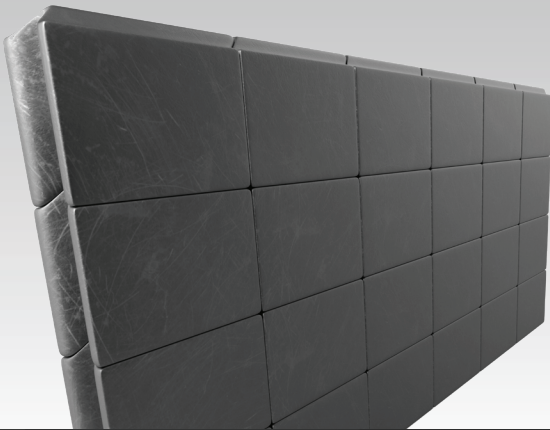


MarShield™

CUSTOM RADIATION SHIELDING PRODUCTS



MARSHIELD MEDICAL IMAGING PROTECTION

When Protection And Safety Must Be Absolutely Assured

www.marshield.com





ROLLING RADIATION BARRIERS

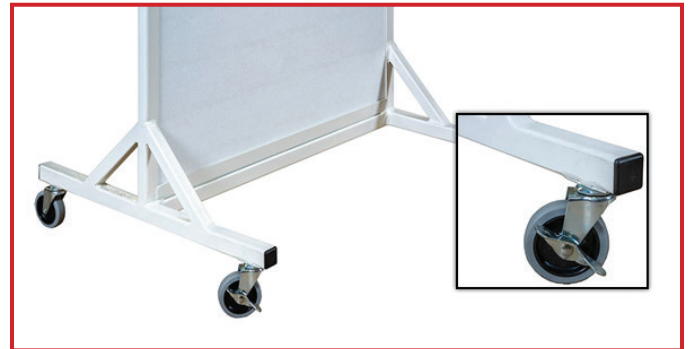
MarShield manufactures standard and custom-designed mobile radiation shielding barriers. Our lead radiation shielding barriers are designed to reduce harmful radiation while maintaining an "open concept" environment through safety lead glass window viewing panels.

MarShield Radiation Shielding Barriers incorporate clear viewing *safety lead glass panels in the top with a solid opaque panel in the bottom, both of varying sizes. The optically clear *safety lead glass panel is durable and shatter resistant while offering a wide field of view. The solid panel is constructed of a single un-pierced sheet of pure lead 99.9% of desired thickness laminated between two ABS Plastic (washable) panels. The shield is balanced for stability with heavy duty outrigger type legs. All panels are housed in a mild carbon steel frame with a powder coat beige/tan paint finish. All models can be made with one full length solid opaque panel or a full length *safety lead glass view panel. Also Available in Lead Acrylic.

The Lead Acrylic viewing panel provides excellent visibility in either 0.5mm or 1.0mm Lead Equivalent Protection. The lower level panel also provides 0.8mm or better Lead Equivalent protection. Our MarShield Lead Acrylic is shatter resistant and durable of which ensures a long life cycle under heavy use.

These mobile units are supplied with smooth rolling heavy duty swivel casters that are easily locked into position when required. All models allow the end user to easily remove the casters and with a slight modification become a stationary unit that is fastened down directly to the floor.

Professional engineering and custom on-site design services are available. We can work with you to design a custom solution in a virtual CAD environment. If one of our standard models doesn't fit your exact needs then let MarShield design and fabricate your own custom model to suit your specific requirements. MarShield will create the perfect barrier for you.



KEY FEATURES

- All standard barriers are 75" high, 1.6 mm lead equivalency, portable on castors
- Frame and Bottom Opaque Panel Color: Beige/tan (Powder coat finish/ABS)
- View Panel is Safety Lead Glass (Laminated glass with interlayer. This Safety lead glass is shatter resistant glass that meets requirements of ANSI Z97.1-1984 & 16 CFR 1201 Cat. II)
- Balanced for stability with heavy duty outrigger-type legs and four Heavy Duty Swivel Locking Casters
- Removable casters allow the end user to easily modify to stationary barrier
- Units can be designed to combine, stack or nest to increase lead equivalency or create a temporary lead-lined room
- Warranty: 1-Year standard warranty

