

CODE COMPLIANCE AND EVALUATIONS BOOKLET (CAN)

Build **Anything** Better.™



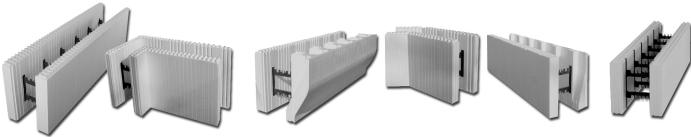


TABLE OF CONTENTS

LOGIX® INSULATED CONCRETE FORMS 7.0 - CANADIAN EVALUATION REPORTS

7.0 - CANADIAN CODE REPORTS	7-1
7.1 – NON-COMBUSTIBLE CONSTRUCTION (NBCC)	7-3
7.2 – VAPOUR BARRIER (NBCC)	7-4
7.3 – LEED V4 EVALUATION	7-7
7.4 – QAI FIRE RESISTANCE RATING	7-9
7.5 – OAI LISTING REPORT	7-10





All documents are downloadable at logixicf.com

7.1 – NON-COMBUSTIBLE CONSTRUCTION (NBCC)

ntertek Testing Services, an independent, nationally accredited testing agency, conducted a fire evaluation and determined the products listed below meets clause 3.2.3.8 when used with Logix for exterior walls for building over 3 storeys.

Copies of the evaluation reports can be downloaded at www.logixicf.com.

Products evaluated:

- **Dryvit Exsulation 2000 System**
- **Dryvit Infinity System**
- **Dryvit Exsulation 2000 System**
- Dryvit Fedderlite 2000 System
- **Dryvit Outsulation System**
- **Dryvit Outsulation MD System**
- Sto EIFS
- **Sto Signature System**
- Sto CLASSIC NExT
- Sto CLASSIC NExT NC
- Sto SIGNATURE SYSTEM NC
- Standard ADEX System
- Standard ADEX RF System
- **Durock ICF Finish System**



All documents are downloadable at logixicf.com

7.2 – VAPOUR BARRIER (NBCC)

Logix Insulated Concrete Forms Ltd. Project No. 3109888-R1

January 30, 2007 Revised: January 31, 2007 Page 2 of 4

Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted an engineering evaluation for Logix Insulated Concrete Forms Ltd., on Logix ICF, to evaluate the vapor permeance properties of the product. The evaluation was conducted to determine if Logix ICF meets the 2005 National Building Code (NBC) for use as a vapor barrier.

Sample Description

Logix ICF consists of rigid interlocking expanded polystyrene (EPS) foam plastic boards that serve as permanent formwork for reinforced concrete, exterior and interior walls, and foundation and retaining walls.

3 Reference Documents

- 2005 National Building Code (NBC)
- ASTM E96/96M-05, Standard Test Methods for Water Vapor Transmission of Materials
- Intertek Test Report 3048347 dated October 14, 2003
- Intertek Letter dated January 6, 2005

Evaluation Method

Vapor barrier properties and installation are described in detail in Section 5.5.1.2 of the 2005 NBC. These details are summarized below:

- 1) The vapor barrier shall have sufficiently low permeance and shall be positioned in the building component or assembly so as to
 - a) minimize moisture transfer by diffusion, to surfaces within the assembly that would be cold enough to cause condensation at the design temperature and humidity conditions, or
 - b) reduce moisture transfer by diffusion, to surfaces within the assembly that would be cold enough to cause condensation at the design temperature and humidity conditions, to a rate that will not allow sufficient accumulation of moisture to cause deterioration or otherwise adversely affect any of
 - i. the health or safety of building users,
 - ii. the intended use of the building, or
 - iii. the operation of building services.
- 2) Coatings applied to gypsum wallboard to provide required resistance to vapour diffusion shall conform to the requirements of Sentence (1) when tested in accordance with CAN/CGSB-1.501-M, "Method for Permeance of Coated Wallboard."





All documents are downloadable at logixicf.com

7.2 - VAPOUR BARRIER (NBCC) CONTINUED

Logix Insulated Concrete Forms Ltd. Project No. 3109888-R1

January 30, 2007 Revised: January 31, 2007 Page 3 of 4

3) Coatings applied to materials other than gypsum wallboard to provide required resistance to vapor diffusion shall conform to the requirements of Sentence (1) when tested in accordance with ASTM E96, "Water Vapor Transmission of Materials" by the desiccant method (dry cup).

Vapor Barrier materials are further discussed in Section 9.25.4.2 of the 2005 NBC under Sentence (1) which is summarized below:

1) Vapor barriers shall have a permeance not greater than 60 ng/Pa-s-m2 measured in accordance with ASTM E96, "Water Vapor Transmission of Materials" by the desiccant method (dry cup).

