The Mixer

ALBERTA READY-MIXED CONCRETE ASSOCIATION

PRESIDENTS MESSAGE

Welcome to the spring edition of "The Mixer".

The AGM was remarkable. The work and organization that goes into this event is phenomenal. The office staff, as well as the many volunteers, deserves a huge thank you for all of their efforts and time commitment to make this event run as smooth as it does.

The entertainment was fantastic with Gord Bamford getting the crowd into the country theme and the dance floor was full. The silent auction was a hit as it was a lot of fun with many laughs and some friendly competition. I think maybe a new annual event was born. It was a sincere pleasure to see the familiar faces and friends again this year. Thank you to all who attended and to all of you that sponsored and supported the AGM.

I have had the pleasure of serving on the board for the past five years and this year I am honored to have been elected as president of ARMCA for 2013/2014. It is with pride that I work with the many volunteers that are committed to our industry and continue to make ARMCA strong and viable with a clear voice for all in our industry as a whole. We will remain on the path forged by leaders before with our new and revised strategic plan, and our clear and concise goals and objectives.

It is time to say farewell to some of the volunteers who have fulfilled their obligations and duties on the board. John Pistak, who leaves the board as our Past President; his common sense approach, his ability to listen to all who have a voice, and to make clear and decisive decisions based on the information at hand will be missed. Fortunately Jack and Brody, John's two young sons, will keep him on his toes for the next few years so boredom will not set in now that he has all of this free time.

We also need to say goodbye to Piero Nanfara, who has been a long sitting board member as well as a Past President. His contributions and knowledge were very much appreciated. In saying that, we welcome Kris Lasek who will be sitting on the board for Corporate, and Alan Henderson, who will be sitting on the board as an Independent. I would also like to welcome back all of our board members who were re-elected or have let their names stand for another term on the board. It is through all of them and their commitment to the industry that we continue to have a strong presence through our association.

I also wish to extend a huge thank you to Josh Tanasiychuk for his excellent leadership over the past year. As I stated at the AGM, Josh's wisdom, common sense, and logic goes well beyond his age. I am very fortunate to

Bill Shaw **Josh Tanasiychuk**

INSIDE THIS ISSUE…

Advertisers:

have him as a Past President as he will be a great resource for me and the board.

I look forward to the coming year. Our board remains committed to serving in the best interests of our members, as well as working with the Cement Association of Canada, in order to strengthen our position in the industry. As we embark into our busy season, take the time to enjoy your family, friends, and associates, and above all be safe and return home to your loved ones at the end of each day.

In closing, I would like to take the opportunity to encourage anyone that would like to get involved with ARMCA to give us a call. I hope to see you at the June golf tournament and other ARMCA events. It is always a pleasure to see new faces with fresh ideas on the committees and at the events.

Sincerely,

Bill Shaw
ARMCA President.

ARMCA BOARD OF DIRECTORS - 2013/2014

OFFICERS

PRESIDENT	BILL SHAW	Inland Concrete
FIRST VICE-PRESIDENT	NORM KUNTZ	BURNCO Rock Products Ltd
SECOND VICE-PRESIDENT	KRIS LASEK	Lafarge Canada Inc.
SECRETARY / TREASURER	KELLY HINES	Knelsen Sand & Gravel
PAST-PRESIDENT	JOSH TANASIYCHUK	Tanas Concrete Industries Ltd.

DIRECTORS

CURTIS BOUTEILLER	Proform Concrete Services
LEN CHINSKI	Lafarge Canada Inc.
CLAYTON FORTH	BASF Admixtures Inc.
ALAN HENDERSON	D & M Concrete Products Ltd.
MARK LANGEN	Interstar Pigments
BRIAN TKACHUK	A & T Construction & Transit Mix Ltd.
PRASHANT VATS	Inland Concrete

WELCOME NEW MEMBERS

Requip Machinery Ltd – Associate Member

JR & W Consultants Inc. – Association Member

Freightliner of Red Deer Inc. – Associate Member

ARMCA 2013 AGM & CONVENTION HIGHLIGHTS

We were delighted to welcome 81 delegates, 50 guests and 24 children to the beautiful Fairmont Jasper Park Lodge for the 2013 AGM & Convention, May 9th -11th. We could not have hoped for better weather to enjoy the events and the spectacular surroundings. I believe this is the best weather we have experienced for this convention in Jasper.

