



**INTEGRATED
LEARNING CENTER**
BY FOX BLOCKS

PRIMARY INSTALLER ILC TRAINING WORKBOOK

SECTION 1: Pre-Build

MODULE 1: Introduction and Products

MODULE 2: Building Codes (US-ICC or Canada-NBCC)

MODULE 3: Estimating

MODULE 4: Pre-Planning

MODULE 5: Bearing Surfaces

MODULE 6: Reinforcement

TABLE OF CONTENTS

SECTION 1: Pre-Build

MODULE 1: Introduction and Products	4
MODULE 2: Building Codes (US-ICC or Canada-NBCC)	8
MODULE 3: Estimating	13
MODULE 4: Pre-Planning	15
MODULE 5: Bearing Surfaces	16
MODULE 6: Reinforcement	18

PRIMARY INSTALLER TRAINING ILC WORKBOOKS

- SECTION 1:** Pre-Build (6 Modules)
- SECTION 2:** Building the Wall (6 Modules)
- SECTION 3:** Concrete (3 Modules)
- SECTION 4:** Post Concrete and Finishes (4 Modules)

OVERVIEW

Mission

The mission of the Fox Blocks Integrated Learning Center site is to provide an experienced curriculum for training and education enabling the User to experience a great build with Fox Blocks, for any project – residential or commercial.

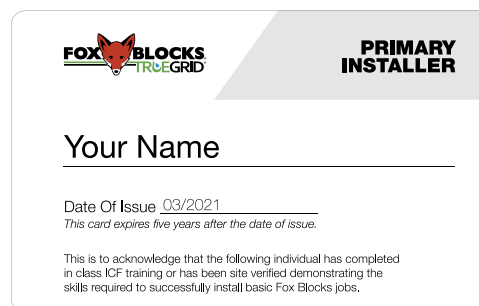
PRIMARY INSTALLER COURSE

This training course is a series of self-paced educational modules. Register on the website and open each module in order, successfully complete the questions for each of the modules. Once you have completed all the modules in all four sections, you will be sent a notification of completion and registered as a **Fox Blocks Primary Installer**, receiving a certificate and wallet card.

Once you are registered, the site allows you to login and logout anytime and will track your progress. There are 19 modules in total with an estimated viewing time of approximately 6+ hours. Some modules are 5± minutes and some are 20± minutes. View all the modules in full screen.

SECTION WORKBOOKS

Each of the 4 Sections includes a Workbook. These Workbooks highlight key content in the modules, plus reference documentation, videos and checklists that will further enhance the educational experience. Download each Section Workbook as you follow along with the training.



MODULE 1: Introduction and Products

Fox Blocks: Who We Are

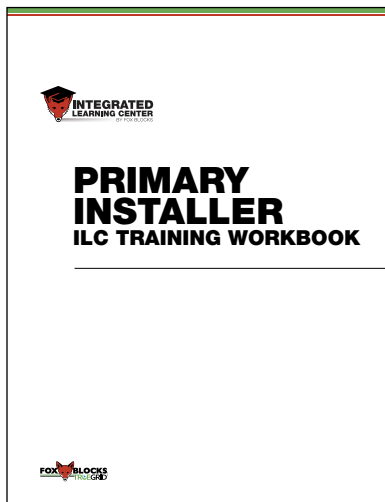
Fox Blocks is a leading manufacturer of ICF building blocks. Our philosophy is that success doesn't just happen—it's intentional and deliberate, requiring preparation and forethought. At Fox Blocks, we leave nothing to chance. We are as committed to each other as we are to the success of our dealers and customers.

Fox Blocks has been making insulated concrete forms since 2005. Our parent company, Airlite Plastics, was founded in 1946, and today, it is still a family owned business. Airlite produces plastic containers and insulated packaging products for a variety of industries, so we share knowledge of plastics innovation throughout the company.

