

ECCOSORB[®] MF-117 used in Waveguide Termination for 84-116 GHz Receiver Development Program

ECCOSORB[®] MF-117, a magnetically loaded epoxy, was selected for a high frequency (84-116 GHz) waveguide termination used in the international Atacama Large Millimeter Array (ALMA).

This specific microwave absorber was chosen for several reasons, specifically bandwidth, and attenuation. However these RF requirements pale in nature to the operational requirements, which required low out-gassing and a service temperature of a cryogenic 4 Kelvin.

Once machined from a solid bar of ECCOSORB[®] MF-117 each wedge design, tapered in two directions (see figure below) is inserted into one half of a rectangular waveguide, which measures 2.44 x 1.22 mm. The load is then bonded in place using an RTV silicone adhesive and the upper half of the waveguide split-block is assembled.



