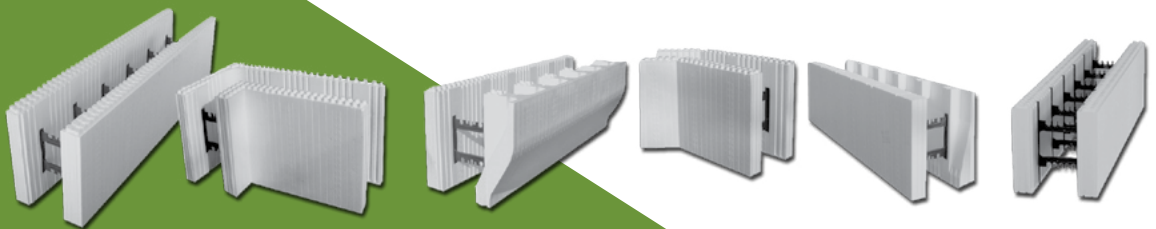




**Specification Package**  
**UNITED STATES**





**Build Anything Better.**



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Full Logix ICF Technical Library	<b>LogixICF.com</b>



# Build Anything **Better.**<sup>™</sup>

DISCOVER A COMPLETE CONSTRUCTION SOLUTION  
WITH BUILT-IN SAVINGS, RESILIENCE  
AND COMFORT.



- 2 SMART FUNDAMENTALS
- 3 RUGGED REINFORCED CORNERS
- 4 INTELLIGENT INTERLOCK
- 5 DESIGNED FOR COMMERCIAL CONSTRUCTION
- 6 BUILT-IN SAVINGS, RESILIENCE & COMFORT
- 7 BUILD ANYTHING BETTER WITH LOGIX
- 8 EFFICIENT CUTLINE DESIGN
- 9 WALL OPENINGS — THE COMPLETE SOLUTION
- 10 SPECIALTY PRODUCT SOLUTIONS
- 11 LEADING R-VALUE SOLUTIONS
- 12 THE SOLUTION FOR ICF WALLS WITH EXPOSED CONCRETE

A PRODUCT BY



ICF Pro-Link is a database that matches incoming ICF leads with ICF-experienced installers, architects, designers and engineers.

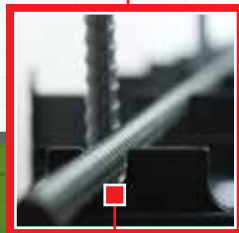
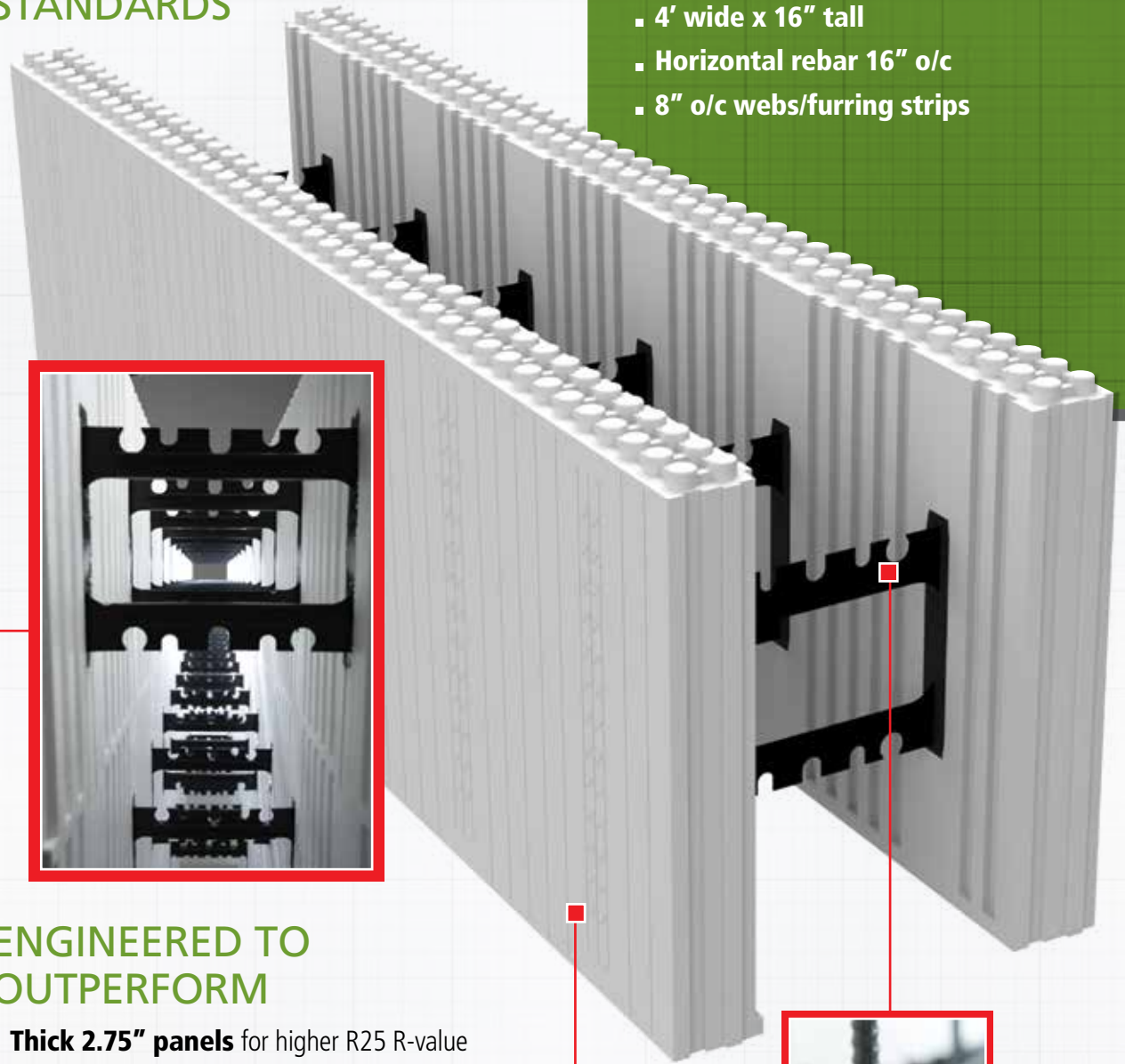
[ICFProLink.com](http://ICFProLink.com)

888.415.6449 ■ [LogixICF.com](http://LogixICF.com)



**CONFORMS WITH  
ACCEPTED CONVENTIONS &  
STANDARDS**

- 4' wide x 16" tall
- Horizontal rebar 16" o/c
- 8" o/c webs/furring strips



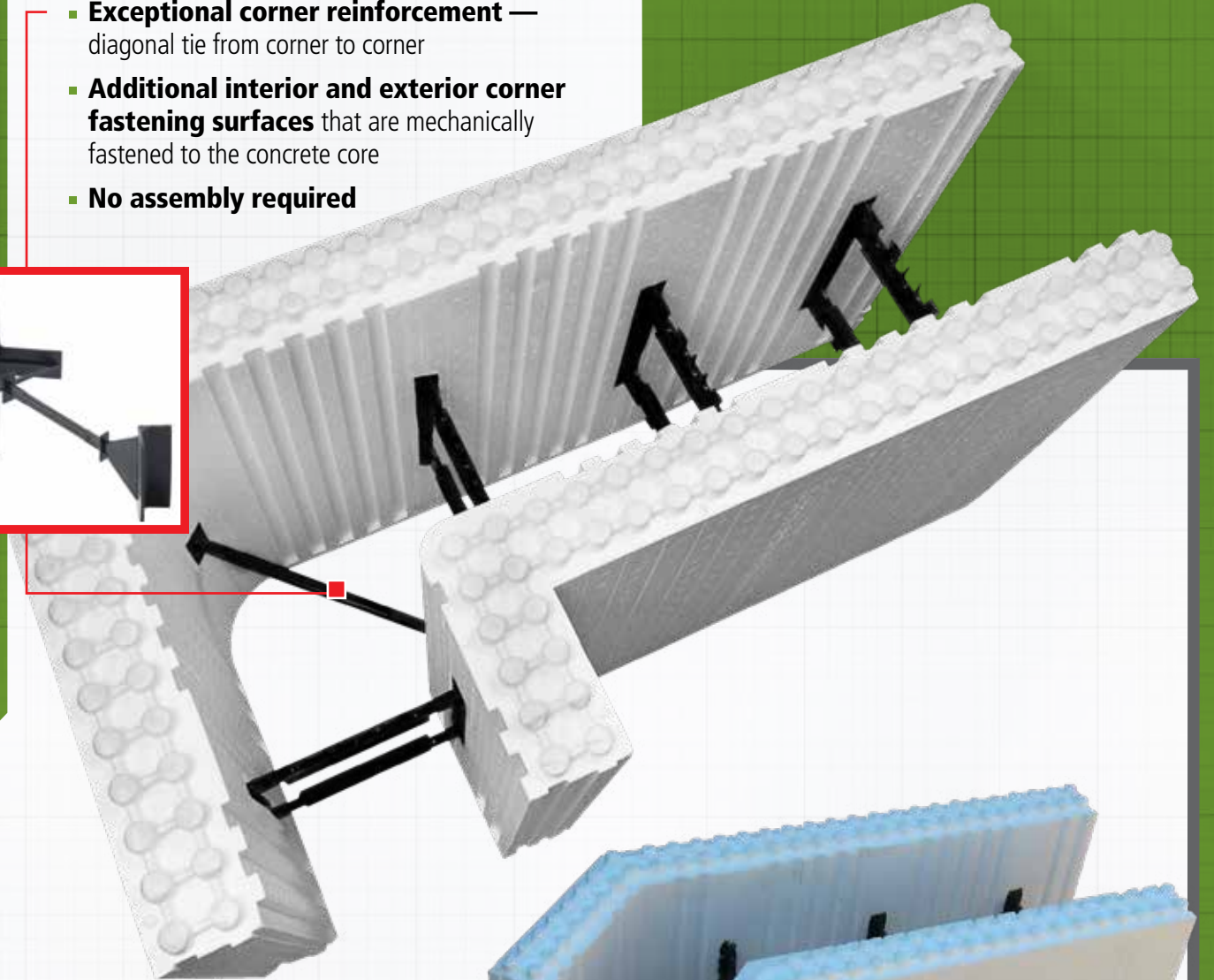
**ENGINEERED TO  
OUTPERFORM**

- **Thick 2.75" panels** for higher R25 R-value
- **Walls go up straighter and faster**
- **Wiring channels every 16" o/c** with no webs to cut through
- **Maximum concrete flow** to prevent voids
- **Virtually indestructible rebar holders** make one-man long bar placement easy

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2

- **Superior form pressure resistance** provided by rugged 2.75" thick panels
- **One tie every 1.08 sq. ft.** for even more support
- **Exceptional corner reinforcement** — diagonal tie from corner to corner
- **Additional interior and exterior corner fastening surfaces** that are mechanically fastened to the concrete core
- **No assembly required**



**90 DEGREE CORNER**

- **32" leg for less cutting + less waste** with short (< 2') offsets/returns

**45 DEGREE CORNER**

- **Preformed 45° corners** for a quick, easy build of unique designs

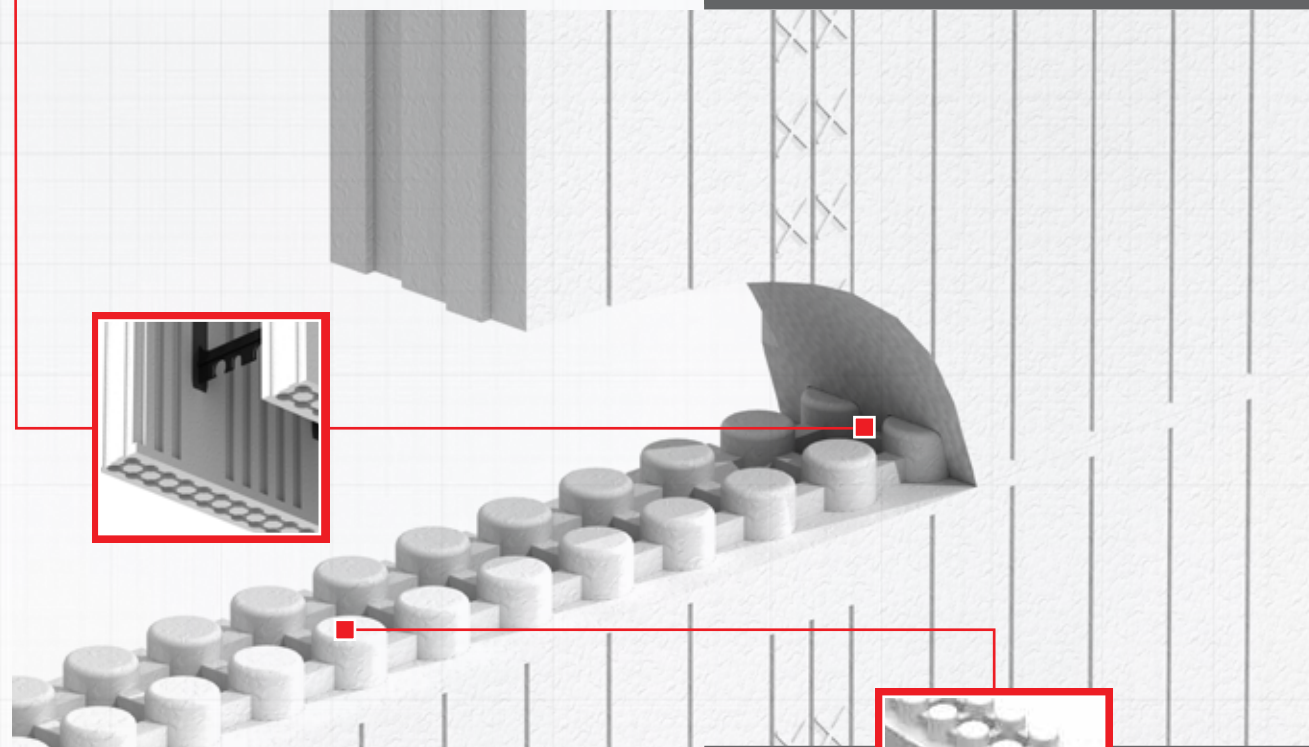
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3



