RF-Shielded SCIF/SAPF and Forensic Rooms

Shielding Effectiveness

RF Shielding for Secure and Special Access Rooms

In many secure communication and intelligence environments, uncontrolled RF leakage becomes a critical factor affecting the confidentiality of sensitive data. Command centers, police departments, and government facilities remain vulnerable to electronic eavesdropping, RF scanning, or TEMPEST-based interception if proper shielding is not in place. Even minimal signal leakage can compromise secure conversations, enable surveillance, or provide hostile actors with channels for data extraction.

To address this, SCIF and SAPF rooms are engineered with integrated RF shielding to block electromagnetic emissions while maintaining full physical and acoustic integrity. Forensic rooms are even more narrowly focused: their role is to prevent remote access to seized digital devices by isolating them from wireless networks such as GSM, 4G/5G, Wi-Fi, or Bluetooth. Shielding therefore ensures both the protection of classified communications and the preservation of forensic evidence. As demonstrated in (Graph 1a), reliable attenuation across a wide frequency spectrum guarantees stable and uncompromised information security, in full compliance with leading military and commercial standards.

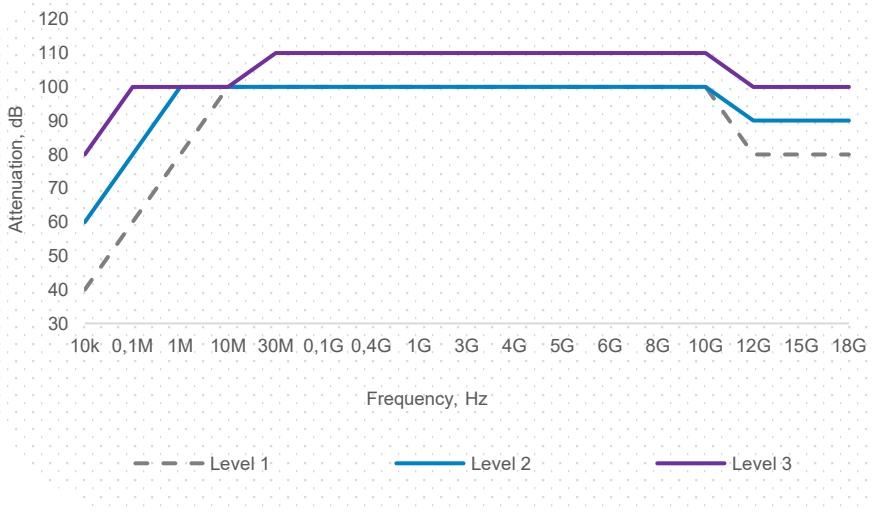
A Pioneer in Combining RF Shielding and Acoustics

Building on decades of innovation, IAC Acoustics introduced in 1988 specialized shielding concepts that combine acoustic isolation with electromagnetic protection for secure environments. Our Moduline™ technology provides proven acoustic insulation (Graph 2a and 2b) and electromagnetic attenuation (Graph 1a) in one enclosure.

By combining standardized modules with flexible designs, IAC delivers secure spaces that scale from compact forensic labs to mission-critical data centers and large command facilities. These chambers ensure stable shielding and acoustic performance across the full spectrum while maintaining long-term reliability.

In addition to Moduline™ panels and doors, we offer a wide range of electromagnetic shielding solutions — including sandwich constructions, pan-type bolted tray panels, copper foils of different composition and thickness, container-based security solutions for missions and fully welded systems on request. This variety enables us to configure each project individually, ensuring the right balance between shielding performance, structural durability, and cost efficiency.

