
Technical Information Guide*

The Basics About Building with Faswall®

Material:

Faswall® is an insulated concrete form (ICF) that is...

- Is made from a composite mix of mineralized Wood chips (85% and lime/portland cement binder 15%).
- Is free draining, very porous, alkaline, and highly hygroscopic.
- Does not allow the growth of fungus and mold, which are the agents that rot and deteriorate wood fiber.

Weight & Size:

- Each block weighs approximately 28-30 pounds.
- A standard wall-form (part # 1224-STD): Measures 24" (L) x 12" (W) x 8" (H) and is designed to hold a up to a 3" thick mineral wool or foam insulation insert.

Tolerance:

- The wall-forms are trimmed at the factory within a height tolerance of +/- 1/32"
- Like any wood-based product wall forms will shrink or expand during the curing process (about 28 days). Once cured, the dimensional tolerance of the wall-forms is consistent.

Life span:

- **So durable, inert and vapor permeable, it will last for centuries**
- Inspired by traditional/natural building structures technologies that have been in use for many hundreds of years
- Wall forms can withstand the moisture and temperature fluctuations occurring on a construction site over many months and even years.

Insulating Values for a concrete filled Faswall wall, with....

- 3" Mineral wool inserts, interior plaster, exterior stucco: **R 21 (U-Value .048)**
- 3" Poli Iso foam inserts, interior plaster, exterior stucco **R-25.5 (U-Value .039)**
- NO additional insulation: **R-11.8 (U-Value .085)**

Wall-forms: a stay in place Insulating Concrete Form (ICF).

Faswall wall-forms are dry-stacked without the need for mortar. They are filled with concrete and insulation to create a high-performance and healthy wall system. In the Faswall® ICF wall system....

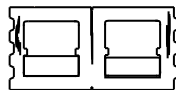
- The blocks' weight, the striation of the cement-wood chip composite, and the interlocking ends, create a stable wall even prior to the concrete infilling.
- Create a reinforced concrete post and beam wall.
- The post and beam system is referred to as a "screen-grid" (SG) wall system.
- A vertical 5"x9" (or larger) post is formed at 12' on center (OC)
- A horizontal 4.5" diameter bond beam (grout joint) is formed at 16" OC vertically.
- Alternative concrete and rebar layouts are possible with our "flat stock" and "large core" blocks (subject to engineering).

NOTE: Faswall blocks are designed to be filled with concrete and are not intended to stand alone as load bearing blocks.

The Faswall Wall Forms are supplied in four main types for building your entire project:

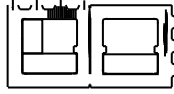
- Standard, Corner (outside and inside), All Purpose (AP) and End Block.
- The quantity of each wall form needed for the project is determined in consultation with the owner, contractor or designer.
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Standard Wall Form

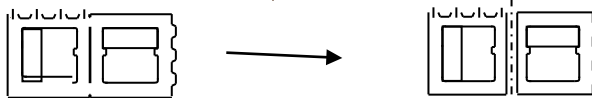


This is the predominate wall form used. It is 24" long x 12" wide x 8" tall.

Corner Wall Form
(inside and outside available)

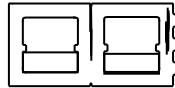


AP Wall Form

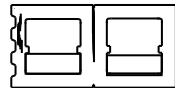


This is an 'all purpose' wall form. It is mostly used to form ½ blocks as it can be split. It can also be used as a corner or as a standard. Field notching is required.

Male End Block'



Female End Block



These blocks are used at openings or at the end of a wall. They feature a solid wall to which doors and windows can attach.

All units are interchangeable dimensionally. The AP and Corner units can be used as a standard wall form.

Building with Faswall - General Information

Engineering

Faswall structures are usually structurally engineered. Typically, **ACI 318** is the basis for an engineered solution.

- Faswall® formed concrete structures may be utilized for 1-3 story residential, commercial and industrial buildings.
- It is also often used for engineered basements, daylight basements and stem-walls (conditioned crawlspaces).
- More complete engineering data is available from ShelterWorks that includes physical testing of the wall-forms, load tables, fire testing, termite testing, acoustical testing, etc.

Fire Resistance and Sound Proofing

- Faswall® received & exceeds a 4 hour fire rating (see website or ask for testing).
- Faswall® is very sound resistant (ASTM E 90-90) with an STC rating of 55.

Tools needed to install Faswall®

- Most wood cutting tools are appropriate for cutting Faswall, for example:
- Circular or miter saw 7"–12" diameter with carbide blades for specialty cutting.
- Reciprocating saw with 12"-16" carbide blade for rough cutting the wall-forms.
- Electric chain saw is a favorite, the stiff bar/chain cuts 12" block.
- Rubber mallet for positioning wall forms prior to filling is an essential tool.
- ICFVL ledger connector system (by Simpson) or hole saws for ledger boards
- Cordless drill and appropriate selection of bits for driving fasteners.
- Level, string, plumb bob to assure a plumb and level wall.
- Adequate moveable set of scaffolding system in proportion to the job
- Rebar bending, fastening, and cutting equipment

WARNING: Protect eyes with safety glasses and mouth & nose with dust mask when cutting Faswall® forms!