**THE LOGIX BASE PLATE**

- **Maximum bearing surface**
- **No bottom nodules** to cut away at approximately \$1.50 per block
- **Yields intuitive and predictable step footing heights**
- **Minimizes compression**



**TANDEM INTERLOCK DESIGN**

**COMMERCIAL CONSTRUCTION IS AS FAST AND EFFICIENT AS 1-2-3!**

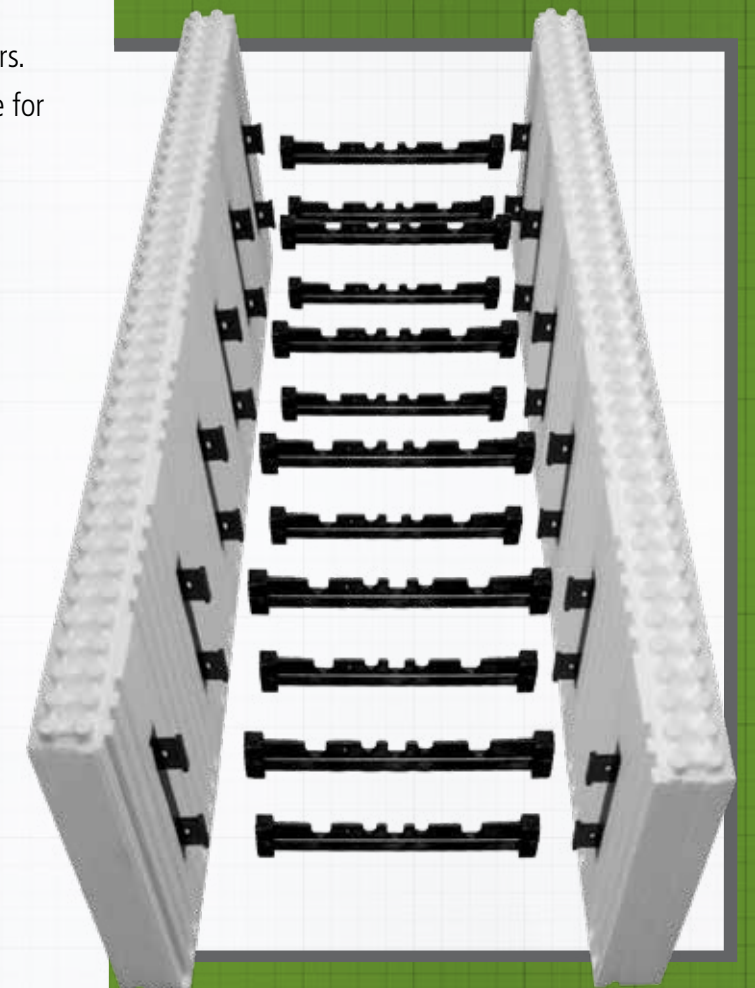
**Why? Because unassembled Logix KD is fully compatible with assembled Logix Pro™.**

1. Install back Logix KD panel and attach internal web connectors.
  2. Install heavy commercial rebar patterns quickly, moving web connectors around as needed.
  3. Attach front Logix KD panels to web connectors.
- Then use assembled Logix Pro everywhere else for maximum efficiency.



**LOGIX IS PERFECTLY DESIGNED TO SEAMLESSLY ACCOMMODATE COMMERCIAL REBAR.**

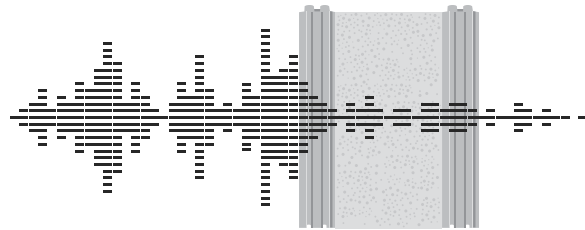
Other ICF brands force builders to do it backwards — and waste a tremendous amount of time and money building their complicated rebar patterns inside tight wall cavities obstructed by webs.



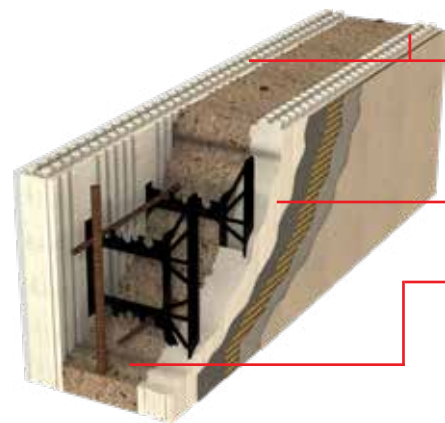
**THE LOGIX FACE PLATE**

- **Maximum Friction Fit for a snug and secure interlock** — up to 32% more interlock contact!
- **Fast and easy to assemble** (and disassemble when needed)
- **No plastic, metal or locks to fight during assembly**
- **Built-in dams to seal against bleed water**
- **Sufficient bearing surface** to minimize compression

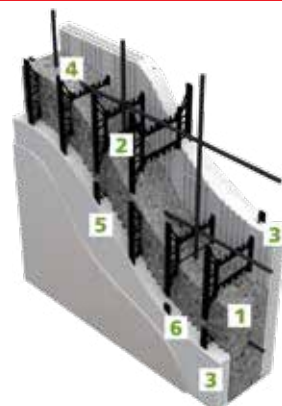




Outside noise is reduced to a whisper.



1. Two 2.75" thick panels of continuous foam insulation.
2. An air-tight wall assembly.
3. The temperature moderating thermal mass of concrete.



1. Concrete
2. Steel Reinforcement
3. Insulation
4. Air Barrier
5. Vapor Barrier
6. Furring Strips

**BUILT-IN COMFORT!**

- Drafts and cold spots in the home are eliminated in northern climates.
- Humidity is easily controlled in warm, moist climates.
- EPS foam and concrete do not off-gas unhealthy, allergy-aggravating remittances.
- No nutrient source exists in the Logix wall assembly for unhealthy mold growth.

**BUILT-IN ENERGY-SAVERS!**

THREE built-in energy-saving elements deliver up to 50% energy savings.

**BUILT-IN RESILIENCE!**

- **Wind Protection** — Wind-rated to over 300 mph
- **Fire Protection** — 4-hour fire rating
- **Earthquake Protection** — Engineering available for all seismic zones
- **Moisture Protection** — Does not rot!

**BUILT-IN COST-SAVINGS!**

Six construction steps. One simple package.  
= Less labor  
= Lower construction costs  
= Faster builds

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6



- BASEMENTS
- COMPLETE HOMES
- HIGH PERFORMANCE HOMES
- MID-RISE MULTI-FAMILY BUILDINGS
- COMMERCIAL BUILDINGS
- SCHOOLS
- ASSISTED LIVING FACILITIES
- DISASTER RESILIENT HOMES & BUILDINGS
- OTHER SPECIALTIES



FOR COMPREHENSIVE SUPPORT, VISIT [LOGIXICF.COM](http://LOGIXICF.COM).

7

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- **2x more cutlines than most ICFs**
- **2x the ability to cut on a cutline**
- **2x the chance to preserve the interlock**
- **With efficient running bonds**, there's no need to brace with numerous wood boards

LOGIX GIVES YOU  
CUTLINES EVERY 1".  
THAT'S TWICE THE  
NUMBER OF MOST  
OTHER BRANDS.

It's always better to cut on a cutline. That's why every brand has them — but Logix gives you more!

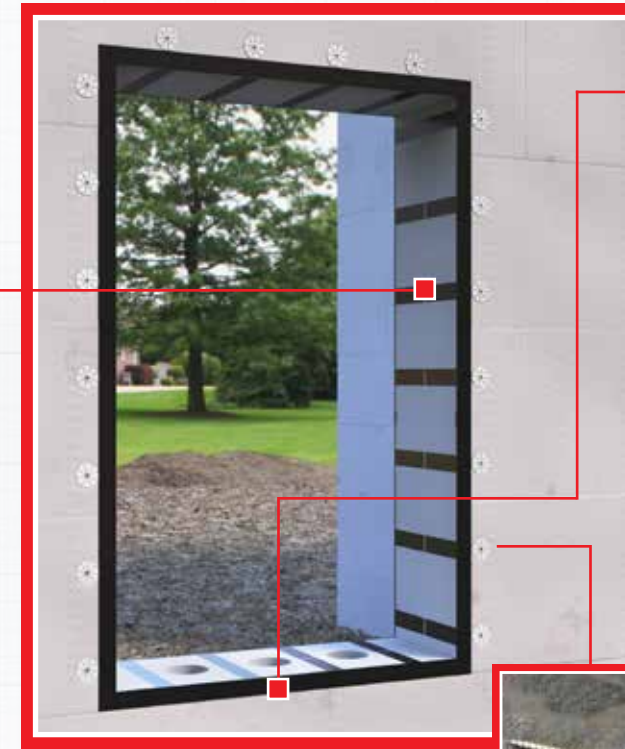


Many other ICF brands have only 2" cutlines — that's only half the number of cutlines you get with Logix ICF.

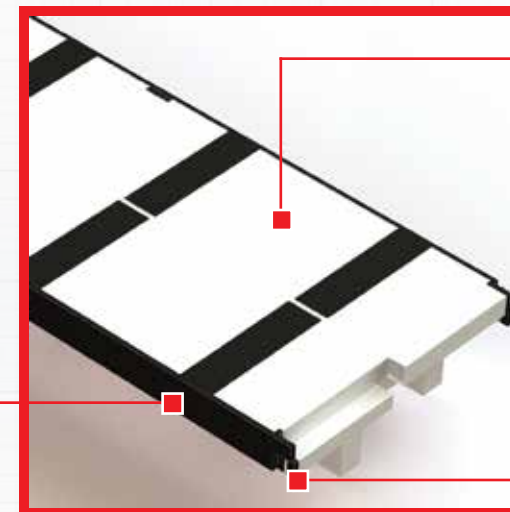
The cutlines in other brands are so infrequent, in fact, that it's often not worth trying to cut on one at all!

That's also why other brands recommend labor-intensive stack seams braced with wood in EVERY wall section. And what they don't tell you is that every 9' stack bond (which needs to be braced on both sides and then the wood removed after the pour) has a hidden time and materials cost of up to \$70 per, adding \$100s to the cost per floor.

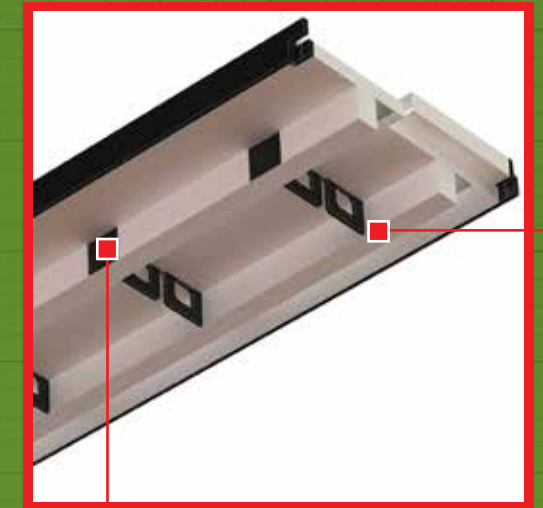
**LOGIX PRO BUCK™**



- **Strong, secure, reliable fastening** — high-strength exposed furring strips
- **Fast picture framing to the internal flanges every 8" o/c** (that do not have to be removed for finishing!)



