

MAC-8101

Flexible RFID Signal Absorber



Based upon MWT Materials proprietary technology, our RFID absorbers utilize circuit analog technology to provide high absorption in a physically thin package (under 0.25 inch (0.64 cm)). MAC-8101 quilted textile product utilizes this technology, allowing for broadband performance across all RFID frequencies. Easy to handle MAC-8101 flexible RFID absorbing material affords significant savings in labor and space when compared to traditional foam RF absorbers. It contains an RF reflective ground plane to reject outside signals and layers of microwave absorbing materials to maintain RF suppression inside the area being treated. This high-performance RFID absorbing material provides signal attenuation, a minimum of -15 dB from 0.5 to 5 GHz.

MAC-8101 is available with a variety of outer covers to handle various environmental conditions. From indoor (PVC outer cover) to outdoor environments (UV Stabilized acrylic coated nylon) to extreme wear conditions (Hypalon coated Kevlar), our products have been shown to withstand the test of time, yielding repeatable performance for over 15 continuous years with rough handling.

APPLICATIONS

- Reduction of signal reflection in RFID Portals

FEATURES

- Minimum of -15 dB Absorption from 0.5 to 5 GHz
- Single Sided, RFID Absorption
- Good Flexibility
- Corrosion Resistant
- Durable Outer Surfaces
- High Wear
- Tear Resistant
- High Tensile Strength
- POL (Petroleum, Oil, Lubricant) Resistant

INSTALLATION

The product is supplied with a choice of attachment options at no extra charge. They include Delrin D-rings or grommets as well as Velcro. Outdoor rated epoxy adhesives have been used successfully as well.

GENERAL SPECIFICATIONS

Construction: Single sided absorber composite flexible panel, consisting of resistive materials, separators and ground plane. Encapsulated in a durable waterproof outer cover of PVC or urethane.

Thickness: Typically, 0.25 inches (0.64 cm)

Weight: Typically, less than 0.5 lbs. per square foot (2.4 kg/m²)

Color: Black is standard (Other colors available: Gray, White, etc.)

MECHANICAL PROPERTIES

Effects of Liquids Oil: No adverse effects after 1000 hours (ASTM-B-117)

Effects of Liquids, Water: Less than 6% increase in volume (ASTM-D-471)

Hydrostatic Resistance: No water leaks after 20-min/15 psi (ASTM-D-751)

Thermal Stability: Range of -40°F to 160°F

Low Temperature Impact: -20°F, 1.5 ft. lbs., and no adverse effects

Thermal Cycles: 10 cycles, 1 hr/-20°F - 1 hr/70° F, no adverse effects

Visual Defects: Uniform surface texture and appearance

Hazardous Material: None

ELECTRICAL: PROPERTIES

Electrical Performance:

Attenuation: Greater than -15dB in the frequency range of 0.8 to 5 GHz (this attenuation is from normal incidence up to 45°). Performances are stated in either polarization.

Isolation: In excess of -85 dB

Relative Absorption (dB) vs. Frequency (GHz)

