

When protection & safety must be **Absolutely Assured**



## HIGH DENSITY CONCRETE BLOCKS

MarShield's system of dry stacked shielding modules which interlock to form a tight, leak-free therapy room of any size or shape. Unique sine-wave shapes eliminate straight line seams and provides superior neutron, photon and particle attenuation at the joints. Available in four densities – 150, 220, 250 and 300 lbs./cu.ft. (2.4, 3.52, 4 and 5 g/cu.cm.). MarShield construction requires half the space of mass concrete vaults.

Standard MarShield blocks are 5" x 5" x 10" (127 x 127 x 254mm). Block are also available in half thicknesses, with a nominal thickness of 2.5 inches (63 mm).

Compressive strength is guaranteed to meet 2,800 psi. This product routinely easily surpasses this minimum and is typically on the order of 5,200 psi. Grout materials will have a lesser compressive strength as water content is increased for working properties, but shall not be less than 2,800 psi when mixed on site.

### FEATURES & BENEFITS

- Easy and quick to, install, remove, and re-install if necessary
- MarShield offers smaller sizes for lighter weight and easier handling
- Construction is not labor intensive, design is flexible, and does not omit hazardous dust emissions during installation
- Blocks are environmentally safe to handle and use with no disposal concerns as material is non toxic
- Blocks are dry stacked
- Accelerated depreciation
- No concrete curing time
- Little to no steel reinforcement and no formwork
- Space saving offer regular concrete
- Easy to transport and store on worksite, unaffected by weather



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# HIGH DENSITY CONCRETE BLOCKS

## MARSHIELD EZ-PAC - Dramatically cut installation time

Individual MarShield modules are assembled into stackable packs to form a standard EZ-Pac unit. Simply craned into position EZ-Pac brings added speed, simplicity and efficiency to the construction of any size radiation shielded structure. The larger and more massively shielded the structure, the more EZ-Pac can positively impact the construction process. In proton facilities, EZ-Pac provides the perfect alternative to time-consuming concrete construction by cutting months off the average construction schedule.



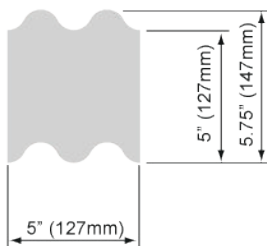
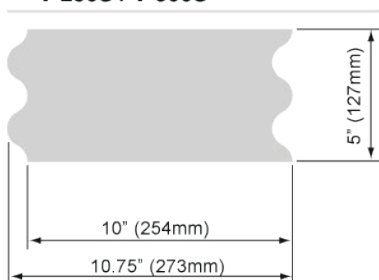
## CONSTRUCTION/PLACEMENT

Simplified installation process – Craned and placed into position using a minimal-sized crew. No manual handling of individual blocks – No curing time – Ready immediately for the next stage of construction – Shielding is not a critical path element.

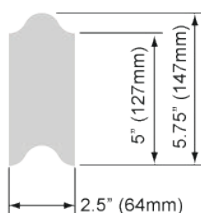
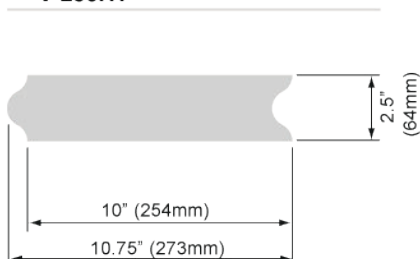
- Manufactured in a controlled factory environment to ensure consistent quality
- Fabricated using site-specific densities and configurations of MarShield modules – guarantees the most efficient shielding design
- 100% Guaranteed attenuation
- Build a typical radiotherapy bunker in less than a week
- Retains all the benefits of modular block – shielding can be disassembled, redesigned or reused
- Stackable system – minimal handling of individual modules
- Interlock to form a solid homogenous shielding structure.



V-250S / V-300S



V-250HT



\*Module Weights: 36 lbs. (16.4 kg.) - 43 lbs. (19.7kg.)

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Model No.	Description	Face Length	Face Height	Thickness	Density
V-150S	Standard	10" (254mm)	5" (127mm)	5" (127mm)	150 lbs./cubic ft. (2.4g/cubic cm)*
V-220S	Standard	10" (254mm)	5" (127mm)	5" (127mm)	220 lbs./cubic ft. (3.52/cubic cm)*
V-250S	Standard	10" (254mm)	5" (127mm)	5" (127mm)	250 lbs./cubic ft. (4g/cubic cm)*
V-300S	Standard	10" (254mm)	5" (127mm)	5" (127mm)	313 lbs./cubic ft. (5g/cubic cm)*
V-250HT	Half Thickness	10" (254mm)	5" (127mm)	2.5" (64mm)	250 lbs./cubic ft. (4g/cubic cm)*

## KEEP THERAPY ROOMS ON ONE FLOOR WITH MARSHIELD



Same primary-to-primary and interior room dimensions as concrete bunkers. MarShield rooms fit entirely within a single floor level and do not infringe on floor space above. Unlike concrete, this space can be utilized for services.