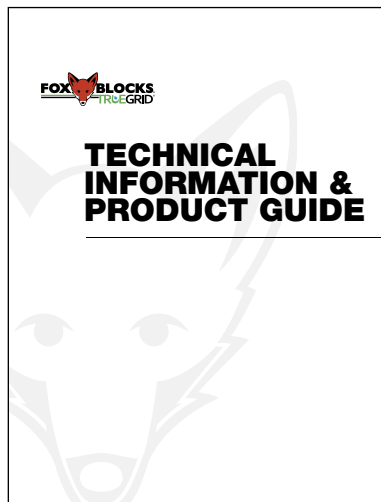
Fox Blocks has multiple manufacturing facilities across the US and Canada and is available from a distributor in your area. Use the Fox Blocks website to find a dealer.

Reference Material

Download these main reference guides for this training:



ILC Workbook



1.01.01 Technical Information
& Product Guide



1.02.01 Installation Checklist

Fox Blocks Website: www.foxblocks.com

Review the website for:

- Products
- Case Studies
- Resources
- Blogs
- Events
- Project Estimating
- Find a Dealer

The screenshot shows the Fox Blocks website homepage. The header includes the Fox Blocks logo, navigation links for Products, Case Studies, Resources, Blog, Events, and Project Estimator, and a search icon. The main content area features a large image of a building at night with a curved roof, overlaid with a dark grey box containing the text "THIS IS THE NEXT GENERATION OF BUILDING" and a call to action "Explore Our Products". A chat window is visible in the bottom right corner.

Callout boxes on the right side of the screenshot provide the following descriptions:

- About Us:** Background on Fox Blocks and Airlite Plastics
- Contact:** Ask an expert on any subject related to ICF construction
- Find a Dealer:** Locate a local dealer/distributor in your area to purchase product
- Products:** Full listing and description of Products and accessories
- Case Studies:** Listing of high-profile Case Studies of projects
- Resources:** Extensive library of technical bulletins
- Blog:** Expansive library of topics, projects, and education
- Events:** Listing of trade shows, exhibits and trainings
- Project Estimator:** Our custom estimating program for download
- Chat Feature:** Instant Access

Fox Blocks Reference Material

All reference materials are available on the Fox Blocks website – www.foxblocks.com

MODULE 1: Introduction and Products

Fox Blocks Resource Library, Website Table of Contents

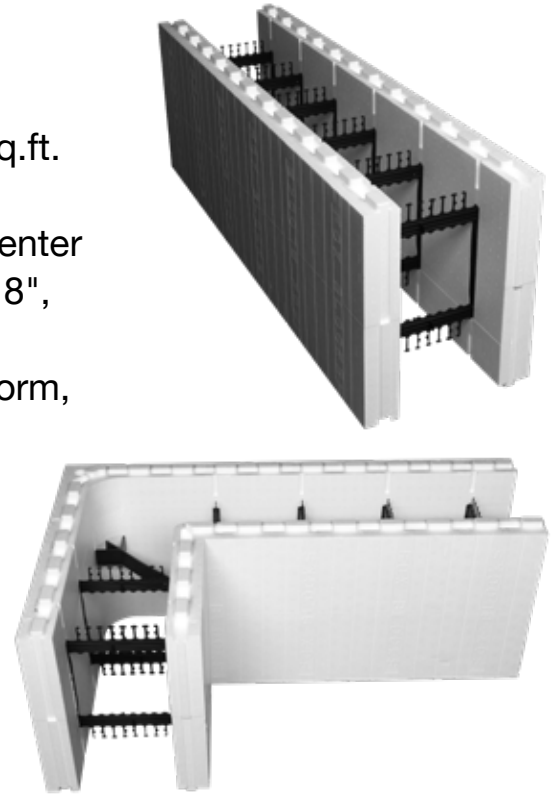
Search for documents by entering key words, or section titles or main index numbers.

