

# Redefining building.

## know·ledge

noun | ˈnə-lij |

Having all the information you need to help you succeed in one handy place:

- 1 Energy efficient building,
- 2 Installation and use, and
- 3 The best technical support in the industry.
- 4 **Redefining building.**



**ARXX™ ICF**  
Redefining building.

Installation Guide

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# Installation Guide



ARXX<sup>TM</sup> Edge

ARXX<sup>TM</sup> Prime

ARXX<sup>TM</sup> Steel

# PREFACE

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## INSTALLATION GUIDE

The ARXX Installation Guide is a valuable reference tool that will help you quickly understand some of the key questions you may have about building with ARXX ICFs.

ARXX ICFs have been a proven and reliable building solution since 1978 – more than 30 years. As a leader in the design and marketing of ICFs, we have more than 105,000 projects, more than 140 million square feet installed, and over 35,000 trained installers - more than any other company making us the solid, safe choice.

## WHAT ARE ARXX INSULATING CONCRETE FORMS (ICFs)?

ARXX insulating concrete forms (ICFs) are a lightweight rigid foam insulation block forming system for steel-reinforced concrete walls above and below grade. The blocks are stacked and locked together to quickly build a wall. These walls can be tall, short, have varying thicknesses, be exterior or interior and be designed with any shape or curve. Only ARXX offers three award-winning product lines to provide the best match for any project: ARXX Prime, ARXX Edge and ARXX Steel. This Installation Guide includes information and applications for all ARXX ICF products.

## WHY USE ARXX ICFs?

An ARXX ICF wall system is energy efficient, structurally tough, comfortable, quiet and green, and can be constructed quickly and cost-effectively.

Benefits include:

- › high energy efficiency resulting in dramatic savings on heating and cooling costs
- › high contributor to LEED credits
- › improved indoor air quality, temperature control and higher sound suppression
- › structural superiority with 25% higher strength than other concrete walls and can withstand hurricanes, earthquakes and tornados
- › simpler, faster and lower cost build
- › resists mold, mildew, termites and pests
- › suitable for virtually any building application: institutional, commercial, industrial and residential

## ENERGY EFFICIENCY AND THE ENVIRONMENT

Over half of all greenhouse gas emissions, like carbon dioxide, come from the built environment – all the energy used to build, heat, cool and light offices, homes, fast food and retail stores and other buildings all around us. There is strong agreement that greenhouse gases are causing climate change. Using ARXX ICFs can substantially reduce the energy needed to heat and cool buildings. Improved energy efficiency is recognized as one of the most cost effective methods of reducing greenhouse gas emissions. When you construct a commercial or residential project with ARXX ICFs, you're helping the environment; at the same time you're saving your client money on an ongoing basis, and giving them a better, quieter, more comfortable structure.

## HOW ARXX ICFs ACHIEVE HIGH ENERGY EFFICIENCY

### Reduced Air Infiltration

Over half the energy loss of a conventional wood frame home is due to unwanted air infiltration and heat loss through the wall assembly. Air can penetrate into a wood frame building through many channels - sheathing gaps, penetrations at balconies or cantilevered floors, and insulation gaps in the wall cavity. ARXX ICFs provide an ideal solution to these issues. In addition to combining numerous steps of the construction process into one, the monolithic concrete core forms a tight air barrier, with penetrations (e.g. windows and doors) which are easy to seal to complete the building envelope.

Air infiltration for a conventional wood frame house is typically .5 ACH (air changes per hour) which means that every hour half of the air volume of the house is exchanged for outside air that needs to be heated or cooled. Air infiltration of ARXX wall assemblies are typically sixty percent lower. This means that energy efficiency is significantly better, leading to savings in heating and cooling costs, as well as improved indoor air quality.

### Thermal Mass

Studies conducted by the U.S. Department of Energy (USDOE) confirmed that concrete mass in exterior walls reduces annual energy costs in buildings. In fact, studies show that the thermal mass effect can contribute six percent of the energy needed. It keeps the walls warmer when the outdoor temperature hits the coldest extreme and keeps the house cooler when the outdoor temperature is hottest. The ARXX ICF wall moderates indoor temperature swings and reduces the amount of heating or cooling needed.

The energy effectiveness of an ARXX wall is due to three important factors: continuous R-value, reduced air infiltration and thermal mass moderation.

## REDUCED WASTE

When building with ARXX ICFs, construction waste is typically 2 - 5%. In some cases, waste can be virtually eliminated. This is significantly less than all other wall materials and benefits the environment by decreasing the amount of waste going to landfills. ARXX products are recyclable and we encourage using local recycling programs to make each project as green as possible with zero waste.

