

by James\_Dulley

Dear Jim: I am thinking of building one of those concrete/foam block houses for efficiency, security and strength. Since concrete feels so cold, it is really energy efficient and will I be limited on house styling? - Scott W. Dear Scott: You mentioned "concrete/foam block" houses, but that is just one subset of a construction method called stay-in-place-forms. Another term for this construction method is insulated concrete forms. This type of construction produces one of the strongest and most energy efficient houses possible. Even hurricane-force winds cannot blow one down. You mentioned "concrete/foam block" houses, but that is just one subset of a construction method called stay-in-place-forms. Another term for this construction method is insulated concrete forms. This type of construction produces one of the strongest and most energy efficient houses possible. Even hurricane-force winds cannot blow one down. These large foam blocks have reinforcing steel rebar inside to make the concrete structure strong and more stable. Photo credit: Eco-Block

Once the insulated forms are erected and the reinforcing steel is installed, the concrete is pumped in from the top. Photo credit: Eco-Block

The block on the left is all foam. The blocks to the right use various widths of webs to create walls of various strengths (thicker concrete). Photo credit: Conform Pacific

It is true that concrete is not a good insulator and feels cold, but with this method the concrete is totally encapsulated in rigid insulating foam. The foam provides the energy efficiency and the concrete provide the strength. The concrete inside the foam also adds thermal mass to the house. In addition to efficiency, very little outdoor noise penetrates the walls. People often think of efficiency as strictly insulation level, but air infiltration (leakage) into and out of a house is also a significant efficiency factor. With interlocking foam blocks or long continuous panels, there will be very little air leakage. Also, concrete will not settle over time as lumber homes sometimes do, so these houses remain airtight. Other than a thick wall, which is only noticeable at window and door openings, these foam/concrete houses look like any other. In fact, with the superior strength of concrete, you will actually have more design flexibility. One company, Lite-Form, also makes a horizontal system to be used for floors. Concrete floors seldom squeak and they block floor-to-floor sounds. There are several designs of foam/concrete houses you can consider. The finished walls of all are equally strong and efficient. Your builder can recommend which is best for your specific house design. Insulation levels are typically in the R-24 range, but they can be as high as R-40 depending upon the thickness of foam you select. Thicker foam and concrete increase construction costs proportionately. The design you mentioned uses large hollow foam blocks which are stacked and interlocked together. Openings for windows and doors are cut into the blocks and framed. A special concrete truck, with a pump attachment, pumps concrete into the top and it flows throughout the cavities in the hollow blocks. This forms a solid concrete wall inside of the blocks. Other designs use foam panels which are separated by plastic or metal webs or ties. You have a selection foam thicknesses and widths of the webs (determines thickness of concrete). Another option uses much larger foam panels separated by the webs. These are also often used for basement walls and foundation walls on sloping lots. The following companies offer foam/concrete housing materials: Conform Pacific, (800) 266-3676, [www.smartblock.com](http://www.smartblock.com); Eco-Block, (800) 595-0820, [www.eco-block.com](http://www.eco-block.com); ICF Industries, (877) 423-4800, [www.iceblock.net](http://www.iceblock.net); K-X Faswall, (800) 491-7891, [www.faswall.com](http://www.faswall.com); and Lite-Form, (800) 551-3313, [www.liteform.com](http://www.liteform.com). Dear Jim: I have a fiberglass front door and I would like to add an efficient screen door over it. I was told this is not a good idea with a fiberglass door. Is this true and, if so, why it is a problem? - Thomas O. Dear Thomas: Installing a screen door over a fiberglass front door is not a problem. It may detract from the attractive appearance of the front door, but it will not harm it. It will allow for free natural ventilation. Installing a glass storm door can be a problem. Fiberglass doors are usually stained a dark color. If the storm door seals well and the front door is in the sun, the fiberglass skin gets quite warm. Check with the manufacturer's recommendations. Send inquiries to James Dulley, Bend Weekly, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit [www.dulley.com](http://www.dulley.com).