- **Concrete anchors every 8" o/c** ensure a solid connection to the concrete wall and provide a chair for horizontal rebar placement
- **Easy, void-free concrete placement under the opening** — foam-only areas for 4" access holes

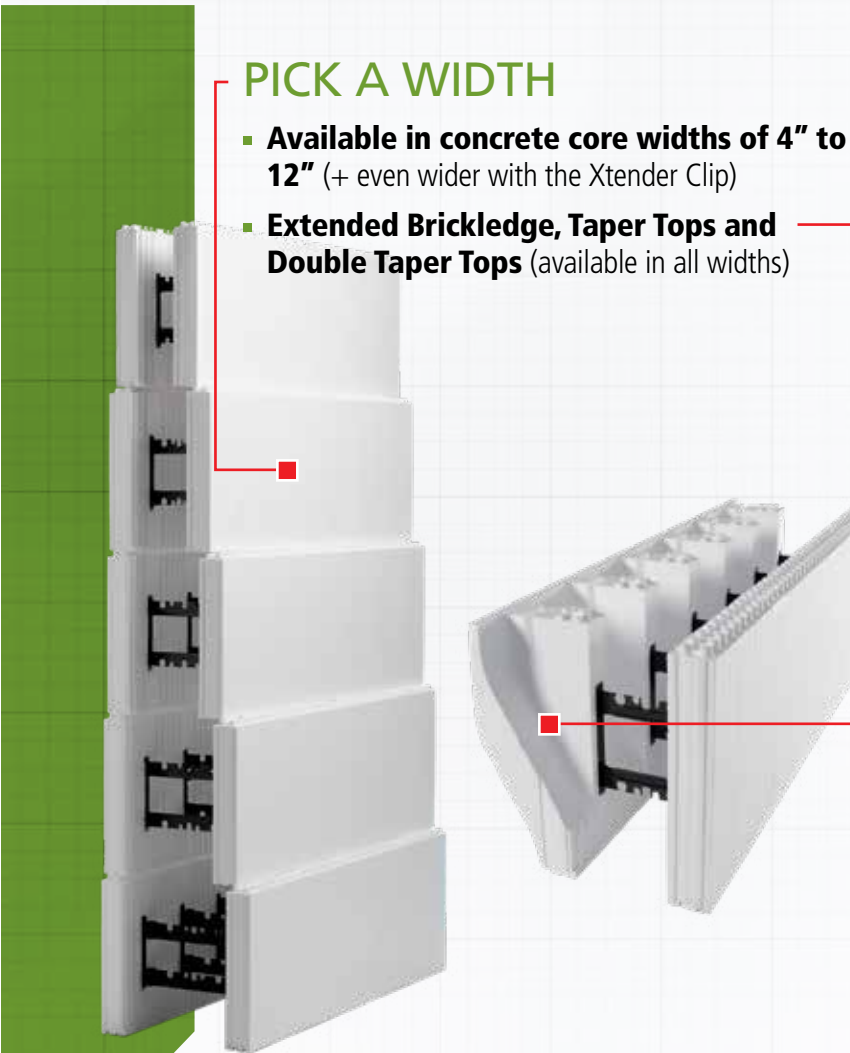
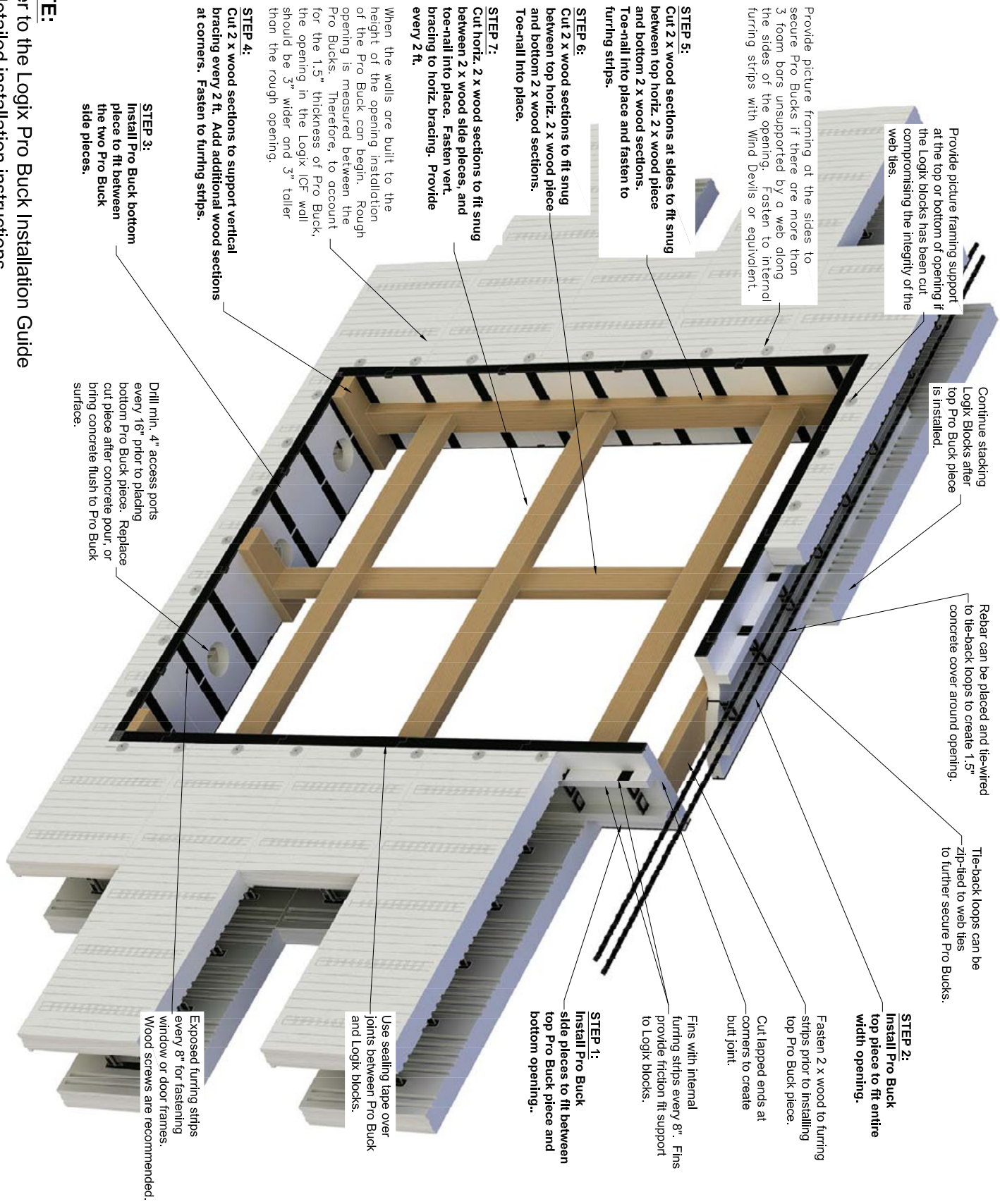


- **Strong, dependable, insulating foam** — high-density 2 lb. foam
- **Minimal waste** — leftover pieces securely clip together end-to-end, generating minimal waste

**WATCH THE VIDEO**



**NOTE:**  
Refer to the Logix Pro Buck Installation Guide for detailed installation instructions.

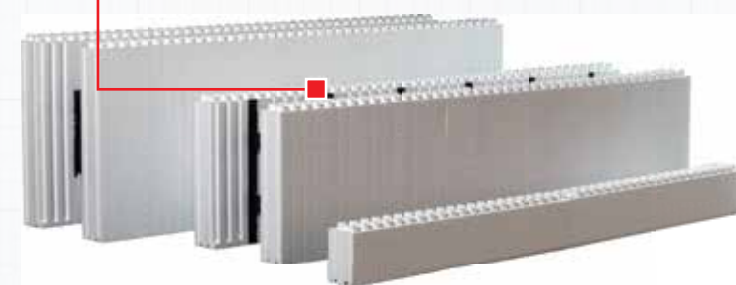


### PICK A WIDTH

- Available in concrete core widths of **4" to 12"** (+ even wider with the Xtender Clip)
- Extended Brickledge, Taper Tops and Double Taper Tops (available in all widths)

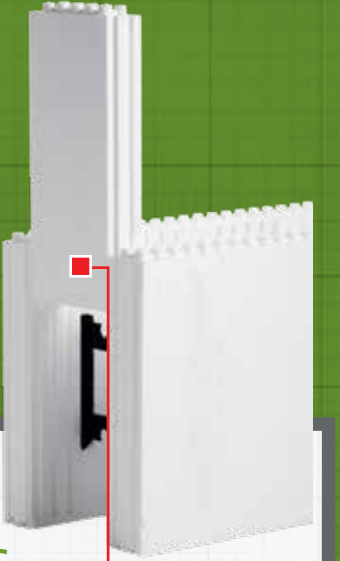
### PICK A HEIGHT

- Use 12" high Logix V12 and 4" high Height Adjusters to **hit ANY 4" height increment** without cutting a block



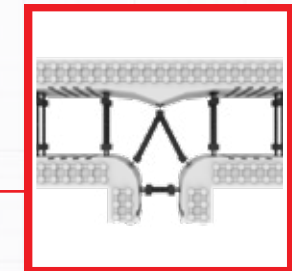
## SPECIALTY PRODUCT SOLUTIONS

- Save real time and money on the job site
- Across a large variety of concrete core widths (not just 6" and 8")

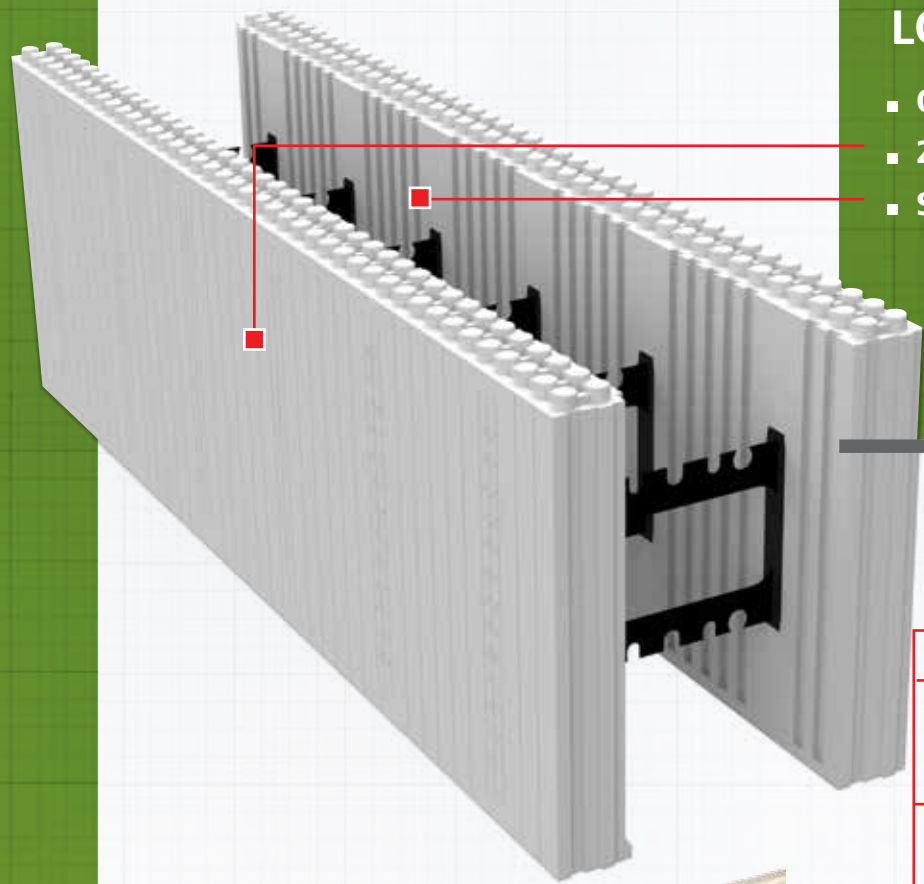


### SPECIALTIES INSTALL FAST

- Logix End Caps** — terminate walls FAST!
- Pilaster Blocks** — form pilasters in tall walls FAST!
- T-Blocks** — form T-Walls FAST!





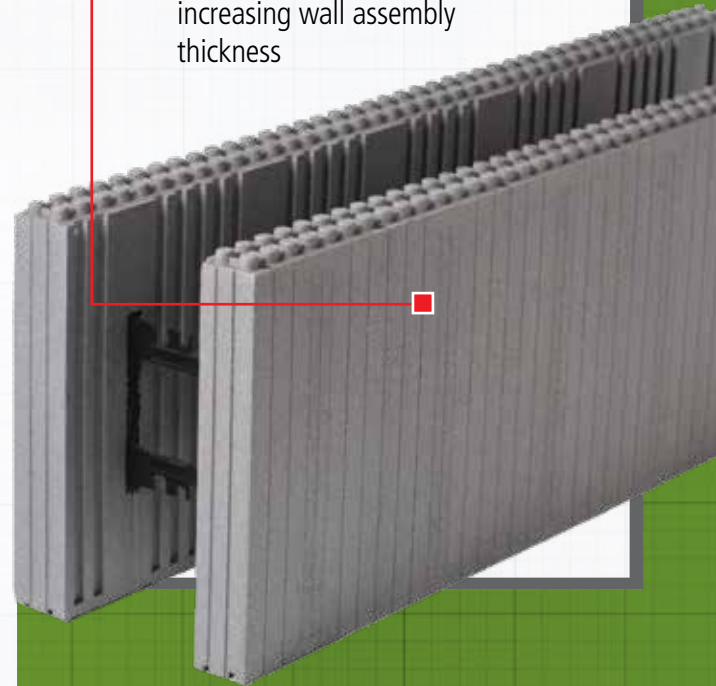


**LOGIX PRO™**

- Our flagship product line
- 2.75" thick foam panels
- Superior R25 wall assembly

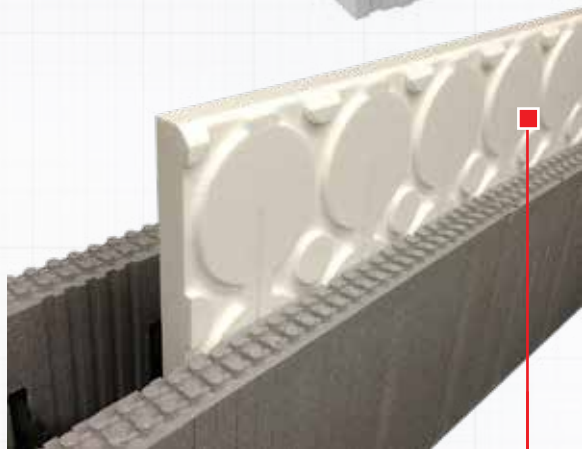
**LOGIX PLATINUM SERIES®**

- Made with Neopor® by BASF®
- R-value enhanced with graphite infrared reflectors and heat absorbers
- Delivers a full R28 without increasing wall assembly thickness