## ARXX IS HERE TO HELP

ARXX has the best technical project support in the industry. We have building science experts, extensive knowledge and practical experience with building codes, CAD files, documentation and more.

Call us anytime when you are looking at or estimating a project – whether industrial, commercial, institutional or residential. We can provide help in understanding potential energy savings, selecting the best product line to use, and the most efficient application of the product. Refer to ARXX Contact Information.

### LEARN TO INSTALL ARXX ICFs

We encourage you to take the ARXX ICF installer training class to learn how to build with ICFs, including a focus on one or more specific product lines that you will be using on an upcoming project. The course includes:

- › ICF benefits
- › estimating what you'll need
- › taking your site into consideration
- › laying out ICFs
- › dealing with openings
- › working with concrete

By the end of the class, along with useful tools, you will be ready to build an ARXX ICF project.

Upon successful completion of the ARXX training class participants receive an official trained installer certificate and wallet card by mail in 4 - 6 weeks. Wallet cards are often requested and required by onsite inspectors.

ARXX also conducts AIA certified educational sessions. Refer to the ARXX website – Training Programs.

### USING THIS GUIDE

This Installation Guide has been prepared for the purpose of assisting you in your efforts to build the best structure possible using ARXX ICFs. Contained in this guide is information about ARXX products and the installation procedures required in each construction phase of a typical build. For your benefit, we have inserted tips, best practice suggestions and other highlights which are identified by special icons. It is important for you to consider all of the alternatives offered in order to select the best approach for your particular project.

This Installation Guide operates under the assumption that the installer has a basic knowledge of construction and it is not a substitute for that knowledge.

Please ensure you read and understand all the processes for the proper installation of ARXX ICFs set out in this guide before you commence building with ARXX ICFs. The procedures outlined in this Guide are current as of the publication date, but may be updated anytime. Accordingly, these procedures should be considered as guidelines only and any questions should be addressed to your ARXX distributor, the ARXX website or ARXX technical support.

ARXX does not purport to address all possible details or product interfacings of products and accepts no liability for building products used in conjunction with the ARXX ICFs.

### ADDITIONAL INFORMATION

From time to time ARXX publishes technical bulletins and other documents relating to additional information about designing and building with ARXX ICFs. These will be posted on the ARXX website. We recommend that you read and use these bulletins and documents as additional reference material.

## BUILDING CODE COMPLIANCE

ARXX ICFs have been evaluated to be in compliance with national building codes. ARXX product should always be used in compliance with all applicable building standards and codes.

If you have any questions or need additional information about building code compliance or installation applications, please don't hesitate to contact ARXX.

## ARXX CONTACT INFORMATION

Contact your local ARXX Distributor for product information, pricing and ARXX contractors in your region. To locate an ARXX distributor near you contact ARXX.

ARXX has two email addresses available for a quick response to specific questions:

**customerservice@arxx.com**

**techsupport@arxx.com**

ARXX also provides a toll free number for customer and technical support **800.293.3210**

The ARXX website has additional documentation to this Installation Guide: technical bulletins, testing reports, newsletters, project profiles, etc.

**www.arxx.com**

## INSTALLATION GUIDE ICONS



**RECYCLING AND GREEN** - REFER TO THIS SYMBOL FOR RECYCLING AND GREEN BUILDING INFORMATION AND TIPS.



**BUILDING CODES, MATERIAL STANDARDS OR REGULATIONS** - REFER TO THIS SYMBOL FOR INFORMATION AND REFERENCES.



**USING AND GETTING THE MOST OUT OF ARXX** - REFER TO THIS SYMBOL FOR IMPORTANT INFORMATION AND TIPS.



**BEST PRACTICE** - REFER TO THIS SYMBOL FOR SUGGESTED BEST PRACTICE GUIDES. THESE ARE OFFERED AS SUGGESTIONS ALTHOUGH SOME MAY BE REQUIRED BY LOCAL BUILDING CODES.