EZ QUICK SHIELDING PANELS

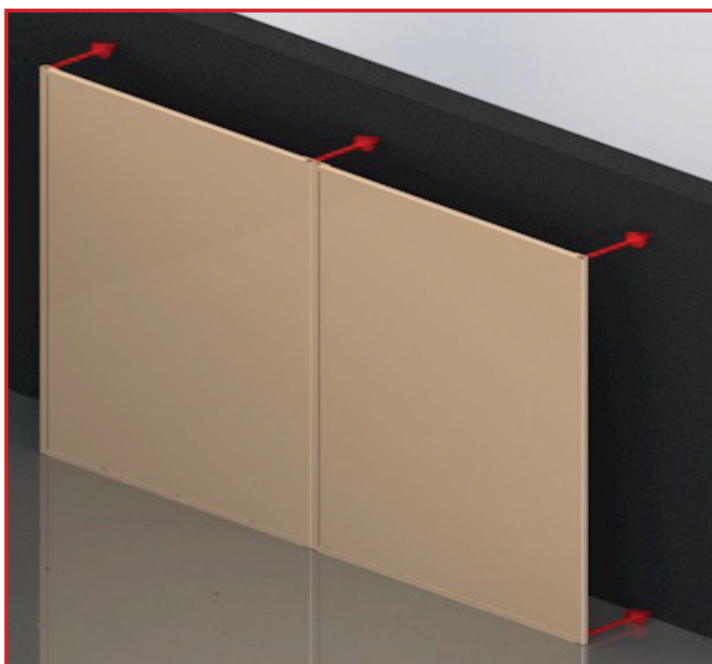
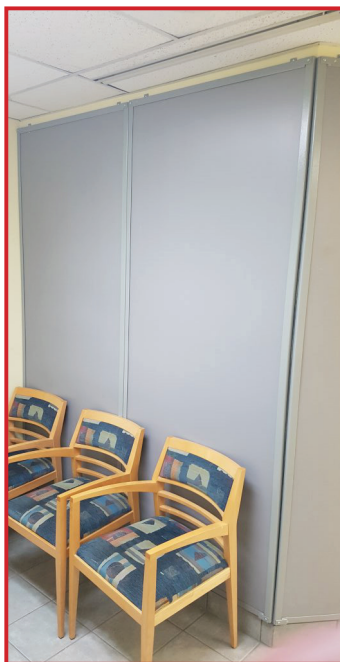


Our MarShield EZ Quick Shielding Panels are a simple alternative to fixed permanent wall shielding. This is an easy, clean and efficient method of non-altering rental spaces or converting existing rooms to a certified radiation protected x-ray room.

We manufacture pre-fab lead lined wall panels as an alternative to using construction materials inside your walls for radiation shielding. This quick and easy radiation shielding solution saves you from doing any demolition! You can attach these lead lined wall panels to your existing walls. These panels can easily be rearranged or taken away at any time without expensive labour or repairs.

KEY FEATURES

- Fully assembled ready to install
- Ease of assembly all pre-drilled
- Durable powder coated steel framing members
- ABS faced panels
- Durable/washable
- Installs in hours
- No mess installation
- Fully removeable
- Works with existing or new construction
- Divide a room while shielding an existing room
- 1/32", 1/16" or 1/8" lead equivalent available
- Standard ivory or beige with optional colors available
- 4' x 8', 4' x 9' or 4' x 10' panels available
- Custom widths, heights, and thicknesses to suit your needs





LEAD CURTAINS

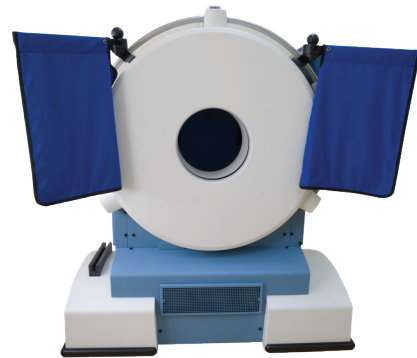
MarShield lead curtains are an economical solution to provide radiation shielding in areas where a permanent wall is not practical (e.g., temporary set-ups or where access is needed). Our lead-lined curtains are ideal for areas with secondary or low-level radiation.

Tailored to your unique requirements, MarShield lead curtains are available in a variety of lead equivalencies, colours, sizes, and configurations. Our optional heavy duty tracking system is available in both straight and curved sections, giving you greater flexibility when it comes to mounting your curtain.