Graph 1a. Typical Shielding Effectiveness Levels*



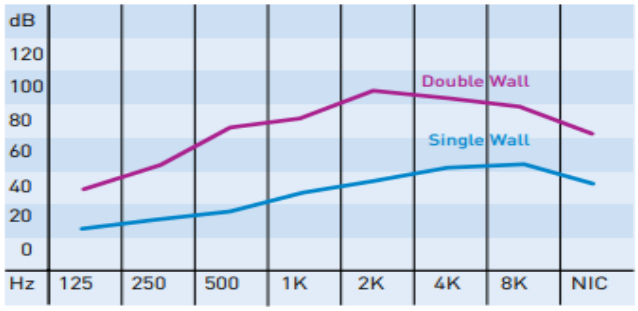
***NOTES AND REFERENCES**

- all measurements were carried out on the basis and in the essential points in accordance with the following international and national standards: EN 50147-1 and IEEE 299
- shielding attenuation is defined as the ratio, expressed in decibels [dB], of two magnetic or electric field strengths measured on opposite sides of a shielded enclosure. These field strengths are determined by means of two measurements (M0 – reference measurement without shielding, M1 - measurement with shielding), which are subsequently used to calculate the shielding attenuation with ±3 dB instrument accuracy.
- measurement was carried out by an independent accredited test company for shielding effectiveness measurements in the laboratory conditions
- our customers can choose test report type, required attenuation values up to 120 dB as well as test points location
- low frequency extension option is available below 1 kHz or even for DC electric and magnetic fields
- microwave frequency extension option is available up to 40 GHz

Acoustic Performance

OCTAVE BAND, Hz	63	125	250	500	1k	2k	4k	8k	NRC*
NOISHIELD REGULAR	0.89	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.95
NOISE-LOCK II	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
NOISE-LOCK III	-	0.49	0.37	0.83	0.96	0.99	1.00	1.00	0.80
NOISE-LOCK IV	-	0.49	0.37	0.83	0.96	0.99	1.00	1.00	0.80
NOISE-LOCK V	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
VARITONE (50mm)	-	0.35	0.65	1.20	1.21	1.07	0.92	-	1.00
VARITONE (100mm)	-	0.97	1.39	1.34	1.29	1.19	1.01	-	1.30

Graph 2a. Sound Absorption Coefficients



Graph 2b. Typical Noise Reduction (Octave Bands in Hz)

Typical Applications:

- Government and defence facilities
- Intelligence agencies and diplomatic missions
- Police and forensic laboratories
- Courts and legal evidence rooms
- Command and emergency control centres
- Mission-critical data centres and telecom hubs
- Corporate secure meeting rooms

Standards and regulations:

- ICD 705 — International SCIF standards
- TEMPEST — Protection against electromagnetic eavesdropping
- NSA/CSS 94-106 — EMI/RF shielding
- ISO 140-18 & STANAG 4569 — Acoustic and physical protection
- EU & NATO security standards

Acoustic and Shielded Floor Configurations

IAC offers several shielded floor systems tailored to different applications: raised floors (>100 mm), modular floating floors (>50 mm), and reinforced concrete slabs (>300 mm). These designs support both heavy static loads up to 30 tons and vibration-sensitive robotics or automation equipment, while preserving shielding integrity. Floors can be integrated into rooms of any size, from compact labs to full-scale facilities.

EMI filters and shielded penetration panels

IAC Acoustics offers a wide range of EMI and RF filters for both AC and DC power supply, isolation transformers as well as special shielded penetrations (for water, liquids, gas, or high-pressure air). A variety of signal cable penetrations is available, including fiber optic, BNC, N-type, DIN, USB, and other shielded connectors. If you're unsure how to configure a suitable shielded I/O panel, our experts will help you find the optimal solution.

Soundproof RF-Shielded Doors and Gates

IAC Acoustics' SCIF Doors are approved by U.S. authorities for installation in SCIF/SAPF and other secure facilities designed in accordance with C Tech Spec – for ICD/ICS 705 and JAFAN 6/9. These doors can be equipped with GSA-approved S&G 2740B and Kaba Mas X-10 locks, with additional customization options available.

- Performance ratings up to STC-64/Rw63
- Real flexibility with custom sizes or designs
- Manual or automatic versions are available
- UL, BS and EN fire ratings and blast-resistance
- Single / double leaf swing doors and sliding doors
- Available Dimensions (W × H):
  Width: 400 mm to 6000 mm
  Height: 400 mm to 6000 mm
- Shielding Effectiveness up to 120 dB

Silenced HVAC System

Conditioning and ventilation for shielded rooms are designed to maintain both RF integrity and acoustic isolation. Airflow is routed through RF-shielded waveguide panels and acoustic silencers, ensuring comfortable environmental conditions without compromising shielding performance. Custom HVAC solutions can be integrated for SCIF, forensic, and data center facilities of any size.

When Compromise Is Not an Option

IAC's shielded acoustic hybrid chambers eliminate the need to compromise between Microdyne® noise reduction, high-performance sound absorption, and reliable EMI/RF shielding. Our advanced technologies enable the creation of state-of-the-art facilities that safeguard classified communications and operations against both electronic surveillance and physical intrusion.

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