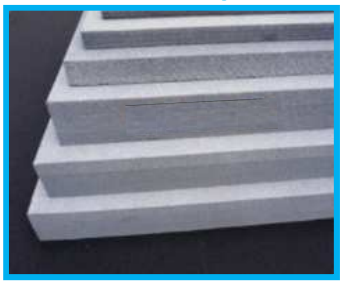
The absorber is designed to obtain a reflectivity level of -20 dB at the given specific frequency.
Related to the frequency of operation AHF-NBE is produced in different thicknesses, typically between 1 and 4mm.



Availability

Standard outside dimensions are 305x305mm, other sizes and specific customized shapes are available on request such customized parts can be delivered die-cut or kiss-cut.
The polyurethane based material can be supplied equipped with a self-adhesive tape.

Absorbers AHF-SLF



Laminated flexible microwave foam absorber

The AB2E AHF-SLF absorbers are a range of broadband microwave absorbers consisting of a multilayer with different graded layers. The stack is designed to obtain a broadband reflectivity level at microwave frequencies of typically better than -17dB of perpendicular incident energy relative to a metal background.

Applications

- Lining of the inside of small test boxes to reduce reflections.
- Installation around antennas systems and inside radomes to reduce crosstalk.
- Improvement of back- and side lobes of antennas.
- Reduction of radar cross section from masts and other metal structures.

Specifications

Reference	Thickness cm	Weight Kg	Reflectivity level -dB
AHF-SLF-6	6	0,25	- 17dB > 20 GHz
AHF-SLF-10	10	0,4	- 17dB > 7,5 GHz
AHF-SLF-19	19	0,7	- 17dB > 3,5 GHz
AHF-SLF-29	29	0,8	- 17dB > 2,4 GHz
AHF-SLF-57	57	1,5	- 17dB > 1,2 GHz
AHF-SLF-114	114	3	- 17dB > 0,8 GHz

Properties

- Front side painted white, backside is unpainted
- Standard outside dimensions : 610 x 610mm
- Maximum service temperature : +90°C
- Typical power handling : 0.15 W/cm²

Availability

Besides standard outside dimensions also specific or customized sizes and shapes can be supplied.
AHF-SLF is not intended for outdoor use as humidity will reduce its RF-performance and lifetime.
Depending on the application and requirements specific coatings or fabrics can be applied on the foam material to make it resistant for outdoor applications or harsh environments.
The following types of protection with different colours are available :
AHF-SLF-xx-T : absorber protected with a special coated fabric for use in semi-outdoor applications
AHF-SLF-xx-C : absorber is painted using a PU coating as anti-dust or for esthetic reasons
AHF-SLF-xx-V : absorber is sealed using a specific PVC fabric for use in harsh environment.

Absorbers AHF-HLSE

Thin flexible microwave elastomer absorber

The AB2E AHF-HLSE is a thin silicone absorber with high loss properties. The absorber material is a non-conductive silicone based material designed for the suppression of surface currents and cavity resonance applications in the higher frequency range. The absorber sheets can be supplied with a self-adhesive backing or can be installed using an adequate liquid adhesive. Silicone material is typically used for harsh environments, high temperature applications and applications where low outgassing is a requirement.

