



# CUMING MICROWAVE

## C-RAM FF-2

RoHS  
Compliant

### TECHNICAL BULLETIN 310-7

#### HIGH LOSS SILICONE RUBBER SHEET ABSORBER FOR UHF AND MICROWAVE FREQUENCIES

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C-RAM FF-2 is a thin, ferrite filled, silicone rubber sheet stock which has high magnetic loss at UHF and microwave frequencies up to X-band. 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 FF-2 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 FF-2 has a high magnetic loss tangent from about 500 MHz to 10GHz. It will perform well in the 900 MHz cellular frequencies. In the UHF range, C-RAM FDSS will perform in an equal fashion; it has different magnetic filler which exhibits high loss tangents at UHF frequencies, but C-RAM FF-2 should be used if absorption above 2 GHz is also desired.

#### TYPICAL PROPERTIES

Color: Brownish-grey

Flammability: non-flammable

Thickness and weight (2 grades):

1.0mm (.040")--- 3.2kg/m<sup>2</sup> (0.65 lb/ft<sup>2</sup>)

2.0 mm (.080")--- 6.3 kg/m<sup>2</sup> (1.30 lb/ft<sup>2</sup>)

Service temperature: -50 to +200°C  
(-65 to +400°F)

Hardness, Shore A: 80

Therm. Conductivity: 0.002 cal-cm/sec-cm<sup>2</sup>-oC

Volume resistivity: >10<sup>12</sup> ohm-cm

Dielectric strength: 10 kv/mm (250 v/mil)

#### METHOD OF APPLICATION

The normal method of applying C-RAM FF-2 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 FF-2 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.

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## AVAILABILITY

C-RAM FF-2 is available in two standard thicknesses--1 mm (.040") and 2mm (.080"). Other thicknesses between 0.75mm and 3.2mm can also be supplied.

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 FF-2-xxx, where xxx is the nominal thickness in inches (040, 080), and include the dimensions.

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

C-RAM FF-2 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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