Thursday afternoons "Mix & Meet Luncheon" was well attended and was followed by the Annual General Meeting where we elected several new Directors to our Board. Congratulations to our new Directors, Alan Henderson of D & M Concrete Products Ltd. and Kris Lasek of Lafarge Canada Inc. Congratulations also to Curtis Bouteiller of Proform Concrete Services, Mark Langen of Interstar Pigments, and Brian Tkachuk of A & T Construction & Transit Mix Ltd. on being re-elected to the Board for another three year term. We also extend a warm welcome to Prashant Vats of Inland Concrete as he completes the remainder of a three year term as an Inland representative. We enjoyed a wine and cheese mix as we celebrated our new Board of Directors following the adjournment of the AGM.

The staff of the Jasper Park Lodge organized an amazing scavenger hunt for the ladies program. The ladies arrived back at the Club House (final check point) out of breath and all smiles and enjoyed wine and champagne as they received awards for their efforts. Apparently it was great fun!! The children also had fun in their program, organized and staffed by the Jasper Park Lodge, and were excited to share their experience!

ARMCA 2013 AGM & CONVENTION HIGHLIGHTS (continued)

"Denim and Diamonds" was the theme for Thursday evening and the room was bedazzling! Mark Langen owned the podium as our Master of Ceremonies and did a great job; thank you Mark! Gord Bamford, multi-award winning Canadian Country Music Artist provided our entertainment for the evening and he brought along his six piece band, all artists of the year for their instrument. It was an outstanding performance with incredible sound and a light show that you would expect to see at a major concert; not what we expected for such an intimate venue, nothing downplayed here. The dance floor was packed and the mood was set for a party! It was a fantastic evening. A special thank you to Greg Lunn for putting us in touch with Gord and for helping to secure him for the evening!

We started our silent auction Thursday evening with some great donations from our members. Thank you again to those of you that donated items!! Gord Bamford was up for auction and Lorraine and Gary Read were the successful bidders to have had the pleasure of golfing with Gord on Friday.

Ahhhh, Friday morning - **GOLF**… GRRRREAT weather… shotgun start on schedule. The course was in beautiful condition and the elk were grazing on the fairways! I almost got an elk in one.

The Presidents Banquet: We recognized and thanked four board members upon completion of their three year term; Brian Tkachuk, Curtis Bouteiller, Mark Langen, and Piero Nanfara. Piero, who served a total of 7 years, was also President in 2009/2010. We specifically thanked our outgoing President, Josh Tanasiychuk, for his contributions and commitment to the Association for the past six years, and welcomed our new President, Bill Shaw, who introduced our new board members. We thanked our volunteers, sponsors, attendees, and their companies for making this all possible. Golf results were announced, prizes awarded, and presentations made.

We met at the Club House Saturday morning for a farewell breakfast and wished everyone a safe return home.

Thank you again to those that attended, to our sponsors, to our volunteers, and to the staff at the Jasper Park Lodge for making this a memorable event! We invite you back next year; please **mark your calendars for the 2014 convention (May 8th and 9th)!**

Sincerely,

Laura Reschke
Executive Director

2012 ARMCA AGM & CONVENTION SPONSORS

THANK YOU TO ALL OF OUR SPONSORS FOR YOUR VERY GENEROUS SUPPORT!

