



Healthcare



**Complete MRI Room Solutions • Faraday Cages • Quench Pipes
MRI RF Shielded Doors and Windows • Arteng Dimmable Led MRI
Lighting system • Power Filters • Virtual Skylite • RF Testing**

📍 Yakuplu Mahallesi Dereboyu
Caddesi No: 11/1
Beylikdüzü / İSTANBUL

☎ +90 212 853 62 10
☎ +90 212 853 62 50
✉ info@artengyapi.com.tr
🌐 www.artengyapi.com.tr



MRI RF Shielded Cabin

High Electromagnetic Shielding Performance, Structural Durability, and Long Service Life

Arteng RF Cabins provide a reliable solution for MRI systems with high electromagnetic attenuation performance, mechanical strength, and modular installation convenience.

Panel Structure and Material Specifications

Panels consist of a composite sandwich panel structure, manufactured by pressing 0.7 mm special galvanized steel sheets on both sides of 18 mm MDF boards.

This structure ensures long-lasting durability, rigidity, and high electromagnetic attenuation performance of the cages.

Structural Advantages:

- Surface rigidity and torsional resistance
- High impact strength and deflection resistance over long spans
- Long-term protection against corrosion and deformation
- Balanced strength in all directions due to symmetric galvanized layers

Electromagnetic Performance (According to IEEE 299 Standard)

- Magnetic shielding attenuation: > 100 dB (1 – 30 MHz)
- Electric field attenuation: > 100 dB (30 – 160 MHz)
- Ground isolation resistance: > 3 k Ω

Acoustic and Mechanical Properties

- Sound insulation: > 44 dB(A)
- Floor insulation: 3 mm membrane + underlayer isolation material
- Integrated baseplate manufacturing and floor connection
- Acoustic comfort ensuring a quiet MRI room environment

Design and Modularity

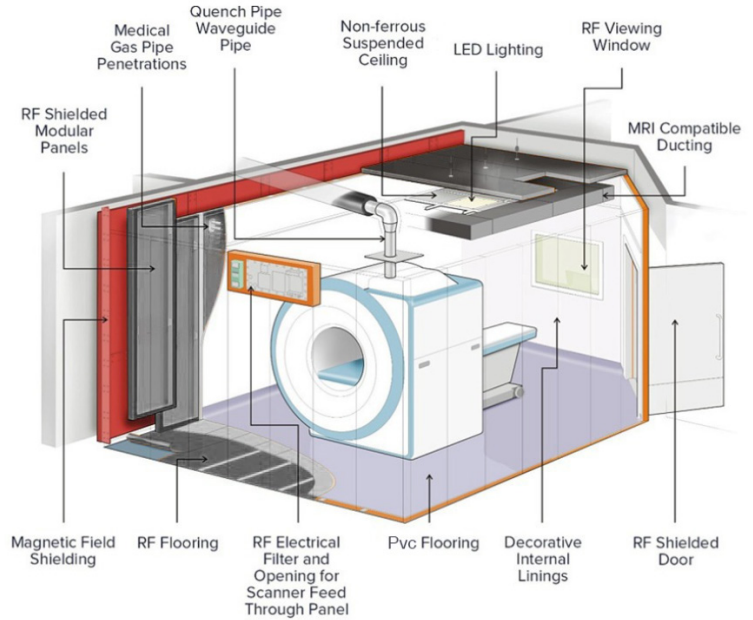
- Modular & flexible design adaptable to various room sizes and site conditions
- Fast installation and disassembly
- Easy maintenance: component replacement and servicing facilitated by modular structure

RF Room Equipment and Integration

- RF Door: Standard size 1.20 × 2.10 m; manual or pneumatic options (custom sizes available)
- RF Window: 100 × 120 cm (custom sizes available)
- Magnetic door switch system
- RF EMI Filters: 16 A, 25 A, 50 A
- EMI/RFI shielded waveguide air vents
- Quench duct integration
- Filter panel openings and cable pass-through adapters
- Stainless steel pipes Ø5 cm and Ø7 cm for medical gas lines and injector cable entries

Lighting and Comfort

- MRI-compatible LED lighting: 600 × 600 mm panel or spotlight options
- RF-shielded LED control panel
- Quiet, flicker-free lighting environment inside MRI room
- Adjustable dimmer lighting control



Arteng Yapi & Healthcare MRI Shielded Doors

High Electromagnetic Sealing, Durable Structure, and Long-Lasting Performance

Arteng Yapi & Healthcare MRI room doors are designed to ensure maximum electromagnetic shielding in RF-enclosed magnetic resonance (MRI) environments. With a robust mechanical structure, silent operation, and long-term durability, they provide a safe solution for hospitals and imaging centers.