### MARSHIELD HIGH-DENSITY BLOCK

- ✓ Uses less than half the floorspace of concrete
- ✓ Weeks of construction
- ✓ Takes room off the critical path
- ✓ Therapy rooms entirely contained on one floor
- ✓ Modular and removeable structure
- ✓ Construction in any type of weather
- ✓ Greatly reduced wall and ceiling thicknesses
- ✓ Quick, easy installation – no formwork
- ✓ Superior neutron, photon and proton attenuation
- ✓ No curing time - Ready immediately upon placement
- ✓ Minimal steel reinforcement
- ✓ Engineering/Physics services included
- ✓ Consistent block density – Q.C. checked
- ✓ Guaranteed 100% effective

### CONCRETE

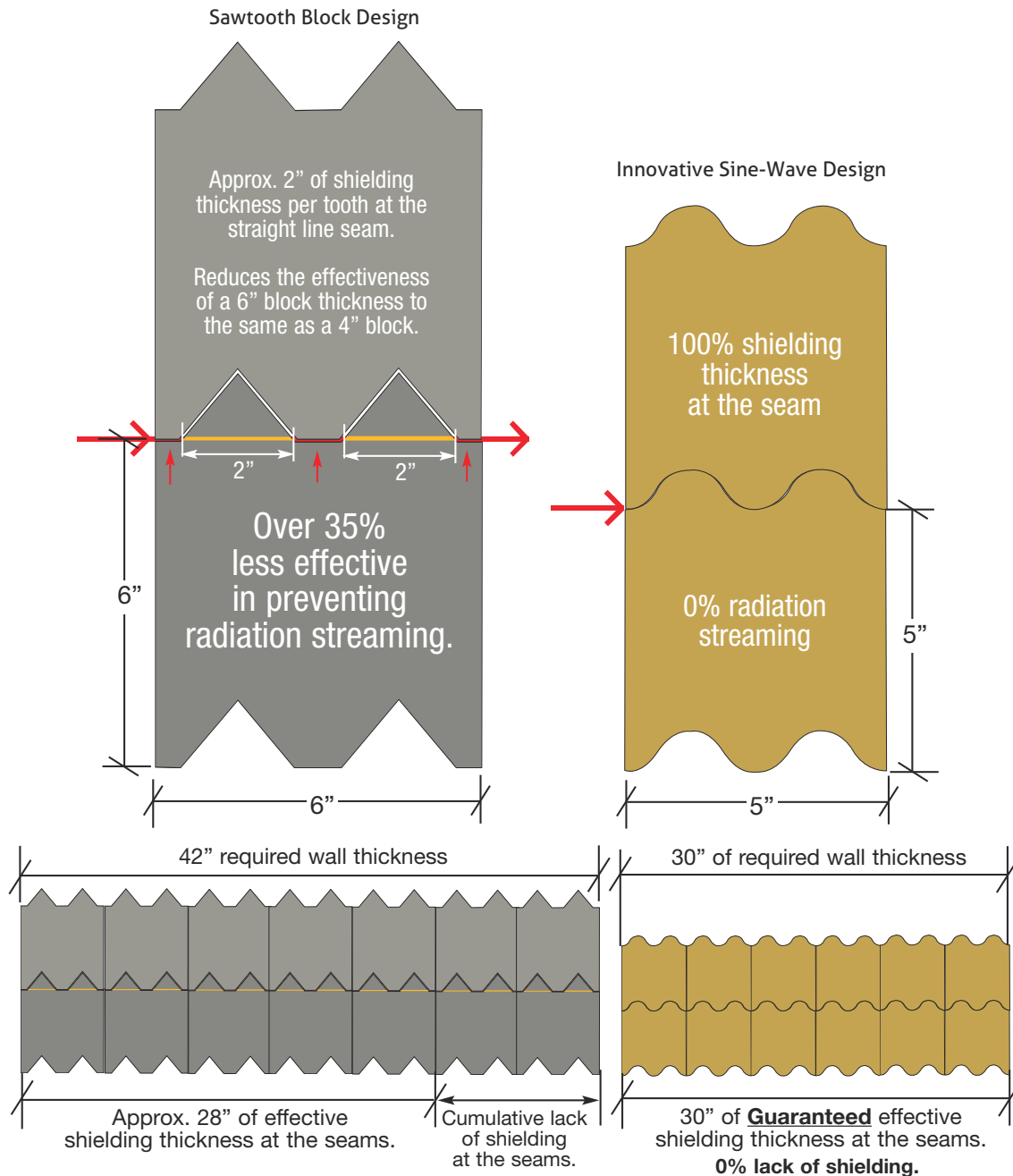
- ✗ Displaces otherwise usable space
- ✗ Months of construction
- ✗ Critical path construction element
- ✗ Shielding extends into floor above
- ✗ Permanent inflexible structure
- ✗ Construction can be delayed by inclement weather
- ✗ Extremely thick walls and ceilings
- ✗ Complicated site preparation, formwork and excavation
- ✗ Thicker barrier needed to provide same level of protection
- ✗ Up to 28-day cure times can delay other aspects of construction
- ✗ Thousands of tons of rebar and reinforcement
- ✗ Services must be purchased separately
- ✗ Density may fluctuate between batches
- ✗ Not guaranteed

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**Learn More About  
High Density Concrete Blocks**

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