EVENT SPONSORS

ASHCOR Technologies Ltd.	AGM
BASF Admixtures Inc.	Golfer's Lunch
Caron Transportation Systems	Entertainment
Cement Association of Canada	Hospitality Suite
Holcim (Canada) Inc.	Mix & Meet Lunch
Inland Concrete	President's Banquet
Kryton International Inc.	Wine for Thursday Night
Lehigh Cement	Wine for Friday Night
Lehigh Cement	Thursday Theme Dinner
Mack Canada Inc.	President's Banquet
Nortrux Inc.	President's Banquet

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Tri-Line Carriers LP	Tri-S Concrete (1996) Ltd.

2012 ARMCA AGM & CONVENTION SPONSORS (continued)

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OTHER SPONSORS

Camrose Concrete

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TEDDY BEAR SPONSOR

Lafarge Canada Inc. & Cascade Carriers L.P.

2012 ARMCA AGM & CONVENTION PRIZE WINNERS

GOLF PRIZES:

Closest to the pin- Ladies	Hole #15	Wendy James
Closest to the pin - Men	Hole #7	Ryan Bisson
Longest drive- Ladies	Hole #13	Colleen Lasek
Longest drive – Men	Hole #11	Trevor Jensen

50/50 WINNER:

Michelle Wong (Dennis) - Inland

EARLY BIRD REGISTRATION WINNER:

Sheldon Stein - Fountain Tire (iPad)

SILENT AUCTION WINNERS

Dewalt 3 Tool Combo	Finning (Canada)	Norm Kuntz
Dewalt 2 Tool Combo	Finning (Canada)	Sheldon Williams
Sony eReader & Case	Interstar Pigments	Tony Lidstone
iPad Mini	Inland Concrete	Bill Shaw
Diecast Mixer Truck	New West Freightliner	Laura Reschke
“Enchanted Evening” Print	Tri-S Concrete (1996) Ltd.	Noreen Young
“Evening Skate” Print	Tri-S Concrete (1996) Ltd.	Dave Tesarski
Lord of the Rings BluRay Set	Fountain Tire	Lorna Agostini
Planet Earth BluRay Set	Fountain Tire	Wendy James
Oiler’s Print	Tri-Line Carriers LP	Joe Dubovsky
Flames’s Print	Tri-Line Carriers LP	Noreen Young
iPad Mini	ARMCA	Barry Young
iPad Mini	ARMCA	Sheldon Williams
$250 Gift Certificates	BURNCO Rock Products Ltd	Al Agostini
iPad	Caron Transportation Systems	Noreen Young

IS THE WORLD READY FOR WOODEN SKYSCRAPERS?

The following is a response from the Cement Association of Canada (CAC) that appeared on May 19th in the form of an OP ED to the Toronto Star regarding *Is the World Ready for Wooden Skyscrapers?*

The original article is below the CAC response.

Ottawa, May 22, 2013

Op-Ed,
Michael McSweeney
President and CEO, Cement Association of Canada

RE: Setting the record straight on the environmental friendliness of building materials

In his opinion piece *Is the World Ready for Wooden Skyscrapers*, published in the Toronto Star on May 19, Benjamin Gillies promotes tall wood buildings (i.e. mid- and high-rise buildings) as a beacon of innovation in the fight against climate change, touting a commonly held but inaccurate view that wood is more "climate friendly" than other building materials.

Buildings are responsible for about 33 per cent of all greenhouse gases (GHGs) produced globally so, as city planners, architects, engineers and politicians rethink how we plan, build and live for a sustainable future, it's critical that we get it right.

The wood industry promotes the idea that the most important GHG emissions from buildings are those that come from the building materials themselves. The science – from respected academics at institutions such as MIT and UBC – doesn't support this view. When all phases of a building project are considered - from the raw materials used in construction, through to the eventual demolition of the building at the end of its useful life – only a tiny fraction can be attributed to the building materials. The lion's share of GHG emissions - some 90 per cent - come from a building's operation (heating, cooling, lighting, etc.).

Though not mentioned by proponents of wood construction, operational energy efficiency is where concrete shines; concrete's innate ability to store heat and energy makes buildings easier (and cheaper) to cool in the summer and heat in the winter. Many architects and builders already appreciate this and have found innovative ways to take advantage of concrete to achieve incredible energy efficiency.