Technical Performance

- **RF Attenuation (according to IEEE 299 Standard):**
 - o Magnetic field attenuation: > 100 dB (1 – 30 MHz)
 - o Electric field attenuation: > 100 dB (30 – 160 MHz)
- **Sound Insulation:** > 44 dB(A)
- **Standard Dimensions:** 1.22 m × 2.13 m (custom sizes available)
- **RF Shielding Performance:** 100 dB (10 – 100 MHz)
- **Acoustic Performance:** STC-40 certified
- **Nominal Clear Opening:** 1.20 m × 2.10 m (4 ft × 7 ft)

Structural Features

- Conductive and durable fabric providing EMI/RFI sealing
- Reinforced aluminum frame and steel-supported door leaf
- MRI-compatible locks and accessories
- Stainless steel, antibacterial, or laminate surface options
- High-pressure laminate (HPL) finish – easy to clean and hygienic
- Low-profile threshold suitable for patient transfer.
- Easy maintenance and long-service life

Door Options

- **Manual RF Door:** Ergonomic handle and locking system for smooth operation with high RF shielding.



- **Pneumatic RF Door:** Closes automatically by air pressure; inflatable seals ensure full electromagnetic isolation.



Key Advantages

- High RF shielding performance
- Modern design and aesthetic surface options
- Low maintenance requirement and high durability
- Quiet operation and excellent acoustic comfort

Arteng Yapi & Healthcare MRI Shielded Windows

High Transparency, Maximum Electromagnetic Protection

Arteng Yapi & Healthcare RF-shielded windows are designed for MRI systems and ensure continuous visual contact between the operator and the patient through their high-performance electromagnetic attenuation glass. They combine high visibility, superior RF shielding, and aesthetic design in a single system.

Technical Specifications

- **Standard Size:** 100 × 120 cm (custom sizes available upon request)
- **Sound Insulation:** > 38 dB(A)
- **Magnetic Field Attenuation:** > 100 dB (1 – 30 MHz)
- **Electric Field Attenuation:** > 100 dB (30 – 160 MHz)
- **Glass Thickness:** 6.4 mm (0.25 in) laminated safety glass
- **Acoustic Performance:** STC 40
- **Structure:** Dual-layer conductive mesh providing RF shielding
- **Frame:** Lightweight and durable extruded aluminum
- **Surface Finish:** Powder-coated for an aesthetic and long-lasting finish

Key Features

- Industry-leading RF glass with the highest visibility rate
- Excellent RF shielding performance
- Clear visual transparency for uninterrupted observation
- Impact-, scratch-, and deformation-resistant surface
- MRI-compatible frame and installation system
- Full compliance with IEEE 299 Standard
- Suitable for wall, ceiling (skylight), or observation window applications





MRI Internal Finishing

Once the Faraday cage is completed, Arteng can provide the following interior finishing options:

- Interior wall cladding can be applied using high-pressure laminate wall panels (HPL) or wallboard and plastic coverings.
- A non-ferrous suspended ceiling system equipped with high-quality commercial-grade ceiling tiles.
- Medical-grade PVC flooring options are available.
- Flooring installation includes welded seams, skirting, and coved edges for hygienic continuity.
- Interior decoration can be designed to match surrounding spaces when required.
- We are flexible to meet our customers' requests for materials and colors.

MRI Magnetic Field Shielding

Magnetic field shielding is vital for the safety of personnel, the MRI system, and nearby medical equipment. Magnetic fields are generated by permanent magnets, electromagnets, electric motors, power distribution systems, and the MRI scanner itself. When these fields must be controlled or contained, Arteng can design and install the required magnetic shielding system. Providing protection against MRI-generated magnetic fields is critical for the following reasons:

- MRI systems remain unaffected by nearby magnetic structures (e.g., elevators or vehicles).
- Adjacent medical equipment operates without interference.
- A safe environment is ensured for individuals with electronic implants (e.g., pacemakers).

Before designing and installing the physical shielding, Arteng can perform magnetic field mapping to verify the field strength and distribution.

Waveguides & Penetrations

Arteng designs, manufactures, and installs various RF-shielded waveguides and penetration components.

This includes medical gas piping systems, fiber optic feedthroughs, gas and water pipes, and air ducts.

Fiber optic cables or gas lines can pass through dielectric penetrations without affecting the shielding performance of the room.



