



NUDURA home (left) built with insulated concrete wall systems survives the storms in Florida

Natural disasters are no match for today's ultra-durable concrete homes

Tornadoes and other natural calamities are becoming more frequent every year due to the drastic changes in climate. In North America alone they have led to the devastation of hundreds of thousands of homes in just the last few years. This alarming trend has led to builders, municipalities and homeowners to look for more durable building solutions to withstand the inevitable destructive onslaught from Mother Nature.

One trend that has emerged over the past decade is the use of the latest advancements in ultra-durable concrete walls, called insulated concrete forms (ICF), to build the envelope of homes as an alternative to wood framing. "Due to high demand, more builders are opting for the strongest impact-resilient house available," says Keven Rector at NUDURA, a leading name in building with insulated concrete forms. "This ICF method is an advanced departure from traditional wood framing – and our Canadian design is recognized to be even more efficient. At the construction site, these compact concrete forms interlock (like Lego) to build a rock solid envelope from 10 to 30 centimeters thick."

The experts at the University of Texas Tech agree, as their findings show the solution to having a sturdy and disaster resistant home is to build one in concrete using the ICF building system.

Concrete houses offer peace of mind

Studies have proven that Insulating Concrete Form (ICF) built concrete walls are 10 times stronger than wood framed structures offering peace of mind to its owners. Concrete houses have a myriad of advantages over wood frame houses and one of their key features is they are highly resistant to a number of calamities.

Resistance to debris from strong winds

During tornadoes and hurricanes, debris flying due to strong winds represents one of the greatest hazards. Recent findings from laboratory testing carried out at Wind Engineering Research Center at Texas Tech University revealed that houses with concrete wall construction have a greater resistance to impact compared to traditional wood frame houses (these walls failed to prevent the penetration of airborne hazards). ICF walls, on the other hand, can withstand raging winds and debris blowing at 402 km per hour (250 mph).

Earthquake resistant

Houses made of concrete are one of the most solid structures in an earthquake. It has been proven that homes constructed with reinforced concrete walls can withstand such a calamity and stay intact. Reinforced concrete walls have been tested after earthquake impacts and the conclusion is they resist compression forces. The steel used in ICFs also resists tensile forces created during an earthquake. The bars are tightly locked into place by the concrete generating earthquake resistance properties such as strength, stiffness, and ductility. Modern reinforced concrete buildings have rarely succumbed to heavy damages during recent earthquakes.

Fire resistant

Concrete walls have the capacity to withstand intense flames. Firewall tests have shown, even long exposure did not cause any structural failure, unlike traditional wood frame walls. At the same time, concrete restrains the spread of flames and smoke development too.

ICF to create safe rooms

ICFs can be used to create safe rooms. In regions prone to natural calamities, it's recommended to create an ICF safe room. This can be the master bedroom closet, for example. Apart from ICF walls, a concrete "lid" is poured on the top and a steel door is installed. During disasters, this ICF safe room can protect the whole family. More information is available at www.nudura.com.