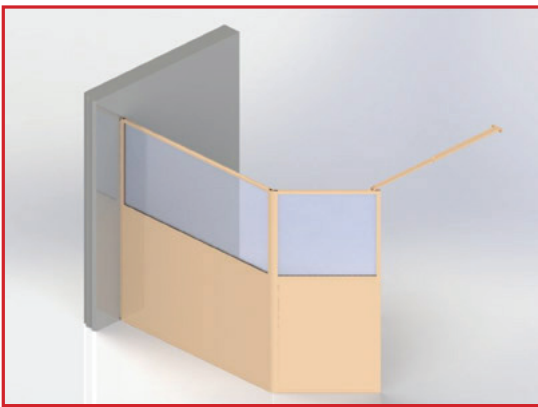
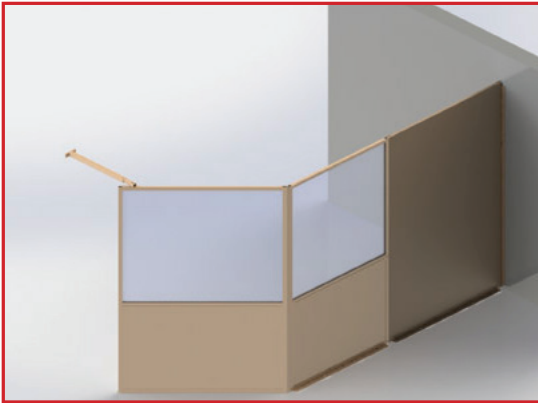
Easy-to-install, MarShield lead curtains are used in many applications in the nuclear, oil and gas, medical and transportation industries, including uranium production, industrial non-destructive testing, isotope shielding, medical patient dividers and trauma suites, as well as applications in defence, such as security checkpoints.

KEY FEATURES

- Available in lead equivalencies of 0.25mm, 0.3mm, 0.35mm, 0.5mm, 1.0mm, and 1.5mm
- Individual panels (Max. 36" wide) attach using Velcro to create custom widths
- Easy-to-clean and maintain
- Grommets sewn across top of curtain
- Outer material: nylon, vinyl, or weblon
- Available in a variety of colours
- Optional 16 gauge enclosed steel roller track and 16 gauge rollers with steel wheels available



MODULAR RADIATION BARRIERS AND WALLS



MarShield manufactures standard and custom-designed radiation shielding modular barriers/walls. These full body shielding units are designed to shield medical personnel from harmful secondary radiation in examination rooms, operating rooms, intensive or cardiac care units, and nuclear medicine suites, as well as industrial applications, including welding, nuclear and non-destructive testing.

KEY FEATURES

- Panels extend from floor to 84" or more, high, ensuring effective protection
- Frame and Bottom Opaque Panel Color: Beige/tan (Powder coats finish/ABS). Optional colors available
- View Panel is Safety Lead Glass (Laminated glass with interlayer. This Safety Lead Glass is shatter resistant glass that meets requirements of ANSI Z97.1-1984 & 16 CFR 1201 Cat. II)*
- Lead equivalencies ranging from 0.5mm to 3mm
- Can be fabricated into large continuous window panes, up to 6' x 8' or larger



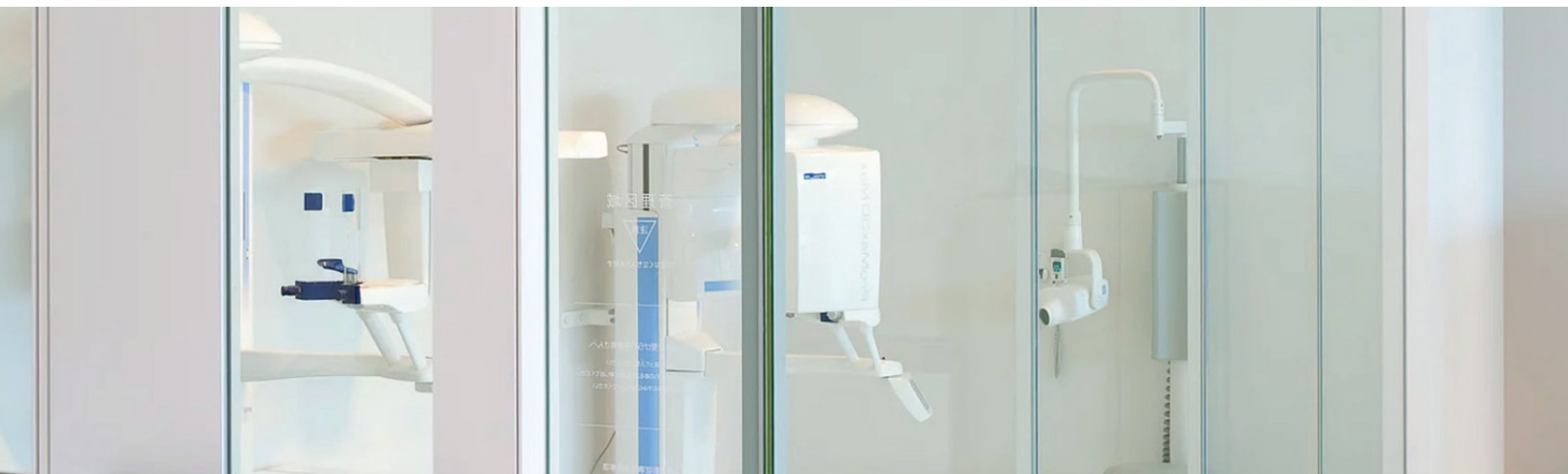


LEAD GLASS

MarShield carries a variety of sizes and thicknesses of lead glass that is excellent in providing radiation shielding. The material is usually placed into a lead-lined frame built into a wall or door. Lead glass is used extensively in x-ray rooms, operating theatres, radiation therapy rooms, dental clinics, veterinary clinics, laboratories and for materials testing. Applications include observation viewing windows and intercommunication windows, door glazing, panoramic glazing, mobile shielding protection, protection panels for check-up systems or in a mammography work station and as lenses for safety goggles.