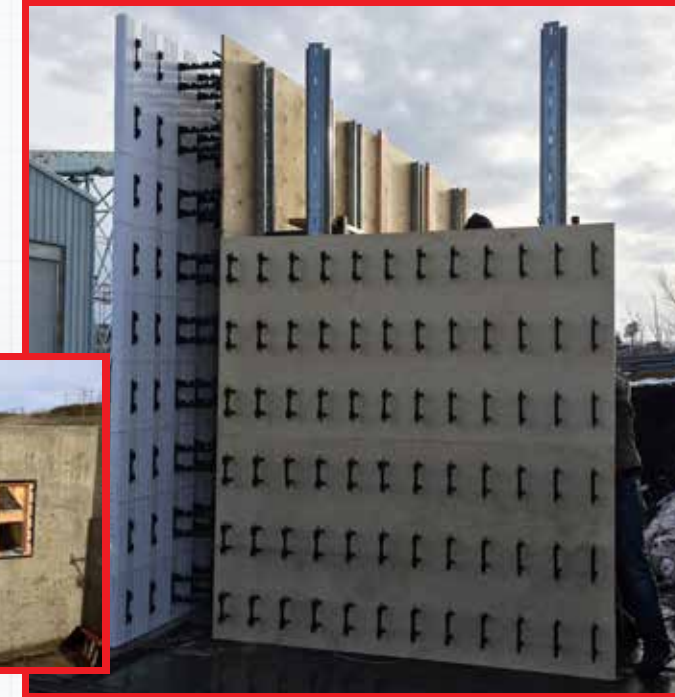


**LOGIX D-RV®**

- Efficient slide-in panel
- Delivers an optional drainage plane
- Increases wall assembly R-values to R33 – R37
- Can also be used to reduce sound



**LOGIX XP-1™**



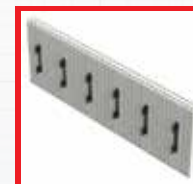
**ENGINEERED FOR SUPERIOR STRENGTH AND STABILITY**

- 4' x 8' plywood sheets minimize the number of seams and create a secure auto-offset
- Fool-proof and code-compliant rebar coverage is designed right into the XP-1™ system

**INTELLIGENTLY IMAGINED TO MINIMIZE COSTS**

- The ONLY parts ordered through Logix are:

KD Panels



KD Connectors



XP-1™ Side Webs

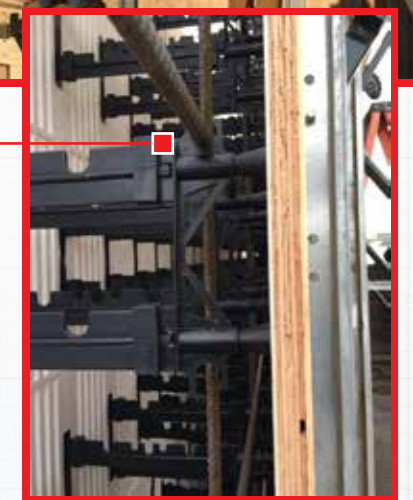


XP-1™ Cones



DESIGNED FOR  
MAXIMUM SIMPLICITY,  
EFFICIENCY, SPEED AND  
VERSATILITY

- XP-1™ is self-aligning and forgiving
- The 4' x 8' plywood sheets are reusable
- The 10 available wall thicknesses allow for the seamless integration of XP-1™ walls with many regular ICF and bare concrete walls



All 4' x 8' plywood sheets and screws are purchased **LOCALLY!** Needless freight charges and mark-ups are eliminated.





## LOGIX INSULATED CONCRETE FORMS MATERIAL PROPERTY DATA SHEET

This document is intended for general information purposes only regarding specifications for Logix Insulated Concrete Forms (herein referred to as Logix ICF). Technical specification sheet, as per Construction Specifications institute (CSI) formatting, can be downloaded at [www.logixicf.com](http://www.logixicf.com).

### 1 PRODUCT DESCRIPTION

- Logix ICF consists of two flame-resistant EPS boards separated by polypropylene webs.
- Logix ICF consists of solid form units (LOGIX Pro Forms) or knock-down forms (LOGIX KD Forms) or a combination of both Logix form and Logix KD forms, referred to as LOGIX Hybrid Forms.
- The EPS foam boards are a minimum 70 mm (2.75 inch) thick, and can range in thickness of 70 (2.75 inches), 102 (4 inches), 127 (5 inches), 152 (6 inches), 178 (7 inches) and 203 mm (8 inches), which gives a total EPS foam board thickness of 140 (5.50 inches), 203 (8 inches), 254 (10 inches), 305 (12 inches), 356 (14 inches) and 406 mm (16 inches), respectively.
- The webs separate the EPS boards to form 102 mm (4 inch), 159 mm (6.25 inc), 203 mm (8 inch), 254 mm (10 inch) and 305 mm (12 inch) cavities, which create the concrete wall thicknesses. With Logix Xtenders the concrete wall thickness can be increased to virtually any thickness.
- The webs are spaced every 203 mm (8 inch) on centre horizontally and 406 mm (16 inch) on centre vertically, and contain a 32 mm (1.25 inch) wide furring strip that extends the height of each ICF block. The furring strips shall facilitate fasteners for attachment of both exterior and interior finishes.
- A furring strip is located in the corners of corner forms. The furring strip consists of both a vertical and horizontal component. The vertical component extends nearly the full height of the form, extends a minimum of 64 mm (2.5 inches) from both sides of the corner, and a minimum of 5 mm (0.2 inches) thick. The horizontal component is a minimum 51mm (2 inches) in height, extend a minimum of 152 mm (6 inches) from both sides of the corner, and a minimum of 5 mm (0.2 inches) thick.
- The webs facilitate rebar placement in accordance with CAN/CSA A23.1, and ACI 318

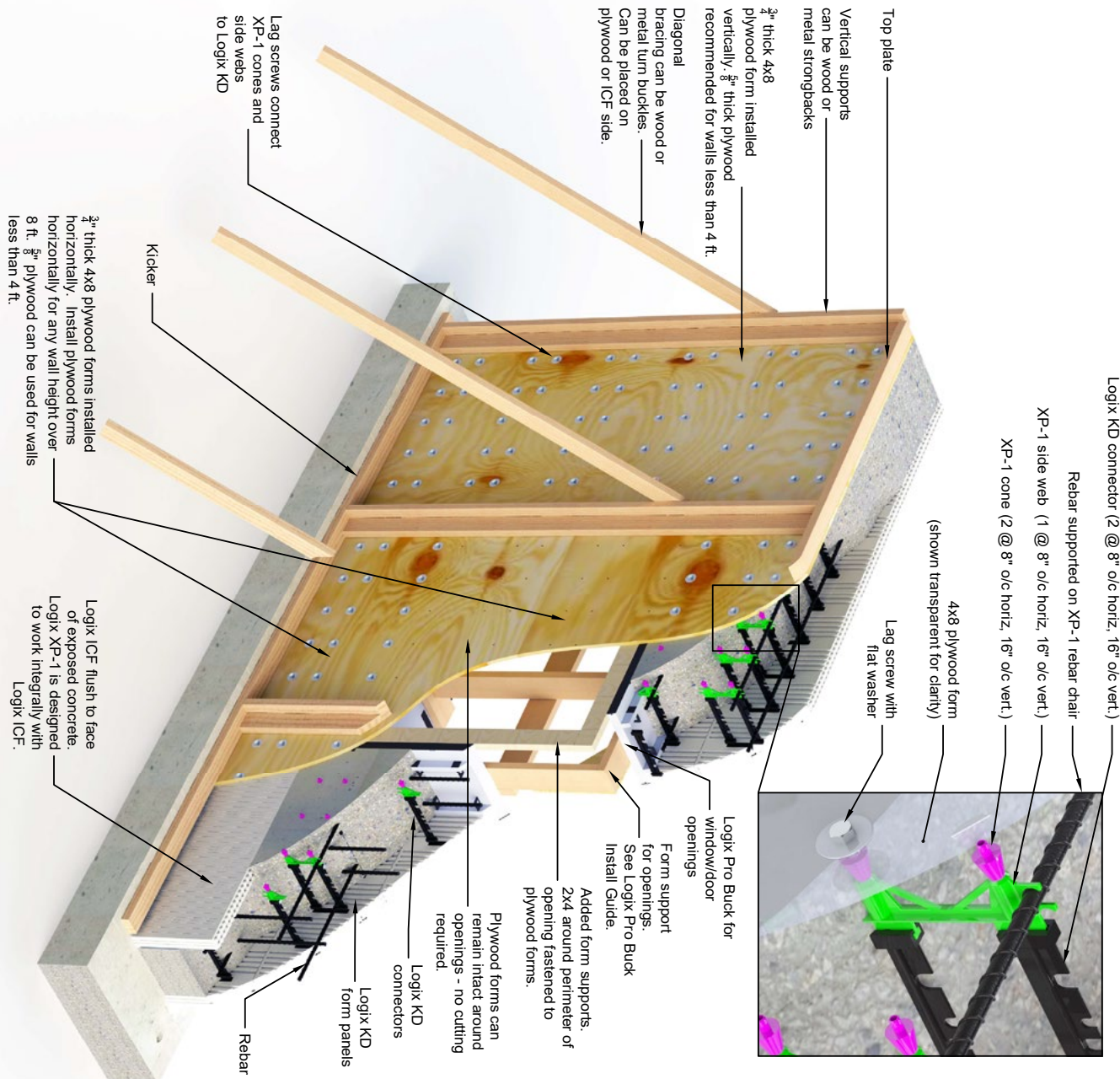
### INSTALLATION STEPS

Before erecting XP-1 wall systems, the XP-1 side webs and cones should be assembled and fastened to the plywood sheets. The XP-1 wall system should only be built on relatively level ground, and free of debris.

1. Lightly tap the XP-1 cones with a hammer or rubber mallet into the holes drilled on the 4x8 plywood sheets. For drilling locations refer to "Logix XP-1 - Wall Thickness Charts & Plywood Drilling Locations."
2. Connect XP-1 side webs to the cones installed on the plywood sheets. Each XP-1 side web is easily hand-placed and friction fits onto two XP-1 cones.
3. Ensure the assembled XP-1 cones and side webs are properly secured to the plywood by using 1" flat washers and appropriate lag screws. For screw sizes refer to "Logix XP-1 - Wall Thickness Charts & Plywood Drilling Locations." Make sure to lay the plywood forms on a flat surface, with the XP-1 side webs facing down, before fastening screws. This will ensure the XP-1 side webs do not fall off when fastening.
4. Using 2x4s plumb and level a framed wall with a bottom kicker and top plate, and vertical supports every 4ft. Secure to the ground following the layout of the wall and using diagonal bracing to keep the framed wall plumb. Steel strong backs and turnbuckles can also be used to plumb the wall.
5. Place the first course of plywood sheets vertically or horizontally and fasten to the framing members making sure the vertical edges of the plywood sheets align with the approximate center of the vertical supports. The vertical supports will provide proper edge nailing for the plywood sheets.
6. Apply form oil to the inside face of the plywood forms. Do not use petroleum based oil in cases where the KD panels may be in contact with the form oil.
7. Start placing KD form panels once the plywood sheets are at most 8ft tall. The KD forms connect to the XP-1 side webs with KD connectors.
8. Placement of rebar can take place as the KD panels are installed.
9. Follow the same procedures you would use to create openings in Logix ICF walls. There is no need cut around the plywood. For added support fasten 2x4s around the perimeter of the r/o against the plywood.
10. Apply additional form support at end walls and corners. Refer to XP-1 Installation Guide for further details.

### FEATURES

- Bracing can be placed on either ICF or wood form side depending on site conditions
- Plywood can be placed vertically or horizontally. Recommend installing sheets horizontally for any wall height other than 8ft.
- No need to cut plywood for openings.
- XP-1 side webs have built-in chairs for horizontal rebar to allow proper rebar cover
- 3/4" or 1/2" plywood can be used.
- Stripped Plywood forms, lag screws and washers can be reused for other jobs
- After concrete sets and wood forms are stripped cones can be removed easily with plyers and optionally patched just the same as conventional concrete
- Designed to work integrally with LOGIX ICF.



## LOGIX XP-1

Refer to the Logix XP-1 Installation Guide for detailed installation instructions.





## 2 LOGIX PRODUCTS

LOGIX manufactures both assembled and unassembled insulated concrete form units. LOGIX assembled forms, known simply as “LOGIX Pro”, are delivered to the job site as assembled form blocks. LOGIX unassembled forms (or knock-down forms), known as “LOGIX KD”, are delivered to the job site in components that make up the form blocks - the form panels and KD Connectors. LOGIX KD are assembled on the job site.

Below is a summary of the types of LOGIX and LOGIX KD forms available.