MAIN CATEGORY	SUB-CATEGORY	CATEGORY INDEX NO.
Marketing	Brochures and Infographics	
	Flyers	
Technical Bulletins	Product Data	1.01
	Installation Applications	1.02
	Coursing and Layout	1.03
	Concrete and Reinforcement	1.06
	Bracing Alignment	1.07
	Finishes	1.08
	Plumbing Electrical HVAC	1.09
	Environmental Sustainability	1.10
	Fire and Resiliency	1.11
	Building Science-Air, Moisture, Vapor, Sound	1.12
	Energy and Thermal Efficiency	1.13
	Construction Efficiency, Estimating	1.14
	Complementary Materials	1.15
Codes & Standards	Building Code Compliance	
	ICF Standards	
	Safety	
Engineering & Checklists	Prescriptive Design	1.05
	Reinforcement	
	Lintel Tables	
	Installation Checklists	
Testing & Reports	Codes Compliance	
	Fasteners	
	Fire and Smoke	
	Product Attributes	
Specifications & Guides	CSI Specification	1.04
	Technical Data Sheet	
	Estimating	
	Technical Installation	
	Material Safety	

Fox Blocks Product Features

- Reversible interlock
- EPS panels 2⁵/₈" thick
- Standard form size 16" x 48", 5.33 sq.ft. wall area
- Fastening strips 1¹/₂" wide at 8" on center
- Concrete core sizes available 4", 6", 8", 10" 12"
- Compact product is a knock-down form, expandable core size beyond 12"
- 6 in 1 building envelope features
- Full line of accessory products and specialty blocks

Fox Blocks may be used for below and above grade walls for any building type – residential or commercial.



Fox Blocks Resource Material on Products

- Products Tab on Website
- Resource Library Section 1.01
- 1.01.01 Technical Information and Training Guide
- 1.01.02 Fox Blocks Line -Up
- 1.02.06 6 in 1 Design Advantages
- 1.02.13 Frequently Asked Questions (FAQ)
- 1.04.02 Technical Performance Data Sheet
- CCRR 1010 Product Code Compliance Report



MODULE 2: Building Codes - US

ICC Building Codes – IBC AND IRC

Flat wall ICFs are listed in the following sections of the IRC -

- Section 3 – Building Planning
- Section 4 – foundations
- Section 6 – Wall Construction



Residential construction to following applicability limits.

ICF Standards

- AC12 – Foam Plastic Insulation
- AC15 – Concrete Floor, Roof and Wall Systems
- AC353 – Insulating Concrete Forms for Solid Walls
- ASTM Standards: ASTM E2634 Specifications for Flat Wall ICF



ICF Engineering

- Residential per IRC
- ACI 332 – Residential Code Requirements for Structural Concrete
- Commercial per ACI 318
- PCA 100 Prescriptive Design of Exterior Concrete Walls
- Fox Blocks Structural Engineering Tables



Fox Blocks Code Compliance Report – CCRR-1010

- Download this code compliance report from Resource Library

Code Applicability Limits

- Follow residential applicability limits as defined in the IRC
- Fox Blocks can be used for foundation walls and above grade walls for all building types and all sizes

Fox Blocks Reference Material

- 1.05.01 Structural Engineering Tables
- 1.05.02 Lintel Tables ACI-318
- 1.05.06 IRC and ACI318 alternative Rebar Tables
- 1.04.01 Standards and Building Codes



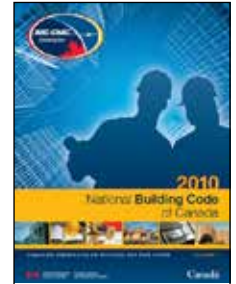
MODULE 2: Building Codes - Canada

NBCC Building Code

Flat Wall ICFs are listed in Part 9 – Housing and Small Buildings.

NBCC lists residential design parameters for flat wall ICFs.

