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TECHNICAL BULLETIN

ECCOSORB* AN and AN-W

FLEXIBLE FOAM SHEET BROADBAND MICROWAVE ABSORBER

Description

ECCOSORB AN is a lightweight, flexible, foam sheet, broadband, microwave absorber. It is available in six standard thicknesses, depending upon the lowest desired frequency of operation. ECCOSORB AN is designed to reflect less than -17 dB of normally incident energy above specified frequencies, relative to a metal plate. It is also effective in reducing surface current waves on metal shapes.
ECCOSORB AN-W is essentially the same material as ECCOSORB AN, sealed in an impervious neoprene coated nylon fabric sheet, and has essentially the same reflectivity characteristics. It can be used outdoors and is resistant to fuel, lubricants and hydraulic fluids.

Availability

ECCOSORB AN and AN-W are available in square sheets of 610 mm x 610 mm (24 in x 24 in) and in six different grades, for operation above the following frequencies :

ECCOSORB AN-(W)-72	above	20	GHz
ECCOSORB AN-(W)-73	above	7,5	GHz
ECCOSORB AN-(W)-74	above	3,5	GHz
ECCOSORB AN-(W)-75	above	2,4	GHz
ECCOSORB AN-(W)-77	above	1,2	GHz
ECCOSORB AN-(W)-79	above	600	MHz

ECCOSORB AN and AN-W can be supplied on special order in any desired shape or configuration, incorporating mitre cuts or attachment to metal parts.

ECCOSORB AN and AN-W can be manufactured on a mandrel on special order to take on a contoured shape. This is particularly useful on the thicker grades which cannot be bent to tight radii.
ECCOSORB AN and AN-W can be supplied with an aluminium foil backing on special order.

Applications

Include :

- reducing crosstalk between adjacent antennas
- shrouding antennas to improve the antenna pattern
- absorbing undesired backlobes
- selective shadowing of parts of a target for RCS measurements
- shadowing of posts and supports in anechoic chambers
- absorbing blankets for testing radar systems without harm to personnel

Properties

	Typical value	
	AN	**AN-W**
General		
Colour	front surface painted white, back surface gold	olive green
Dimensions	610 x 610 mm 24 x 24 in	610 x 610 mm 24 x 24 in
Thickness	0.6 to 11.4 cm (0.24 to 4.5 in)	0.6 to 11.4 cm (0.24 to 4.5 in)
Weight	0.3 to 2.8 Kg/pc (0.7 to 6.2 lbs/pc)	0.45 to 3.85 kg/pc (1.0 to 8.5 lbs/pc)
Thermal		
Maximum service temperature	90°C 194°F	90°C 194°F
Fire retardancy	ISO 3582	ISO 3582
Power handling capability	0.25 W/cm²	0.25 W/cm²
Environmental		
Outdoor exposure	Use AN-W	resistant

Reflectivity

Typical normal incidence reflectivity characteristics for the six ECCOSORB AN and AN-W grades are shown in the two figures on the next page.
Reflectivity performance degrades for off-normal bistatic incidence, at different rates for different polarizations. The two following figures** show how performance of ECCOSORB AN-74 degrades as the incidence angle increases (0° is normal, 90° is grazing incidence).

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FIGURES (**)

TYPICAL METAL-BACKED REFLECTIVITY OF VARIOUS GRADES OF ECCOSORB AN AND AN-W

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Instructions For Use

ECCOSORB AN can be readily cut to shape on a bandsaw, or with scissors or a sharp knife. It is a flexible foam and can be formed easily to compound curves. The absorber is designed to be attached to a metal object to give the best reflectivity reduction, however for isolation of components or antennas, it can be used without metal backing. ECCOSTOCK** Adhesive 13111 (Technical Bulletin EK-190) is the recommended adhesive, and will bond the absorber securely to clean surfaces of metal, wood, and common plastics composites. It is brushed or sprayed onto both the back surface of the absorber and the substrate surface, allowed to become tacky in 3-5 minutes, then the two surfaces are pushed together with slight pressure to form a contact adhesion. The bonded piece should be allowed to sit overnight for complete evaporation of residual solvent. It is important to note, that ECCOSORB AN is a laminated material. It has a front surface (white) and a back surface (gold). Layering multiple pieces of ECCOSORB AN, or slicing off part of the thickness will degrade the overall performance.
If pieces are cut from a full sheet of ECCOSORB AN-W, they must be resealed to ensure the same weatherproof behaviour. ECCOSTOCK Tape 86B (Technical Bulletin EK-280) is recommended for this purpose.

Storage Conditions

Store in a dry well ventilated room.

Safety Considerations

It is recommended to consult the EMERSON & CUMING MICROWAVE PRODUCTS N.V. product literature, including material safety data sheets, prior to use EMERSON & CUMING MICROWAVE PRODUCTS N.V. products. These may be obtained from your local sales office.

(ECCOSORB* is a registered trademark of EMERSON & CUMING MICROWAVE PRODUCTS N.V.)
(ECCOSTOCK** is a registered trademark of EMERSON & CUMING MICROWAVE PRODUCTS N.V.)

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Warranty

We hope the information given here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for the user's consideration, investigation and verification; but we do not warrant the results to be obtained. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale **INCLUDING THOSE LIMITING WARRANTIES AND REMEDIES** which apply to all goods supplied by us. We assume no responsibility for the use of these statements, recommendations or suggestions, nor do we intend to use them as a recommendation for any use which would violate statutory obligations or infringe any patent or copyright.