



**Steel Panel Foundations**

The Foundation to Build On

**WHY A CONCRETE FOUNDATION ISN'T THE MOST SOLID STRATEGY**

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**It's Time to Put Some Steel in Your Plans.**

**MARINO INTERNATIONAL INC.**



# STEEL PANEL FOUNDATIONS

Moisture can migrate into a concrete basement in several ways. And conventional moisture barriers and treatments usually stop at ground level, allowing moisture into the building through the untreated surfaces.

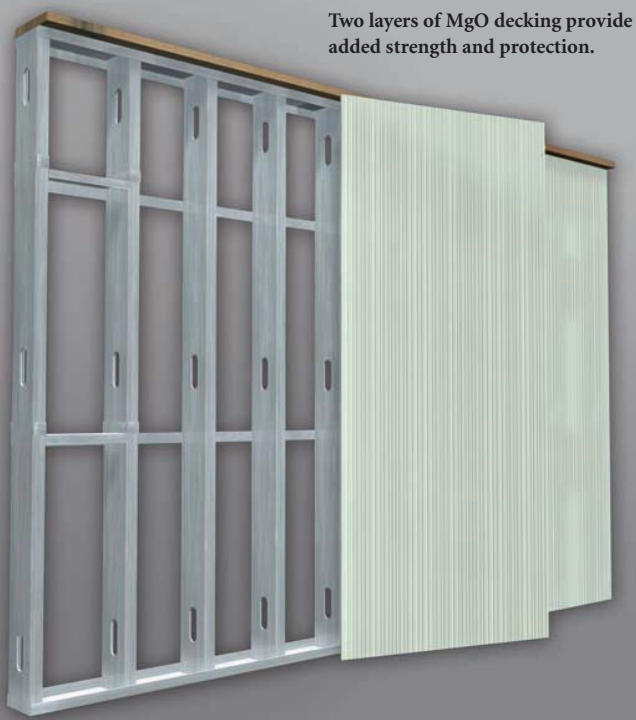
A Steel Panel Foundations (SPF) system eliminates the water and mold problems associated with traditional concrete approaches while providing distinct cost and comfort advantages over a building's entire life cycle.

## SIXTEEN-GAUGE STEEL STUDS AND MgO DECKING: AN IMPENETRABLE UNION OF STRENGTH AND FLEXIBILITY

The heart of a SPF composite foundation system is its framework of galvanized-steel studs and tracks. It's the ideal structural support for our innovative magnesium-oxide (MgO) composite wall: two panels fused to each side of an insulating, waterproof extruded-polystyrene core.

With a higher compressive strength than concrete, this International Code Council-approved MgO panel is waterproof, nonconductive, and impact-resistant and also resists insects and backfill damage.

The end result is a dry, living-room-quality area that is suitable for multiple uses—a ready-for-drywall structure that can be customized for any building site and house plan.



Two layers of MgO decking provide added strength and protection.



16 gauge steel studs with bracing for added strength.

## STUD SIZES

Our walls are available in multiple stud configurations to meet specific design requirements:

### EIGHT-INCH STUDS

Used for Full-Load Walls up to ten feet.

### FOUR AND SIX-INCH STUDS

Used for Daylight and Walkout Walls.

## TAKING PERFORMANCE TO THE WALL WITH INTEGRITY AT ALL GRADE LEVELS

Formulated through detailed engineering simulations—and verified through empirical testing—the SPF foundation system is designed to address every significant load factor associated with foundation construction.

### FULL FOUNDATION WALLS

This is a heavy-duty system typically with 16" on-center studs. MgO composite panels are attached to the steel frame with both metal fasteners and structural adhesive for maximum load capability.

### WALKOUT WALLS

These walls extend from the frost line up to the floor joists, with lower sections below grade. Total height is dictated by the frost-depth requirement of the region.

### DAYLIGHT WALLS

A hybrid of our Full Foundation Wall and Walkout Wall systems. It has the height of the Full Wall—but carries less earth load. Our most cost-effective design, Daylight Walls can accommodate almost any desired number of windows.



## GAP-FREE WATERPROOFING FROM FOOTING TO SILL

Dampproofing is no longer enough. Wet basements are unhealthy for homeowners—who are demanding more livable basement space in general. Moisture issues are also the leading source of callbacks for contractors. And even the cause for litigation.

The waterproofing advantages of an SPF foundation system start at the bottom, with a unique, flexible waterproof membrane that prevents wicking of moisture at the footing of the foundation.

It's the basis of a monolithic barrier to moisture that continues up the entire wall and includes the highest construction-grade galvanized steel available as well as welds that are factory-sprayed with an industrial-strength rust inhibitor. And the exceptional waterproof properties of the MgO composite panels themselves.

## CONTINUOUS R-10 INSULATION FOR CODE COMPLIANCE WITH NO THERMAL BREAKS

About 50 percent of a basement's heat loss comes from the top two feet of the foundation. This is worsened by the shortcomings of insulation methods for concrete—which already has an insulating factor lower than R-1.

With a SPF system, the MgO composite panel itself is insulated to R-10 from the footing to the sill. The interior stud openings can accommodate additional insulation up to R-30.



