THE BENEFITS ALL STACK UP

Walls cast in PolySteel are **warmer, quieter, cleaner, greener** and easier to construct. Combining the strength of steel, the enhanced insulation of EPS and the speed and versatility of concrete to achieve the strongest, safest, most energy efficient buildings money can buy.

POLYSTEEL STRONG & SAFE

PolySteel helps you create incredibly strong and solid internal and external load bearing walls that easily meet or exceed all relevant US Building Regulations. So strong in fact that it is unlikely that you will require additional reinforcement up to four stories.

- The only ICF with integrated galvanised steel ties to give you added strength, dimensional stability and further more, every 6 inches provide steel furring strips for fixing radiators, cupboards or finishes to the wall internally or externally (no need to drill the concrete or to use specialist fixings).
- Monolithic integration of the walls and floors make for a super strong home to protect you and your family from accidental impact or natural forces.
- The EPS panels are made with fire retardant material.
- PolySteel can be used with self compacting concrete, making for a much stronger mix and removing the need to vibrate.

POLYSTEEL FAST

Time is money. PolySteel with its rapid and easy assembly method means no waiting for specialist and expensive labour, waiting for ideal weather conditions or allowing long order to delivery lead times. It will allow you to build more wall quicker and with less labour.

- The standard *4 feet* long by *2 feet* high form weighs around *13lb*, is easy and clean to handle straight off the delivery lorry.
- The standard form covering *8 sq feet* is larger than most other ICF's making for a much quicker build time.
- The open grid design of the steel ties enables good flow and consolidation of the concrete during pour, giving less chance of voids and ensuring a much stronger wall.
- Forms can be pre-panelised for even quicker construction, stack or brick bond used when laying forms is equally acceptable.
- Pouring one floor at a time, there is no need to fix PolySteel forms to the foundations as they are not inclined to float when concrete is poured.

POLYSTEEL FLEXIBLE

The tongue and groove edge design allows for infinitely variable adjustment of one form on another, no need to be limited by preformed castellated edges.

- Any kind of finish can be applied, limited only by your imagination, for safety the finish material or wallboards can be fixed back to the steel furring strips that are embedded in the form walls, producing a solid connection to the concrete core in case of fire or other event.
- PolySteel comes as preformed straights or corners and can easily be cut or shaped to meet any design criteria using basic tools.
- PolySteel has for many years and continues to be used for all kinds of residential, commercial, educational and industrial projects.

POLYSTEEL EFFICIENT

Acoustic tests have shown that the performance of a standard (*6 inch* standard mix concrete) PolySteel wall with 1/2 inch plasterboard on each side will provide a typical 50dB reduction from one side to the other.

- Fire tests have proven and shown that a standard PolySteel wall (*6 inch* concrete) will provide at least *4* hours of fire protection, without additional coverings.
- The PolySteel wall easily meets the requirements of the International Building Code .. What's more, the thermal efficiency of the wall (how good it is at reducing your heating costs) has been shown through tests and historical data to outperform many similar systems and other methods of construction.
- ***Save 50% or more on your utility bills!***