MarShield's lead glass has been designed to provide a high quality, transparent, protective shield against x-ray radiation. Extensive research and development has been done for you to trust its comprehensive protection in any medical or technical research application.

MarShield X-Ray Glass is a lead barium type glass of high quality optical grade with over 60 percent heavy metal oxide, including at least 55 percent PbO offering optimum performance. Our leaded glass provides excellent visual clarity while shielding against radiation from equipment in the 100 to 300 kV range. Both surfaces are mirror-polished, resisting abrasives and scratches. MarShield high quality lead glass is more than qualified to meet or exceed the high standards of stringent safety regulations established in the medical, scientific, as well as nuclear fields around the world.

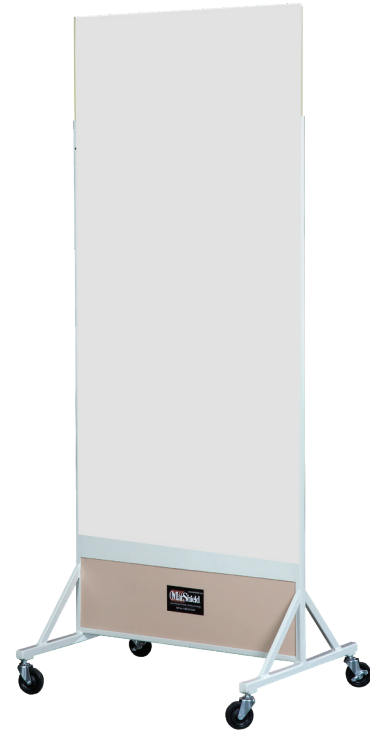


LEAD ACRYLIC

MarShield's Leaded Acrylic / Plastic is the shatter-resistant, versatile answer to all of your x-ray shielding needs! Our Lead acrylic is not lead glass. It's a unique, versatile, transparent plastic that contains 30% lead by weight. It combines superb light transmission with effective radiation protection. It is available in six different lead equivalencies and thicknesses (see chart below). The lead equivalency and thickness are directly related; the higher the L.E. the thicker the piece of leaded Acrylic.

KEY FEATURES

- Available in six different lead equivalencies and thicknesses
- Made from an acrylic polymer resin into which lead is chemically introduced as an organ-lead salt compound
- Can be cut, drilled or machined using standard plastic-handling techniques
- Provides complete radiation protection with unmatched design flexibility
- Ideal for any radiation shielding application
- Create "open feel" environment for personnel/ patients while still providing reduced exposure to harmful radiation
- High light transmission helps create a happier and healthier work environment
- Rugged, durable and shatter-resistant alternative to lead glass