- Section 9.15.4.4 – Foundation Walls
- Section 9.20.17 – Above Grade Walls



Code Applicability Limits

- Follow residential applicability limits
- Fox Blocks can be used for foundation walls and above grade walls for all building types and all sizes

ICF Standards

- AC-353 – Insulating Concrete Forms for Solid Walls
- ASTM Standards: ASTM E2634 Specifications for Flat Wall ICF
- CAN/ULC S717.1 Standard for Flat Wall ICF

ICF Engineering

- CSA A23.3 Design of Concrete Structures
- ACI 332 – Residential Structural Concrete
- Fox Blocks Structure Engineering Tables – registered per Province, available on website

Fox Blocks Code Compliance Report – CCRR-1010

- Download this code compliance report from Resource Library

Fox Blocks Reference Material

- 1.05.10 Prescriptive Design – ON,BC,AB,SK,MB,NS
- 1.05.11 Prescriptive Design – QC,NB,PE
- 1.05.12 to 1.05.14 Kneewall Foundation Engineering
- 1.05.15 to 1.05.17 Unreinforced Foundation Walls
- 1.04.01 Standards & Building Code



MODULE 2: Building Codes

Fox Blocks Wall Design

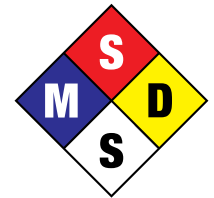
The Resource Library has reference documents for coursing, wall layout, etc. There is also vast library of CAD 2D, 3D in various file formats, plus BIM details from these websites.

- 1.02.06 6 in 1 Design Advantages
- 1.02.02 6 inch Foundations
- 1.02.03 8 inch Foundations
- 1.03.01 Optimizing Wall Layouts
- 1.03.02 Vertical Coursing Tables
- 1.03.03 Sizes, Volumes and Weights



Health & Safety

- All typical construction safety equipment is required working with ICFs, concrete, reinforcement bars and heights
- No off gassing or harmful chemicals in ICFs
- All Alignment, Bracing and Scaffolding must be OSHA approved
- ICFs are a code approved product for all building types
- Safety Data Sheets are available
- ICF materials do not pose a health risk during construction or in the final application



Fox Blocks Reference Material

- 1.04.05 Safety Data Sheet
- 1.04.02 Spec Data Sheet

MODULE 3: Estimating

Contractors and installers, to be successful in business, must understand how to accurately estimate materials and the labor required for any project to enable winning bids and securing contracts.

Checklist for Estimating

1. Review the plans for all wall lengths, heights, opening sizes
2. Review engineering for concrete core size and rebar layout per level
3. Review opening sizes for requirements on lintel rebar and stirrups
4. Itemize specialty blocks, accessories, anchors, embedments
5. Review layout and materials for bracing/alignment and scaffolding
6. Download Fox Blocks Estimator Pro and start estimate
7. Establish worksheets per level and input data
8. Apply material and labor costs within Estimator Pro program
9. Calculate man hour requirements and crew size
10. Using Estimator Pro, develop material order for all Fox Blocks products