**ICI** - REFER TO THIS SYMBOL FOR INSTITUTIONAL, COMMERCIAL, INDUSTRIAL APPLICATIONS OF ARXX ICF PRODUCTS.



**BUILDING AND WORK-SITE SAFETY** - REFER TO THIS SYMBOL FOR SAFETY INFORMATION AND TIPS.

# CONTENTS

---

<b>1.0</b>	<b>ARXX FORM UNITS AND ACCESSORIES</b>	<b>1</b>
1.1	ARXX Edge Forms	2
1.1.1	ARXX Edge Standard Forms	2
1.1.2	ARXX Edge Corner Forms	5
1.1.3	ARXX Edge 45° Corner Forms	7
1.1.4	ARXX Edge Brick Ledge Panels	10
1.1.5	ARXX Edge Taper Top Panels	12
1.1.6	ARXX Edge Connectors and Splice Connectors	14
1.1.7	ARXX Edge Accessories	15
1.1.7.1	Tie Anchors	15
1.1.7.2	Panel Connectors	15
1.1.8	Assembling ARXX Edge Blocks	16
1.2	ARXX Prime	17
1.2.1	ARXX Prime Standard Forms	17
1.2.1-A	ARXX Prime Height Adjusters	18
1.2.1.1	ARXX Prime Standard Concealed Web Forms	20
1.2.2	ARXX Prime Corner Forms	22
1.2.3	ARXX Prime 45° Corner Forms	24
1.2.4	ARXX Prime Brick Ledge Forms	26
1.2.5	ARXX Prime 6" Taper Top Forms	29
1.2.6	ARXX Prime End Caps	31
1.2.7	ARXX Prime Accessories	31
1.2.7.1	ARXX Hooks	31
1.2.7.2	ARXX Claws	32
1.3	ARXX Steel	33
1.3.1	ARXX Steel Standard Forms	33
1.3.2	ARXX Steel Corner Forms	35
1.3.3	ARXX Steel 45° Corner Forms	37
1.4	ARXX Steel Waffle Grid Forms	39
1.4.1	ARXX Steel Waffle Grid Standard Forms	39
1.4.2	ARXX Steel Waffle Grid Corner Forms	42
1.4.3	ARXX Steel Waffle Grid 45° Corner Form Units	44
<b>2.0</b>	<b>DESIGN AND BUILDING WITH ARXX FORMS</b>	<b>47</b>
2.1	Design Process	48
2.1.2	Converting Existing Plans	48
2.1.3	Code Compliance and Testing	48
2.1.4	Applicability Limits	48
2.1.5	Design Details	49
2.2	Installation of ARXX ICF Forms	50
2.2.1	Education	50
2.2.2	Preparation and Planning	50

# CONTENTS

---

2.2.3	Health and Safety	51
2.2.4	Tools and Equipment	51
2.2.5	Footings or Slab-On-Grade	51
2.2.6	Footing Specifications	52
2.2.7	Leveling the First Two Courses	52
2.2.8	Step Footing	53
2.2.9	Connections to Footings or SOG	53
2.2.10	Building on Piles or Piers	55
2.2.11	Wall Layout	56
2.2.12	Material Placement	57
2.2.13	ARXX Edge Staging	59
2.2.14	First Course Placement	59
2.2.15	Controlling Waste	60
2.2.16	Cutting Forms Horizontally	60
2.2.17	Second Course Placement	61
2.2.18	Successive Courses	64
2.2.19	Top Course	63
2.2.20	Stacked Joints	63
2.2.21	Size Transitions Between Forms	64
2.2.22	Service Penetrations	65
2.2.23	Void Forms and Beam Pockets	66
2.2.24	Wall Alignment	68
<b>3.0</b>	<b>REINFORCEMENT</b>	<b>69</b>
3.1	Fundamentals of Reinforcement	70
3.2	Reinforcement Design and Specifications	71
3.3	Splices in Reinforcing Steel	72
3.3.1	Lap Splices	72
3.3.2	Corner Lap Splices	73
3.4	Installation of Reinforcement	74
3.4.1	Preparation	74
3.4.2	Horizontal Reinforcement Placement	74
3.4.2.1	ARXX Prime and ARXX Edge Forms	74
3.4.2.2	ARXX Steel Forms	74
3.4.3	Vertical Reinforcement Placement	75
3.4.3.1	ARXX Prime and ARXX Edge Forms	75
3.4.3.2	ARXX Steel Forms	75
3.4.4	Cold Joint in a Continuous Wall	77
3.5	Reinforcement Placement Around Openings	79