Logix ICF fall under Sentence (3) of Section 5.5.1.2 of the 2005 NBC and have been tested by Intertek in accordance with ASTM E96 using the desiccant method. The results were summarized in Intertek Test Report 3048347 dated October 14, 2003 and showed that a 1-inch Logix ICF had a water permeance of 100 ng/Pa-s-m². In the field, Logix ICF is installed with a 2.75-inch thickness and thus the calculated water permeance at this thickness is 36 ng/Pa-s-m². The detailed calculations are shown in Intertek Letter dated January 5, 2005. Based on these results, Logix ICF meets the requirements of Section 9.25.4.2, Sentence (1) of the 2005 NBC and can be installed without the use of a vapor barrier.

5 Conclusion

Intertek has conducted an engineering evaluation for Logix Insulated Concrete Forms Ltd., on Logix ICF, to determine if the Logix ICF meets the 2005 National Building Code as a vapor barrier. The analysis, per Section 4 above, showed that Logix ICF meets the water permeance requirements and can be installed without a vapor barrier.

INTERTEK TESTING SERVICES NA LTD.

Reported by:

Matt Lansdowne, EIT

Engineer, Building Products

Reviewed by:

Kal Kooner, EIT

Team Leader, Engineering Services Canada





All documents are downloadable at logixicf.com

7.2 - VAPOUR BARRIER (NBCC) CONTINUED

Logix Insulated Concrete Forms Ltd. Project No. 3109888-R1

January 30, 2007 Revised: January 31, 2007 Page 4 of 4

REVISION SUMMARY

DATE	SUMMARY
February 1, 2007	Added additional reference to 2005 NBC and maximum permeance
	requirements







All documents are downloadable at logixicf.com

7.3 - LEED V4 EVALUATION

LEED v4 BD+C for Logix TECHNICAL BULLETIN No.37 - 053014 (US & Canada)

POTENTIAL LEED POINTS CONTRIBUTION WITH LOGIX¹

TOTENTIAL LELD TOTALS CONTRIBUTION WITH LOUIS			
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).



All documents are downloadable at logixicf.com

7.3 - LEED V4 EVALUATION CONTINUED

TECHNICAL BULLETIN LEED v4 BD+C for Logix No.37 - 053014 (US & Canada)

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.

¹The 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 or www.cagbc.org.



All documents are downloadable at logixicf.com

7.4 - QAI FIRE RESISTANCE RATING

Quality Auditing Institute

Listing Book

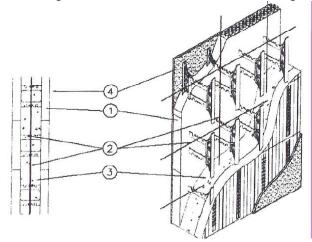
Standards:

ASTM E119 - "Standard Test Methods for Fire Tests of Building Construction and Materials";

CAN/ULC S101 - "Standard Methods of Fire Endurance Tests of Building Construction and Materials"

	Rating	Product Density	Maximum Cavity Width	Maximum Panel Thickness
ASTM E119 /	2-Hour	1.35 pcf	4 inches	2 3/4 inches
CAN/ULC S701	3-Hour	1.35 pcf	6 1/8 inches	2 3/4 inches
Ratings:	4-Hour	1.35 pcf	8 inches	2 3/4 inches

Structural Rating at above durations for concrete wall at structural design load.



Assembly Details:

- 1. Insulated Concrete Forms Standard forms made of two 16" x 48" by 2.75" thick expanded polystyrene (EPS) block panels connected by polypropylene detail webs at 8" O.C. The minimum width of the cavity is 4" as shown in the ratings table above (rating depends on cavity thickness).
- 2. Reinforcing Steel No. 4 steel reinforcing bars placed horizontally in each course and vertically at 16" O.C. along centerline of wall cavity thickness.
- 3. Sand-Limestone Concrete 145 +/- 5 pcf density, 2900 psi nominal compressive strength concrete.
- 4. Gypsum Wallboard Min. ½" thick, 1.5 psf minimum density, 48" wide gypsum wallboard fastened to flanges of polypropylene webs with 2" long drywall screws at 16" horizontally and vertically. Joints covered with joint compound, covered with joint tape, and covered with an additional coat of joint compound. Screw heads covered with joint compound.