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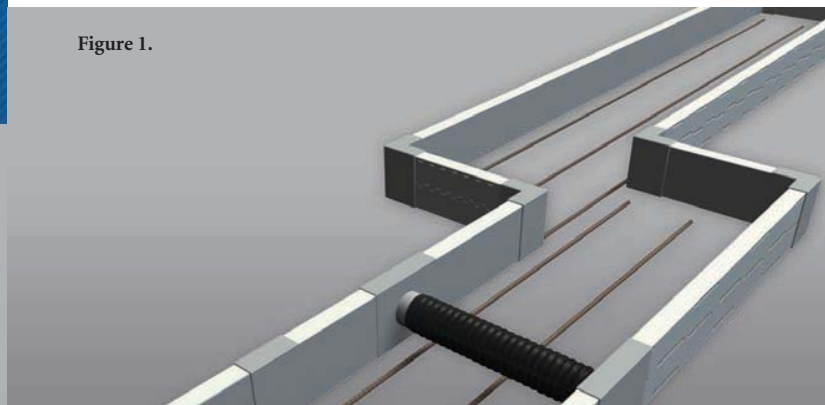
SPF wall system attached to poured concrete footing using CertainTeed's Form-A-Drain™.

## DESIGNED FOR EFFICIENT INSTALLATION AND FINISHING

Despite its exceptional strength, a Steel Panel Foundation can actually flex with ground movement instead of cracking. The flexibility of our system also carries through to the installation process. Prefabricated SPF panels, up to 20 feet in length, are easy to handle, allowing for maximum speed and quality control while enabling consistent installation.

The resulting steel-studded walls are ready for finishing the same day they're installed. No additional framing, insulation or vapor barrier is required prior to finishing.

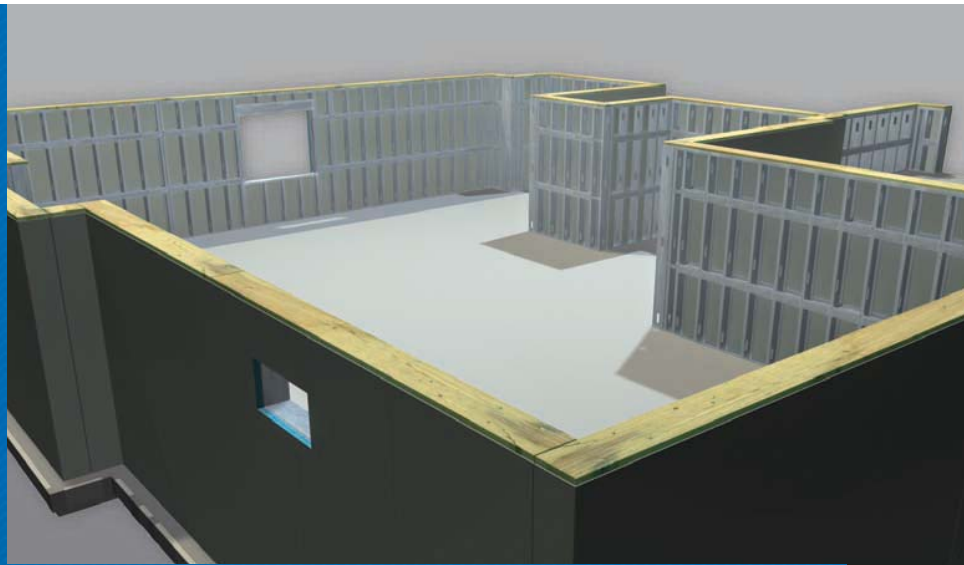
Figure 1.



**FOOTINGS WITH CERTAINTEED DRAINAGE.** The SPF foundation system incorporates the patented Form-A-Drain™ solution from CertainTeed. This engineered footing and drainage system is integrated directly into the footing—as the foundation footing forms—to provide water drainage and prevent the mold and high-moisture issues that are potential health risks to occupants and a potential liability for contractors. In addition to the exceptional drainage control of the Form-A-Drain™ system, its unique design also allows it to be adapted for use as either a passive or active radon venting system. (Figure 1)

## BENEFITS

- ◆ Ready for finishing the same day they're installed.
- ◆ Wall is insulated to R-10 from footing to sill and can accommodate additional insulation to R-30.
- ◆ No additional framing, insulation or vapor barrier is required prior to finishing.
- ◆ Run electric, heating/cooling, plumbing right in the wall.
- ◆ Engineered water drainage system integrated into the interior and exterior of the footing.
- ◆ Integrated passive radon venting system can be upgraded to full active system.
- ◆ Provides a dry, comfortable multi-use area without the clammy basement feel or musty smell.



## STEEL IS GREENER THAN CONCRETE, ANOTHER SUBSTANTIAL REASON TO EXPLORE THE SPF SYSTEM

A SPF system not only improves a living space by eliminating mold, radon, and moisture. The high percentage of recycled content makes it an eco-friendly product—with the wherewithal to help reduce the massive CO<sub>2</sub> footprint caused by concrete building components.

Call or e-mail us today. Or visit our Web site for more information. You'll find a set of powerful, cost-effective solutions that could change the core of your thinking.

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## BUILT-IN ASSURANCES

The SPF “foundation” system has undergone rigorous testing and review by nationally recognized testing laboratories and regulatory authorities. Each foundation design is signed and sealed by a licensed structural or civil engineer to provide homeowners, contractors and local building authorities with documented assurance of its structural integrity.

Section View: Two MgO panels fused to each side of an insulating, waterproof extruded-polystyrene core.

