

SHIELDING SOLUTION CATALOGUE

RADIO FREQUENCY | MAGNETIC



Expert in Medical Infrastructures Since 2003

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People at the heart of
all our projects

OUR COMPANY

Founded in 2003, SDI Canada is the Canadian leader in the implementation of MRI and biomedical equipment, the design and construction of medical infrastructures and the distribution of specialized accessories.

To support its growth and optimally meet the needs of its customers, SDI Canada has a vast network of partners. This network made up of key players in the construction and healthcare industry enables SDI Canada to carry out large and complex projects.

SPECIALITY

- Radio-frequency shielding installation
- Magnetic shielding installation
- Design and build of medical infrastructures
- Distribution of specialized accessories
- Tailor-made solutions

TO FACE NEW TECHNOLOGIES
REQUIRING A HIGHER LEVEL OF KNOW-HOW,
SDI CANADA HAS DEVELOPED ITS OWN INNOVATIVE APPROACH.

RADIO-FREQUENCY SHIELDING COMPARISON OF SYSTEMS

Whether it is to achieve flawless imaging or to protect sensitive data, RF shielding is a must in the design and construction of any critical room.

SDI Canada is the Canadian leader in the installation of this type of system, commonly referred to as a Faraday cage. For more information on the various systems, please contact us at info@sdicanada.ca.



COMPARATIVE TABLE OF RF SHIELDING SYSTEMS INSTALLED BY SDI CANADA

	NICKEL-COPPER FABRIC	GALVANIZED STEEL	SOLDERED COPPER
Durability	Durable	Very durable	Very durable
Speed of installation	Very fast	Fast	Average
Price	\$	\$\$	\$\$\$
Warranty	15 years	15 years	15 years
Modular panels	No	Yes, cut on site	Yes, factory built
Future interventions	Simple	Simple	Complex
RF performance	Very good	Excellent	Excellent
Acoustic performance	None	Excellent	Excellent
MRI accessoires compatible	Full range	Full range	Full range
Assembly method	Adhesive + Mechanical	Mechanical	Solderings + Mechanical
Site preparation	Complex	Simple	Simple
Customization on site	Simple	Average	Complex
Shielding support	Plywood over building structure	Building structure	Self-supporting
Compliance with MRI manufacturers' criteria*	Yes	Yes	Yes

*Manufacturers : Bruker, Canon, GE, Philips, Siemens, Synaptive, UMS

RADIO-FREQUENCY SHIELDING NICKEL-COPPER FABRIC

In use since the early 2000s, nickel-copper fabric shielding, commonly referred to as RF fabric, is a quick solution that is optimal in several respects. It is mechanically fastened to plywood that has been previously installed by the local contractor.

This system provides RF shielding performance that exceeds the strict criteria of MRI OEMs. It is also an optimal solution in projects where space constraints are important.

USES

- Radio-frequency (RF) shielding for Magnetic Resonance Imaging (MRI)
- Laboratories, test rooms, research centers
- Veterinary clinic