A shining example of this is Winnipeg's award winning, LEED Platinum Manitoba Hydro Place, which capitalizes on concrete's thermal mass to achieve energy efficiencies upwards of 70% over conventional buildings. Since the vast majority of a building's greenhouse gas emissions come from the operation of that building, the climate benefits of Manitoba Hydro Place's efficiency utterly eclipse the GHGs generated during its construction, including those emitted to make the concrete. In other words, if climate change is our priority, energy efficiency will give us by far the biggest bang for our buck.

Not only that but - and this is never mentioned by the wood industry - when wood buildings reach the end of their service life, the wood used to construct them goes into landfill where it releases the sequestered carbon back into the atmosphere.

All of this is not to say that the cement and concrete industry are shirking their responsibility to lower their manufacturing GHG footprint – we have and continue to make tremendous strides on this front. Indeed, there is a raft of technologies being developed today that could ultimately make concrete "carbon-neutral".

At the same time, climate change is already happening and what we build today needs to be resilient in the face of those changes. Events like the May 20 tornadoes in Oklahoma City and last year's Hurricane Sandy are expected to become more frequent, with major implications for our cities and the families who reside in those communities.

Concrete has always been a material of choice when it comes to safety. For example, unlike wood, concrete buildings are not dependent on secondary fire safety systems like sprinklers to keep occupants safe or to protect the integrity of the structure. Concrete is already used under the harshest environmental conditions (think the Confederation Bridge) and, where climate disasters like those we have experienced recently in North America do strike, it's often only the concrete structures that remain intact.

At the end of the day, sustainable construction is more complex than choosing one material over another. Wood, steel and concrete all have and will continue to play a role in our built environment. But if sustainability is your criteria, as it should be and as it is increasingly around the world, a holistic life cycle perspective will often show concrete as the clear choice.

Rather than play favourites with "wood first" type policies, governments should accelerate the practice of setting high standards for buildings, not just on energy and climate factors, but across the range of sustainability criteria, including resilience, and let the market compete for meeting and exceeding those standards. It's the surest path to securing the innovation and leadership we need to secure our sustainable future.

HERE'S THE ARTICLE THAT WAS PUBLISHED IN THE **TORONTO STAR**:

Is the world ready for wooden skyscrapers?

By: Benjamin Gillies Freelance Opinion writer, Published on Sun May 19 2013

In 1885, the Home Insurance Building in Chicago opened its doors. At 10 storeys, it was the world's first skyscraper, and the first building to use a steel frame in its construction. Since then, the use of steel and concrete has proliferated, allowing North American architects to build taller and evermore impressive multi-storey structures.

While these two materials dominate modern high-rise construction, both come with serious environmental concerns. Three and 5 per cent of the world's carbon emissions are generated in steel and concrete production, respectively. As such, a growing number of architects argue we must find a new material to meet building needs in the 21st century, and they believe they have the perfect alternative: wood.

Of course, wood is not a new product; humans have been using lumber in construction for thousands of years. Even in 2013, almost 80 per cent of Canadians live in wooden homes. Because of very legitimate concerns of rot and fire, however, back at the turn of the last century building codes restricted wood structures to no more than four storeys — and these regulations have remained on the books since.

IS THE WORLD READY FOR WOODEN SKYSCRAPERS? (continued)

Today though, the technology exists to build timber-framed high-rises stretching up to 30 storeys. Proponents point out such wooden skyscrapers would not only be cheaper than their steel and concrete counterparts, but sustainably forested timber is also far more environmentally friendly than conventional construction materials. According to Vancouver architect Michael Green, there is enough wood grown every 13 minutes on this continent to make a 20-floor building, and unlike producing steel or concrete, which emits greenhouse gases, using wood in construction actually sequesters carbon.

In fact, due to the effects of climate change and insect infestation, there is a growing population of dead trees in North America. Instead of leaving these to decompose and release carbon dioxide into the atmosphere, advocates argue this bountiful resource could easily be harvested, treated, and put to use building up cities.