Fox Blocks Resource Material for Estimating

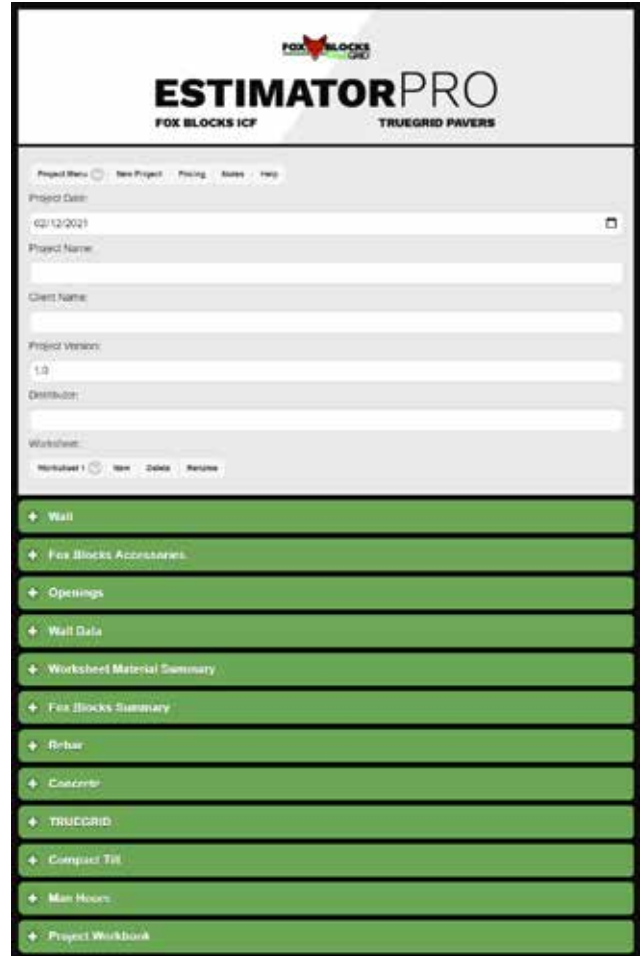
- 1.03.01 Optimizing Wall Layouts
- 1.03.02 Vertical Coursing Tables
- 1.03.03 Sizes, volumes and Weights

- 1.14.01 Man Hour Rates
- 1.14.02 Estimator Pro Procedures and Tips
- 1.14.03 Basic Estimating
- 1.14.08 Cost Savings – Material and Labor
- 1.14.09 Foundation Wall Comparison

MODULE 3: Estimating

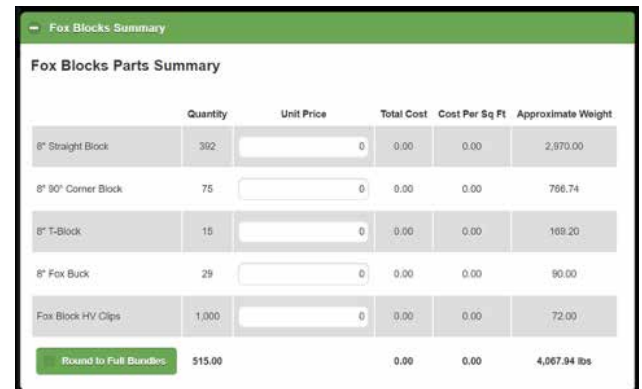
All New Estimator Pro

- New program and format
- Addition of TRUEGRID
- Addition of Compact Forms
- All new design for new operating systems
- All new look in order to work as good on your phone as it does on your computer
- New tabs to enable accurate, and detailed estimates for any size project.
- Refer to technical bulletin in Resources and instruction video course on ILC website



Fox Blocks Summary Tab

- Showing specific block quantity, unit price, total cost, cost per sq. ft. and approx. weight.



	Quantity	Unit Price	Total Cost	Cost Per Sq Ft	Approximate Weight
8" Straight Block	392	0	0.00	0.00	2,970.00
8" 90° Corner Block	75	0	0.00	0.00	766.74
8" T-Block	15	0	0.00	0.00	169.20
8" Fox Buck	29	0	0.00	0.00	90.00
Fox Block HV Clips	1,000	0	0.00	0.00	72.00
Round to Full Bundles	515.00		0.00	0.00	4,067.94 lbs



The Estimator Pro App is available for download to your mobile device.

MODULE 4: Pre-Construction Planning

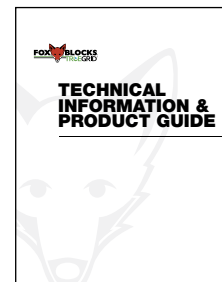
The objectives of this module are to discuss pre-construction, on-site planning for an ICF project, enabling safety, efficiency and a successful build.