Materials needed to install Faswall®

- Wood: For temporary wood bucks (frames) at each opening use 2x10 lumber for the sides and header and two 2x4's on edge for the sill. 2x lumber or plywood is needed to form corner boards at wall corners.
- Plywood; 4' x 8' sheets fabricated for temp strapping or mending/cover plates.
- Coarse threaded fasteners (#9 x 3" deck screws) for applying to weakened areas of the wall or cut/altered block.
- Fasteners; coated deck screws. #9 x 3" and #9 x 3.5" for fastening corner units, for modifying wall-forms, for fastening bucks and plywood to the wall forms.
- Wood shims for occasional leveling of courses (usually not needed). Plastic shims for leveling the first course if that approach is selected
- Mortar mix (the first row can be laid in mortar). Leveling w/ shims and grouting w/ mortar after is also a good method. It is very important that the first row be perfectly level to build up the wall.
- Mortar or other filler can be used to fill small gaps in the wall.
- Construction adhesive such as Tight-bond (solvent free) adhesive, polyurethane concrete/masonry sealant or nonexpanding urethane foam to secure a wall-form that has been cut (adhesives are used only as a supplement to patching).

Setting the Forms

Before workers begin to lay out the wall-forms on the building perimeter, they must understand that the forms are not conventional concrete blocks.

Installers need to carefully study the detailed **Design and Installation Manual** and the accompanying diagrams and illustrations.

- If there are any questions about the proper use of Faswall® wall-forms, do not hesitate to contact the manufacturer.
- In order to realize all the benefits and advantages of the system, it is vitally important that the system be used correctly.

Foundations + Slabs

To be designed/engineered and constructed in accordance with all applicable building codes and ordinances as well as engineers' specifications if an engineer's involvement is required.

Shelter Works Ltd. P.O. Box 1311 Philomath, Oregon 97370:

855 558 4588

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Healthy, High Performance Building

www.Faswall.com www.healthyshesterworks.com

*This is the short version of our **Design and Installation Manual** . Please read the complete manual before designing or installing with Faswall.

Windows + Doors

The preferred method is to fasten windows and doors directly into the wall-form material. End Blocks and half blocks are designed to build openings as they have smooth ends to which windows can be fastened with screws.

Floors

When an intermediate floor system is designed into the FASWALL® structure, it is generally assumed to be of wood. Because these floors do not have components that can adequately support the dead weight of the heavy wall assembly above it, the typical design criterion is to “hang” the floor from the inside of the wall structure.

There are 2 main methods that engineers typically specify for this.

- ICFVL ledger connector system (by Simpson) or
- Cantilevering anchor bolts from the concrete core to attach ledger boards

Fastening to the wall-forms.

- For lighter loads coated #8 or #9 deck screws can be used (if the depth of penetration into the wall-form is maximized).
- Fastening screws at points where the wall-form web is present is preferable as you can penetrate deep into the wall-form using 3.5-4” (or longer) screws.
- Mechanical fasteners appropriate for the weight of the item to be attached should be anchored directly into the concrete core.

Electrical & Plumbing (see Website)

Surface Finishing (see Website)

- Exterior
 - Stucco (cement or lime based)
 - Siding (wood or fiber) with vented rain screen.
- Interior
 - Natural (lime or clay) plasters



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Healthy, High Performance
ICF Building System
 by ShelterWorks Ltd

Questions? Call us! 855 558 4588

Intro to Faswall
 Technical Information

- Paneling
- MGO board
- Gypsum/Drywall Products

Below Grade Surface Treatments of Faswall® wall-forms

Below grade wall surfaces of living spaces must be parge coated and waterproofed.

Drainage:

Equally important to the effectiveness of a waterproofing system is adequate drainage. There are several products available to provide “in-plane” drainage throughout the full height of the basement wall. These, coupled with properly designed footing drains, will take the water away before it has the chance to become a problem.

Please Email us at Info@faswall.com to request the Technical Manual and Installation Instructions, which includes specifications, and engineering information.

 <p>HEALTH & COMFORT Faswall® is non-toxic, vapor-permeable, and is sound-proof. Creates an exceptionally healthy & comfortable indoor environment.</p>	 <p>SUSTAINABILITY Made with recycled, organic building materials (no chemicals or toxins). Faswall® is the material of choice for green-conscious builders.</p>
 <p>SIMPLICITY Faswall® is a dream come true for do-it-yourself builders. Faswall® blocks are dry stacked — no mortar needed! Less than 30lbs per block.</p>	 <p>HIGH PERFORMANCE The superior insulation properties of Faswall® mean significantly reduced heating and cooling costs. Maintenance costs are also reduced.</p>
 <p>DURABILITY The reinforced concrete walls created by Faswall® will last for centuries. Build your legacy home with Faswall®.</p>	 <p>SAFETY & SECURITY Faswall® offers superior resistance to fire, deadly wind, and earthquakes so you can sleep safe and sound in your Faswall® home.</p>

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