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## Homes Built of Concrete Garner Increased Interest in Wake of the Marshall Fire

Last week's column focused on ways that homes can be made more fire-resistant, but there's only so much you can do to protect wood frame homes from wildfires that are driven by hurricane force winds. Looking at neighborhoods where every home was reduced to its concrete foundation, it's not hard to question that common method of construction.

Reader Peter Deem made me aware of the use of **insulated concrete forms** (ICFs) to construct the entire "envelope" of a house and pointed me to Don Clem of the National Ready Mixed Concrete Association, which has a local office in Denver. That organization, along with its Colorado affiliate and several concrete companies, sponsored an 18-townhome project in Woodland Park for Habitat for Humanity of Teller County last summer. Above right is picture of those townhomes under construction.

I was first introduced to the use of ICFs when I participated in the 1994 Jimmy Carter Work Project on the Cheyenne River Sioux Indian Reservation in Eagle Butte SD. The 28 homes in that project were conventional wood frame ("stick-built") homes, but the concrete foundations were poured into ICFs. An ICF replaces more common wood forms which have to be removed from the foundation after it cures. The ICF provides insulation in the form of two inches of expanded polystyrene (EPS) both inside and outside the foundation. After

seeing it there, I was surprised not to see ICFs in widespread use for foundations by production builders over the past 27 years.

The ICFs being promoted now are for above-ground use for exterior walls, and there are even ICFs for pouring concrete flat roofs. (More commonly, there are concrete tile sloped roofs, including one on the house Rita and I once owned on Parfet Estates Drive in Golden.)

While concrete is a non-combustible material, the EPS insulating layers will melt with direct flame, but it does not act as a fuel source, will not promote flame spread, and will not release harmful gases. In addition, the ICF would be protected on the outside of a home by siding — for example, a fiber cement siding like Hardieboard, which is not combustible, and the flames would probably only be present briefly during a passing wildfire. The interior would be covered by drywall, as with a stick-built house.

Speaking of that, there is still the question of combustible vegetation such as juniper bushes that are close to your house. Another reader made me aware of Phos-Chek, the same fire retardant that you see used by aerial tankers to attack wildfires. While that chemical is red, it's available in a colorless concentrate that you mix with water and apply using an ordinary sprayer to the vegetation around your home. A single bottle of Phos-Chek sufficient to make 5 gallons costs \$59.99. You will need 5 to 20 gallons depending on the amount of vegetation you want to cover. At [www.GoldenREblog.com](http://www.GoldenREblog.com) I've posted a link to a KNBC news segment about a Malibu homeowner who saved her home from the Woolsey fire in November 2018 thanks to an application of Phos-Chek to the grounds around her house three months earlier.

In last week's column I also mentioned that the soffit vents typical of homes with unconditioned attics can allow embers to enter the attic, igniting an interior fire, but I neglected to mention that there are ways to fireproof soffit vents to keep that from happening.

**REAL ESTATE TODAY**



By **JIM SMITH**, Realtor®



Photo courtesy of Sara Vestal, Teller County Habitat for Humanity.

Another way that concrete homes are being built is using 3D printing pioneered by Icon, an Austin TX-based company which is currently building a 100-home Texas subdivision in partnership with Lennar using that process. Icon built its first 3D-printed home in 2018 as a proof of concept, following which they built a community of 3D-printed homes in Tabasco, Mexico. Here's a picture of one of those homes:



Just as desktop 3D printers work by applying multiple layers of material following a computerized template, Icon's huge 3D printers apply multiple layers of concrete. See [www.IconBuild.com](http://www.IconBuild.com) for more information about this company, which, by the way, has NASA contracts to build 3D-printed structures on the moon and on Mars. Their primary mission, however, is "to reimagine the approach to homebuilding and construction to make affordable, dignified housing available to everyone throughout the world."

Their home page goes on to say,

"the audacious mission of Icon is to revolutionize homebuilding, and our team's expertise and determination have already made this dream a reality. Our team has a passion for design, engineering, and elegant software. We have decades of experience in sustainable technology and construction innovation."

Building with concrete is both less labor intensive, less expensive and more sustainable than building with lumber. It's significant that one of America's biggest builders, Lennar, is working with Icon to build those 100 concrete homes in Texas. That project should provide facts and figures about the practicality and economy of building with concrete that could be a powerful influence on the rest of the homebuilding industry.

### Politicians Could Learn From the National Football League

One of the remarkable parts of watching NFL games on television is at the end when the coaches and players who just "fought like hell" against each other converge on the playing field to shake each other's hands and even hug each other, exchanging congratulations and best wishes to the players who just beat them.

And one of my favorite penalties is for *taunting*. Wouldn't it be nice if there were a penalty for taunting off the field, including in politics? Nowadays we not only see politicians taunting, insulting and ridiculing each other, but even refusing to concede that they were defeated.

In football, a coach can challenge a referee's call, but the final call after review is accepted without question (except by fans), and the players proceed undaunted, accepting every call and moving quickly to avoid a delay-of-game penalty.

### Come to Our Ribbon-Cutting Tonight (Thursday) in Golden

Golden Real Estate's new office at 1214 Washington Ave. in downtown Golden is ready to welcome visitors, so the Golden Chamber of Commerce is hosting a ribbon-cutting at our office on **Jan. 13th from 5 to 7 p.m.**

Readers of this column are welcome, and we hope to see many of you there. Meet all our agents as well as our in-house lender, **Wendy Renee** of Fairway Independent Mortgage Corp. Refreshments will be served.

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