# CONTENTS

---

<b>4.0</b>	<b>CONCRETE</b>	<b>81</b>
4.1	Concrete Mix Design	81
4.1.1	Concrete Design Specifications	82
4.1.2	Concrete Slump	82
4.1.3	Concrete Aggregate	84
4.1.4	Ordering Concrete	84
4.1.5	Additives	84
4.1.6	Innovations	84
4.1.7	Green Concrete	85
4.2	Prior to Placement of Concrete	86
4.2.1	Placement Procedures	86
4.2.2	Pre-Placement Checklist	87
4.3	Concrete Placement	88
4.3.1	Concrete Placement Overview	88
4.3.2	Placement Rate	88
4.3.3	Lifts	89
4.3.4	Form Pressure	89
4.3.5	Concrete Free Fall Height	90
4.3.6	Concrete Placement Procedures	90
4.4	Consolidation of Concrete	92
4.4.1	Consolidation of Concrete Overview	92
4.4.2	Concrete Vibrators	92
4.4.3	Alternative Methods	93
4.5	Completion of Concrete Placement	94
4.5.1	Top of Finished Walls	94
4.5.2	Roof Sill Plates	94
4.5.3	Floor Sill Plates	95
4.6	Post Placement Checklist	96
<b>5.0</b>	<b>WALL APPLICATIONS</b>	<b>97</b>
5.1	Below Grade Walls	98
5.2	Below Grade Moisture Protection	99
5.2.1	Overview	99
5.2.2	Preparation for Below Grade Moisture Protection	99
5.2.3	Installation of Below Grade Moisture Protection	99
5.2.4	Parging or Cementitious Coating	100
5.3	Grade Beams	102
5.4	Shallow Foundations	103
5.5	Stem Walls	105
5.5.1	Stem Walls for Concrete Slabs	105
5.5.2	Stem Walls for a Crawl Space	105
5.6	Columns and Pilasters	107

# CONTENTS

5.6.1	Internal Columns and Pilasters	107
5.6.2	Installation Method for Columns and Pilasters	108
5.6.3	Larger Columns and Pilasters	109
5.7	Above Grade Walls	110
5.8	T-walls or Intersecting Walls	111
5.8.1	ARXX Edge T-walls	112
5.8.2	ARXX Prime T-walls	113
5.8.3	ARXX Steel T-walls	113
5.8.4	ARXX Steel Waffle T-walls	114
5.9	Angled and Radius Walls	115
5.9.1	Angled Walls	115
5.9.2	Radius Walls	115
5.9.2.1	Small Radius Walls	115
5.9.2.2	Large Radius Walls	116
5.9.2.3	Radius Cutting - Block Segment Method	118
5.10	Demising Walls	120
5.11	Fire Resistance	120
5.11.1	Flame Spread Index (FSI) and Smoke Development Index (SDI)	120
5.11.2	Fire Resistive Rating (FRR)	121
5.12	Gable End Walls	121
5.12.1	Typical Gable Form Placement	121
5.12.2	Alternative Gable Framing	122
<b>6.0</b>	<b>OPENINGS</b>	<b>123</b>
6.1	Door and Window Openings	124
6.1.1	Wood Bucks	124
6.1.2	Wood Buck Installation	126
6.1.3	Vinyl and Metal Bucks	128
6.1.4	Window Installations	130
6.1.5	Window Fastening Tables	131
6.1.5.1	United States Standards	131
6.1.5.2	Canadian Standards	131
6.1.5.3	General Notes on Fastening Tables	132
6.1.6	Radius Top Openings	133
6.1.7	Door Installations	133
6.2	Reinforcement at Openings	135
6.2.1	Overview	135
6.2.2	Lintel Design	136
6.2.3	Vertical Reinforcement at Openings	136
6.2.4	Horizontal Reinforcement Beneath Openings	136
6.2.5	Horizontal Reinforcement Extensions	136
6.2.6	Lintel Depth	136