All documents are downloadable at logixicf.com

7.5 – QAI LISTING REPORT

Quality Auditing Institute

Listing Book

BUILDING PRODUCTS LISTING PROGRAM

Insulated Concrete Forms (ICF) Class:

LOGIX Insulated Concrete Forms, Ltd. Customer:

Location: 9242 Pinetree Place, Whistler, BC, Canada, V0N 1B9

Website: www.LOGIXicf.com

Listing No. B1031-1

Effective Date: September 27, 2010 May 27, 2014 Last Revised:

Expires: N/A

Product: LOGIX Insulated Concrete Forms (ICF)

ASTM E2634 "Standard Specification for Flat Wall Insulating Concrete Form Standard(s):

(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".

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.

Effective Date: September 15, 2006 Revision Date: April 17, 2014

QM0604 Draft Listing Page Revision 3

Page 1 of 4



All documents are downloadable at logixicf.com

7.5 - QAI LISTING REPORT CONTINUED

Quality Auditing Institute

Listing Book

LOGIX ICF Fastener Resistance Ratings

FASTENER	ALLOWABLE	WITHDRAWAL		E LATERAL EAR
	lbs	kg	lbs	kg
#6 1 1/4 inch Length Coarse Thread Drywall Screw	23	10	59	26

LOGIX ICF Type 2 Specifications per CAN/ULC S701

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

LOGIX ICF Type II Specifications per ASTM C578

PROPERTY	LOGIX SPECIFICATION
Compressive Resistance	Minimum 15.0
psi at Yield or 10% Deformation	
Thermal Resistance	Minimum 4.0
F*ft ² *h/Btu at 1.00 Inch Thickness	
Flexural Strength	Minimum 35.0
psi	
Water Vapor Permeance	Maximum 3.5
Perms at 1.00 Inch Thickness	
Water Absorption	Maximum 3.0
% Volume	
Dimensional Stability	Maximum 2.0
% Change Dimensions	
Oxygen Index	Minimum 24.0
% Volume	
Density	Minimum 1.35
lbs/ft ³	

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/m3	100 mm Maximum	≤ 210	≥ 500

LOGIX ICF Surface Burning Characteristics per ASTM E84¹

		LOGIX	DENSITY	MAXIMUM	FLAME	SMOKE
--	--	-------	---------	---------	-------	-------

Effective Date: September 15, 2006 Revision Date: April 17, 2014

QM0604 Draft Listing Page Revision 3

Page 2 of 4



All documents are downloadable at logixicf.com

7.5 - QAI LISTING REPORT CONTINUED

Quality Auditing Institute

Listing Book

COMPONENT		THICKNESS	SPREAD INDEX (FSI)	DEVELOPED INDEX (SDI)
Expanded Polystyrene (EPS Panel)	$1.35 - 1.80$ $1bs/ft^3$	4.0 Inches Maximum	≤ 75	≤ 450

¹Ceiling 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 Listing B1031-1 LOGIX Insulated Concrete Form (ICF) – CAN/ULC S101 / ASTM E119

Load Bearing Fire-Resistance-Rated Wall Assembly¹

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

(See pdf Attachment)

NO.	COMPONENT	DESCRIPTION
		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.
1	Interior Sheathing	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 ½) 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

Effective Date: September 15, 2006 Revision Date: April 17, 2014

QM0604 Draft Listing Page

Revision 3





All documents are downloadable at logixicf.com

7.5 - QAI LISTING REPORT CONTINUED

Quality Auditing Institute

Listing Book

		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 herein 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

No warrantee 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.gai.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@gai.org. Please include the listing number in the request

FORM History

History Date	Version	Change Description	Reviewed By	Approved By
04/17/2014	3.0	Added disclaimer to	J. Johnson	K. Adamson
		form.		

Effective Date: September 15, 2006 Revision Date: April 17, 2014

QM0604 Draft Listing Page

Revision 3

Page 4 of 4



TABLE OF CONTENTS

LOGIX® INSULATED CONCRETE FORMS

8.0 - SPECIFICATIONS & REFERENCES

8.1 – TECHNICAL SPECIFICATIONS	8-3
8.2 – MATERIAL SAFETY DATA SHEET	8-9
8.3 – RECOMMENDED INDUSTRY PRACTICE FOR PLACING REINFORCING BARS	8-14
8.4 – STANDARD PRACTICE - SPLICING & DOWELS	8-15
8.5 – LOGIX R-VALUES	8-18





All documents are downloadable at logixicf.com

8.1 – TECHNICAL SPECIFICATIONS



Updated 12/10/19

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.