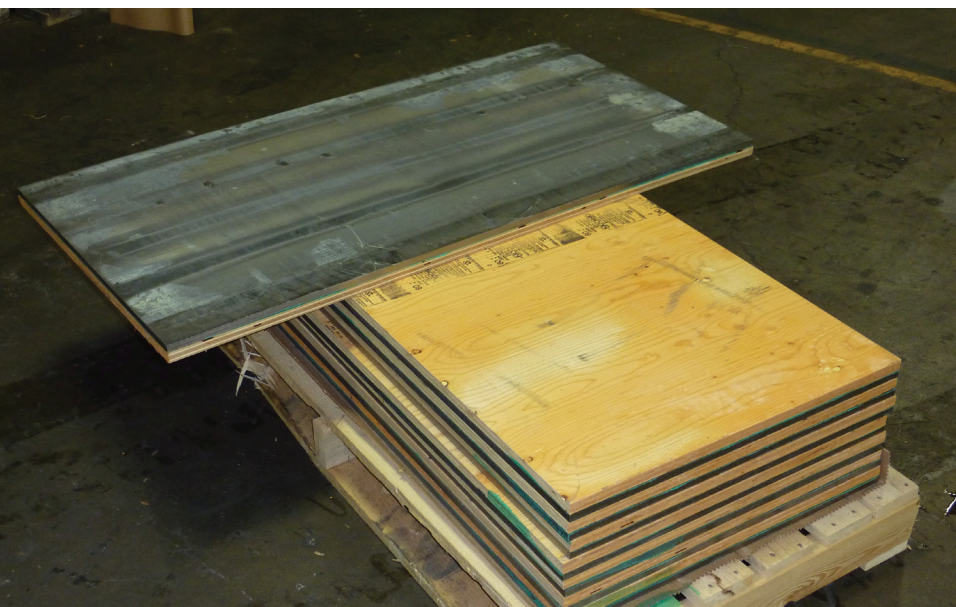
SHEET LEAD

Our high quality Sheet Lead is manufactured from pure lead conforming to ASTM B-29, B-749 and Federal QQ-L-201F, QQ-L-171E.

Since lead sheeting has very little inherent structural strength, most applications require that the sheet lead be supported in some fashion, or that the lead sheet be laminated to provide a more rigid building material. MarShield provides sheet lead as laminated lead panels, adhesive bonded to materials such as plywood (lead lined plywood), gypsum board (lead lined drywall), and other supporting materials.

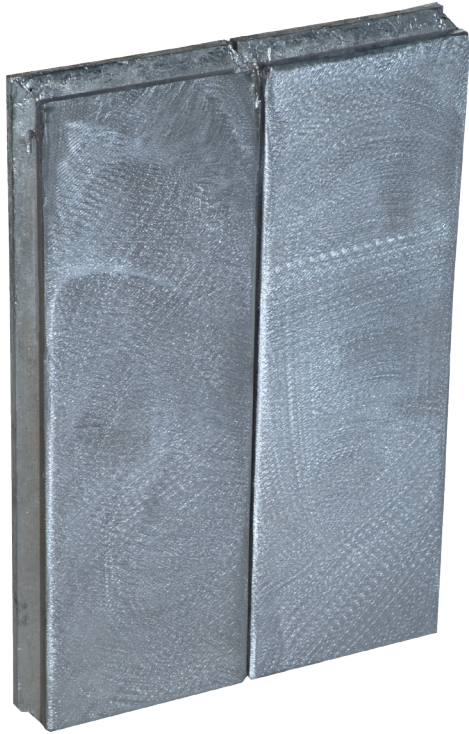
KEY FEATURES

- Standard stock thicknesses of 1/32", 1/16", 1/8" in 4'x10' and 4'x8'
- Superior in shielding rooms from radiation against x-rays and gamma radiation
- Manufactured from pure lead conforming to ASTM B-29, B-749 and Federal QQ-L-201F, QQ-L-171E
- Resistant to corrosion from the atmosphere, saltwater and most natural chemicals
- Fire rated Lead Laminated Drywall and Lead Laminated Plywood available
- Available in rolled or sheet form
- Custom CNC machined parts available