# CONTENTS

---

6.2.7	Horizontal Reinforcement Over Openings (Lintels)	137
6.2.8	Stirrups and Stirrup Spacing	137
6.2.9	Wall Segments Between Openings	137
6.2.10	ARXX Edge and Prime Lintel Design	138
6.2.11	ARXX Steel Lintel Design	140
6.2.12	ARXX Steel Waffle Lintel Design	141
<b>7.0</b>	<b>FLOOR AND ROOF SYSTEMS</b>	<b>143</b>
7.1	Wood Floor Connections	144
7.1.1	Wood Floors on ARXX Walls	144
7.1.2	Garage Floor Foundation Walls	145
7.1.3	Ledger Board (Rim Joist) Floor Connection Assemblies	147
7.1.4	Anchor Bolt Connection System	147
7.1.5	Ledger Connector Systems	149
7.1.5.2	Attaching Ledger Boards	150
7.1.6	Extended Brick Ledge Floor Support Assemblies	153
7.2	Floor Systems	155
7.2.1	Concrete Floors	155
7.2.2	Hambro Composite Concrete Floors	155
7.2.3	Composite Steel Deck	156
7.2.4	Precast Concrete Slabs (Hollow Core)	158
7.2.5	EPS Deck Systems	159
7.3	Roofing Systems	162
7.3.1	Rafter or Truss Roof Connections	162
7.3.2	Flat Roof Connection	163
7.3.3	Green Roofs	164
<b>8.0</b>	<b>WALL FINISHES - INTERIOR AND EXTERIOR</b>	<b>165</b>
8.1	Overview: Barriers and Finishes	166
8.1.1	Vapor Barriers	168
8.1.1.1	Code Requirements for Moisture Vapor Retarders	168
8.1.1.2	ARXX Permeance Ratings as a Vapor Barrier	168
8.1.2	Air Barriers	169
8.2	Interior Finishes	170
8.2.1	Code Requirements - Thermal Barrier	170
8.2.2	Alternative Interior Finishes	170
8.3	Exterior Finishes	172
8.3.1	Ultraviolet Rays	172
8.3.2	Weather Resistant Finishes	172
8.3.3	Masonry Veneers - Brick and Stone	172

# CONTENTS

8.3.4	Acrylic Stucco	174
8.3.5	Traditional Stucco	174
8.3.6	Sidings	175
8.3.7	Simulated Stone	177
8.3.8	Alternative Exterior Finishes	177
8.3.9	Commercial Exterior Finishes	177
8.3.10	Installation Tools and Fasteners	177
8.4	Fasteners	178
8.4.1	ARXX Prime Fasteners	178
8.4.2	ARXX Edge Fasteners	179
8.4.3	ARXX Steel and Steel Waffle Grid Fasteners	179
8.5	Cabinetry and Wall Mounted Accessories	180
8.5.1	Cabinets and Heavy Wall Mounted Accessories	180
8.5.2	Regular Wall Mounted Accessories	182
<b>9.0</b>	<b>ELECTRICAL AND PLUMBING</b>	<b>183</b>
9.1	Installing Electrical Services	184
9.1.1	Prior to Concrete Placement: Through-wall Penetrations	184
9.1.2	After Concrete Placement: Cables / Wires Chases	184
9.1.3	Chase Cutting Procedure and Planning	185
9.1.4	Wiring	185
9.1.5	Conduit	185
9.1.6	Outlet Boxes	186
9.1.7	Main Panel	186
9.1.8	Exterior Masts and Meters	186
9.2	Planning, Piping and Mechanical Services	187
9.2.1	Planning Prior to Concrete Placement	187
9.2.2	Services Embedded in Concrete	187
9.2.3	Through-wall Penetrations	187
9.2.4	Pipe Chases	187
<b>10.0</b>	<b>ALIGNMENT, BRACING AND SCAFFOLDING SYSTEMS</b>	<b>189</b>
10.1	Systems Overview	190
10.2	Relevant Codes and Standards	190
10.3	ARXX Alignment, Bracing and Scaffolding Systems	191
10.3.1	ARXX R-100 Alignment Systems	191
10.3.2	ARXX R-120 Alignment System	193
10.3.3	ARXX R-144 Alignment System	194
10.4.1	Install	195
10.4.2	Useful Tips	196



# CONTENTS

---

C.3.2.3	Number of Vertical Courses	230
C.3.2.4	Variable Degree Turns and Radius Walls	231
C.3.2.5	Area of Openings	231
C.3.2.6	Bucks for Openings	231
C.3.2.7	Masonry Veneer	231
C.4	Reinforcing Steel	232
C.5	ARXX Lok (ARXX Prime Forms Only)	232
C.6	ARXX Edge Connectors and Accessories	232
C.6.1	ARXX Edge Splice Connectors	232
C.6.2	ARXX Edge Brick Ledge Rails	232
C.6.3	ARXX Edge Panel Connectors: 45° and 90°	232
C.7	Concrete	233
C.8	Alignment	233
C.9	Labor	233
C.10	ARXX Material Estimating Program	233
C.11	Man Hour Rates	237