### LOGIX (assembled form blocks)

	Description
LOGIX Pro	White in color
LOGIX Pro Platinum <sup>3</sup>	Grey in color. Offers higher R-value <sup>1</sup> than LOGIX Pro.
LOGIX Pro TX	LOGIX Pro with termite resistant additive Preventol <sup>2</sup> .
LOGIX Pro Platinum <sup>3</sup> TX	LOGIX Platinum with Preventol.

### LOGIX KD (unassembled form blocks)

	Description
LOGIX KD	White in color
LOGIX KD Platinum <sup>3</sup>	Grey in color. Offers higher R-value <sup>1</sup> than LOGIX Pro.
LOGIX KD TX	LOGIX Pro with termite resistant additive Preventol <sup>2</sup> .
LOGIX KD Platinum <sup>3</sup> TX	LOGIX Platinum with Preventol.

#### Notes:

1. See Logix Design Manual, Section 8.5 for Logix R-values.
2. Preventol is an effective termite resistant additive.
3. Care should be taken to protect exposed foam surfaces from reflected sunlight and prolonged solar exposure until wall cladding or finish material is applied. Shade exposed foam areas, or remove sources of reflective surfaces, where heat build up onto exposed foam might occur. For more information refer to BASF Technical Leaflet N-4 Neopor, “Recommendations for packaging, transporting, storing and installing building insulation products made from Neopor EPS foam.” (The BASF Technical Leaflet is attached to every bundle of LOGIX Platinum forms delivered to a job site).

## 3 CODE/CERTIFICATION APPROVALS

- QAI evaluation to IBC and IRC 2012
- City of Los Angeles Research Report No. 25518
- Miami-Dade County Approval No.09-0714.03
- State of Florida Certification of Approval No.FL14109
- Wisconsin Building Products Evaluation No.200266-I
- City of New York Materials and Equipment Acceptance – MEA 273-04-M
- QAI listed QM0503
- Complies with ASTM E2634, Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems

## 4 DESIGN/PERFORMANCE OF LOGIX ICF

A brief description of each test is outlined in the attached Appendix. Test reports are available upon request.

Test Description	Result	Pass/Fail Criteria	Referenced Standard Test Method
R-Value (Thermal Resistance) per inch (per 25.4mm)	R 4.13 (RSI 0.72)	Min. R 4.00 (RSI 0.70)	ASTM C518
Water Absorption	0.18%	Max. 3.0%	ASTM D2842
Water Vapor Presence	100.0ng/Pa-s-m2 (1.74perm-in.)	Max. 201 ng/Pa-s-m2 (3.5perm-in.)	ASTM E96
Compressive Strength	165kPa (23.9psi)	Min. 104kPa (15.0psi)	ASTM D1621 & ASTM C165
Flexural Strength	365kPa (53.0psi)	Min. 240kPa (35.0psi)	ASTM C203
Dimensional Stability – Thermal & Humid Aging	0.5%	Max. 2.0%	ASTM D2126
Density	27.5kg/m3 (1.72pcf)	Min. 22 kg/m3 (1.35pcf)	ASTM C1622 & ASTM C303
Dimensions	Min. length variation = 0.0% Max. length variation = 0.4% Min. width variation = 0.1% Max. width variation = 0.4% Min. thickness variation = -0.3mm Max. thickness variation = 0.9mm Max. squareness = 3mm	Min. -0.2% Max. 0.4% Min. -0.2% Max. 0.4% Max. -2mm Max. 4mm Max. 3mm	ASTM C303
Limiting Oxygen Index	29.1%	Min. 24.0%	ASTM D2863
Formaldehyde Emission	No formaldehyde detected	N/A*	AATTC-112
Fungi Resistance	No fungal growth detected	N/A*	ASTM G21
Flame Spread Rating	< 25	N/A*	ASTM E84/CAN ULC S102
Smoke Developed Rating	< 450	N/A*	ASTM E84/CAN ULC S102



LOGIX INSULATED CONCRETE FORMS  
GENERAL SPECIFICATIONS SHEET, CONT'D

Test Description	Result	Pass/Fail Criteria	Referenced Standard Test Method
Fire Endurance Test	See Fire Resistance Rating table	N/A*	ASTM E119/CAN ULC S101
Standard Room Fire Test	w/in acceptable limits	Met conditions required for exposure to fire for 15 minutes.	UBC 26-3/CAN ULC 1715
Concrete Pour-in-place	Observations of deflection recorded.	N/A*	CCMC Masterformat 03131
Sound Transmission	STC 56 for 6.25" Logix wall system (2 layers of 5/8" drywall & 2x2 wood strips on one side, 1/2" drywall on the other side) STC 50 for 4" Logix wall system (1/2" drywall & 2x2 wood strips on one side, 1/2" drywall on the other side).	N/A*	ASTM E90
UPITT Toxicity	Pass	LC50 < 19.7g	University of Pittsburgh Toxicity Test

\*Code body or referenced test standard required reporting test results only - no Pass/Fail criteria specified.

LOGIX INSULATED CONCRETE FORMS  
GENERAL SPECIFICATIONS SHEET, CONT'D

TESTS CONDUCTED ON POLYPROPYLENE WEB

Test Description	Result	US Requirements	Referenced Standard Test Method
Flammability	Flame Front Distance = 100mm (4") Avg. Linear Burn Rate = 17.9mm/min (0.70in/min)	Max. linear burn rate = 40.0mm/min (1.57in/min) for Flame Front Dist. = 100mm (4")	ASTM D635
Smoke Density Rating	19.1%	Max. 75%	ASTM D2843
Average Lateral Fastener Resistance of Drywall Screws	1.63kN (367lbs)	N/A*	ASTM D1761
Average Withdrawal Fastener Resistance of Drywall Screws	0.75kN (169lbs)	N/A*	ASTM D1761
Shear Strength of Polypropylene Web	26.1MPa (37.9psi)	N/A*	ASTM D732, CCMC Masterformat 03131
Average Tensile Strength of Polypropylene Web	3.75kN (842lbs)	N/A*	ASTM D638
Average Withdrawal Resistance of Staples 1.59mm 16ga.	105N (24lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Plane Shank 1.5" long, 3/8" head	155N (35lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Ring Shank 1.5" long, 3/8" head	431N (97lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Spiral Shank 1.5" long, 3/8" head	135N (30lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Staples 1.59mm 16ga.	169N (38lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Plane Shank 1.5" long, 3/8" head	520N (117lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Ring Shank 1.5" long, 3/8" head	378N (85lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Spiral Shank 1.5" long, 3/8" head	200N (45lbs)	N/A*	ASTM D1761 (under cyclic temperatures)



LOGIX INSULATED CONCRETE FORMS  
GENERAL SPECIFICATIONS SHEET, CONT'D

Test Description	Result	US Requirements	Referenced Standard Test Method
Average Withdrawal Resistance of Corrosion Resistance No.8-18 x 0.323 HD x 1.5/8"	567N (127lbs)	N/A*	ASTM D1761
Average Withdrawal Resistance of Corrosion Resistance 6d (0.113" shank x 0.267 HD x 2" long)	93N (21lbs)	N/A*	ASTM D1761
#6 Coarse Drywall Screw, 1-5/8" long**	787N (177lbs)	N/A*	ASTM D1761
#6 Fine Drywall Screw, 1-5/8" long**	765N (172lbs)	N/A*	ASTM D1761
16ga. Staple, 1-1/2" long**	124N (28lbs)	N/A*	ASTM D1761
Galvanized Ringed Wallboard Nail, 1-1/2" long**	462N (104lbs)	N/A*	ASTM D1761
Hot-dipped Galvanized Spiral Nail, 2" long**	226N (51lbs)	N/A*	ASTM D1761
#8 Wood Screw, 2" long**	920N (207lbs)	N/A*	ASTM D1761
#8 Exterior Deck Screw, 2" long**	934N (210lbs)	N/A*	ASTM D1761
#10 Wood Screw, 2" long**	880N (198lbs)	N/A*	ASTM D1761

\*Code body or referenced test standard required reporting test results only - no Pass/Fail criteria specified.

\*\*Applicable to corner web only.

**FIRE RESISTANCE RATING**

Form Size (Concrete Wall Thickness)	Rating with 1/2" drywall
100mm (4")	2hrs
159mm (6.25")	3hrs (4hrs if 5/8" drywall used)
203mm (8") and above	4hrs

\*Bearing load applied to wall = 360,000lbs (360kips)

## LIMITED LIFETIME WARRANTY

Each LOGIX™ Insulated Concrete Form used in the construction of a building in Canada or the United States carries the following lifetime warranty to the first owner of such building. If a LOGIX™ Insulated Concrete Form, as a result of a manufacturer's defect in workmanship or materials (as reasonably determined by LOGIX™), fails to meet the standards set forth in our product manual existing at the time of such construction, when installed in accordance with our recommended guidelines, LOGIX™ will, at its option, provide a replacement or refund the actual purchase price of such Form. This lifetime warranty is exclusive of all other costs and expenses of any nature or kind, including labor, to remove the defective product and replace it with a new product. Proof of building ownership at the time of installation and proof of purchase from a LOGIX™ authorized distributor is required.

THE FOREGOING WARRANTY SHALL BE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED. If the proceeding sole and exclusive remedies should be found to have failed their essential purpose, in no event shall LOGIX's liability or first owner's remedy exceed the actual purchase price for the product.





The LEED v4 for Building Design and Construction (LEED BD+C) was finalized in 2013. Rather than product focused, LEED v4 places more emphasis on building system performance in an effort to produce buildings with a lower environmental impact, compared to previous LEED versions, by promoting more sustainable materials and environmentally friendly design, construction and manufacturing methods.

Rather than adopting a stand-alone rating system, as was done in previous versions, the Canada Green Building Council (CaGBC) will be adopting LEED v4. However, because LEED v4 was developed in the United States, which mainly references US standards, the CaGBC will be providing Canadian options to show compliance – termed Alternative Compliance Path (ACP). For example, where an equivalent Canadian standard exists, the ACP can allow the use of that standard, in lieu of the standard required in the LEED requirements.

While some of the building types may seem familiar from previous LEED versions, LEED v4 BD+C now include 8 building types:

1. New Construction
2. Core and Shell
3. Schools
4. Retail
5. Data Centers
6. Warehouses and Distribution Centers
7. Hospitality
8. Healthcare

A minimum of 40 points are required to achieve LEED v4 certification. The point system for LEED v4 certification is listed below:

- Certified LEED – 40 to 49
- Silver – 50 to 59
- Gold – 60 to 79
- Platinum – 80 to 110



LEED v4 BD+C include 8 categories. Each category may vary in points based on the building types. The categories total 109 possible LEED points plus and additional point under "Integrative Process. The categories include

1. Location and Transportation (16 points)
2. Sustainable Sites (10 points)15
3. Water Efficiency (11 points)12
4. Energy and Atmosphere (33 points)35
5. Material and Resources (13 points)
6. Indoor Environmental Quality (16 points)
7. Innovation (6 points)
8. Regional Priority (4 points)

The categories where Logix can potentially contribute to gaining LEED points are items 2, 4, 5, and 6, as listed above. The potential LEED point contribution when using Logix is listed below, with details shown on the next page.

Building Type	Potential LEED Potential Contribution <sup>1</sup>
New Construction & Major Renovations	34
Core & Shell	32
Schools	32
Retail	34
Data Centers	34
Warehouses & Distribution Centers	34
Hospitality	34
Healthcare	35

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**POTENTIAL LEED POINTS CONTRIBUTION WITH LOGIX<sup>1</sup>**

Sustainable Sites	Applicable Building Types	Maximum Points Contribution	Comments
Protect or Restore Habitat	All	2 (1 for healthcare)	Although the points may not apply to LOGIX, wall bracing for LOGIX is one of a combination of actions that, together with other procedures, can result in proper protection or restoration of natural areas around the job site. LOGIX is typically placed within the building perimeter. This type of assembly avoids disturbance to existing natural areas and keeps construction activity close to the building perimeter.

Energy & Atmosphere	Applicable Building Types	Maximum Points Contribution	Comments
Minimum Energy Performance	All	n/a (required)	The continuous insulation and air barrier properties of Logix can help meet required minimum levels of efficiency for the building.
Optimize Energy Performance	All	18 except Schools and Healthcare (16 for Schools, 20 for Healthcare)	The continuous insulation and air barrier properties of Logix can help achieve the levels of energy performance that go beyond the prerequisite standard.

Material & Resources	Applicable Building Types	Maximum Points Contribution	Comments
Construction and Demolition Waste Management Planning	All	n/a (required)	Logix products produce little waste compared to wood, which should ease the waste management planning. In addition, EPS recycling programs can be implemented as part of the waste management planning.
Building Life-cycle Impact Reduction	All	3	Can help contribute 3 points under "Option 4. Whole-Building-Life-Cycle Assessment." The high energy efficient walls Logix creates contributes to the reduction of a building's impact on global warming.
Building Product Disclosure & Optimization - Environmental Product Declarations.	All	1	Can help contribute 1 point under "Option 1. Environmental Product Declaration (EPD)." Logix uses EPS which carries EPD documents, which conform to ISO 14025.
Building Product Disclosure & Optimization - Sourcing of Raw Materials.	All	2	Logix products are made with up to 10% recycled pre-consumer EPS.
Building Product Disclosure & Optimization - Material Ingredients.	All	1	Contributes to 1 point under "Option 3. Product Manufacturer Supply Chain Optimization." Logix products are certified under a third party program with Quality Auditing Institute (QAI).