Checklist for Project and Site Review

- Plan approval, permits, final dimensions, heights, opening sizes
- Crew training on building with ICFs, documentation available
- Site access for concrete, pump and material trucks
- Receiving and storage of bundled quantities
- Protection and safety of materials prior to use
- Tools for ICF build
- Staging ICF materials to begin building the walls
- Staging to prep and place reinforcement
- Staging of bracing, alignment and scaffolding
- Connectors, anchors, embeds and service sleeves
- Project access once walls are built
- Fox Blocks support contact numbers – distributor, technical support

Fox Blocks Resource Material for Pre-Planning

- 1.01.01 Technical Information and Training Guide
- 1.02.01 Installation Checklist
- 1.02.06 6 in 1 Design Advantages
- 1.14.05 Step by Step Project Checklist
- Fox Blocks Project Log



MODULE 5: Bearing Surfaces

The objective of this module is to discuss the importance of various types of bearing surfaces and the requirements to successfully build an ICF wall.

It is in the ICF installer's best interest to either supervise or be involved in the installation of the bearing surface to meet specified tolerances.

Key Items to Review

- Understand the bearing capacity of the ground for bearing surface design
- Key is for a bearing surface to be flat, level and smooth
- Maintain tolerances of ¼" to alleviate any issues with adjusting the first 2 courses of ICF
- Elevation changes should match block height with steps @ 16" or half block height 8"
- Dowels are required to connect ICF concrete core to bearing surface
- Dowel spacing does not have to align with wall vertical rebar spacing or location
- Building on piles requires a grade beam designed in the bottom courses of the ICF
- For design, need to know - Snow or Roof Load, Number of Stories, Soil Load Capacity

Typical Bearing Surfaces



Strip Footing



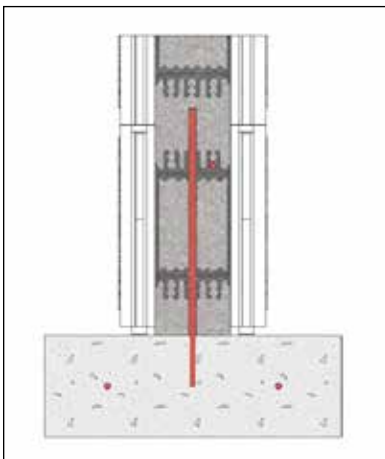
Piles



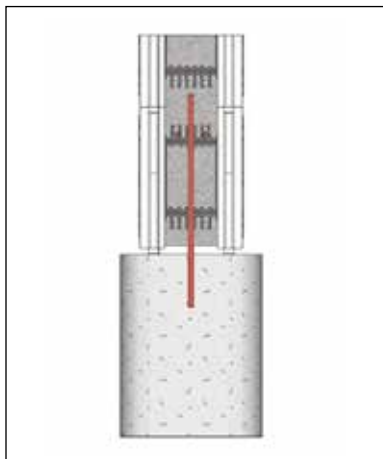
Slab on Grade

Resource Material for Bearing Surfaces

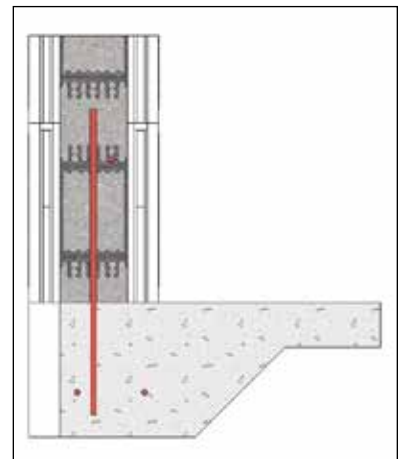
- Bearing surfaces must be designed to meet building code and project soil bearing capacity
- IRC Table R403.1(3) footing size
- NBCC Footings - Part 9, Section 9.15



