

Radiation Resistance & Microwave Measurement

3M™ Nextel™ Ceramic Fibers 312 and 440

Radiation Resistance

Exposure to radiation from a Cobalt 60 source did no noticeable damage to the 3M Nextel Fibers 312 and 440. A total of 1×10^7 rads at an exposure rate of 2.1×10^5 rads/hour did not change the tensile strength of the fibers, yarns or fabrics made from the fibers.

Microwave Measurements

Power Transmission and Reflection for 3M Nextel Fabric panels 18 inch x 18 inch (45.7 cm x 45.7 cm) at 10 GHz.

Fabric Specimen	Transmission*		Reflection**	
	5 Layers	10 Layers	5 Layers	10 Layers
AF-30	96.5%	97.8%	7%	0.45%
BF-30	94.7%	96.7%	7%	0.14%

*Sample held with styrofoam panels, angles of incidence 0°.

**Sample uncompressed, angle of incidence 10°. Compared to copper plate with perpendicular polarization.