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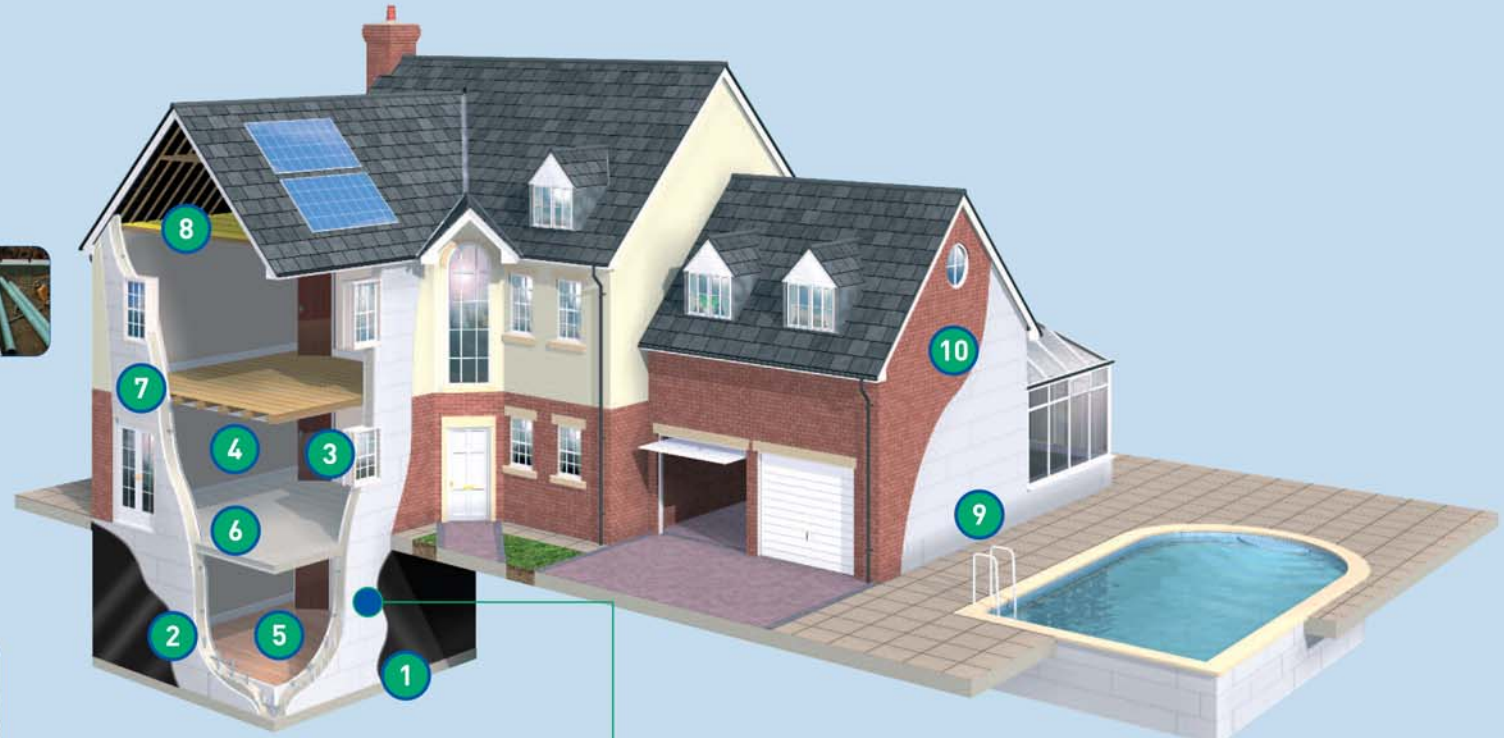
10 STEPS TO THE PERFECT BUILD

PolySteel is one of the most user-friendly building systems available. Even so, success is only guaranteed if you stick to the basic disciplines, schedule your time properly and take proper measures to ensure adequate health and safety for everyone involved at all times.



Stage One - Footings and slabs.

Lay a standard level raft slab or foundation (trench or block), adding re-bar if advised by your structural engineer and install a dpm/dpc as required, alternatively use a waterproof concrete mix. Mark out the wall perimeter using string or chalk. Where a basement is constructed, the outside wall can be made waterproof by externally covering the wall with waterproof material leading to a suitable drainage system and / or using waterproof concrete mix design in the PolySteel formwork, again with arrangement between the wall and floorslab.

Stage Two - Placing forms.

Start at the corners. Secure the first course of forms either with low expansion foam or by wet setting. Place subsequent courses in stack or running bond, securing with foam and clips. Install service and ventilation ducting through walls as you go.

Stage Three - Window and door openings.

Use VBuck to easily form door and window openings and stop ends. Additional bracing inside the openings will be required during the concrete pour (see stage 4). Through wall ducts for ventilation and services are to be put in place at this stage before concrete pour.

Stage Four - Bracing.

Reechcraft corner bracing should be fixed externally as soon as possible to keep walls plumb and in position. Fix straight braces internally every 4 to 5 feet along the length of the wall as you continue up. Check the wall remains true during and after pouring with lines and levels and adjust as necessary turning the bracing leg to bring the wall in or out of plumb.

Stage Five - Steel reinforcement.

It is usually only necessary to use steel re-enforcing bars in basements and other retaining walls or when the building is over four stories high. Always use a structural engineer to check and specify the re-enforcing requirements for your project.