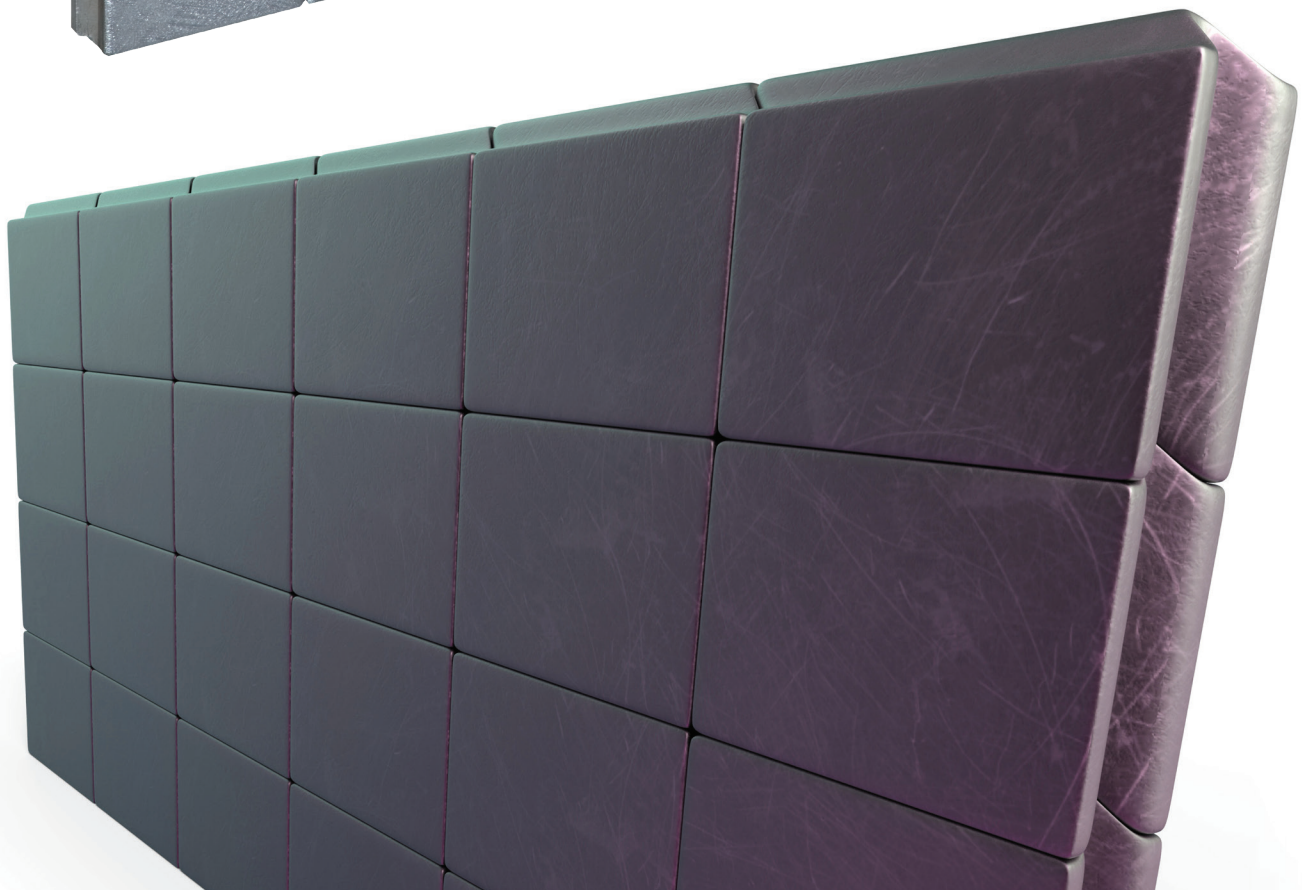
LEAD BRICKS

MarShield manufactures straight and interlocking lead bricks from 99.9% pure lead for radiation shielding. Bricks are commonly used when sheet lead is impractical or unavailable in required sizes – typically for lead equivalencies of $\frac{3}{4}$ " and up. Bricks are also an excellent choice for temporary construction because they can be readily removed and reused.



FEATURES & BENEFITS

- Cast from 99.9% pure lead
- Standard and custom sizes available
- Interlocking bricks use chevron "V" shape tongue and groove to prevent leakage
- Versatile to be re-used for other applications after initial use
- Widest size range in industry





LEAD LINED DOORS

MarShield offers a premium line of lead-lined metal and wood veneer doors and hollow metal frames that are manufactured to have an equal appearance to architectural-designed doors and frames. Our doors are designed and constructed with the highest quality craftsmanship and materials available. These doors are designed to take into consideration the heavy weight that sheet lead imposes on them. They are constructed to support this extra weight, which will not detract from their appearance or radiation protection. The frames are designed to support the lead-lined doors to provide a lead-lined interface between the door and the lead-lined wall in the adjacent walls. Usually they are attached to studs in the walls using a variety of techniques specifically designed to hold the door securely and prevent radiation shielding leakage. Frames are available in fully-welded form or knock-down style. For maximum support MarShield recommends a welded style vs. knock-down type.

Most standard architectural hardware can be specified and used on the door and frame. The correct specification of the finishing hardware is critical to the success of the complete closure. Adequate hinging is required to carry the heavy loads imposed by the lead lining. Hardware that fits into openings in the door and frame should be suitable to maintain the integrity of the closure. Extreme care must be taken when applying any item to a lead-lined door or frame that the fasteners do not penetrate that lead lining.

KEY FEATURES

- Custom made High Energy Shielded door Systems are available in any size or configuration
- We customize to your requirements with door shielding thicknesses of 24" or more as required. Engineered to meet your shielding requirements
- Top mount or base driven automated opening systems providing the optimum in design and safety



LEAD LINED WINDOWS

Each lead-lined window is custom-designed and built. They can be provided in a variety of veneer and plastic laminates. They are typically used in various medical x-Ray, PET or CT Scan rooms in hospitals and doctors' offices.

Our frames are designed to provide the foundation and support for leaded glass or leaded acrylic. The frame provides a lead-lined link between the glazing and the lead-lined wall. Split-type frames that allow the frames to be manufactured in two pieces are available. This allows the installer to fit the frame into the opening from both sides and fastened together to form a solid assembly.

MarShield offers a variety of lead thickness. The lead required thickness is determined by the intended application of the product and should be determined by a qualified physicist. For hollow metal frames and doors the lead sheet is applied to the inside of the skin of the door on the "pull" side. The lead sheet is applied to the face, rabbet, stop, and part of the soffit on the door rebate side of the frame. If frames are to be installed in drywall partitions, then the manufacturer should install the stud anchors. Ensuring the continuity of the lead lining in the frame and the wall is the responsibility of the frame installer.