In 2009, the first modern wood high-rise was built in London. The nine-storey condominium tower proved hugely popular, with all 29 units selling out within an hour. A seven-floor building then went up in Sweden, and Melbourne, Australia, currently boasts the world's tallest modern wood building, a 10-storey skyscraper. The apartment block will soon be eclipsed, though, as Vancouver is reviewing a proposal for a 16- to 20-floor wooden tower, and Sweden has already approved a skyscraper of 30 storeys.

Certainly, many people may be skeptical of the feasibility of wooden cities, fearing the lumber will easily catch fire. Yet, as Geoff Triggs, an expert with LMDG Building Code Consultants, points out, wood high-rise construction does not use small two-by-fours. Rather, super-compressed mass timber — engineered wood layered together with adhesives or fasteners — is used to make huge panels 64 feet long and 12 feet wide. The compressed lumber has proven to be as strong as concrete but much lighter, which improves a building's structural integrity.

Most important, the compression process creates dense wood blocks that, much like a big fat tree stump in a fireplace, are very difficult to burn. When a fire does catch, it moves slowly and behaves predictably, allowing for uniform safety measures to be put in place. A 2012 study published by Surrey, B.C.'s fire chief noted that modern fire protection systems such as sprinklers (that did not exist when most regulations regarding wood building construction were adopted) "more than mitigate" the risks of building tall timber structures.

In the next 20 years, 3 billion people will be moving to cities around the world, and high-rises will be a critical part of their housing mix. According to wood advocates, modern safety measures and technology mean this ancient material can be an asset in building these new skyscrapers. The biggest hurdle will likely be convincing the public that wood is just as safe as conventional concrete and steel — but as more wooden buildings go up, engineers will be able to provide hard evidence as to whether or not they are more dangerous than conventional structures. It would be nice if they do prove to be secure; beyond the considerable environmental benefits, wood could add an appealing warmth to the skyline that is impossible to achieve with drab concrete and steel. If nothing else, it would give new meaning to the phrase "city of trees."

Benjamin Gillies *is a political economy graduate from the University of Manitoba, where he focused on urban development and energy policy. He works as a consultant in Winnipeg.*

For immediate release
May 1, 2013

NEWS RELEASE

BURNCO Acquires Saskatchewan's Taylor Concrete Group

Calgary/Saskatoon - BURNCO Rock Products Ltd has acquired the business assets of Saskatoon's Taylor Concrete Group. This acquisition gives BURNCO a permanent site in Saskatchewan and continues their growth agenda.

Doug and Bernie Taylor, owners of Taylor Concrete Group, have been providing quality products with personal care and service for over 30 years. When asked about the acquisition they stated: "We are very pleased to welcome a 100 year old family business to carry on providing exemplary service to customers in the Saskatoon area." Both have agreed to stay with the business through a transition period.

Michael Powell, President of BURNCO Rock Products Ltd states, "Taylor Concrete Group was attractive to us because their personal and business values are similar to those of BURNCO. They have been exceptional to work with over the duration of this acquisition process."

For the short-term, Taylor Concrete Group will run under the name, Taylor Rock Products, a BURNCO Company. All employees are anticipated to continue with the business. "When we go into new markets we prefer to use local talent and not parachute in Calgary managers," says BURNCO Rock Products Ltd CEO Scott Burns. "We intend to fully integrate with the local community." BURNCO's desire is to run the business as a successful supplier in the Saskatchewan market area.

BURNCO Rock Products Ltd is a fourth generation family business established in Calgary in 1912 by James F. Burns. Today, BURNCO is Canada's largest independent supplier of ready-mix concrete, a major supplier of asphalt and aggregate products and operates Western Canada's largest network of Landscape Centres.