MRI Quench Pipes

Arteng is fully equipped to provide engineering solutions that manage the physical effects within helium exhaust systems.

Quench pipes are a critical component of superconducting MRI systems.

In emergency situations, potentially hazardous liquid helium gas within the MRI must be safely vented into the atmosphere.

Therefore, the piping system must withstand sudden temperature changes from ambient to -269°C (4 Kelvin) within seconds.

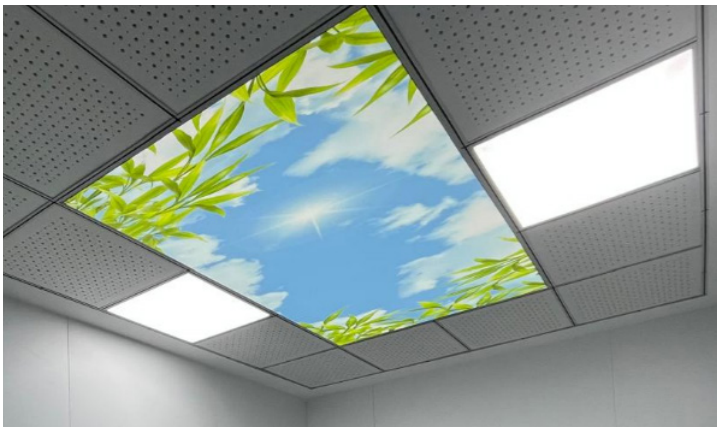
All Arteng installations are executed in compliance with the highest international installation standards.

Arteng Dimmable Led MRI Lighting System

Arteng lighting systems provide a fully integrated lighting solution for MRI rooms. The control unit includes the power supply, control boards, backup batteries, and RF filters.

The system is positioned outside the Faraday cage, and all connections are RF filtered to ensure that no radio frequency interference enters or radiates into the room.

It generates minimal electromagnetic emissions and provides high energy savings compared to halogen lighting. The LED panels are lightweight and can be easily mounted into 600 × 600 mm ceiling grids.



MRI Lighting – Arteng Virtual Skylite

Arteng Virtual Skylite and Wall Panels are high-resolution decorative LED systems compatible with MRI environments.

These panels are placed within the patient’s line of sight to create a calming, relaxing atmosphere during scans. The immersive visual environment helps reduce stress throughout the scanning process.

Virtual Skylite panels are suitable not only for MRI rooms but also for radiology, CT, dental, and consultation rooms, and can be installed as standalone decorative modules within existing lighting systems.

MRI Power Filters

Power Line Filter:

Provides electrical power to the MRI room while preventing electromagnetic interference from entering the shielded environment. Available in capacities ranging from 5A to 63A.

Control Line Filter:

Supplies power to equipment within the shielded room while suppressing high-frequency electrical noise from connected devices. Available in configurations from 2 to 12 lines.

Signal Line Filter:

Used for low-current circuits such as telephone, data, and fire alarm systems. Compact in size and available in 1 to 12-line models.

All filters are specially designed to prevent RF interference and can be installed without compromising the room’s shielding integrity.

MRI Room RF Testing & Maintenance

Once the MRI room installation is completed, Arteng performs a comprehensive RF shielding effectiveness test to verify compliance with international RF protection standards. For long-term reliability, regular maintenance and periodic testing are recommended. To ensure continued performance, Arteng offers maintenance and service agreements for MRI facilities.

About Us



ARTENG
Y A P I



25+ Years of
Experience



Arteng Yapi & Healthcare is a leading solution partner in healthcare construction, RF shielding cabin systems, and site preparation works for medical imaging equipment. Our specialized team delivers reliable and innovative solutions in lead glass, lead-lined doors, radiation shielding, and all related engineering applications.

With over 25 years of experience, we prioritize quality, precision, and customer satisfaction in every project we undertake. In addition to healthcare facilities, we also develop turnkey projects in Energy facilities, Public buildings, Industrial structures and Mobility solutions. Thanks to our interdisciplinary expertise, we add value not only to the healthcare sector but also to public and private investments of various scales.

Across both national and international projects, we provide high-standard engineering solutions to build safe, durable, and functional structures. Arteng Yapi & Healthcare combines innovation, engineering excellence, and experience to create structures that meet today's needs and align with tomorrow's vision.

Yakuplu Mahallesi Dereboyu
Caddesi No: 11/1
Beylikdüzü / İSTANBUL

+90 212 853 62 10
+90 212 853 62 50
info@artengyapi.com.tr
www.artengyapi.com.tr