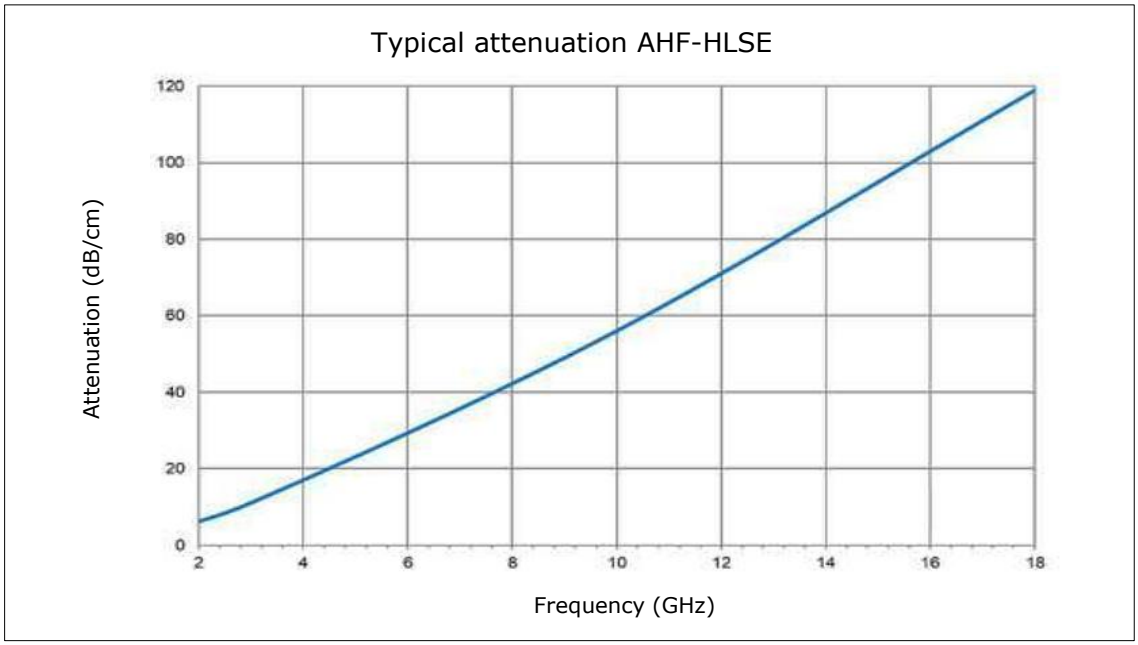
Applications

- Lining cavities typically to supress standing waves and surface currents, the material is not designed nor intended to be used in reflectivity mode.
- AHF-HLSE is typically installed in applications above 4 GHz.
- High frequency sensor systems, LNB's, waveguides, amplifiers, oscillators are often equipped with AHF-HLSE to improve RF-stability.

Properties

- Frequency range : > 4 GHz.
- Hardness > 70.
- Maxi service temperature : -40°C up to 170°C.
- Elongation : 50%.

Specifications

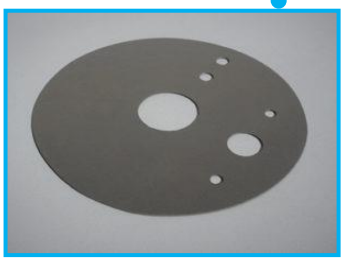


Availability

Standard outside dimensions are 305x305mm available thickness is 0.5mm. Also customer specific thicknesses, sizes and shapes can be produced to suite the available space in the applications. If required the absorber sheet material can be supplied with a self-adhesive backing. Typically for low outgassing applications it is preferred to bond the material using a liquid silicone adhesive, in most cases a primer needs to be applied prior to adhesive.

Absorbers AHF-MLSE

Thin flexible microwave elastomer absorber



The AB2E AHF-MLSE is a thin silicone absorber with magnetic loading. The absorber is an all-round material for both broadband reflectivity applications and also the suppression of surface currents and cavity resonances applications for a very broad frequency range. The absorber sheets can be supplied with a self-adhesive backing or can be installed using an adequate liquid adhesive. Silicone material is typically used for harsh environments, high temperature applications and applications where low outgassing is a requirement.

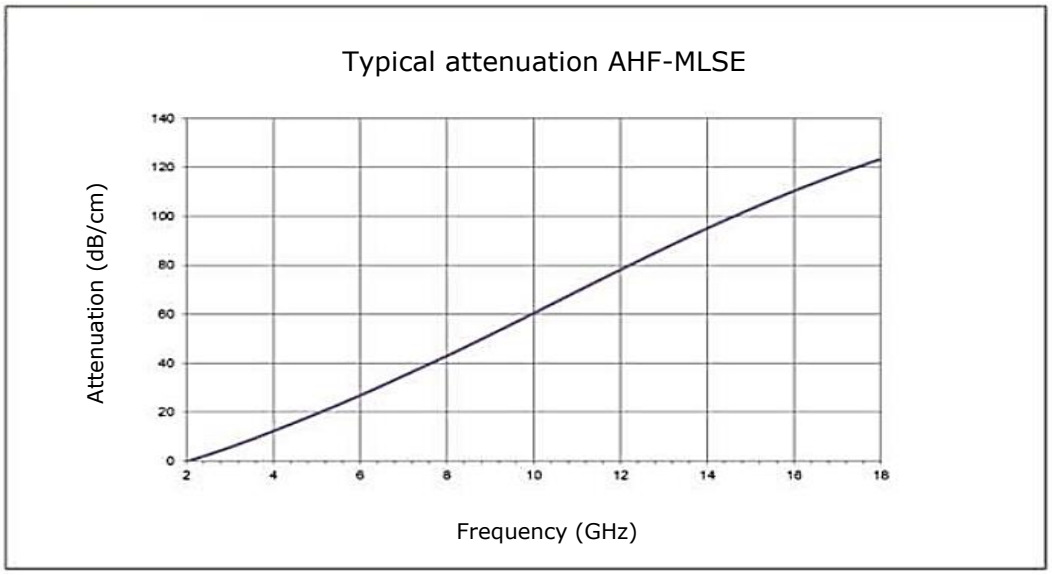
Applications

- Lining cavities typically to supress standing waves and surface currents.
- When bonded to a metal surface the material will reduce the reflectivity level of the metal object.
- Antenna elements are often equipped with AHF-MLSE to reduce side lobes and improve the antenna pattern.
- LNB's, waveguides, amplifiers, converters and oscillators are often equipped with AHF-MLSE to improve RF-stability by improving attenuation.

Properties

- Frequency range : > 6 Ghz up to 60 GHz.
- Hardness : 94 Shore A.
- Maximum service temperature : -40°C up to 170°C.

Specifications



Availability

Standard outside dimensions are 305x305mm available thicknesses are 1 and 2mm.
Also customer specific thicknesses, sizes and shapes can be produced to suite the available space in the applications. Typically for low outgassing applications it is preferred to bond the material using a liquid silicone adhesive, in most cases a primer needs to be applied prior to the adhesive. By itself the material has very high mechanical strength and excellent abrasion resistance.