-30-

For more information contact:
Dawn Mackie - (403) 640-9357
dawn.mackie@burnco.com

AGGREGATE | READY MIX | ASPHALT | LANDSCAPE CENTRES

IMPORTANT DATES TO REMEMBER:

June 26, 2013 **ARMCA Golf Tournament**
Texas Scramble,
Lacombe Golf and Country Club

Sept. 5, 2013 **ARMCA Golf Tournament**
Two Person Scramble, Lacombe Golf and Country Club
Registration information to be mailed out in July

CLASSES

Concrete Technology Level 1

Edmonton - Accepting registrations for November

Calgary - Accepting registrations for December

Concrete Technology Level 2

Edmonton - Early February, 2014

Calgary - third week of February, 2014

ACI Field Testing

Calgary –April 2014.

Edmonton –March 2014.

***** Note: Additional ACI & Concrete Technology classes will be held in the event that 16 students are enrolled. 6 – 8 weeks notification is required to book these extra classes*****

As there are only 16 spots available per class we encourage you to register today in order to secure a spot.

ARMCA also provides training to other provincial ready-mixed associations when requested.

Extreme R-Value Going Beyond R-30

ICFs have a reputation for energy efficiency. The combination of thermal mass, airtight construction, and two continuous layers of highly insulative EPS foam create walls that dramatically outperform standard wood-frame construction.

But an increasing number of homeowners and designers are going "beyond green" and calling for insulation beyond the R-23 or R-25 ICFs typically provide. They're asking for R-Values in the 30s, and in some cases even more. Coupled with that, Canadian and U.S. Energy Codes are calling for higher insulation values as well. (See *Energy Codes Favor ICFs* on p.26.)

Mike Kennaw, vice-president of sales at Fox Blocks reports that quite a few projects in the U.S. are already going net zero or code plus.

Gary Brown, vice-president of sales and marketing at Amvic Systems, explains, "The ICF as we know it is still a superior product, but we're beginning to see demand for an enhanced performance product."

"As building codes rise, a good number and builders and building owners will want to build beyond code," says Andy Lennox, vice-president of marketing at Logix ICF. "A decade ago, pushing the envelope was R-23. Today and tomorrow, those people are going to feel they need R-30+."

Until recently, that meant mechanically fastening sheets of rigid foam to the exterior of the ICF. It requires a good deal of ingenuity to work around the construction hassles it created; Windows, doors, siding, exterior decks and other features become difficult to attach when the furring strips are hidden under 2 inches (or more) of foam. And on multi-story buildings, the labor component is significant.

Until recently, additional insulation required fastening sheets of foam to the outside of the building, a labor-intensive process that also complicated the entire build.

Graphite-enhanced foam boosts R-Values by about 15%.

To meet demand while simplifying installation a number of ICF manufacturers have introduced products that offer "off-the-shelf" solutions for extreme R-Value projects. These solutions have varied from offering thicker side panels or foam inserts to switching to a graphite enhanced EPS bead, which offers slightly higher R-Values in the same wall thickness. Some companies pursued multiple alternatives. Logix ICF, for instance, offers a "Platinum-Series" graphite-infused block, an XRV knockdown panel with up to 8" sidewalls, and a D-Rv foam insert.

Here's a closer look at each of the options:

Graphite-Enhanced Foam

In the 1990s, German chemical giant BASF developed a new type of EPS bead named Neopor. Coated with powdered graphite, Neopor has higher R-Values and reflects more heat than regular EPS, thanks to its dark gray color. It was introduced to the North American market in 2006.

In 2009, Logix unveiled their "Platinum Series" ICF made with Neopor. In January 2011, Fox Blocks followed suit with their "Silver Fox" lineup. The

EPS insert panels, like this Boost-R by Reward, make it easy to increase insulation values with minimal labor.

graphite-enhanced foam delivers about 15% more insulation per inch compared to regular EPS.

"The biggest advantage is that you go from R-25 to R-28 without increasing the wall thickness," says Lennox. "And from a molder perspective, we can use the same molds and tooling." The additional R-3 costs the builder an additional $0.40 sq. ft. and does not increase wall thickness or increase the distance between the furring strip and the exterior wall face.