BENEFITS

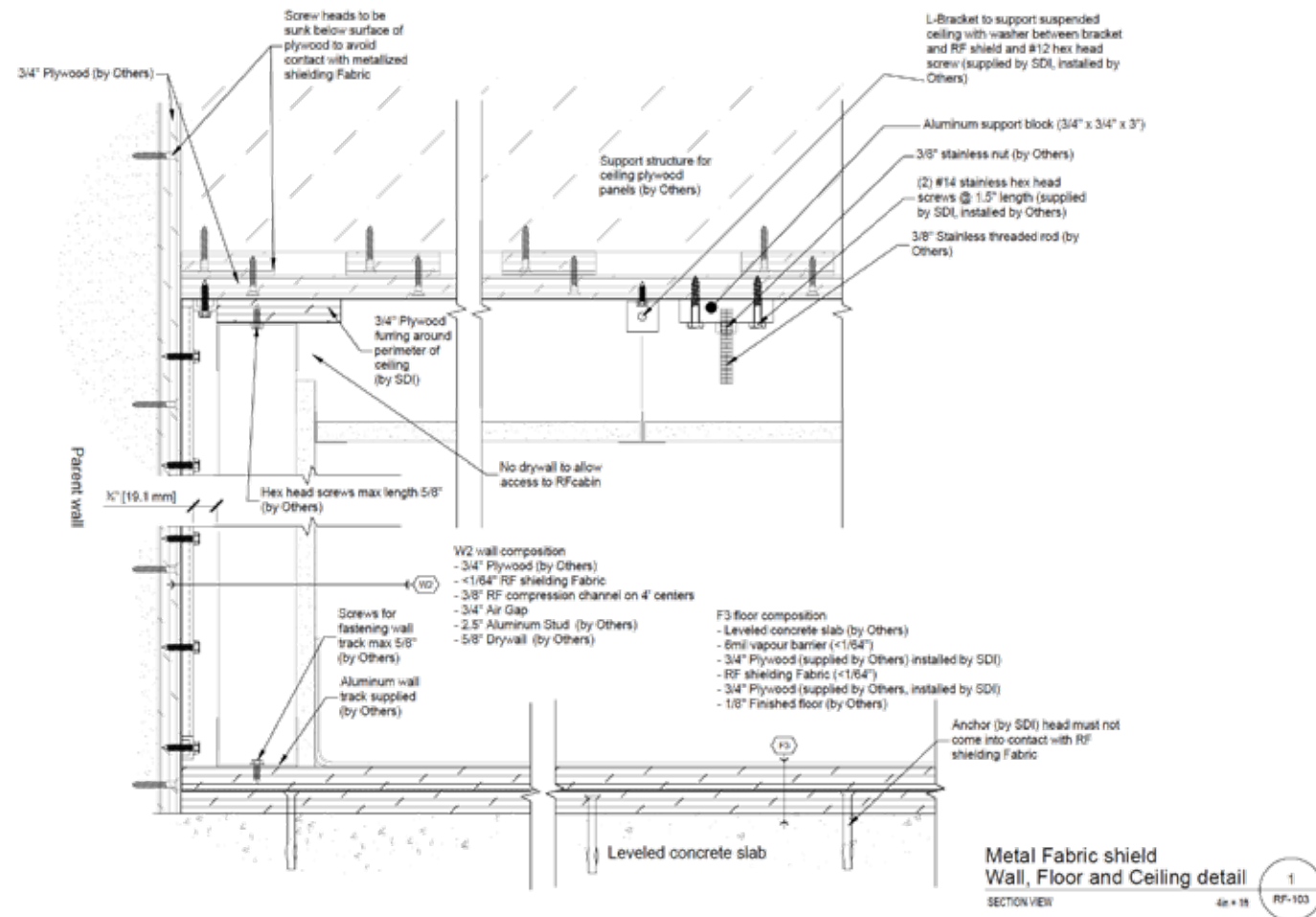
- Lightweight and compact materials for on-site delivery
- Adjustable on site according to conditions
- Meets the expectations of MRI manufacturers
- Quick setup
- SDI Canada 15 year warranty

KEY FEATURES

- RF fabric mechanically attached to 3/4" plywood
- Continuous jointing system with aluminum bars
- Easy removal and installation of section for equipment deliveries
- Floor lined with plywood
- Easy to make angles in the walls