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. Increased EPS foam boards are available by utilizing D-Rv insert panels, which provides additional thickness in increments of 50 mm (2 inch).
- 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

www.logixicf.com Pa.1 of 6



All documents are downloadable at logixicf.com

8.1 - TECHNICAL SPECIFICATIONS CONTINUED



Updated 12/10/19

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 ³	Grey in color. Offers higher R-value ¹ than Logix Pro.
Logix Pro TX	Logix Pro with termite resistant additive Preventol ² .
Logix Pro Platinum ³ TX	Logix Platinum with Preventol.

LOGIX KD (unassembled form blocks)

	Description
Logix KD	White in color
Logix KD Platinum ³	Grey in color. Offers higher R-value ¹ than LOGIX Pro.
Logix KD TX	Logix Pro with termite resistant additive Preventol ² .
Logix KD Platinum ³ 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.
- 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 buildup 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).

www.logixicf.com Pa.2 of 6



All documents are downloadable at logixicf.com

8.1 - TECHNICAL SPECIFICATIONS CONTINUED



Updated 12/10/19

LOGIX INSULATED CONCRETE FORMS GENERAL SPECIFICATIONS SHEET, CONT'D

3 CODE/CERTIFICATION APPROVALS

- QAI evaluation to IBC and IRC 2012
- Miami-Dade County Approval No.19-0925.02
- State of Florida Certification of Approval No.FL14469-R3
- Wisconsin Building Products Evaluation No.20199000
- City of New York Materials and Equipment Acceptance MEA 273-04-M
- QAI listed QM0503
- ASTM E2634, Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems
- ASTM C578, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- CAN/ULC S717, Standard for Flat Wall Insulating Concrete Form (ICF) Units Material Properties
- CAN/ULC S701, Standard for Thermal Insulation, Polystyrene Boards

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	Min0.2% Max. 0.4% Min0.2% Max. 0.4% Max2mm 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

www.logixicf.com Pg.3 of 6



All documents are downloadable at logixicf.com

8.1 - TECHNICAL SPECIFICATIONS CONTINUED



Updated 12/10/19

LOGIX INSULATED CONCRETE FORMS GENERAL SPECIFICATIONS SHEET, CONT'D

Test Description	Result	Pass/Fail Criteria	Referenced Standard Test Method
Smoke Developed Rating	< 450	N/A*	ASTM E84/CAN ULC S102
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, ½" drywall on the other side) STC 50 for 4" Logix wall system (½" drywall & 2x2 wood strips on one side, ½" 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.

www.logixicf.com Pg.4 of 6



All documents are downloadable at logixicf.com

8.1 - TECHNICAL SPECIFICATIONS CONTINUED



Updated 12/10/19

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)

Pg.5 of 6 www.logixicf.com



All documents are downloadable at logixicf.com

8.1 - TECHNICAL SPECIFICATIONS CONTINUED



Updated 12/10/19

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.

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)

Pg.6 of 6 www.logixicf.com



^{**}Applicable to corner web only.

All documents are downloadable at logixicf.com

8.2 - MATERIAL SAFETY DATA SHEET



Safety Data Sheet - Expanded Polystyrene (EPS) in Logix[®] Insulated Concrete Forms

Issue Date: Oct 30, 2018

SAFETY DATA SHEET

Safety Data Sheet – Expanded Polystyrene (EPS) in Logix® Insulated Concrete Forms

SECTION 1 - IDENTII	FICATION
Product identifier:	Logix® Insulated Concrete Forms, Logix® Pro Buck, Logix® XP-1
Other means of identification:	Logix ICF
Recommended use:	Stay-In-Place Insulated Concrete Forms
Company:	Logix Insulated Concrete Forms Ltd. PO Box 162 Port Hope, Ontario L1A 3W3 1-866-944-0153
Emergency telephone number:	Francis Roma 1-866-944-0153
SECTION 2 – HAZAR	DOUS IDENTIFICATION
GHS classification: Label elements: Signal word: Hazard statements:	None None None None
Precautionary statements:	Keep away from heat/sparks/open flames/hot surfaces No smoking Avoid breathing dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling Wear respiratory protection.
Other hazards:	May accumulate combustible dust particles when sanding or sawing in restricted or confined spaces.
	Residual off-gassing of blowing agent may occur in low toxicity levels under normal use conditions.