It does not, however, create a R-30 product. Kennaw admits, "with the upcoming R-Value requirements, graphite bead is only going to provide the solution in a small portion of the country."

Foam Inserts

In order to push the R-Value of an ICF wall beyond 30, the total amount of foam in the ICF needs just under seven inches of foam. While that foam could be adhered to the outside of the ICF after the fact, better solutions exist. Using thicker sidewalls or foam inserts accomplishes the same purpose with much less labor.

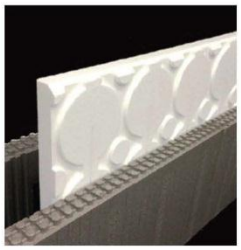
A handful of companies have developed foam inserts that fit inside the core, effectively boosting R-Value without having to design an entirely new product line-up.

The Boost-R Panel by Reward and D-Rv panel by Logix ICF both measure 48"x16", the same dimension as their ICF. Both panels have series of slots cut in them that allow it to slide between the webs and lock into place. They can be installed on either side of the core.

"The Boost-R Panels are cost-effective solution, from both a material and installation standpoint, to achieve higher actual R-values," says Hank Pfeiffer COO, Reward Wall Systems.

"This really is a labor saver," says Lennox. "You can install the panels into the block at the time you're placing them, or have them pre-installed. It takes very little time, especially on tall walls and mid-rise and high-rise buildings."

Available in two-inch increments (R-8 for white foam; R-9 for graphite), they can be installed in multiples for even higher R-Values. For instance, two 2-inch Boost-R Panels would fit neatly inside a 10"-core Reward ICF (15" total width), creating an R-39 wall with a 6" concrete core.



The techniques discussed in this article can often be combined. Here Logix' D-Rv panel is used in conjunction with their graphite-enhanced Platinum Series.

Logix's Pro D-Rv will create R-Values from 25 to 33; with Platinum Series inserts, it rises to 28-37.

Quad-Lock Building Systems also offers a four-inch thick insert that matches the dimension of their standard block (48x12). The "Extra Panel" allows the additional insulation to extend completely into corners.

Fox Block uses an "Energy Stick" that is vertically oriented. The long pieces of foam (measuring 2" thick and 32" tall) are just less than 8" wide so that slides easily into place between the ties inside the wall cavity.

A typical eight-foot wall would require three Energy Sticks (96") in every space between ties.

Kennaw says that the system reduces waste, and can fit into the 90 and 45 degree corner blocks, as well. Like the panels, Energy Sticks can be double- or triple-stacked for extreme R-Values. Three graphite Energy Stick layers inside a 12" cavity block would create R- 48+ with 6" of concrete.

Reward and Fox Blocks executives say the inserts are intended strictly for insulation value.

Lennox, at Logix, claims that offsetting the D-Rv panel (spanning the joints in the block) can make the wall even stronger and more forgiving on pour day.

"It locks everything in place, and you can get a stronger, straighter wall," says Lennox. "It also serves as a drainage layer for the core when a supplemental drainage layer is specified."

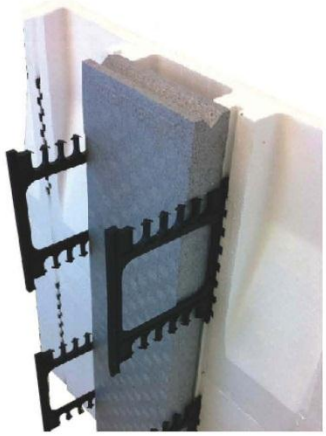
Thicker Sidewalls

As mentioned earlier, at least four companies have met demand for higher R-Value by offering thicker sidewalls. Three of them are knockdown forms. The other, Amvic, introduced an entirely new "third generation" ICF named Plus 3.30.

One of the first ICFs to offer an enhanced performance product is Quad-Lock, which introduced the PLUS panel with 4 ¼ inches of foam per side, in 2005. "It all goes back to our European roots," explains Doug Bennion, technical manager for the company. "At the time, European codes were light years ahead of the U.S. and Canada, and our directors wanted all the product for the European market available in the U.S.