MODULAR X-RAY ROOMS

MarShield's custom x-ray rooms are built to suit your individual application, based on architectural specs or a custom concept we help you create. With our manufactured lead panels, doors and windows we are able to design and construct the entire package.

FEATURES & BENEFITS

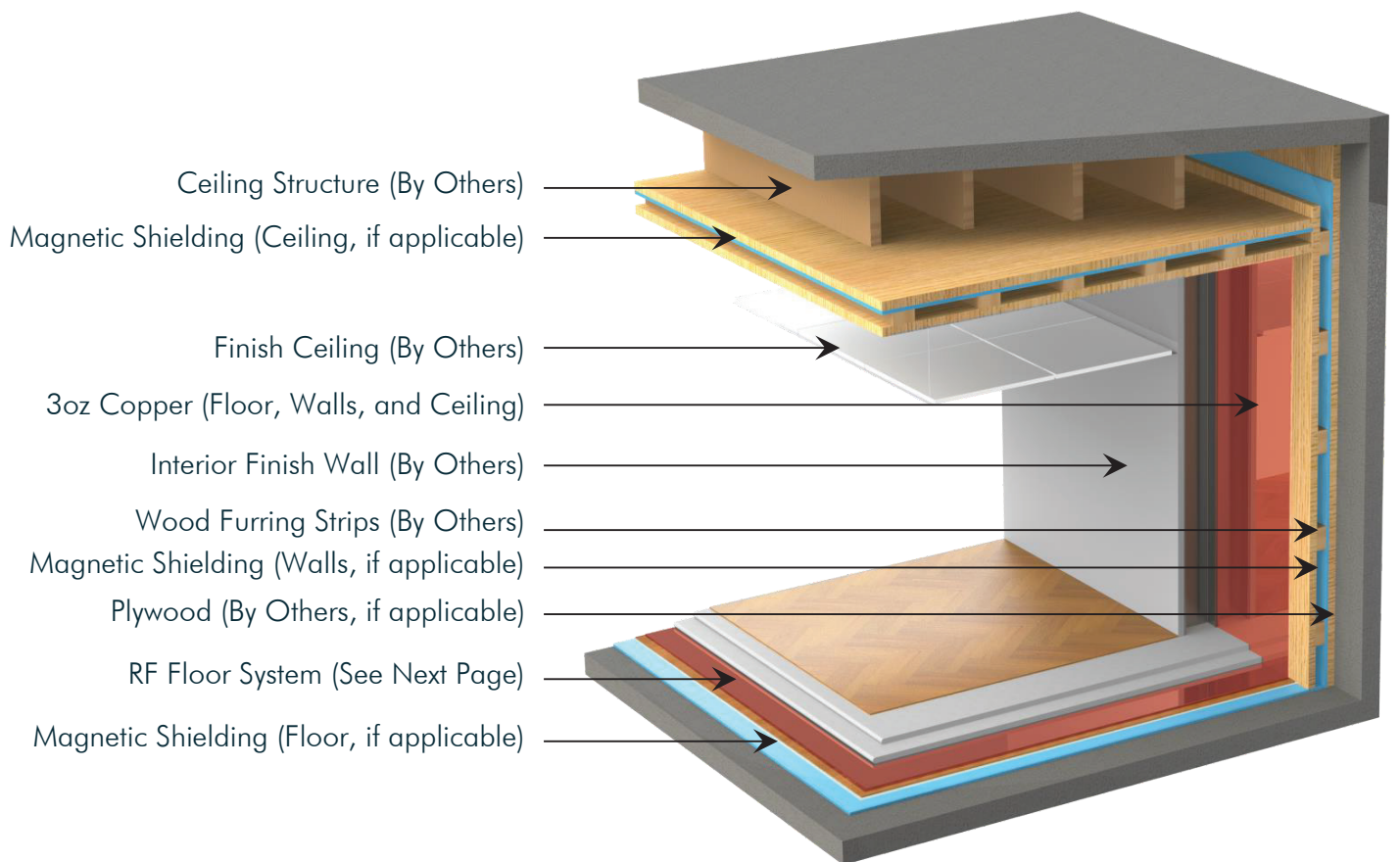
- Quick, clean, and easy installation. No demolition needed
- Attractive neutral décor with clean lines
- Durable solid lead-lined panels and solid steel frame are built to last
- Customized to individual application with CAD support available
- Designed to accommodate future modifications and expansions. Can be removed or relocated, if required