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Material & Resources	Applicable Building Types	Maximum Points Contribution	Comments
Construction & Demolition Waste Management	All	2	Programs can be put in place to recycle EPS from job sites. EPS is also light in weight, and produces less waste than wood products.

Indoor Environmental Quality	Applicable Building Types	Maximum Points Contribution	Comments
Minimum Acoustic Performance	Schools	N/a (required)	Logix can help increase the acoustical performance of wall and ceiling assemblies.
Low-emitting Materials	All	3	Logix Platinum is made with BASF Neopor, which is Greenguard Certified. In addition, the EPS used for Logix has been tested to show no signs of harmful emissions.
Thermal Comfort	All except Core & Shell	1	Logix offers continuous insulation in wall and ceiling assemblies, and is made with BASF Neopor, which offer the highest thermal value of any EPS material.
Acoustic Performance	All except Core & Shell	1	Logix can contribute to the STC ratings of wall and ceiling assemblies. STC testing of various wall assemblies have been conducted with Logix.

<sup>1</sup>The total LEED point contribution from Logix is a best estimate based on available information and test data. The actual LEED point contribution may change based on project specifics, and should be determined by a LEED Accredited Professional for each project seeking LEED accreditation.

For more information about the LEED green building rating system visit [www.usgbc.org](http://www.usgbc.org) or [www.cagbc.org](http://www.cagbc.org).

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**{NOTE TO USERS:}** This document has been prepared for the LOGIX Insulated Concrete Forming (LOGIX ICF) product, and has been prepared in accordance with the Construction Specifications Institute (CSI) Section Format 2004. The main intention of this document is to aid the Contractor/Installing Contractor in developing CSI specifications (of LOGIX ICF) for use in combination with specific project specification manuals, which follow CSI formatting, as part of the overall project scope of work.

This document is a template and where appropriate, may require modifications to suit specific projects.

*Italicized text enclosed in parenthesis, { }, are intended for the user of this document to aid in determining where modifications may be required.*

## PART 1 GENERAL

### 1.0 SUMMARY

This section outlines the specifications for the implementation of LOGIX Insulated Concrete Forms, specifically LOGIX *{Platinum}* Series (herein referred to as LOGIX ICF).

#### 1.0.1 Section Includes

LOGIX Insulated Concrete Forms - permanent insulating concrete forming system.

#### 1.0.2 Products Supplied But Not Installed Under This Section

- Cast-in-place concrete
- EPS compatible waterproofing system
- EPS compatible parge coat
- Wall alignment system (wall bracing system)

LOGIX ICF products or components that are installed by owner or by others shall comply with Division 1 as required.

#### 1.0.3 Products Installed But Not Supplied Under This Section

- Service Penetration Sleeves
- Inserts
- Hold-Downs & Anchors
- Bolts
- Reinforcing Steel
- Window & Door Bucks (Openings)
- Concrete

LOGIX ICF products or components that are installed by owner or by others shall comply with Division 1 as required.

The Installing Contractor shall furnish all labor, materials, tools and equipment to perform the installation of LOGIX *{Platinum}*, including placement of reinforcing steel, placement of concrete and final cleanup.



#### 1.0.4 Related Sections

{NOTE: This section may be modified to suit specific project details.}

- Section 03 20 00: Concrete Reinforcement
- Section 03 30 00: Cast-in-place Concrete
- Division 04 00 00: Masonry
- Division 05 00 00: Metals
- Division 06 00 00: Woods, Plastics, and Composites
- Section 07 13 00: Sheet Waterproofing
- Section 07 24 00: Exterior Insulation Finishing Systems
- Section 07 46 00: Siding
- Division 08 00 00: Doors & Windows
- Division 09 22 00 – 09 25 00: Supports for Plaster and Gypsum Board – Other Plastering
- Section 09 70 00 – 09800: Wall Finishes - Acoustical Treatments

#### 1.0.5 Alternates

Unless otherwise approved by owner or owner's Engineer or Architect, alternate materials or ICF products shall not be accepted. Alternates are materials or other ICF products that are not specified within this document and/or do not meet the specifications within this document.

#### 1.1 REFERENCES

{NOTE: users of this specification should modify this section to suit specific project details.}

- ASTM D1622 Apparent Density of Rigid Cellular Plastics
- ASTM C165 Measuring Compressive Properties of Thermal Insulations
- ASTM C203 Breaking Load & Flexural Properties of Block-Type Thermal Insulation
- ASTM C303 Dimensions & Density of Preformed Block & Board-Type Thermal Insulation
- ASTM C518 Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM D1621 Compressive Properties of Rigid Cellular Properties
- ASTM D1761 Mechanical Fasteners in Wood
- ASTM D1929 Determining Ignition Temperatures of Plastics
- ASTM D2126 Response of Rigid Cellular Plastics to Thermal & Humid Aging
- ASTM D2842 Water Absorption of Rigid Cellular Plastics
- ASTM D2843 Density of Smoke from the Burning or Decomposition of Plastics
- ASTM D2863 Limiting Oxygen Index
- ASTM D635 Rate of Burning &/or Extent & Time of Burning of Plastics in a Horizontal Position
- ASTM D638 Tensile Properties of Plastics
- ASTM D732 Shear Strength of Plastics by Punch Tool
- ASTM E119 Fire Tests of Building Construction & Materials
- ASTM E96 Water Vapor Transmission of Materials
- CCMC Masterformat 03131
- UBC 26-3 Room Fire Test Standard for Interior of Foam Plastic Systems
- ASTM E84 Surface Burning Characteristics of Building Materials
- ACI 318 (or CAN 3A23.1) Building Code Requirements for Structural Concrete with Commentary.
- ACI 347R Guide to Formwork for Concrete
- ACI 301 Structural Concrete for Buildings
- ASTM E2634 Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems

{NOTE: users of this specification should modify this section to suit specific code approvals.}

- Compliance to ASTM E2634 Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems
- Evaluation to IBC and IRC 2012
- Greenguard Indoor Air Quality Certificate of Compliance certificate no. 38-00
- City of Los Angeles Research Report No. 25518
- Wisconsin Building Products Evaluation Report No. 200721-I
- Florida Product Approval No. FL14109
- Miami-Dade County NOA No.09-0714.03
- City of New York MEA 273-04-M
- QAI Fire Resistance Ratings, per ASTM E119

Form Size (Concrete Wall Thickness)	Rating with ½ inch drywall
4 inch (102 mm)	2hrs
6.25 inch (159 mm)	3hrs (4hrs if 5/8" drywall used)
8 to 12 inch (203 mm)	4hrs

\*Bearing load applied to wall = 360,000lbs (360kips)

#### 1.2 DEFINITIONS

Wall Alignment System - bracing that acts as an alignment/scaffold system designed for use with LOGIX insulated concrete forms.

Installing Contractor – A contractor contracted to install LOGIX ICF, and who has training and experience in the installation of permanent insulated concrete forms.

Technical Advisor – An individual who has the training and experience to assist in the installation of permanent insulated concrete forms. The role of the Technical Advisor shall be as technical support to the Installing Contractor. The Technical Advisor may be a representative of the distribution firm or LOGIX ICF.

EPS - Acronym for “Expanded Polystyrene”, the foam component of the LOGIX {*Platinum*}.

ICF - Acronym for “Insulated Concrete Form”.

LOGIX {*Platinum*} Products – refers to the LOGIX ICF forming system including related components listed in Section 1.0.2 and 1.0.3

Service Penetrations – services such as electrical wiring, pipes, ventilation systems, etc.that are installed in or through the LOGIX {*Platinum*} walls.

#### 1.3 SYSTEM DESCRIPTION

- LOGIX {*Platinum*} shall consist of two flame-resistant EPS boards separated by polypropylene webs. The EPS boards shall be manufactured using BASF Neopor bead resins.
- LOGIX {*Platinum*} shall be solid form units (LOGIX Pro {*Platinum*}) or knock-down forms (LOGIX KD {*Platinum*}) or a combination of both LOGIX Pro {*Platinum*} and KD {*Platinum*} forms, referred to as LOGIX Hybrid Forms.



- The EPS foam boards shall be minimum 2.75 inch (70 mm) thick, and can range in thickness of 2.75 (70 mm), 4 (102 mm), 5 (127 mm), 6 (152 mm), 7 (178 mm) and 8 inches (203 mm), which gives a total EPS foam board thickness of 5.50 (140 mm), 8 (203 mm), 10 (254 mm), 12 (305 mm), 14 (356 mm) and 16 inches (406 mm), respectively.
- The webs shall separate the EPS boards to form 4 inch (102 mm), 6.25 inch (159 mm), 8 inch (203 mm), 10 inch (254mm) and 12 inch (305mm) cavities, which create the concrete wall thicknesses. Thickness greater than 12 inches shall be accomplished using LOGIX Xtenders.
- The webs shall be spaced every 8 inch (203 mm) on centre horizontally and 16 inch (406 mm) on centre vertically, and contain a 1.25 inch (32 mm) wide furring strip that extends the height of each ICF block. The furring strips shall facilitate fasteners for attachment of both exterior and interior finishes.
- A furring strip shall be located in the corners of corner forms. The furring strip shall consist of both a vertical and horizontal component. The vertical component shall extend nearly the full height of the form, extend a minimum of 2.5 inches (64 mm) from both sides of the corner, and a minimum of 0.2 inches (5 mm) thick. The horizontal component shall be minimum 2 inches (51mm) in height, extend a minimum of 6 inches (152 mm) from both sides of the corner, and a minimum of 0.2 inches (5 mm) thick.
- The webs facilitate rebar placement in accordance with ACI 318.

### 1.3.1 Design/Performance Requirements

{NOTE: users of this specification should modify this section to suit specific project details.}

{NOTE: Additional design/performance information, as required, can be obtained by contacting LOGIX at info@LOGIXicf.com}

#### Tests Conducted on EPS Material

Test Description	Result	Pass/Fail Criteria	Referenced Standard Test Method
R-Value (Thermal Resistance) per inch (per 25.4mm)	R 4.13 (RSI 0.72) {R 4.71 (RSI 0.83) for LOGIX Platinum}	Min. R 4.00 (RSI 0.70) {Min. R 4.00 (RSI 0.70) for Logix Platinum}	ASTM C518
R-Value of wall assembly. Includes interior air film, ½" drywall and 4" concrete core.	R 27 (RSI 4.75)	N/A	Intertek Testing Services Evaluation Report
Water Absorption	1.0%	Max. 3.0%	ASTM D2842
Water Vapor Presence	148.0ng/Pa-s-m <sup>2</sup> (2.59perm-in.)	Max. 201 ng/Pa-s-m <sup>2</sup> (3.5perm-in.)	ASTM E96
Compressive Strength	114kPa (16.5psi)	Min. 104kPa (15.0psi)	ASTM D1621 & ASTM C165
Flexural Strength	292kPa (42.4psi)	Min. 240kPa (35.0psi)	ASTM C203
Density	22.05kg/m <sup>3</sup> (1.38pcf)	Min. 22 kg/m <sup>3</sup> (1.35pcf)	ASTM C1622 & ASTM C303
Dimensional Stability (change in dimensions), %	@70°C (158°F) and 97% RH	Length = -0.54 Width = -0.56 Thickness = -0.53	2.0 max
	@ -40°C (-40°F)	Length = -0.09 Width = -0.11 Thickness = -0.03	
Limiting Oxygen Index	30.07	Min. 24.0%	ASTM D2863
Flame Spread Rating	< 25	N/A*	ASTM E84
Smoke Developed Rating	< 450	N/A*	ASTM E84
Fire Endurance Test	See Fire Resistance Rating table	N/A*	ASTM E119/CAN ULC S101
Standard Room Fire Test	w/in acceptable limits	Met conditions required for exposure to fire for 15 minutes.	UBC 26-3
Sound Transmission	STC 56 for 6.25 inch (159 mm) LOGIX wall system STC 50 for 4 inch LOGIX wall system	N/A*	ASTM E90
UPITT Toxicity	Pass	LC50 < 19.7g	University of Pittsburgh Toxicity Test

\*Code body or referenced test standard required reporting test results only - no Pass/Fail criteria specified.

