



# CUMING MICROWAVE

Technical Bulletin 310-11

**RoHS  
Compliant**

## **C-RAM GDx** **HIGH LOSS SILICONE RUBBER SHEET ABSORBER FOR SUPPRESSION OF SURFACE WAVES**

C-RAM GDx is a thin, magnetically filled rubber sheet stock which has high loss at microwave frequencies from 1 to 35 GHz. It is applied to metal surfaces to attenuate RF surface currents. It can be used to modify antenna patterns, lower the Q of a cavity, act as a transmission line attenuator, and modify the radar cross section of targets.

C-RAM GDx is thin and elastomeric, so it will conform to curvatures of the substrate. It is not electrically conductive, and has high dielectric strength. It is a soft material and is readily die-cut or cut with a razor. Being based on a silicone rubber, it will withstand wide temperature ranges, and survive outdoor exposure.

C-RAM GDx has a high magnetic loss tangent from 1 GHz to 18 GHz. Thicker grades are required to attenuate at lower frequencies to obtain the same performance as a thinner grade at higher frequencies.

C-RAM GDx is available in silicone or urethane elastomers. Please refer to Technical Bulletin No. 310-1 for properties and benefits of each type of elastomer.

### **TYPICAL PROPERTIES**

Color: Grey

Flammability: non-flammable

Thickness and weight (3 grades):

0.75 mm (.030") --- 2.3 kg/m<sup>2</sup> (0.47 lb/ft<sup>2</sup>)

1.52 mm (.060") --- 4.6 kg/m<sup>2</sup> (0.95 lb/ft<sup>2</sup>)

3.18 mm (.125") --- 9.6 kg/m<sup>2</sup> (1.98 lb/ft<sup>2</sup>)

Service temperature:

Silicone -50 to +200°C (-65 to +400°F)

Urethane -62 to +135°C (-80 to +275°F)

Hardness, Shore A: 80

Thermal Conductivity: 0.002 cal-cm/sec-cm<sup>2</sup>-°C  
Volume Resistivity: >10<sup>11</sup> ohm-cm  
Dielectric strength: 10 kv/mm (250 v/mil)

### **METHOD OF APPLICATION**

The normal method of applying C-RAM GDx to a substrate is with a silicone RTV adhesive. For best results, the metal should be scuffed with sandpaper, wiped with alcohol to remove dust and grease, and have a silicone primer applied, such as C-PRIME 215.

The silicone adhesive, such as C-BOND 255 or equivalent, is brushed or rolled onto one of the surfaces, and the sheet is then applied to the metal. An overnight cure is generally required, and a modest temperature cycle, such as a few hours at 150°F, helps the bond.

As an alternative, C-RAM GDx can be supplied with a pressure sensitive adhesive, which, while not as strong as an RTV adhesive, will provide an adequate bond in many applications, particularly when one is bonding several smaller pieces. Simply peel off the backing, stick the part to a primed surface, and apply heat with a heat gun for 1-2 minutes to effect a good bond.

Document Control No. N-06-000-501842-4  
2/2/2015 page 1 of 2

## AVAILABILITY

C-RAM GDx is available in three standard thicknesses-- .030", .060", and .125".

Standard dimensions for all thicknesses are flat sheets 300 x 300 mm (12 x 12 in) and 400 x 500 mm (16 x 20 in), in the nominal thickness for the particular grade. Specify the part as: C-RAM GDx-xxx, where xxx is the nominal thickness in inches (.030, .060, .125), and include the dimensions.

We can supply other dimensions, and can die-cut or laser-cut parts to your drawings.

C-RAM GDx can also be supplied with a peel-and-stick pressure sensitive adhesive backing (specify by adding a /PSA suffix to the part name).

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