

ECO-Block Insulated Concrete Form Building System

Greater Comfort & Lower Energy Bills

- Energy savings and comfort are built into every ECO-Block ICF system. An ECO-Block ICF structure starts with 65 mm of polystyrene foam insulation on either side, of a minimum of 102 mm concrete core providing an R value rating of 3.78 or more. A thicker concrete core can provide an even higher R-Value.
- Air infiltration in an ICF Home is minimal due to the continuous air barriers provided by the foam insulation and the concrete. Likewise, there are no convection currents within wall cavities.
- The concrete walls of an ICF home have high thermal mass, which buffers the interior of a home from the extremes of outdoor temperature during every 24-hour cycle. This reduces both peak and total heating and cooling loads. This combination of high R-values, low air infiltration, and high thermal mass is believed to account for the amazing 25% to 50% energy savings of ICF versus wood or steel-framed homes.

Peace & Quiet

New ICF homeowners almost always remark on how unbelievably quiet their new house is, compared with their old stick-built home. They expect the new-found comfort and energy efficiency, but the peace and quiet -the protection from outside noise - never fails to surprise and delight them.

In sound transmission tests, ICF walls allowed less than one-third as much sound to pass through as do ordinary frame walls filled with fibreglass. With double-glazed windows in ICF walls and beefed-up roof insulation, you will rarely hear street noises or airport traffic.

Solid & Lasting Security

The high-mass walls of an ICF home not only give it a remarkably solid feel, but they also make it safer for the family. They create a remarkably solid and secure investment, too. Concrete homes have a proven track record of withstanding the ravages of hurricanes, tornadoes and fires, when all the stick-built houses around them are in ruins.

In fire wall tests, ICFs stood exposure to intense flame without structural failure longer than did common frame walls.

The polystyrene foam used in most ICF forms is treated so it will not support combustion. Also, tests show that its tendency to transmit an outside flame source is less than that of most wood products. (BRANZ approved)

Note* (Many insurance carriers in North America are now offering a discount on a home owner's policy for an ICF home.)

Less Repair & Maintenance

With ICF homes, the equation is simple:

No Rot, shrinking or warping of timber = Less Repair and Maintenance.

Neither polystyrene nor concrete will ever rot or rust. Concrete can even be exposed to the elements for centuries with few ill effects. Reinforcing steel, buried deep inside and protected by concrete's alkalinity, does not corrode.

A Healthier Home & Environment

Building with ICFs is healthier for the environment in a number of ways.

- It minimizes the number of different building products involved in construction. Each building product in a *timber* wall requires a lot of energy to produce. Fewer materials also reduce the amount of waste generated on the construction site.
- ICF homes provide a healthy indoor environment, too. Nothing held within or ordinarily emitted by an ICF wall is toxic. The measurement of the air contents of actual ICF houses shows an almost complete absence of any emissions.

Construction Made Simple

- ICF homes can be designed in any style, and will accept any traditional exterior finish including vinyl or wood siding, stucco and brick.
- Because custom angles and curves are easily created, it's simple to build in bows, bays and radiuses.
- ICF systems accommodate any of today's most popular design features, such as tall walls, large openings, long floor spans, and cathedral ceilings.

Internationally Proven & Code-Accepted

Originally developed in Canada (where concrete home building is standard), ICF systems have been used successfully around the world for more than 40 years. Tens of thousands of ICF homes have been built in recent years throughout the United States and Canada. They have proven successful in every region and climate, from Orlando to Calgary. ICF systems are accepted by all the major model codes in the U.S. and by the National Building Codes in Canada. ICF systems are also accepted in New Zealand and Australia

Fast To Learn & Easy To Use

Although it looks new and different, anyone with construction experience can quickly get up to speed with ICFs. An ideal crew has a mix of concrete placement and carpentry experience. Once the crew has some practice, each ICF-built home requires less skilled labour and less total labour than a wood-framed home. ICFs are very lightweight, so crews stay fresh through the day. Likewise, ICFs present no problem for the sub-contractors who come after the walls are poured. Since holes, chases and rectangles are easily cut into ICFs with a knife or saw, installation of mechanical systems is a snap. The fastening of drywall and lap siding is just as fast and easy. And mid-course corrections, such as moving an opening, are no big deal - just saw it out and re-form. It isn't more difficult to make changes to an ICF wall - it's just different.

Cost Competitive

Over the last ten years, concrete prices have been remarkably stable. Recent price increases in other materials have generated interest in concrete building systems as never before. Labour savings and readily available materials make ICFs, feature for feature, one of the most cost competitive wall systems in New Zealand. ICF construction costs the same as and often less than other forms of construction.