SECTION 3 – COMPOSTION/INFORMATION ON INGREDIENTS		
Chemical Name	CAS No.	Content
Benzene Ethenyl-Homopolymer (Common Name: Polystyrene)	9003-53-6	> 90%
Pentane	109-66-0	>1% - <5.0%
Isopentane	78-78-4	<1.0%

Page 1 of 5



All documents are downloadable at logixicf.com

8.2 - MATERIAL SAFETY DATA SHEET CONTINUED



Safety Data Sheet - Expanded Polystyrene (EPS) in Logix® Insulated Concrete Forms

Issue Date: Oct 30, 2018

SECTION 4 – FIRST A	AID MEASUREMENTS
Inhalation:	When hot-knifing vapors may cause irritation to nose and throat. Dizziness may occur in poorly ventilated areas when hot-knifing. Remove affected individual into fresh air and keep the person calm. If difficulties occur, seek medical attention.
Skin contact:	This material is not considered to be a skin irritant. In cases where irritation may occur to extra sensitive skin, wash with soap and water for several minutes. Get medical attention if skin irritation develops or persists.
Eye contact:	Flush eyes with water for several minutes. Get medical attention if eye irritation persists or particulates are difficult to remove from the eye.
Ingestion:	This material is not considered to be hazardous when ingested but may cause blockage of air passage if large pieces are ingested. Get medical attention and apply proper first aid for persons with air passage blocked.
Physical state:	Solid
Odour & appearance:	Slight hydrocarbon odour, White in color
SECTION 5 – FIRE-FI	GHTING MEASURES
Suitable extinguishing media:	Use water spray, dry chemical, foam or carbon dioxide to extinguish flames.
Special protective equipment and precautions for fire-fighters:	Firefighters should be equipped with self-contained breathing apparatus and turn-out gear
Flash Point:	175 – 185 °C (347 – 365 °F), ASTM D3278
Autoignition:	285 °C (571 °F), DIN 51794
Lower explosion limit:	1.4 % (V) (air)
Upper explosion limit:	8.3 % (V) (air)
Flammability:	Not highly (UN Test N.1 (ready combustible solids))
Self-ignition temperature:	Not self-igniting
Further information:	Fire gives off black smoke consisting of carbon monoxide (< 10ppm), carbon dioxide (500ppm), oxides of nitrogen (4ppm), including trace of amounts of pentane, aldehydes and keytones. Fire hazards increase with presence of ignition sources or high concentrations of dust from work sites.

Page 2 of 5



All documents are downloadable at logixicf.com

8.2 - MATERIAL SAFETY DATA SHEET CONTINUED



Safety Data Sheet - Expanded Polystyrene (EPS) in Logix[®] Insulated Concrete Forms

Issue Date: Oct 30, 2018

SECTION 6 - ACCIDE	NTAL RELEASE MEASURES
Personal precautions:	Sources of ignition should be kept well clear.
	Maintain proper ventilation in areas prone to static discharge (high dust environment) or products prone to combustion.
Environmental precautions:	Do not allow to enter drains or waterways.
Methods and materials	Loose material can be vacuumed or swept and placed in disposal containers.
for containment and cleaning up:	This material can be disposed of in accordance with local, state/provincial and federal regulations. This material is not considered a hazardous waste.
SECTION 7 - HANDLI	NG AND STORAGE
Precautions for safe handling:	Take special precautions in handling and unloading product onto the construction site. When loading or unloading from trucks use either proper lifting equipment or use a minimum of 2 persons when manually loading or unloading pallets from trucks.
Conditions for safe storage (including incompatible materials):	Storage locations should be in an area that will minimize damage or soiling to products. Products can be exposed to UV or freezing rain or snow for prolonged periods. However, protection is recommended in cases where stored or installed products are exposed for more than 4 weeks.
	Keep products away from heat, sparks, flames or other ignition sources.
SECTION 8 – EXPOSU	RE CONTROL/PERSONAL PROTECTION
Eye protection:	Approved safety goggles when applying fasteners, sanding or sawing.
Skin protection:	Approved gloves and/or sleeves should be worn if sensitive to material composition of products.
Respiratory protection:	Approved dust mask when sanding, sawing or when working in high dust/particulates environment. In areas of high dust, vapor or mist content exceeding safe exposure limits use NIOSH or MSHA approved air purifiers or air supplied respirators.
SECTION 9 – PHYSIC.	AL AND CHEMICAL PROPERTIES
Appearance:	Rigid cellular foam blocks and shapes. White in color.
Odour:	Faint odour.
Odour threshold:	N/A
pH:	N/A
Melting point/freezing point:	Softens at approximately 70 °C (160 °F)
Initial boiling point/boiling range:	N/A
Evaporation rate:	N/A
Flammability (solid, gas)	> 24% oxygen index (ASTM D2863)





All documents are downloadable at logixicf.com

8.2 - MATERIAL SAFETY DATA SHEET CONTINUED



Safety Data Sheet - Expanded Polystyrene (EPS) in Logix® Insulated Concrete Forms

