

## MAC-9101 RFID Portal Isolation and Absorption Curtains

Reduce microwave signal leakage, reflection and crosstalk issues



Absorber (inside)



Exterior panels exposed

Based upon MWT Materials proprietary technology, these RFID absorbing curtains utilize circuit analog technology allowing for broadband performance across all RFID frequencies. They provide high absorption in a physically thin and flexible package. Panels are under 0.25 inch (0.64 cm thick) which is not attainable using other RFID absorber products.

Our RFID Portal Isolation Curtains utilize two layers of panels. The exterior panels contain a RF reflective ground plane to reject outside EMF, while the interior ones add layers of electrical microwave absorbing material to maintain RF suppression inside the area being treated. This unique technology is far more effective in isolating the RFID read area from outside areas than any competitive product. An optional clear safety window section is available for larger curtains, allowing for line of sight and safe passage.

### **APPLICATIONS**

- RFID Isolation on Conveyor belt readers
- Use with all frequencies of RFID
- For smaller RFID portals where signal crosstalk is an issue

### **FEATURES**

- Minimum of -15 dB Absorption from 0.9 to 5 GHz
- Minimum of -80 dB Isolation from 100 MHz to 26 GHz
- Custom designed slits for package transport through curtains
- Interior panels allow absorption across all frequencies of RFID
- Exterior panels contain high performance isolation material for signal isolation
- Durable Outer Surfaces
- High Wear resistance
- Tear Resistant
- High Tensile Strength
- POL (Petroleum, Oil, Lubricant) Resistant
- Custom cut and fit to RFID Conveyor size with top mounted grommets

## GENERAL SPECIFICATIONS

### Construction

#### Interior panels

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

#### Exterior panels

Dual sided isolation composite flexible panel, consisting of multiple ground plane and separators. Encapsulated in a durable waterproof outer cover of urethane coated nylon

#### Size:

Custom made to meet requirement.

#### Thickness:

Typically, 0.25 inches (0.64 cm)

#### Weight:

Typically, less than 0.5 lbs. per square foot (2.4 kg/m<sup>2</sup>)

#### Color:

Absorber - Black standard (others available: blue, green, red, gray, etc.)  
Reflector – Gray standard (other available: blue, green, red, black, 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)

### Electrical Performance

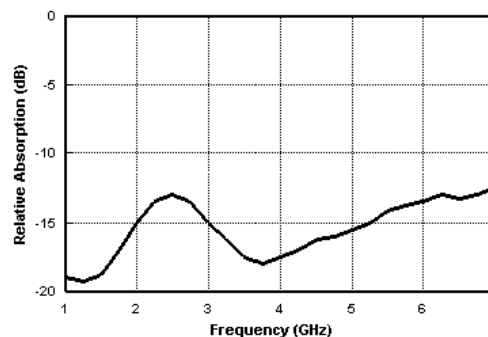
#### Isolation:

More than -90 dB when closed

#### Attenuation:

Greater than -15dB from 0.8 to 5GHz

### Relative Absorption (dB) vs. Frequency (GHz)



### INSTALLATION NOTES:

Our RFID Portal Isolation Curtains have two different overlapping sets of panels. They are custom sewn to your specifications. Curtains should be measured carefully and just touch the belt without product on them. Entry curtains should be installed inside the portal and exit curtains outside the portal with the black (absorber) side facing the inside of the tunnel. We suggest they overlap the portal by 1" (3 cm) to allow for optimal RFID signal seal. Outer panels can be attached to the portal with Velcro to ensure the seal. You should allow a minimum 3" (8 cm) for a horizontal header to which the vertical slats hang and grommets are located for attachment to the portal. We can include design details (notches in the side panels, varying panel length, etc.) to allow for satisfactory seal and maximum signal isolation.