#### Tests Conducted on Polypropylene Web

Test Description	Result	US Requirements	Referenced Standard Test Method
Flammability	Flame Front Distance = 4 inch (102 mm) Avg. Linear Burn Rate = 17.9mm/min (0.70in/min)	Max. linear burn rate = 40.0mm/min (1.57in/min) for Flame Front Dist. = 4 inch (102 mm)	ASTM D635
Smoke Density Rating	19.1%	Max. 75%	ASTM D2843
Average Lateral Fastener Resistance of Drywall Screws	1.63kN (367lbs)	N/A*	ASTM D1761

Test Description	Result	US Requirements	Referenced Standard Test Method
Average Withdrawal Fastener Resistance of Drywall Screws	0.75kN (169lbs)	N/A*	ASTM D1761
Shear Strength of Polypropylene Web	26.1MPa (37.9psi)	N/A*	ASTM D732, CCMC Masterformat 03131
Average Tensile Strength of Polypropylene Web	3.75kN (842lbs)	N/A*	ASTM D638
Average Withdrawal Resistance of Staples 1.59mm 16ga.	105N (24lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Plane Shank 1.5" long, 3/8" head	155N (35lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Ring Shank 1.5" long, 3/8" head	431N (97lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Spiral Shank 1.5" long, 3/8" head	135N (30lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Staples 1.59mm 16ga.	169N (38lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Plane Shank 1.5" long, 3/8" head	520N (117lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Ring Shank 1.5" long, 3/8" head	378N (85lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Lateral Resistance of Spiral Shank 1.5" long, 3/8" head	200N (45lbs)	N/A*	ASTM D1761 (under cyclic temperatures)
Average Withdrawal Resistance of Corrosion Resistance No.8-18 x 0.323 HD x 1.5/8"	567N (127lbs)	N/A*	ASTM D1761
Average Withdrawal Resistance of Corrosion Resistance 6d (0.113" shank x 0.267 HD x 2" long)	93N (21lbs)	N/A*	ASTM D1761
#6 Coarse Drywall Screw, 1-5/8" long**	787N (177lbs)	N/A*	ASTM D1761
#6 Fine Drywall Screw, 1-5/8" long**	765N (172lbs)	N/A*	ASTM D1761
16ga. Staple, 1-1/2" long**	124N (28lbs)	N/A*	ASTM D1761
Galvanized Ringed Wallboard Nail, 1-1/2" long**	462N (104lbs)	N/A*	ASTM D1761
Hot-dipped Galvanized Spiral Nail, 2" long**	226N (51lbs)	N/A*	ASTM D1761
#8 Wood Screw, 2" long**	920N (207lbs)	N/A*	ASTM D1761

Test Description	Result	US Requirements	Referenced Standard Test Method
#8 Exterior Deck Screw, 2" long**	934N (210lbs)	N/A*	ASTM D1761
#10 Wood Screw, 2" long**	880N (198lbs)	N/A*	ASTM D1761

\*Code body or referenced test standard required reporting test results only - no Pass/Fail criteria specified.

\*\*Applicable to corner web flanges only.

#### 1.4 SUBMITTALS

Relevant data for submission before, during and after construction may include the following:

- Laboratory tests or data that validate product compliance with performance criteria specified;
- Manufacturer's Product/Design Manual; Relevant code compliance certificates including Greenguard Indoor Air Quality Certificate of Compliance

##### 1.4.1 Quality Assurance

{NOTE: This section may be modified to suit specific project details.}

The Installing Contractor shall comply with all requirements, but not limited to, as outlined in this section.

##### 1.4.1.1 Qualifications

Installing Contractor shall be ICF trained and experienced.

Installers of LOGIX shall provide proof of training documentation to contractor.

A LOGIX Technical Representative shall be available to supervise construction on a regular basis.

##### 1.4.1.2 Regulatory Requirements

Installing Contractor including trades working under the Installing Contractor shall comply with local building code and regulatory requirements.

Installation of LOGIX ICF shall comply with ACI 347.

##### 1.4.1.3 Field Samples

Installing Contractor shall provide field samples, if required. The samples will be physical examples illustrating finishes, coatings, or finish such as concrete, brick or stone.

##### 1.4.1.4 Mock-Ups

If required by owner, full-size assemblies of a wall assembly shall be constructed for review of construction, coordination of the work specified, testing, operation and training of the trades. The mock-up can form part of the finished work if approved by the owner.

##### 1.4.1.5 Pre-installation Meetings



The Installing Contractor shall meet with the Contractor and relevant trades, as required, to coordinate the delivery, storage and handling of LOGIX ICF including ICF components listed in Section 1.0.2, 1.0.3 and 2.2.

## 1.5 DELIVERY, STORAGE & HANDLING

### 1.5.1 Packing, Shipping, Handling & Unloading

LOGIX ICF shall be delivered on-site in original factory packaging. All delivered LOGIX ICF products shall show traceability by bearing on the identification label the location of manufacturing plant, product description, batch/lot number and date produced.

Care shall be exercised in handling and unloading LOGIX ICF onto the construction site to minimize damage to the EPS boards and/or webs. LOGIX ICF shall remain in original factory packaging until ready for installation.

Storage location shall be in an area that will minimize damage or soiling to LOGIX ICF products. Protection shall be provided in cases where stored products of LOGIX ICF could be exposed, for more than 2 weeks, to UV or freezing rain or snow conditions.

Exposed areas of LOGIX ICF, where heat build-up can occur from reflected sunlight, shall be protected at all times until intended cladding or finish material is applied. Potential exposed areas of LOGIX ICF shall be covered with cardboard or white opaque film only. Transparent plastic wrapping film, and clear adhesive tape or strap banding, shall not be used to protect potential exposed areas of LOGIX ICF. Further precautionary measures shall be referred to BASF Technical Leaflet N-14, Neopor, "Recommendations for packaging, transporting, storing and installing building insulation products made from Neopor EPS foam."

BASF Technical Leaflet N-14, Neopor, shall be shipped with every bundle of LOGIX ICF delivered to the job site.

## 1.6 PROJECT CONDITIONS

{NOTE: If appropriate, include additional relevant specific site conditions}

See above section.

## 1.7 SEQUENCING

{NOTE: This section is optional. State in this section, if appropriate, requirements for coordinating work that requires unusual scheduling with work in another section. The particular schedule of events should be specified here.}

## 1.8 WARRANTY

{NOTE: Contact manufacturer for details of warranty and describe in this section.}

### 1.8.1 Special Warranty

{NOTE: Include statements specific to this section which supplement or extend the warranty.}

## PART 2 PRODUCTS

### 2.0 MANUFACTURERS

LOGIX ICF products have been used as the basis for design. Other manufacturers' products of equivalent quality, dimensions and operating features may be acceptable, at the Engineer's discretion, if they comply with all requirements specified or indicated in these Contract documents.

### 2.1 MATERIALS

LOGIX ICF shall be used in construction. Substitutions or alternatives to LOGIX ICF may be acceptable at the Engineer's discretion if they comply with all requirement specified or indicated in these Contract documents.

### 2.2 MANUFACTURED UNITS

{NOTE: This section may be modified to suit specific project details.}

LOGIX ICF is available in 5 block sizes: 4 (102 mm), 6.25 (159 mm), 8 (203 mm), 10 (254 mm), and 12 inches (305 mm). LOGIX Xtenders shall be used to build LOGIX walls larger than 12 inches. The following table lists the available LOGIX ICF products and web furring strip dimensions.

LOGIX ICF products consists of:

1. LOGIX Pro {Platinum} (assembled form blocks)
2. LOGIX KD {Platinum} (unassembled form blocks)
3. LOGIX XRV (LOGIX KD {Platinum} forms with EPS panels greater than 2.75 inches (70 mm))

LOGIX ICF Products		Availability	
Product	Description	Solid Form Units	Knock-down Forms
Standard	16 inches tall by 48 inches long. Range of thickness is 2.75, 4, 5, 6, 7, and 8 inches	4, 6.25, 8, and 10 inch	6.25, 8, 10, and 12 inches
Brick Ledge	16 inches tall by 48 inches long by 2.75 inches thick. Brick ledge extends 5.875 inches from face of concrete.	6.25, 8, and 10 inch	6.25, 8, 10, and 12 inches
Transition	16 inches tall by 48 inches long by 2.75 inches thick. Corbel ledge extends 3.75 inches from face of concrete.	6.25 and 8 inch	6.25, 8, 10, and 12 inches
Taper Top	16 inches tall by 48 inches long by 2.75 inches thick. At tapered end concrete extends 1.75 inches from face of concrete.	4, 6.25, 8, and 10 inch	6.25, 8, 10, and 12 inches
90° Corner	16 inches tall by 2.75 inches thick. Length of corner forms varies based on concrete core thickness.	4, 6.25, 8, and 10 inch	6.25, 8, 10, and 12 inches
45° Corner	16 inches tall by 2.75 inches thick. Length of corner forms varies based on concrete core thickness.	4, 6.25, and 8 inch	n/a
Half Height Standard	8 inches tall by 48 inches long. Range of thickness is 2.75, 4, 5, 6, 7, and 8 inches	4, 6.25, and 8 inch	n/a
Half Height 90° Corner	8 inches tall by 2.75 inches thick. Length of corner forms varies based on concrete core thickness.	4, 6.25, and 8 inch	n/a

**Furring Strip Dimensions**

	Block Size				
	4 inch (102 mm)	6.25 inch (159 mm)	8 inch (203 mm)	10 inch (254 mm)	12 inch (305 mm)
Height (full height blocks)	14.25 (362)	14.25 (362)	14.25 (362)	14.25 (362)	14.25 (362)
Height (half height blocks)	6.25 (159)	6.25 (159)	6.25 (159)	n/a	n/a
Width	1.25 (32)	1.25 (32)	1.25 (32)	1.25 (32)	1.25 (32)
Thickness	0.1875 (4.8)	0.1875 (4.8)	0.1875 (4.8)	0.1875 (4.8)	0.1875 (4.8)

**Corner Furring Strip Dimensions**

Vertical Component – 14.25 inches (362 mm) high by 0.2 inches (5 mm) thick. Extends beyond both sides of the corner by 2 inches (52 mm).

Horizontal Component – 2 inches (52 mm) high by 0.2 inches (5 mm) thick. Extends beyond both sides of the corner by 6 inches (152 mm).

**2.3 CONCRETE & REINFORCING STEEL**

Recommended maximum aggregate sizes are listed in the following table.

Block Cavity Size			
4 inch (102 mm)	6.25 inch (159 mm)	8 inch (203 mm)	10 and 12 inch (254 and 305mm)
0.375 (9.5)	0.75 (19)	0.75 (19)	0.75 (19)

Recommended concrete slump is 5 to 7 inch (127 to 178 mm). Slump may differ depending on design revisions to suit application.

Reinforcing steel shall be as specified under Section 03 20 00, and as required by the design engineer.

Structural design of reinforced concrete shall comply with ACI 318 & 301 as applicable.

**2.4 WALL ALIGNMENT AND SCAFFOLDING SYSTEM**

The Wall Alignment and Scaffolding System shall be used as a wall bracing system, and consist of an adjustable mechanism to ensure, and maintain, plumbness of the wall during construction. Installation of LOGIX ICF shall comply with ACI 347R.

Assembly of the wall alignment and scaffolding system must comply with local building and regulatory codes.

The wall alignment and scaffolding system shall be assembled to handle all design construction loads, and must be approved by a design engineer.

The wall alignment and scaffolding system must demonstrate resistance to the following design load conditions:

- Design wind load of 90 mph unoccupied, and 35 mph occupied, in accordance with ASCE 7-98 "Minimum Design Loads for Buildings and Other Structures", and the "Tilt-up Concrete Association's Guideline for Temporary Wind Bracing of Tilt-up

Concrete Panels During Construction."

- Light-duty loading of 25 psf, as specified by OSHA.
- Horizontal loading of 200 lb applied at the top rail to simulate a worker leaning against the guardrail.

**2.5 WATERPROOFING**

Waterproofing shall be installed as specified under Division 07 00 00.

Where called for on drawings, waterproofing shall be an EPS compatible waterproofing system approved by the owner's Engineer or Architect.

**2.6 PARGING**

Where parging (stucco type) is required, supply & installation of parging shall be as specified under Section 09 24 00, Portland Cement Plaster.

Alternate EIFS coatings shall be supplied and installed under Section 07 24 00, EIFS Systems.

**2.7 STRUCTURAL METAL PANELS**

For the use of Structural Metal Panels over ICF panels, ICF Dead and Construction load anchor points must be defined, if required by the Structural Metal Panel manufacturers. The location of the ICF Connectors/Dead and Construction load anchors must be coordinated by the Architect/General Contractor with the ICF Manufacturer, and the Metal Panel Manufacturer. Panel subframing must be fastened to the concrete.

**3 EXECUTION**

**3.0 EXAMINATION**

Special attention shall be paid to assessing all areas of work to determine, as much as possible, the scope of work involved.

**3.1 SITE VERIFICATION OF CONDITIONS**

The Installing Contractor shall verify the following site conditions prior to installation of LOGIX ICF:

- Site access and egress;
- Site conditions are as set out in Section 1.6 Project Conditions;
- Footings installed under Section 03 30 00 are within +/- ¼ inch (6 mm) of level and that steps in footings are 16 inches (406 mm) in height;
- Reinforcing steel dowels are in place at specified centers along footing lengths.

**3.2 PREPARATION**



The Installing Contractor shall ensure top of footings are clear of debris prior to installing LOGIX ICF. All debris must be removed from the interior of the forms prior to installation.

### 3.3 INSTALLATION

Installation of LOGIX ICF products shall be in conformance to the Installation Manual or as per the Technical Advisor's recommendations. Alternate installation methods shall be approved by the owners' engineer.

The Installing Contractor shall ensure the proper installation methods for the following work are employed on site. The installation method shall comply with the manufacturer's installation instructions, unless alternate methods are approved by the owner's engineer.

- (a) Installation of First Course
- (b) Installation of Horizontal Reinforcement
- (c) Setting Successive Courses
- (d) Forming Door & Window Openings
- (e) LOGIX Alignment & Scaffolding System Installation
- (f) Installation of Vertical Reinforcement
- (g) Inspection and alignment of forms Prior to Concrete Placement
- (h) Concrete Placement
- (i) LOGIX Alignment & Scaffolding System Removal

### 3.4 SERVICE PENETRATIONS

Service penetrations shall be installed where indicated on approved drawings. Service penetrations shall be installed by the appropriate trade.