Issue Date: Oct 30, 2018

Vapour pressure:	N/A
Vapour density:	N/A
Solubility:	Insoluble in water. Soluble with materials containing primarily of hydrocarbons, aldehydes, esters and amines.
Partition coefficient – n-octanol/water:	N/A
Viscosity:	N/A

SECTION 10 - STABILITY AND REACTIVITY	
Reactivity:	Products react to high temperatures and strong oxidizers.
Chemical stability:	Stable under normal use conditions.
Possibility of hazardous reactions:	None.
Conditions to avoid:	Avoid all sources of ignition, such as heat, sparks, open flame. Unstable when exposed to high temperatures. Recommended maximum use temperature of 60°C (166°F).
Incompatible materials:	Not compatible with materials containing primarily of hydrocarbons, aldehydes, esters and amines.
Hazardous decomposition products:	High heat or combustion produces black smoke consisting of carbon monoxide (< 10ppm), carbon dioxide (500ppm), oxides of nitrogen (4ppm), including trace of amounts of pentane, aldehydes and keytones.

SECTION 11 – TOXICOLOGICAL INFORMATION		
Primary route of entry:	Eyes, skin and inhalation.	
Effects of Acute Exposure	:	
Eyes:	When hot-knifing material, vapors may cause irritation to eyes.	
Skin:	This material is not considered to be a skin irritant. Products may contain small particulates of dust accumulated naturally from surrounding environment, which may cause skin irritation with possible mild discomfort on extra sensitive skin.	
Inhalation:	When hot-knifing vapors may be cause irritation to nose and throat. Dizziness may occur in poorly ventilated areas when hot-knifing.	
Effects of chronic exposure:	Exposure to vapors may aggravate existing respiratory conditions, such as asthma, bronchitis and inflammatory or fibrotic respiratory disease.	

SECTION 12 – ECOLOGICAL INFORMATION

Non-biodegradable.

SECTION 13 – DISPOSAL CONSIDERATIONS

Loose material can be vacuumed or swept and placed in disposal containers.

This material can be disposed of in accordance with local, state/provincial and federal regulations. This material is not considered a hazardous waste.

Page 4 of 5



All documents are downloadable at logixicf.com

8.2 - MATERIAL SAFETY DATA SHEET CONTINUED



Safety Data Sheet - Expanded Polystyrene (EPS) in Logix® Insulated Concrete Forms

Issue Date: Oct 30, 2018

SECTION 14 – TRANSPORT INFORMATION

N/A

SECTION 15 - REGULATORY INFORMATION

All ingredients listed with TSCA and DSL (Toxic Substances Control Act and Domestic Substances List, respectively)

EPCRA 311-312 (Emergency Planning and Emergency Right-to-Know Act): Not hazardous

Classified as non-hazardous with WHMIS.

SECTION 16 – OTHER INFORMATION

SDS updates:

October 30, 2018

TO THE BEST OF OUR KNOWLEDGE THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE. HOWEVER, NEITHER THE ABOVE NAMED MANUFACTURER OR SUPPLIER NOR ANY OF ITS SUBSIDIARIES ASSUMES ANY LIABILITY WHATSOEVER FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREIN. FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL IS THE SOLE RESPONSIBILITY OF THE USER. ALL MATERIALS MAY PRESENT UNKNOWN HAZARDS AND SHOULD BE USED WITH CAUTION. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED HEREIN, WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.





All documents are downloadable at logixicf.com

8.3 – RECOMMENDED INDUSTRY PRACTICE FOR PLACING REINFORCING BARS

Reprinted from: THE MANUAL OF STANDARD PRACTICE by the Concrete Reinforcing Steel Institute, January 1997.

RECOMMENDED INDUSTRY PRACTICE FOR PLACING REINFORCING BARS*

1. Introduction

These recommendations for placing reinforcing bars are partially based upon the ACI Building Code.

2. General

Reinforcing bars should be accurately placed in the positions shown on the placing drawings and adequately tied and supported before concrete is placed, and secured against displacement within the tolerances recommended in Section 8.

Welding of crossing bars (tack welding) should not be permitted for assembly of reinforcement unless authorized by the Architect/Engineer.

3. Surface Condition of Reinforcement

At the time of concrete placement, all reinforcing bars should be free of mud, oil, or other deleterious materials. Reinforcing bars with rust, mill scale, or a combination of both should be considered as satisfactory, provided the minimum dimensions, weight, and height of deformations of a hand-wire-brushed test specimen are not less than the applicable ASTM specification requirements.

