

TECHNICAL BULLETIN 320-3

C-RAM AR

RETICULATED FOAM BROADBAND RADAR ABSORBER

C-RAM AR is a line of reticulated foam Radar Absorbing sheet materials, comprised of urethane foam and a gradient lossy coating C-RAM AR absorbs microwave energy across a wide range of frequencies. Typically the thicker the material the lower in frequency C-RAM AR will attenuate. C-RAM AR has proven to be ideal for lining shrouds of communications antennas for the suppression of sidelobes. It can also be used to cover fences to separate adjacent antennas, and shield or isolate equipment. The open-cell structure permits airflow freely through the absorber, also when used outdoors rain will freely drain from the product. Cuming Microwave Corporation offers two types of C-RAM AR, our standard performance AR and high performance AR.

C-RAM AR SELECTION

Typically the standard performance AR is suitable for most antenna shroud applications, high performance AR is suited for applications where maximum attenuation is desired, such as RCS reduction, chamber fences, Radomes, electronic enclosures and foam through applications. If standard performance AR is suitable it will cost less than high performance AR. Reticulated foam absorbers in general are the lowest cost absorbers, including high performance AR. AR can also be supplied as an insertion loss material. On specialty applications AR has been purchased up to 3.0" thick. Consult the factory if a required thickness is not listed.

TYPICAL PROPERTIES

Porosity, pores per inch:	4-20
Tensile strength, psi:	8-12
Tear strength, lb/inch width:	2.2
Density, lb/ft ³ :	3.0
Ultimate elongation (%) max:	275

Environmental Properties

Operating temp., max:	250°F
Ozone adverse affects:	No

**Fungus Resistance,
Evidence of fungus growth: No**

TYPICAL REFLECTIVITY

(dB down from reference)

Standard Performance (SP) Grade:

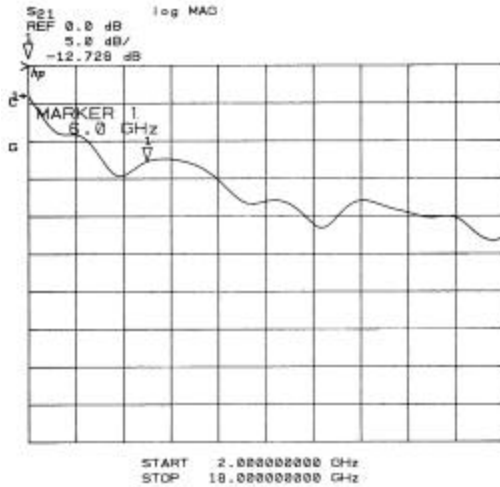
<u>Thk.</u>	<u>Performance</u>	<u>Freq. Range</u>
0.375in.	-12 dB	10 GHz & up
0.50in	-12 dB	8 GHz & Up
0.75in.	-12 dB	6 GHz & Up
1.0in.	-12 dB	6 GHz & Up
1.25in.	-12 dB	5 GHz & Up

High Performance (HP) Grade:

<u>Thk.</u>	<u>Performance</u>	<u>Freq. Range</u>
0.375in.	-20 dB	10 GHz & Up
0.50in.	-20 dB	8 GHz & Up
0.75in.	-20 dB	6 GHz & Up
1.00in.	-20 dB	6 GHz & Up
1.25in.	-20 dB	5 GHz & Up

METHOD OF APPLICATION

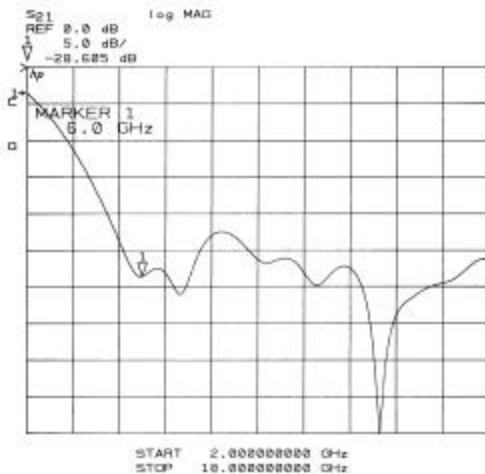
Typically C-RAM can be adhered in place using Neoprene contact adhesives or can be mechanically fastened using low dielectric plastic fasteners. C-RAM AR is easily cut by, bandsaw, utility knife, or shears. It is easily applied to curves or cut to fit into various sizes.



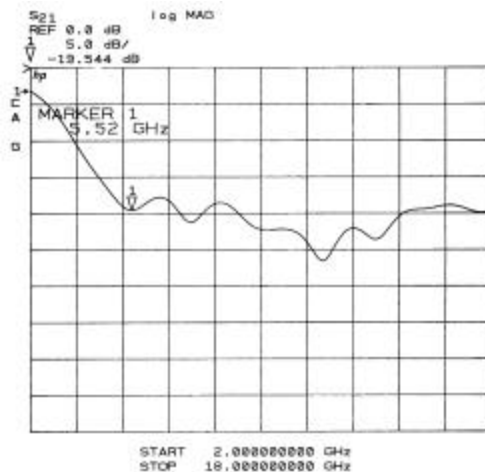
Above: Typical Reflectivity of C-RAM AR (SP) in 0.75 inch thickness

AVAILABILITY

C-RAM AR is available in standard sizes of 24 x 24 in (610 X 610mm) and 24 x 48 in. (610 x 1200mm). Other sizes are available. Cuming Microwave can also supply parts cut to drawings. Consult the factory for alternative Sizes.



Above: Typical Reflectivity of C-RAM AR (HP) in 0.75 inch thickness



Above: C-RAM AR (HP) 0.75 inch foamed through with C-FOAM PK to form a rigid absorber panel.

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