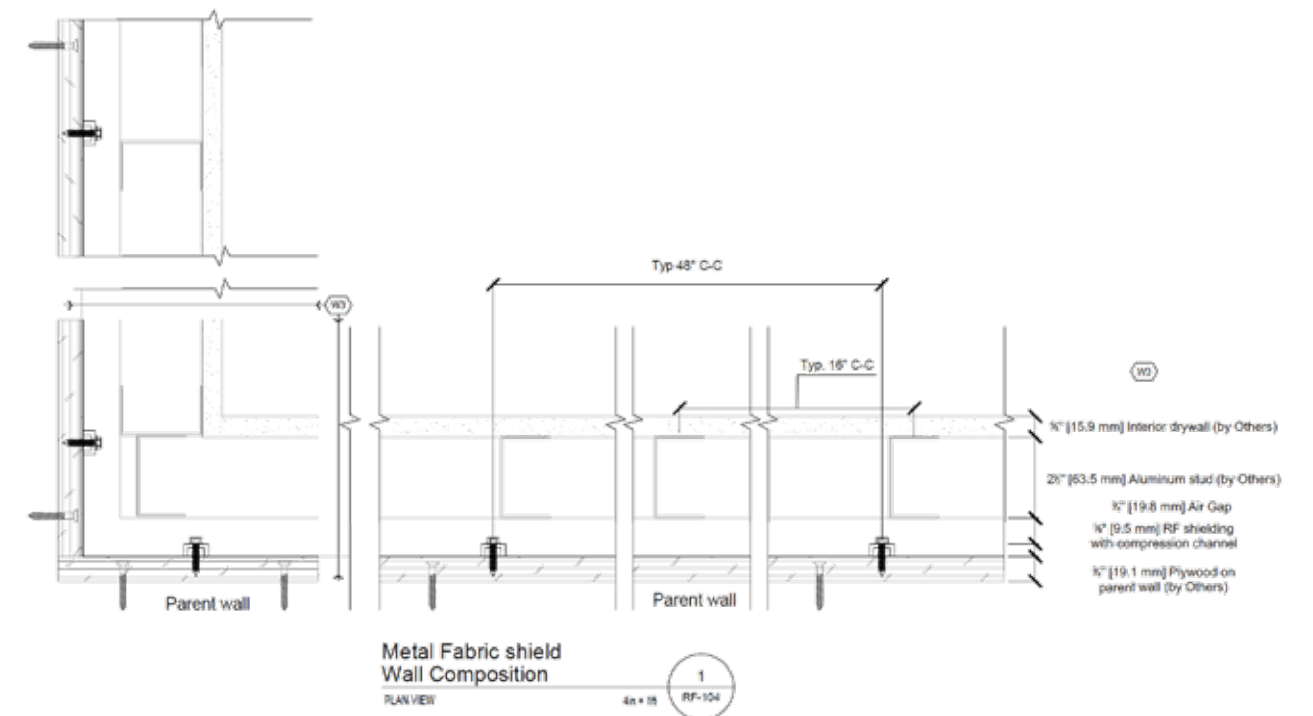
RADIO-FREQUENCY SHIELDING RADIO FREQUENCY FABRIC



Typical detail - Elevation Section

COMPATIBLE COMPONENTS

- Manual and semi-automatic pneumatic shielded doors
- Wide shielded window
- RF filters and RF waveguides (research, sprinklers, ventilation, etc.)
- Patient experience
- Magnetic shielding
- Injector
- Cryogenic vent



Typical detail - Plan section

RADIO-FREQUENCY SHIELDING HAT & FLAT GALVANIZED STEEL

In use since the early 1950s, Modular Solid Body Panels provide durable, flexible, and performance shielding. Composed of laminated steel panels galvanized on both sides, this system meets the most stringent criteria of MRI manufacturers.

Mechanically fixed by “Hat & Flat” type steel bars, this system can be easily modified during enhancement work.

USES

- Radio-frequency (RF) shielding for Magnetic Resonance Imaging (MRI)
- Laboratories, test rooms, research centers
- Data centers, security, police, military

BENEFITS

- Durable and impact resistant panels for job site
- Adjustable on site according to conditions
- Meets the expectations of MRI manufacturers
- Quick setup
- SDI Canada 15 year warranty

