



# + Advanced Electromagnetics Dielectric Material AES/AEPF Series

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## + SECTION 1: introduction

Advanced ElectroMagnetics, Inc., has developed a series of dielectric foams providing a lossy medium to microwave energy. The AES Series materials are ideally suited for electronic enclosures, radar systems and for other component applications where low levels of RF absorption is desired. The AEPF version of this material is used in anechoic chambers for treatment to wall to wall, or ceiling to wall intersections.

This material provides additional lossy foam in areas and is used instead of miter cut materials. The AES/AEPF materials are highly fire retardant and can be provided in standard sheet sizes or in custom fabricated shapes. The following specification describes the properties of the AES Series lossy dielectric slab materials.

## + SECTION 2: related documents

- ① NRL Flammability Standard 8093 tests 1, 2, & 3.

## + SECTION 3: mechanical properties

### 3.1. Thickness

The AES Series material can be provided in any thickness up to 4". Thicker materials are glued. The tolerances that can be achieved in cutting are typically plus or minus 1/16". Upon request, closer tolerances can be achieved with the use of additional tooling.

### 3.2. Planar Dimensions

The AES Series material is provided in standard 24" x 24" sheets. Larger sheets are available up to 24" x 48" and custom solutions are available following technical analysis.

### 3.3. Density

Material density will depend on the loading and may vary from 3 to 5 lb/cu.ft.

### 3.4. Homogeneity

The properties of the carbon impregnation mix will provide even

dielectric properties throughout the planar area of the absorber. The product will be smooth and homogeneous in texture throughout it's bulk.

### 3.5. Foam characteristics

The base foam has a predominately open cell structure and is a polyurethane foam. Its basic flammable character is modified by the addition of a number of chemicals and it passes NRL 8093 tests 1, 2, & 3.

### 3.6. Material Use

The customer application will define the supply shape. It can be readily cut by scissors in thin layers and with a small bandsaw or similar when thicker. Small pieces can be straight forwardly cut using a shape blade.

## + SECTION 4: electrical properties

This material exhibits a variable insertion loss when measured at 1.5 GHz using appropriate antennas.

The insertion loss remains constant over a range 1 to 8 GHz. Special requirements for thickness and insertion loss can be provided on request.

## + SECTION 5: application

These materials can be used where a lossy microwave filler material is needed.

## + SECTION 6: bonding

AEMI type AES/AEPF can be readily cut to shape and bonded using most types of contact adhesives.

## + SECTION 7: flammability

These materials have several chemical additives to make the product highly flame retardant. The material will meet the requirement. of NRL 8093 tests 1, 2, & 3.

## + SECTION 8: proprietary notice

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