

technology TODAY

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Insulated Concrete Construction

THE truth is, construction technology hasn't changed much since stick-frame construction was introduced in the 1840s and a similar skyscraper metal-frame construction was introduced in 1885. Today, our most ubiquitous construction material is concrete, first developed and used by the Romans centuries ago.

A new construction technology that creates insulated concrete walls might have a major influence on future construction. A number of different companies have developed their own insulated concrete method of construction that includes concrete insulated forms made in the shape of blocks, panels, and planks. Plastic or metal connectors hold these forms together. Steel mesh or rebar reinforce their walls.

Many architects and builders feel that this technology will strongly affect the way we construct buildings in the 21st century. Using this technology, builders can pour concrete foundations and walls with an insulation factor as high as R-30. Non-insulated 8"-thick concrete walls have an insulation factor of only R-1.3. Since insulated concrete construction costs are competitive with current stick-frame construction, many in the con-

struction industry advocate using this technology to build entire homes.

What would your home look like if its outside and interior walls were all constructed of insulated concrete? The photo below shows a Polysteel Forms® house under construction. The Polysteel construction forms lock together like Lego blocks, and they come in 6" and 8" core widths 4' long by 16" high. These forms are cast as a permanent part of the home's interior and exterior walls, from the foundation to the roof-line.

American Polysteel, LLC, the manufacturer of Polysteel Forms, molds galvanized steel attachment strips into each form. Once the concrete is poured, these strips and the polystyrene form itself both become permanent parts of the wall. To understand the concept, think of a Styrofoam cup filled with concrete. Once the walls are erected, builders use self-tapping sheet metal and drywall screws to attach interior and exterior wall covering to the walls by screwing into the attachment strips that exist every 12" on center.



Any drywall, plaster, stucco, or brick veneer can be applied to Polysteel Forms. All manufacturers of insulated concrete systems want you to be able to achieve any finished architectural look you desire. Electric and plumbing services for this type of construction are placed into channels cut in the polystyrene foam. Once the exterior and interior facade is attached, the house looks very conventional.

In the Polysteel construction system, the first row of forms are set into the wet concrete of the foundation's footing.

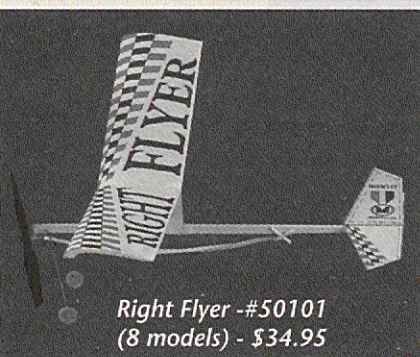
The following rows of blocks are dropped over the wall's rebar and then snapped together like Legos. The wall is then braced so it won't collapse under the weight of liquid concrete, which is then pumped into the wall. Learn more about Polysteel construction at www.polysteel.com.

The National Association of Home Builders (NAHB) has given awards to homes built with insulated concrete. The construction technology has been approved for all areas, including earthquake, tornado, and hurricane zones by all National Building Codes. To further research this topic visit Insulated Concrete Forms (ICF) at 64.55.30.132/learningcenter/default.asp, or the NAHB website, www.nahbrc.org/.

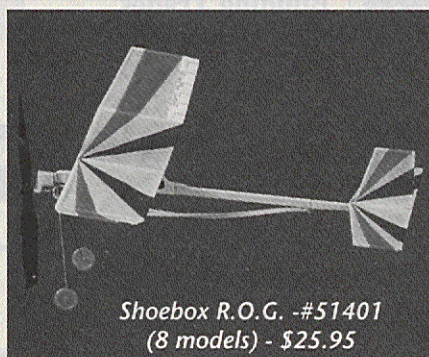
Recalling the Facts

1. In what way is construction with Legos and construction of Polysteel Forms similar?
2. What happens to the Polysteel Forms after the concrete has cured?
3. What makes insulated concrete an exceptional construction material?

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