KEY FEATURES

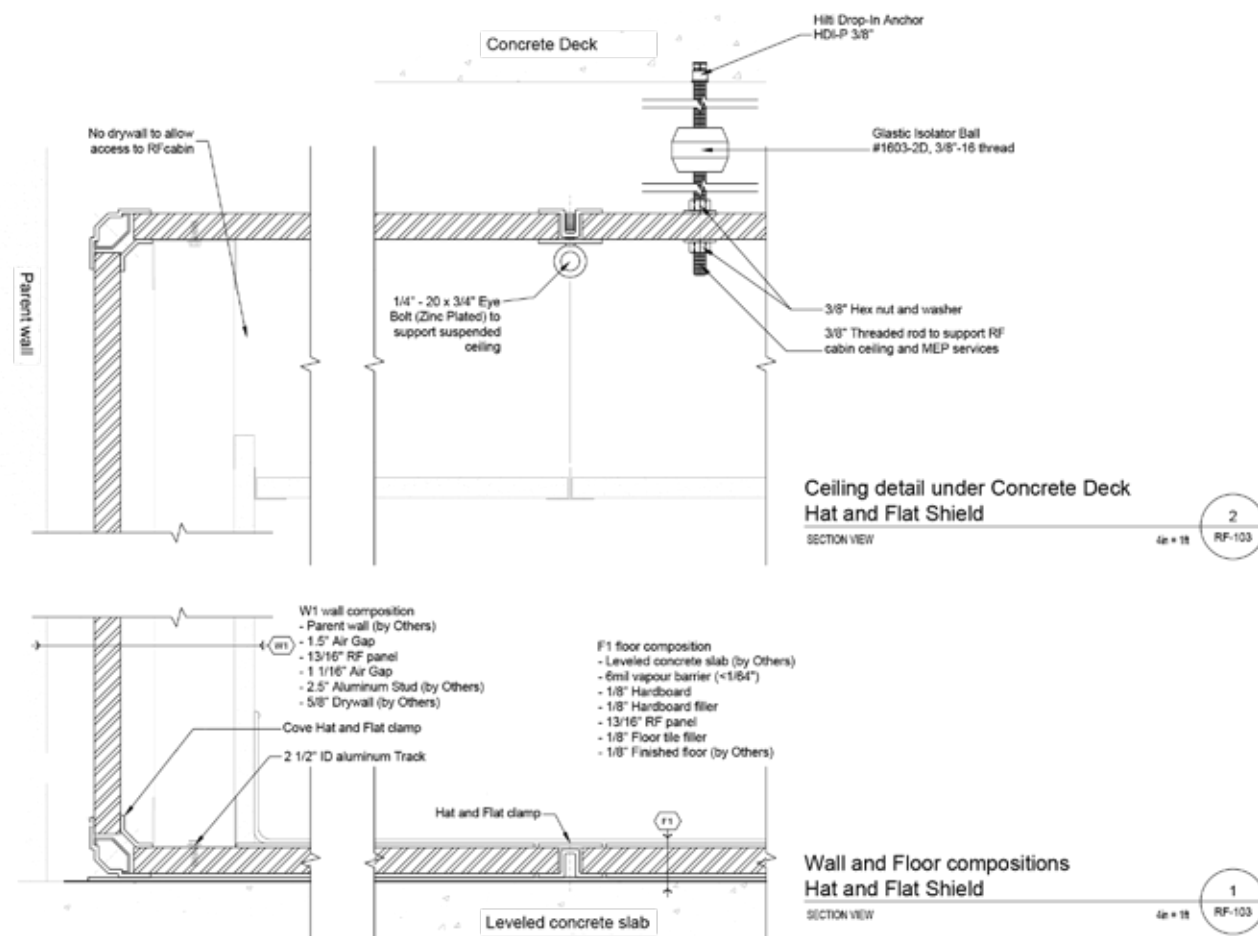
- 3/4” rigid modular panels laminated with galvanized steel on both sides
- Hat & flat type continuous jointing system
- Easy removal and installation of panels for equipment deliveries
- Hybrid floor with copper finish according to the requirements of the MRI manufacturer
- Hanging of ceiling panels suitable for all types of structures