RF COPPER SYSTEM



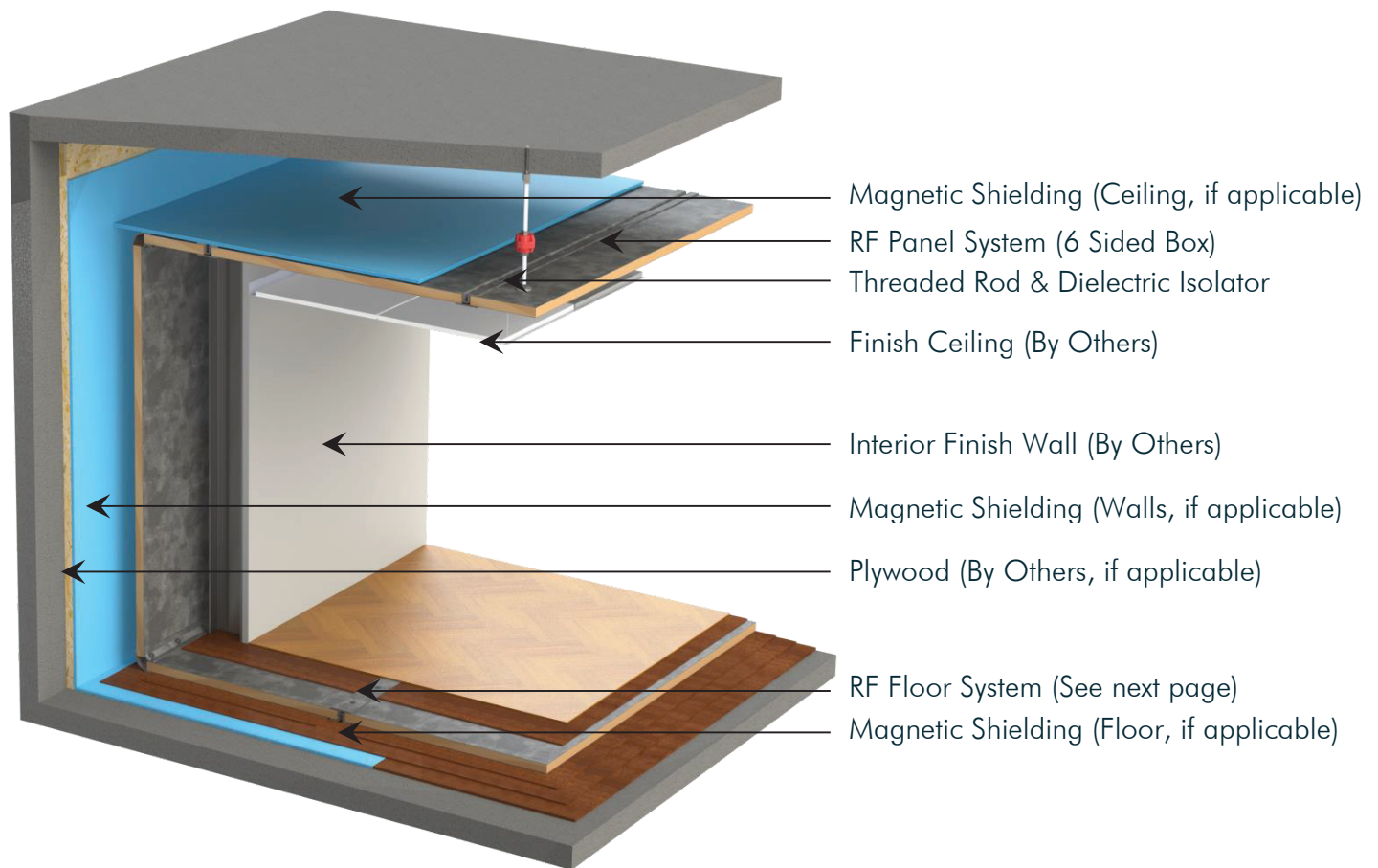
This non-ferrous enclosure is ideal for shielding applications with restricted site access. The lightweight copper makes for easy navigation through job sites with limited space. Copper sheets attached to a plywood substrates and the copper is soldered together at all seams. The plywood, framing, and support are completed by others. The copper material is easily adaptable to various room configurations and is accepted for a wide array of applications. This shielding system will perform beyond the attenuation levels required for all major OEM's.





RF GALVANIZED PANEL SYSTEM

The modular structure is traditionally used for high performance shielding. Panels are galvanized sheet steel bonded to a wood core that are attached via framing joints. The RF panel system will be supported via threaded rod and dielectric isolators attached to the deck above. Shield will perform beyond the attenuation levels required for all major OEM's.



FOUR DECADES OF TRUSTED EXPERIENCE



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