Where service penetrations run through the LOGIX ICF wall, sleeves shall be provided to create a void where the service is to be located. Sleeves shall be placed prior to concrete placement.

### 3.5 CONCRETE PLACEMENT

Concrete placement shall not exceed a pour rate of 4 ft/hr. Maximum pour height shall not exceed 14 ft. In addition, Logix ICF shall demonstrate resistance to the lateral concrete pressure exerted from placing concrete in a 14 ft tall wall, per ACI 347, "Guide to Formwork for Concrete."

### 3.6 FIELD QUALITY CONTROL

The Installing Contractor shall inspect the erected formwork prior to placing concrete. The formwork shall be inspected to verify, but not limited to, the following:

- Conformance to design drawings;
- Plumbness of wall;
- Rebar placement;
- Stability of wall alignment system (wall bracing system) and any additional anchoring system required to keep the walls aligned position and rigidity.

### 3.7 CLEANUP

Installing Contractor shall ensure his/her work site is kept clean at all times. All material shall be properly disposed, and all remaining debris shall be removed from the work site following the complete installation of LOGIX ICF.

### 3.8 PROTECTION

Prior to concrete placement, interlocking knobs along the top of the ICF wall shall be protected with tape or other means to ensure no concrete debris sets on and between the interlocking knobs.

Protection of installed forms shall be provided if the forms are expected to be exposed to UV rays for longer than 180days (i.e. delay in final wall finish application).

See Section 1.5.1 for additional protection requirements.

**END OF SECTION**

To Whom It May Concern:

**Re: Logix ICF – Cancellation of ICC Evaluation Report**

After careful consideration, Logix has decided to no longer carry the ICC Evaluation Report, ICC-ESR 1642. Recent developments in building code and standards have made ICC evaluation reports obsolete:

1. The ASTM E2634 standard for ICFs, headed by the ICF industry, was developed to replace AC 353, the ICC Acceptance Criteria for ICFs.
2. ICFs are covered in the IBC and IRC, and now also require that all ICFs comply with ASTM E2634.
3. Logix has been tested and complies with ASTM E2634. Enclosed is the Logix QAI third party listing, which notes Logix compliance to ASTM E2634. (QAI is a nationally recognized third party testing and evaluation certification agency).
4. QAI has conducted an evaluation of Logix to determine compliance to the IBC and IRC. Enclosed is the QAI evaluation noting Logix compliance to the 2012 and 2015 IBC and IRC. This evaluation replaces the ICC Evaluation Report, ICC-ESR-1642.

If you require further information please feel free to contact me.

Best Regards,  
Francis



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**BUILDING PRODUCTS LISTING PROGRAM**

**Class:** [Insulated Concrete Forms \(ICF\)](#)

**Customer:** LOGIX Insulated Concrete Forms, Ltd.  
**Location:** 9242 Pinetree Place, Whistler, BC, Canada, V0N 1B9  
**Website:** [www.LOGIXicf.com](http://www.LOGIXicf.com)

**Listing No.:** B1031-1

**Effective Date:** September 27, 2010  
**Last Revised:** May 27, 2014  
**Expires:** N/A

**Standards:** ASTM E2634 "Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems".  
 CAN/ULC S717.1 "Standard for Flat Wall Insulating Concrete Form (ICF) Systems".  
 CAN/ULC S701 "Thermal Insulation, Polystyrene, Boards and Pipe Covering".  
 CAN/ULC S102.2 "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies".  
 ASTM C578 "Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation".  
 ASTM E84 - "Standard Test Method for Surface Burning Characteristics of Building Materials".  
 UBC 26-3 "Room Fire Test Standard For Interior of Foam Plastic Systems".  
 CAN/ULC-S101 "Standard Methods of Fire Endurance Tests of Building Construction and Materials".  
 ASTM E119 / ANSI / UL 263 "Standard Test Methods for Fire Tests of Building Construction and Materials".

**Product:** LOGIX Insulated Concrete Forms (ICF)

**Label:** Product is marked with labels supplied by LOGIX Insulated Concrete Forms, Ltd. The label includes the manufacturer's name, trademark, or other recognized symbol of identification, the product model designation, month and year of manufacture or equivalent, QAI logo with the 'US' and 'C' identifier, and CAN/ULC S701 Type 2, ASTM C578 Type II, ASTM E84 FSI and SDI Rating, and CAN/ULC S102.2 FSI and SDI Rating. Labels are applied to palletized finished products to ensure visibility on the jobsite.

**Ratings:** The following outlines LOGIX ICF test results determined in accordance with the noted standards.

LOGIX ICF Fastener Resistance Ratings

FASTENER	ALLOWABLE WITHDRAWAL		ALLOWABLE LATERAL SHEAR	
	lbs	kg	lbs	kg
#6 1 ¼ inch Length Coarse Thread Drywall Screw	23	10	59	26

LOGIX ICF Type 2 Specifications per CAN/ULC S701

PROPERTY	LOGIX SPECIFICATION
Thermal Resistance m <sup>2</sup> ·oC/W at 25 mm Thickness	Minimum 0.70
Water Vapour Permeance Ng/Pa*s*m <sup>2</sup> at 25 mm Thickness	Maximum 200
Dimensional Stability % Linear Change	Maximum 1.5
Flexural Strength kPa	Minimum 240
Water Absorption % Volume	Maximum 4.0
Compressive Strength kPa at 10% Deformation	Minimum 110
Limiting Oxygen Index %	Minimum 24

LOGIX ICF Type II Specifications per ASTM C578

PROPERTY	LOGIX SPECIFICATION
Compressive Resistance psi at Yield or 10% Deformation	Minimum 15.0
Thermal Resistance F*ft <sup>2</sup> *h/Btu at 1.00 Inch Thickness	Minimum 4.0
Flexural Strength psi	Minimum 35.0

Water Vapor Permeance Perms at 1.00 Inch Thickness	Maximum 3.5
Water Absorption % Volume	Maximum 3.0
Dimensional Stability % Change Dimensions	Maximum 2.0
Oxygen Index % Volume	Minimum 24.0
Density lbs/ft <sup>3</sup>	Minimum 1.35

LOGIX ICF Surface Burning Characteristics per CAN/ULC S102.2

LOGIX COMPONENT	DENSITY	MAXIMUM THICKNESS	FLAME SPREAD INDEX (FSI)	SMOKE DEVELOPED INDEX (SDI)
Expanded Polystyrene (EPS Panel)	22 – 29 kg/m <sup>3</sup>	100 mm Maximum	≤ 210	≥ 500

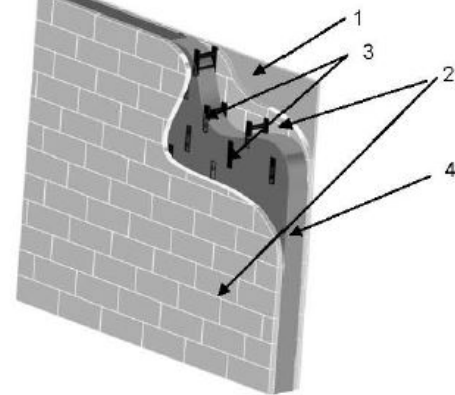
LOGIX ICF Surface Burning Characteristics per ASTM E841

LOGIX COMPONENT	DENSITY	MAXIMUM THICKNESS	FLAME SPREAD INDEX (FSI)	SMOKE DEVELOPED INDEX (SDI)
Expanded Polystyrene (EPS Panel)	1.35 – 1.80 lbs/ft <sup>3</sup>	4.0 Inches Maximum	≤ 75	≤ 450

<sup>1</sup>Ceiling Measurement Only. This measurement is conducted through determination of flame spread index and smoke developed index with the removal of any contribution of molten materials ignited on the floor of the tunnel assembly. LOGIX UBC 26-3 Configuration Meets requirements with ½ inch thickness gypsum fastened with 2 ¼ inch length standard drywall screws at 12 inch on center. Fasteners must be anchored into LOGIX ICF web ties.

**QAI Design B1031-1 LOGIX Insulated Concrete Form (ICF) – CAN/ULC S101 / ASTM E119  
Load Bearing Fire-Resistance-Rated Wall Assembly (See Table for Hourly Ratings)<sup>1</sup>  
15 Minute Stay-In-Place Fire-Rated Wall Assembly (CAN/ULC S101)<sup>1</sup>**

ASSEMBLY RATING (Hours)	MINIMUM CONCRETE CORE (MM)	MINIMUM CONCRETE CORE (INCHES)
2	102	4
3	159	6.25
4	204	8



NO.	COMPONENT	DESCRIPTION
1	Interior Sheathing	Minimum ½ inch (12 mm) thickness ASTM C1396 listed gypsum wall board, installed with 51 mm (2 inch) length drywall screws spaced at 406 mm (16 inches) on center horizontally and vertically.  For 6 ¼ inch concrete Logix ICF product used in load bearing fire-resistance-rated wall assemblies, listed 16 mm (5/8 inch) thickness Type X gypsum wall board complying with ASTM C1396 is required fastened as noted above.  Gypsum is required to be taped and mudded per industry standard and the applicable model code.
2	Expanded Polystyrene (EPS) Insulation	Logix ICF component 70 mm (2 ¾ inch) thickness Type 2 (CAN/ULC S701) / Type II (ASTM C578) QAI certified expanded polystyrene thermal insulation. Logix ICF EPS panels have interlocking teeth to allow stacking onsite to create the forming wall.
3	Web Ties	Logix polypropylene web tie component, spaced at 203 mm (8 inches) on center spacing through Logix ICF. Web ties can be stacked or staggered vertically during installation (staggered web tie system shown).
4	Concrete Core	Minimum core as noted in Table above of 20 MPa (2,900 psi) compressive strength concrete. Steel reinforcing, while not shown, is approved for use. Rebar addition is to be designed and approved by a registered design professional, or authority having jurisdiction in accordance with the applicable code requirements.
5	Exterior Cladding (Not Shown)	Exterior claddings are approved for use with the Logix ICF load bearing fire-resistance-rated wall assemblies without negatively impacting the fire rating. These exterior claddings include: brick veneer, stucco, fire rated exterior insulating finish systems where no additional EPS is added, cultured stone, aluminum and steel products. All exterior claddings are to be installed with the applicable building code, and the manufacturer's approved installation instructions.

**Note 1:** The allowable load for LOGIX ICF Load Bearing Fire-Resistance-Rated Construction is to be determined by a registered design professional, or authority having jurisdiction in accordance with the applicable codes.

Note:

Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction.  
Product is to be installed in accordance with the manufacturer's published installation instructions by qualified installing personnel.

The materials, products or systems listed in this directory have been qualified to bear the QAI Listing Mark under the conditions stated with each Listing. Only those products bearing the QAI Listing Mark are considered to be listed by QAI.

No warranty is expressed or implied, and no guarantee is provided that any jurisdictional authority will accept the Listing found herein. The appropriate authorities should be contacted regarding the acceptability of any given Listing.

Visit the QAI Online Listing Directory located at [www.qai.org](http://www.qai.org) for the most up to date version of this Listing and to validate that this QAI Listing is active.

Questions regarding this listing may be directed to [info@qai.org](mailto:info@qai.org). Please include the listing number in the request.

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**LOGIX INSULATED CONCRETE FORMS, LTD.**

July 28, 2016

1917 West 4<sup>th</sup> Avenue  
Vancouver, BC Canada V6J 1M7

**RE: LOGIX ICF COMPLIANCE TO INTERNATIONAL BUILDING CODE, INTERNAIONAL RESIDENTIAL CODE 2012**

To Whom it May Concern:

QAI Laboratories Ltd. (QAI) is an International Accreditation Service, Inc. (IAS) accredited testing (TL-220), inspection (AA-723), certification body (PCA-119) and a Standards Council of Canada (SCC) accredited body for the testing, certification, and follow up inspections for Insulated Concrete Forms (ICF) and construction materials for use in fire-resistance-rated applications. This includes LOGIX ICF flat wall insulating concrete forms, for use in fire-resistance-rated applications. The following are referenced building codes for the products:

International Building Code 2015 Section 1903.4 and 2012 Section 1903.3 for flat wall insulating concrete form (ICF) systems: *Insulating concrete form material used for forming flat concrete walls shall conform to ASTM E 2634.*

International Residential Code 2015 Section R608.4.4 and International Residential Code 2012 Section R611.4.4 Flat ICF wall systems: *Flat ICF wall system forms shall conform to ASTM E 2634.*

QAI has evaluated LOGIX ICF products, and found these products to comply with ASTM E2634-11, as outlined on QAI's directory of products found at the following website address:

<http://qai.org/directory/logix-insulated-concrete-forms-ltd/>

LOGIX ICF has been evaluated by QAI for maintaining a 2 to 4 hour fire-resistance-rating determined in accordance with ASTM E119, when constructed in accordance with QAI's noted listing.

Based on the information noted above, QAI considers LOGIX ICF to compliant with the International Building Code 2015/2012 versions, and International Residential Code 2015/2012 versions as for use as flat ICF walls, for use in fire-resistance-rated assemblies when constructed in accordance with the noted QAI listing.

For up to date information, please visit QAI's directory of listed products, at [www.qai.org](http://www.qai.org). If you require further information, please feel free to contact the undersigned.

Sincerely,  
**QAI Laboratories**



Matt Lansdowne, P.Eng., M.Sc.  
Business Manager – Building Products.



V. Andrew Tan, PE  
Senior Engineer