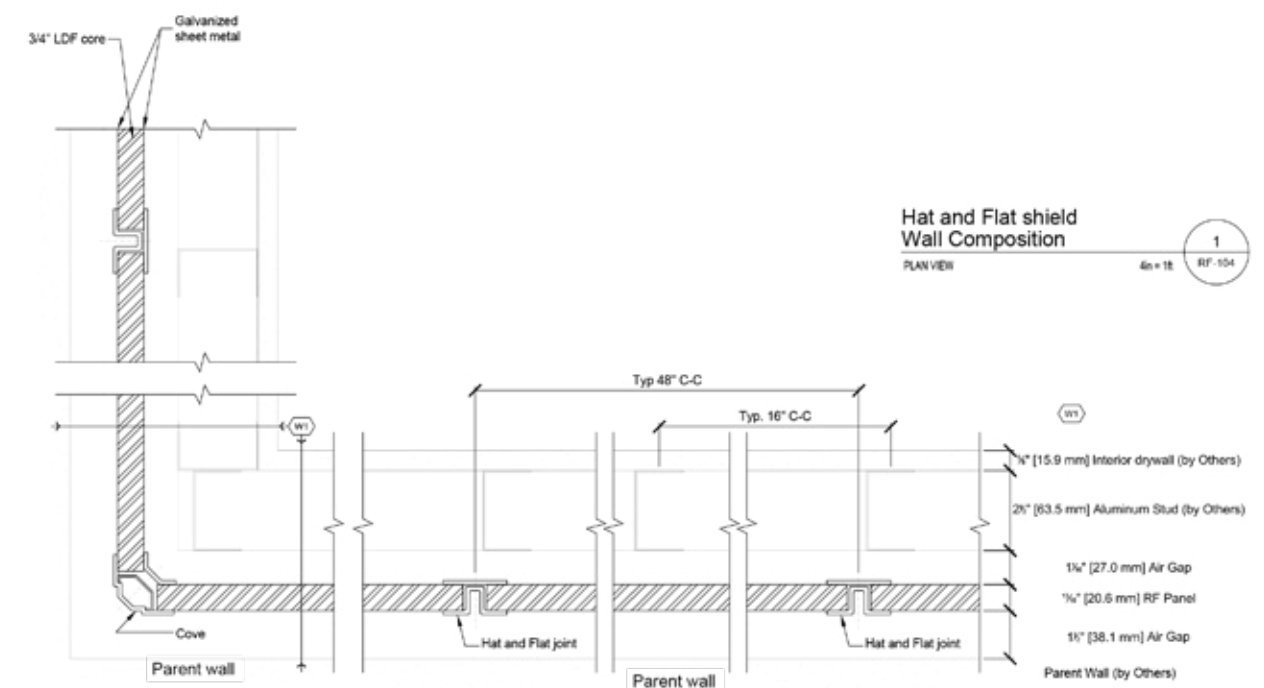
RADIO-FREQUENCY SHIELDING HAT & FLAT GALVANIZED STEEL

COMPATIBLE COMPONENTS

- Manual and semi-automatic pneumatic shielded doors
- Wide shielded window
- RF filters and RF waveguides (research, sprinklers, ventilation, etc.)
- Patient experience
- Magnetic shielding
- Injector
- Cryogenic vent



Typical detail - Elevation Section



Typical detail - Plan section

RADIO-FREQUENCY SHIELDING SOLDERED COPPER

In use since the early 1990s, modular copper panels provide durable shielding with exceptional performance. Composed of MDF panels laminated with copper foil on one side and aluminum on the other, this system meets the strictest criteria in terms of radio shielding.

This system is joined by lead solder. The copper panels are attached to a **self-supporting** steel structure, making the system independent from the rest of the building from a structural point of view.

USES

- Radio-frequency (RF) shielding for Magnetic Resonance Imaging (MRI)
- Laboratories, test rooms, research centers
- Data centers, security, police, military

BENEFITS

- Independent self-supporting structure
- Excellent acoustic performance
- Durable solders
- Industry proven solution
- SDI Canada 15 year warranty