4. Bending

Reinforcing bars should not be bent or straightened in a manner that will injure the material. Bars with kinks or improper bends should not be used. Except for realignment of #7 through #18 rebar up to about 30° bend and #3 through #6 rebar up to about a 45° bend, no bars partially embedded in concrete should be field bent, except as shown on the project drawings or permitted by the Architect/Engineer.

5. Spacing of Reinforcement

The clear distance between parallel reinforcing bars in a layer should not be less than the nominal diameter of the bars, nor 1 in. Clear distance should also not be less than one and one-third times the nominal maximum size of the coarse aggregate, except if in the judgement of the Architect/Engineer, workability and methods of consolidation are such that concrete can be placed without honeycomb or voids.

Where parallel reinforcement is placed in two or more layers, the bars in the upper layers should be placed directly above those in the bottom layer with the clear distance between layers not less than 1 in.

Groups of parallel reinforcing bars bundled in contact, assumed to act as a unit, not more than four in any one bundle may be used only when stirrups or ties enclose the bundle. Bars larger than #11 should not be bundled in beams or girders. Individual bars in a bundle cut off within the span of flexural members should terminate at different points with at least 40 bar diameters stagger. Where spacing limitations and minimum clear cover are based on bar size, a unit of bundled bars should be treated as a single bar of a diameter derived from the equivalent total area.

In walls and slabs other than concrete joist construction, the principal reinforcement should not be spaced farther apart than three times the wall or slab thickness, nor more than 18 in.

In spirally reinforced and tied columns, the clear distance between longitudinal bars should not be less than one and one-half times the nominal bar diameter, nor 11/2

The clear distance limitation between bars should also apply to the clear distance between a contact lap splice and adjacent splices or bars.

Splices in Reinforcement**

6.1 General

Splicing of reinforcing bars should be either by lapping, mechanical connections, or by welding.

Splices of reinforcing bars should be made only as required or permitted on the project drawings or in the project specifications, or as authorized by the Architect/Engineer. All welding should conform to the current edition of "Structural Welding Code-Reinforcing Steel" (ANSI/AWS D1.4).

6.2 Lap Splices

Lap splices of #14 and #18 bars should not be used, except in compression only to #11 and smaller bars.

Lap splices of bundled bars should be based on the lap splice length recommended for individual bars of the same size as the bars spliced, and such individual splices within the bundle should not overlap each other. The length of lap should be increased 20 percent for a 3-bar bundle and 33 percent for a 4-bar bundle.

Bar laps placed in contact should be securely wired together in such a manner as to maintain the alignment of the bars and to provide minimum clearances.

Bars spliced by noncontact lap splices in flexural members should not be spaced transversely farther apart than one-fifth the required length of lap nor

^{**}See Reinforcement: Anchorages, Lap Splices and Connections by the Concrete Reinforcing Steel Institute



^{*}For more complete recommendations on bar placement, see Placing Reinforcing Bars available from the Concrete Reinforcing Steel Institute

All documents are downloadable at logixicf.com

8.4 - STANDARD PRACTICE - SPLICING & DOWELS

Lap Splices

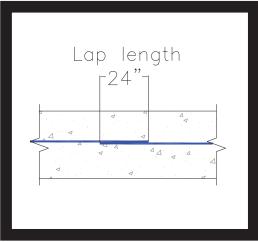


Figure 1a: Contact lap splices

A lap is when two pieces of rebar overlap to form a continuous line. This helps transfer loads properly throughout the structure. There are two types of lap splices: contact lap and non-contact lap splices (see Figure 1a and 1b). The lapped sections of contact lap splices are wired together. Lapped sections of non-contact lap splices do not touch and are permitted in practice provided the distance between lap sections meet the specified code requirements.

When using LOGIX ICFs non-contact lap splices can be used in lieu of contact lap splices.

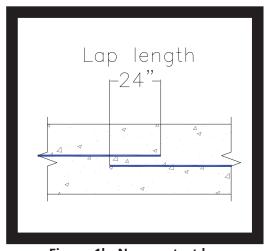


Figure 1b: Non-contact lap splices

Lap Splices in Horizontal Rebar

In traditional construction methods, contact lap splices are more commonly used because it offers the most reliable method of ensuring the lapped sections are secure against displacement, especially during concrete pours. LOGIX ICFs can accommodate contact lap splices. However, the rebar slots in the LOGIX webs are also designed to accommodate non-contact lap splices,



All documents are downloadable at logixicf.com

8.4 - STANDARD PRACTICE - SPLICING & DOWELS CONTINUED

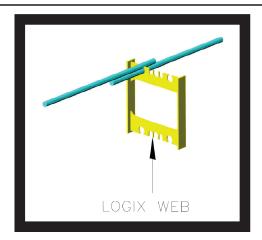


Figure 2a: Contact lap splices



Figure 2b: Non-contact lap splices

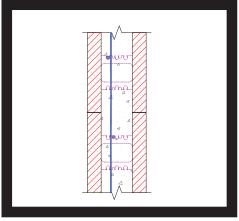


Figure 3: Vertical rebar in LOGIX ICF wall system

ensuring the horizontal rebar stays in place (see **Figure 2a** and **2b**). This minimizes the need to wire tie lapped sections and reduces labor.