Stage Six - Pouring.

Ensure walls are straight and plumb allowing enough time before the concrete arrives to make any last minute improvements or adjustments. The standard PolySteel concrete mix is a pumpable 4000 strength with round 1/3" aggregate and having a slump of 4-5 in ., and should be used through a delivery hose reducing from 5inches to 3inches having a double 90deg bend in line to give improved control over the concrete flow. Concrete mix designs may be varied for different applications eg. strength, compaction, permeability etc which may change the flow characteristics and exerted pressures as it is poured. It is always better to place extra support to compliment the bracing, such as plywood panels etc where necessary if unsure, until the pour is completed.

Stage Seven - Finishing.

At the end of each pour the concrete can simply be left to set before the next pour or levelled and prepared for a wall plate, floor beams etc. Anchor bolts or re-bar may be inserted into the wet concrete to mitigate a slip plane or in preparation for fixing wall plates. It is possible to use a chemical to temporarily retard the surface setting of concrete and to inset water bars where the wall has to have a high level of consolidation between different pours.

Stage Eight - Floor and roofing systems.

PolySteel is suitable for most conventional flooring systems, from suspended wooden floors using Simpson ICF hangers, to beam and block or poured concrete floors. Roof trusses and joists are installed as with conventional masonry wall systems.

Stage Nine - Service installation.

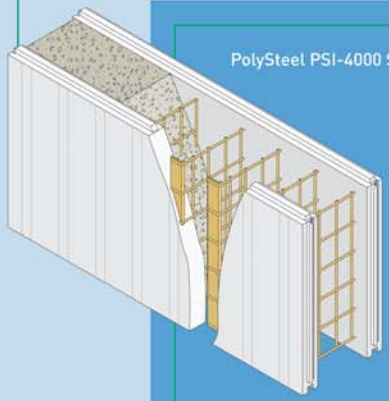
Through-wall services and ducts are placed at stage 3, before pouring. Electrical cables and plumbing can easily be cut into the EPS, avoiding the steel ties where possible. Always use low smoke and fume type cables (LSF) or use suitable conduit or ducting.

Stage Ten - Interior and exterior finish.

Plasterboard, radiators and cabinets can be screwed directly to the steel furring strips just below the surface in the PolySteel form walls (located vertically every 6 inch.) through the chosen dry lining. Cladding, brick, stone and other external finishes may be secured quickly and easily in a similar way or render can be applied directly to the polystyrene face subject to a suitable basecoat first being applied. Ensure that your finishing contractor is familiar with the durability of PolySteel and are willing to provide a long guarantee for the products applied to compliment the long life you can expect of your PolySteel home.

Stage Ten Plus - Additional systems.

Now that you have made the perfect start in building your PolySteel home there are many systems that you can employ to further reduce your environmental impact. Enjoying the benefits of the insulating materials used so far and the high thermal mass of your walls to passively regulate internal temperatures is just a start. Using solar collectors and wind generators will reduce your need to purchase energy from less eco friendly sources. Storing this collected energy in the ground or by other means will allow you to use the free energy when most needed with even the prospect of exporting your clean energy to others, making a positive contribution to the environment and taking a significant step towards being carbon neutral.



PolySteel PSI-4000 Series Insulating Concrete Forms

Smooth tongue and groove design of flame retardant EPS allows easy interlocking of the forms for ultimate design flexibility. Pre-formed corners compliment the standard straight form to make a sound and stable shuttering structure ready to accept poured concrete.

Embedded vertical steel ties marked every *6 inches* add dimensional stability and strength to the form and solid fixing points for internal or external fittings, no need to drill the concrete to fix radiators etc.

Two sides of *2 1/2"* EPS providing outstanding thermal and acoustic performance. Standard straight form covers *8 sqft* for a faster more efficient build.

PSI-4600-1	*4'x 1'x 6 in core*	straight
PSI-4600-2	*4'x 2'x 6 in core*	straight
PSI-4690-2 (ext)	*4'-6" x 2'x 6 in core*	90 degree corner
PSI-4800-2	*4'x 2'x 8 in core*	straight
PSI- 4890-2 (ext)	*4'-10" x 2'x 8 in core*	90 degree corner

CERTIFIED cradle to cradle SILVER