KEY FEATURES

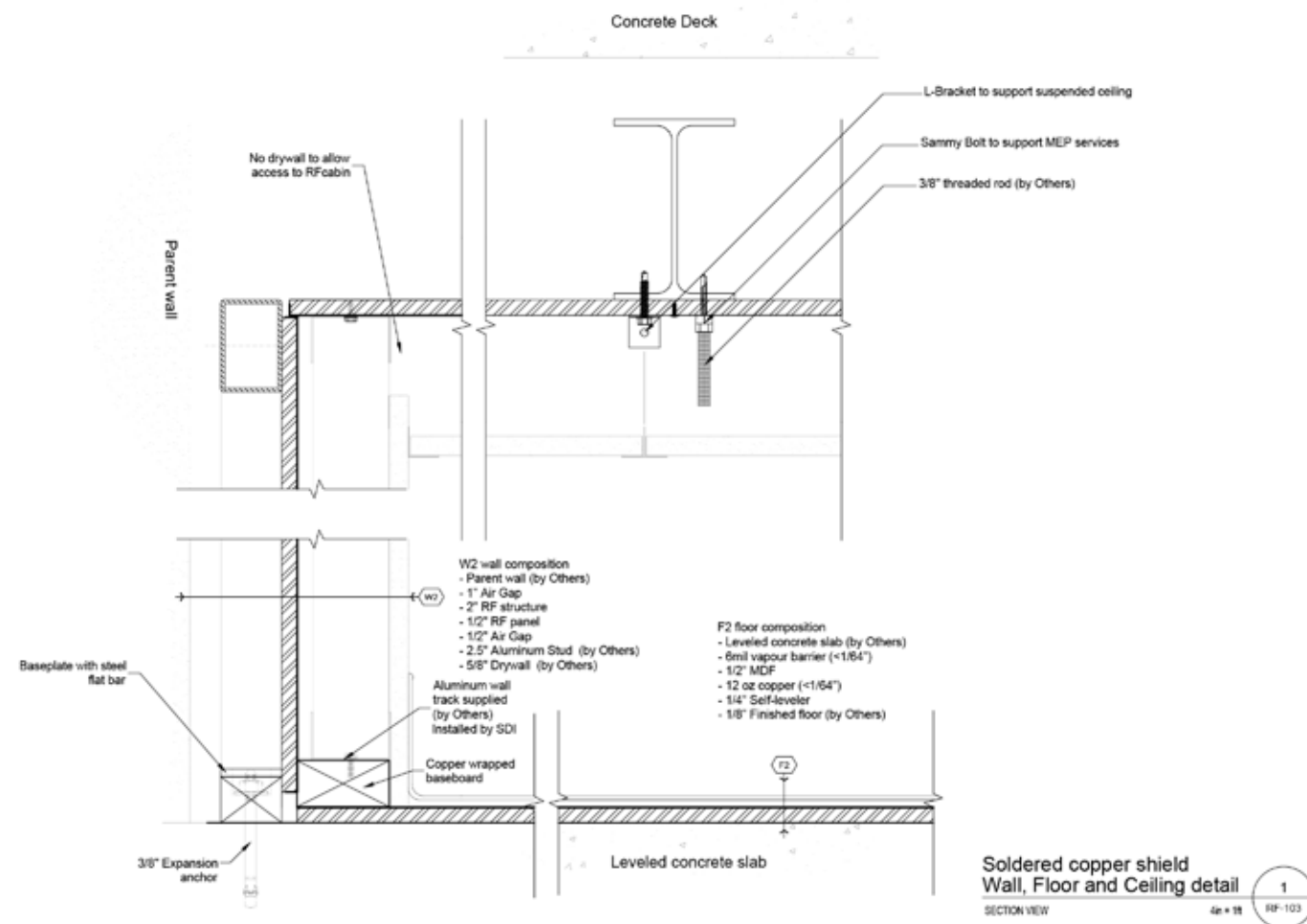
- 1/2" Modular rigid panels MDF laminated copper on the interior side of the room
- Lead solder joint system
- Self-supporting steel structure of the shielding independent of the building structure
- Copper floor according to the requirements of the MRI manufacturer