The company has recently rolled out a 3 ⅛" thick panel dubbed QPX3 as well. Both the 3" and 4" panels can be used on interchangeably with the standard 2 ¼" panel and can be used in conjunction with the company's foam inserts as well. The wide range of combinations offered in sidewall thicknesses and inserts allow designers to easily fine-tune insulation values at virtually any level.

The Logix knockdown form is called the XRV (for "Xtreme R-Value) and can be mixed and matched with any other form in Logix's KD (knockdown) lineup. That means taper-tops, brickledges, and other specialty forms can be incorporated easily. The thicker panels are available in one-inch increments from four to eight inches and can be added to either (or both) sides. Eight inches of Platinum foam on both



sides of the wall yields a theoretical R-71!

TF Forming Systems is a vertical ICF that offers a range of sidewall thicknesses. While the standard sidewall is 2 ½ inches, they can custom-cut sidewalls to virtually any dimension.

"Because our foam is wire-cut and not molded, we can easily adjust sidewall thicknesses and insulation values to virtually any number," says Richard Mortlock, director of operations at TF. "The customization adds very little to the cost."

TF uses a full-height tie that fits into a groove cut into the foam after the thickness is determined, so the furring strip stays near the exterior faces regardless of the foam thickness. And with ties for core sizes ranging from four inches to 36 inches, there are really no constraints.

"We developed the product in response to the more sophisticated consumer that's looking for extra R-Value in the wall, or that wants to move thermal mass to the inside," says Mortlock. "We've seen it used in net-zero homes, passive homes, LEED projects, etc. On the commercial side it's being used in freezers, cold storage, and so on."

Amvic is the only manufacturer to design a new form with thicker sidewalls and factory-molded ties.

"We wanted to provide an all-in-one solution that wouldn't require any extra labor or cost on the part of the installer," says Brown. "We designed a block that is significantly stronger than the previous one, easier to stack and install, and our previous block was very robust." He claims the Amvic Plus 3.30 will deliver straighter walls, stronger corners, and better drainage in the interlock when compared to the typical block.

"We looked at everything, and at the end of the day, we selected what would be best for the installer, the overall performance of the system—and from a cost perspective—the biggest bang for the buck," he continues.

The company invested several hundred thousand dollars for the cost of the mold.

The two EPS side panels have been thickened by 30% (going from 2.5" to 3.30" per side) for a total EPS width of 6.5". The wider EPS foam increases the R-value of the block from R22 to near R30, giving it the highest R-value of any factory-assembled ICF block.

The 90-degree corner is massive, each block providing 7.78 sq. ft. of wall area. The 45-degree corner block is an equally astonishing 6.22 sq. ft. Diagonal cross ties and additional furring strips put them among the strongest corner blocks in the industry.

Conclusion

"These products are perfect for net-zero and passive house projects" says Pfeiffer. "We've seen a considerable amount of interest, primarily driven by green/sustainability concerns."

He admits that the majority of those inquiring end up using regular ICFs. "It's a cost concern," he says. "For those on a budget, it's hard to justify the return."

Regular ICFs are far above current code requirements, and most energy loss is through the roof and windows anyway. "I think they're finding that money may be better spent on focusing on roof insulation, windows, connections, and penetrations. Air infiltration is a big deal, and eliminating that may be a better first step than adding foam," he says.

Still, there will always be those interested in building as efficiently as possible. "A substantial portion of the net zero market is requiring R-40 and beyond," says Lennox. "Conditioned storage is another potential growth market for these products. For ICFs generally and Logix specifically, our natural place is on the cutting edge." ■

Amvic's Plus 3.30

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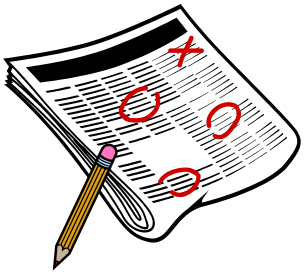

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