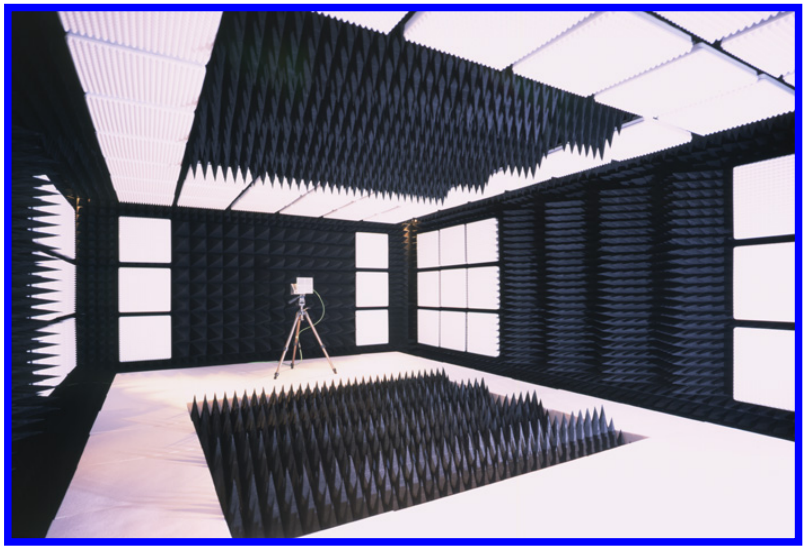
TDK CORPORATION

Antenna Evaluation Anechoic Chambers



Application

Antenna Characterization Tests
- Radiation Pattern
- Gain
- Effective Radiated Power

Application Specific Tests
- Wireless Communications
- Mobile Telecom
- RFID/Mesh Networking

Specialty Items
- Oblique Incident Absorbers
- Low Reflective Foam
- White Caps and Walkway

TDK's antenna evaluation anechoic chambers are designed to allow the end user to characterize various features of wireless technology as well as measure the properties of the antennas that support that radio technology.

TDK has developed two standard antenna evaluation chambers for user's requirements. TDK's Type A chamber is designed to provide the best performance in a moderately sized chamber. The Type B chamber is designed to provide optimized performance in a restricted size format. Both chambers utilize TDK's one-of-kind polyethylene closed cell foam and oblique incidence absorber to provide superior performance over a broad frequency range.

These chamber designs are suitable for modern and next generation wireless characterization, as well as stand alone antenna evaluations for such technologies as WLAN, BT, RFID, ETC, Mobile Telecom, UWB, SDARS, and others. The frequency range of use is from 800 MHz to millimeter-wave applications. Other frequency ranges can also be accommodated with different chamber configurations or absorber treatment.

Additional features and advantages mentioned here are a direct result of TDK's advanced development techniques for absorber materials, simulation technology and empirical design database.

1. Stable physical and electrical characteristics for absorbing materials.
2. Compact size coupled with high performance.
3. Reduced specular activity based on oblique incident absorbers.
4. Optimized quiet zone available for different applications.
5. Closed cell absorbers for clean environment (no carbon dust).
6. Green manufacturing process: ISO 9001,ISO 14001 & RoHS compliant.
7. Applicable for Millimeter-wave testing up to 110GHz.
8. Bright work area with light reflective white caps.

TDK CORPORATION

Chamber Specification	Type A	Type B
1. Internal shield room size	7.0m (L) x 4.0m (W) x 4.0m (H)	6.0m (L) x 3.6m (W) x 2.6m (H)
2. Internal working space	5.8m (L) x 3.0m (W) x 3.0m (H)	5.1m (L) x 2.6m (W) x 1.9m (H)
3. Test distance	3.0m Test Distance	3.0m Test Distance
4. Volume of QZ	0.6m Diameter Sphere	0.3m Diameter Sphere

Quiet Zone Reflectivity	Guarantee (XYZ)	Typical (XY)	Guarantee (XYZ)	Typical (XY)
800MHz	=< -30dB	=< -35dB	=< -20dB	=< -30dB
1GHz	=< -35dB	=< -40dB	=< -30dB	=< -40dB
1.5GHz	=< -35dB	=< -40dB	=< -30dB	=< -40dB
1.8GHz	=< -35dB	=< -40dB	=< -35dB	=< -40dB
2.45GHz	=< -40dB	=< -45dB	=< -30dB	=< -30dB
5.2GHz	=< -50dB	=< -50dB	=< -45dB	=< -50dB
5.8GHz	=< -50dB	=< -50dB	=< -45dB	=< -50dB
10GHz	=< -50dB	=< -55dB	=< -50dB	=< -55dB
18GHz	=< -50dB	=< -55dB	=< -50dB	=< -55dB
40GHz	=< -50dB	=< -55dB	=< -50dB	=< -55dB

TDK Special Oblique Incident Absorber (IS – SM Series)

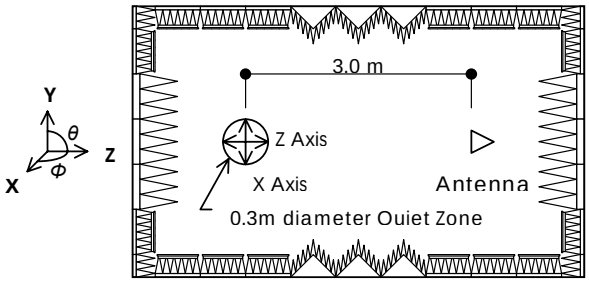
TDK microwave IS material absorber is a conductive, carbon – loaded closed – cell polyethylene foam absorber that is designed for use in microwave and millimeter wave test chambers, antenna pattern test chambers and other special use anechoic facilities.

TDK IS series absorbers are light weight yet rigid and durable, with excellent resistance to wear and damage.

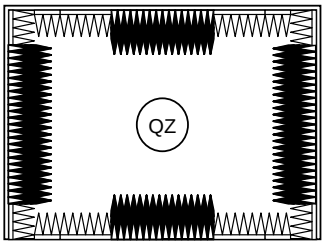
Physical Characteristics

Basic Material	Polyethylene
Composition	Closed Cell
Tensile Stability	4 kg / cm^2
Chemical Stability	Only oxidizing agent can erode.
Humidity Resistance	No deterioration
Product Life	> 10 years
Operating Temperature	< 100 ^oC
Fire Retardation	NRL Class 1,2 and 3 , UL94HBF
Burning Gas	H_2O , CO_2 , Aliphatic compound gas
Adhesion Reliability	Epoxy resin adhesive may give the best adhesion.

Example of Chamber Layout (Type B)



Floor Plan



Section

IS-SM050

IS-060

Optional Items:
- 3D Manipulator
- Antenna Positioning Devices
- Controllers
- Shielded Control Room(s)
- Test Equipment and Solutions
- Measurement and Metrology Antennas
- Measurement Software

TDK RF Solutions Inc.
1101 Cypress Creek Road, Cedar Park, TX78613, USA
Tel : +1-512-258-9478, Fax: +1-512-258-0740
World Wide Web : http//www.tdkrfsolutions.com