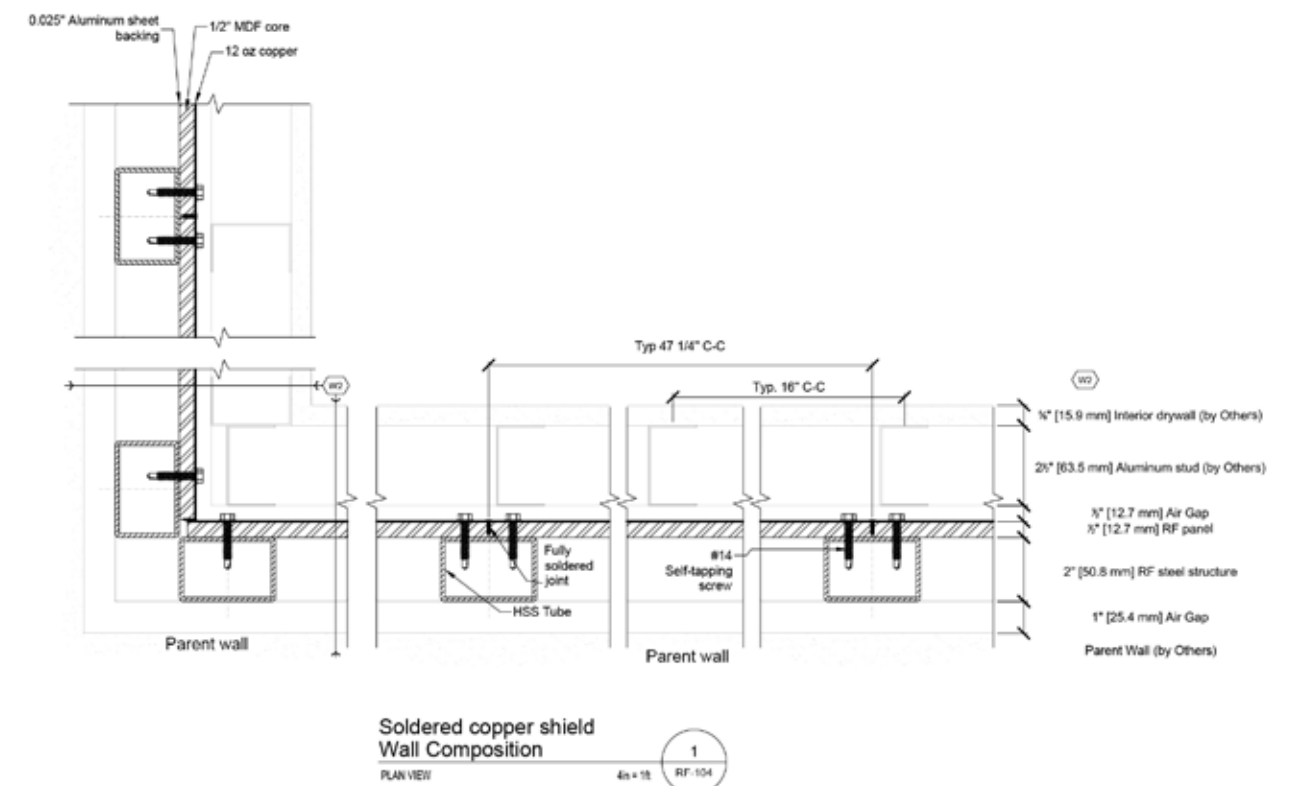
RADIO-FREQUENCY SHIELDING SOLDERED COPPER

COMPATIBLE COMPONENTS

- Manual and semi-automatic pneumatic shielded doors
- Wide shielded window
- RF filters and RF waveguides (research, sprinklers, ventilation, etc.)
- Patient experience
- Magnetic shielding
- Injector
- Cryogenic vent



Typical detail - Elevation Section



Typical detail - Plan section

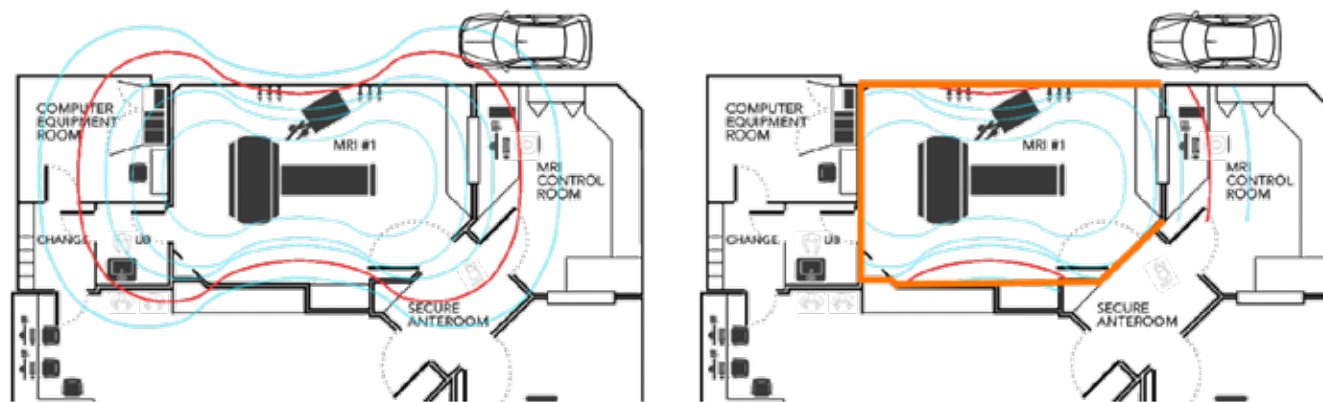
MAGNETIC SHIELDING

Magnetic shielding limits the magnetic field (5 gauss line) emitted by an MRI to protect users outside the area (for example when the imaging room is located against an exterior wall).

Magnetic shielding can also be used to reduce the effect of moving external objects on the MRI (e.g. moving vehicles around the edge of a building in which an MRI is located).

An electromagnetic interference (EMI) study can be carried out in advance of a project to determine the strategy for installing magnetic shielding. These tests use sensitive sensors that monitor the variance of the magnetic field in a specific environment. The results will assess the compatibility of a site accordingly.

If you need support in carrying out this type of study, do not hesitate to contact us at info@sdicanada.ca.



MRI room without magnetic shielding

MRI room with magnetic shielding

KEY FEATURES

- Silicone steel providing magnetic protection
- Custom shielding according to the building's needs
- Electromagnetic interference (EMI) protection
- Protection of users at risk of the 5 gauss line (pacemaker)
- Integrates with various radio-frequency shielding systems





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