Fox Blocks Bearing Strip



Fox Blocks Bearing Pile



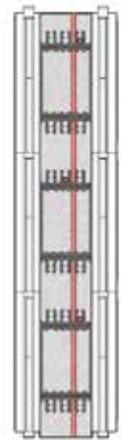
Fox Blocks Bearing Slab

MODULE 6: Reinforcement

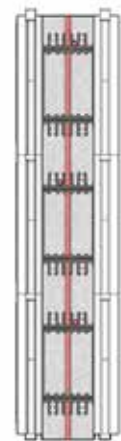
Fox Blocks walls are designed as reinforced concrete. The design of the reinforcement is available in the building codes or Fox Blocks Structural Engineering Tables. Note the codes and prescriptive design tables are different between the US and Canada.

Key Wall Design Elements

- Use safety caps on exposed rebar
- Typical residential rebar designs use #4 or #5 (10M or 15M) rebar
- Foundation walls – rebar install toward interior face of wall, tension side
- Above grade walls – rebar is placed in the center of the wall
- Rebar designs for foundation walls may be different than above grade walls
- Horizontal rebar installed in a staggered layout to secure vertical bars between
- Install with contact lap splicing at required overlap length – 60 times bar diameter
- Pre-cut all rebar, horizontal installed as wall is built, vertical from top of wall



Tension Side



Center of Wall

Key Lintel Design Elements

- All openings over 2' wide require a lintel design
- Understand how to use lintel design tables – opening width, lintel depth, concrete core size and uniform load over opening
- Ensure all openings have the horizontal and vertical rebar, plus required stirrups to meet design criteria

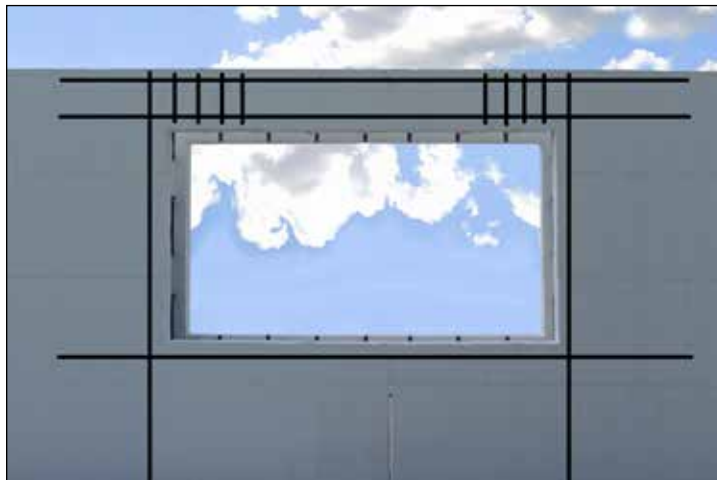
Miscellaneous Reinforcement Elements

- Dowels in bearing surface to connect ICF walls
- Dowels in top of wall cold joint
- Other forms of reinforcement may be used in Fox Blocks – Helix micro-fiber

Follow the Fox Blocks - Pre-Concrete Checklist to ensure rebar is installed as per the design and walls (if required) have been inspected and approved for concrete placement.

Fox Blocks Resource Material for Reinforcement

- 1.05.01 US Structural Engineering Tables
- 1.05.02 ACI 318 Lintel Tables
- 1.05.06 IRC Alternative Rebar Tables
- 1.05.04 and 1.05.05 Helix Tables – below and above grade
- 1.05.10 to 1.05.17 Canadian Structural Engineering Tables
- 1.14.06 Pre-Concrete Checklist Back Page





**INTEGRATED
LEARNING CENTER**
BY FOX BLOCKS

Please go to:
FOXBLOCKS.COM

WHERE YOU WILL FIND:


- Product Information
- Local Dealer and Regional Advisor Contact Information
- Downloadable Technical Files
- Estimating Program
- Case Studies
- Training - Integrated Learning Center (ILC)
- Links to 2D and 3D CAD and BIM Details
- Educational Video Library (ILC)



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