The length of a lapped section (or lap length) varies depending mainly on the loading conditions, rebar size, rebar spacing, rebar grade and concrete strength. As a general rule, LOGIX recommends a lap length of 40d or 24", whichever is greater, for residential construction (see Figure 1a and 1b).

Lap Splices in Vertical Rebar

For the same reason as horizontal rebar, contact lap splices are also more commonly used in traditional construction methods. However, contact lap splices are not necessary when using LOGIX ICFs. The LOGIX web ties, which are spaced horizontally every 8" (203mm) and about 5.25" (133mm) vertically per block, provides enough stability for placement of vertical rebar. Vertical rebar can be further secured if it is slid through a staggered pattern of horizontal rebar. The slots in the webs have been designed to accommodate this (see **Figure 3**).



All documents are downloadable at logixicf.com

8.4 - STANDARD PRACTICE - SPLICING & DOWELS CONTINUED

Vertical rebar in wall Footing dowel

Figure 4: Wall/Footing connection

REINFORCEMENT AS REQUIRED REINFORCEMENT AS REQUIRED

R611.7.1.4

Footing Dowels

Footing dowels connects the wall to the footing (see Figure 4). This prevents wall movement at the wall/footing joint caused mainly by soil loads. In residential construction, the vertical rebar in the wall itself does not contribute to the strength of the wall/footing connection and hence is not required to splice with the footing or match the spacing of the footing dowels. In cases, where lap splice may be required, non-contact lap splices are permitted.

Lap Splices –Building & Design Code References

International Building Code 2003 (IBC 2003), R611.7.1.4:

"R611.7.1.4 Lap Splices. Where lap slicing of vertical or horizontal reinforcing steel is necessary, the lap slice shall be in accordance with Figure R611.7.1.4 and a minimum of 40db, where db is the diameter of the smaller. The maximum distance between noncontact parallel bars at a lap slice shall not exceed 8db."

National Building Code 1995 (NBC 1995), 4.3.3.1:

Clause 4.3.3.1 references concrete design code, CSA A23.3 (specifically CSA A23.3, 12.14.2.3):

"12.14.2.3

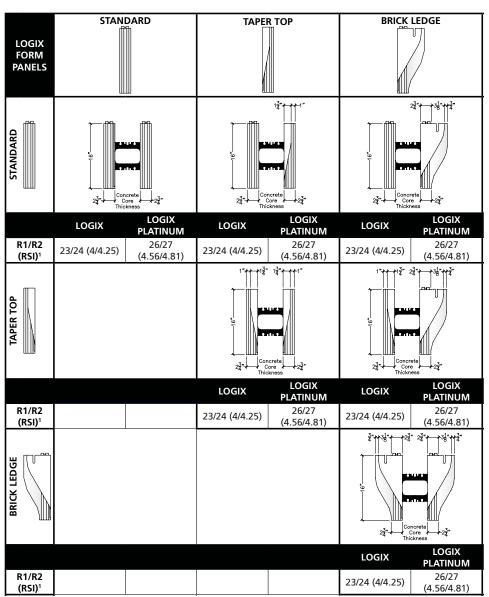
Bars spliced by lap splices in flexural members shall have a transverse spacing not exceeding the lesser of one-fifth of the required lap splice length or 150mm."





All documents are downloadable at logixicf.com

8.5 - LOGIX R-VALUES



^{1.} R1 denotes total R-value of form panels only (per ASTM C518 at average mean temperature of 75deg F.). R2 denotes total R-value of a wall assembly consisting of form panels, 4 inch concrete core, 1/2 inch drywall and interior airfilm. R1 and R2 are based on imperial units. R-values are based on independent testing conducted by Intertek Testing Services.







Connect with a Local Manufacturer

888.838.5038

330 Cain Drive Haysville, KS 67060-2004

888.706.7709

840 Division St. Cobourg, ON K9A 5V2

877.789.7622

35 Headingley Rd. Headingley, MB R4H 0A8 888.453.5961

11581-272 St. Acheson, AB T7X 6E9

888.453.5961

6333 Unsworth Rd. Chilliwack, BC V2R 5M3