**APPENDIX D                      COURSING TABLES                      239**

D.1	Vertical Coursing Tables	240
D.2	Plan Layout Tables	241

**APPENDIX E                      GLOSSARY OF TERMS                      253**

**APPENDIX F                      REFERENCES                      259**

# CONTENTS

## LIST OF TABLES

2.2.12-1	ARXX Packaging	58
3.2-1	Reinforcing Bar Designation and Sizes	71
4.3.2-1	Form Pressure	89
5.6.1-1	Columns and Pilaster Thickness	107
6.1.5.1-1	Minimum Number of Screws Required to Transfer Test Pressures for Windows with Mandatory AAMA	131
6.1.5.2-1	Minimum Number of Screws Required to Transfer Test Pressures Specified in CAN/CSA A440-M90	131
6.1.5.2-2	Minimum Number of Screws Required to Transfer Test Pressure for Windows with AAMA/NWWDA 101/I.S.2-97 Optional Performance Grades	132
8.4.1	ARXX Prime Fasteners	178
8.4.2	ARXX Edge Fasteners	179
8.4.3	ARXX Steel and Steel Waffle Grid Fasteners	179
10.4.8-1	Anchor Requirements (Imperial)	198
10.5.8-2	Anchor Requirements (Metric)	198
A.2-1	Applicability Limits - Residential and Small Buildings	207
A.3-1	Load-Bearing Soil Classifications	208
A.3-2	Minimum Width of Concrete Footing Supporting ARXX ICFs	208
A.4-1	Equivalent Fluid Density Soil Classification	209
A.4-2	Minimum Horizontal Reinforcement for Basement Walls	209
A.4-3	Minimum Vertical Reinforcement for Basement Walls - ARXX Edge 6", ARXX Prime 6.25", ARXX Steel 6" (IRC-2009 Table R404.1.2(2) )	210
A.4-4	Minimum Vertical Reinforcement for Basement Walls - ARXX Edge 8", ARXX Prime 8", ARXX Steel 8" (IRC-2009 Table R404.1.2(3) )	211
A.4-5	Minimum Vertical Reinforcement for Basement Walls - ARXX Steel Waffle Grid 6" Form (IRC-2009 Table R404.1.2(5) )	212
A.4-6	Minimum Vertical Reinforcement for Basement Walls - ARXX Steel Waffle Grid 8" Form (IRC-2009 Table R404.1.2(6) )	213
A.4-7	Minimum Vertical Reinforcement for Basement Walls - ARXX 6" (140mm) Flat Wall Forms (NBCC-2005 Table 9.15.4.5.A)	214
A.4-8	Minimum Vertical Reinforcement for Basement Walls - ARXX 8" (190mm) Flat Wall Forms (NBCC-2005 Table 9.15.4.5.B)	214
A.5-1	Minimum Vertical Reinforcement for Above Grade Walls - ARXX Flat Wall Forms - 4", 6" and 8" (IRC-2009 Table R611.6(1) )	215
A.5-2	Minimum Vertical Reinforcement for Above Grade Walls - ARXX Steel Waffle Grid 6" and 8" Forms (IRC-2009 Table R611.6(2) )	216
A.6-1	Maximum Allowable Clear Span for Lintels Roof Clear Span 40 Feet and 32 Feet (IRC-2009 Condensed Version Tables R611.8(2,3,4,6,7) )	219
A.6-2	Maximum Allowable Clear Span for Lintels in Flat Wall ICFs (NBCC-2005 Condensed Version - Tables A-17 and A-18)	220
C.1-1	ARXX Estimating Formulas	234
C.1-2	Concrete Volumes	235
C.1-3	Standard Form Sizes and Coverage	236
C.1-4	Available Forms	236
C.1-5	Man Hour Rates	238
D.1-1	Vertical Coursing Chart	240
D.2-1	ARXX Edge 4" Block Preferred Wall Dimensions	241
D.2-2	ARXX Edge 6" Block Preferred Wall Dimensions	242
D.2-3	ARXX Edge 8" Block Preferred Wall Dimensions	243
D.2-4	ARXX Edge 10" Block Preferred Wall Dimensions	244
D.2-5	ARXX Prime 6" Preferred Wall Dimensions	245

# CONTENTS

D.2-6	ARXX Prime 8" Preferred Wall Dimensions	246
D.2-7	ARXX Prime 10" Preferred Wall Dimensions	247
D.2-8	ARXX Steel 6" Preferred Wall Dimensions	248
D.2-9	ARXX Steel 8" Preferred Wall Dimensions	249
D.2-10	ARXX Steel Waffle 6" Preferred Wall Dimensions	250
D.2-11	ARXX Steel Waffle 8" Preferred Wall Dimensions	251

## LIST OF FIGURES

1.1.1-1	ARXX Edge Standard Form	4
1.1.2-1	90° Corner Form Unit	5
1.1.2-2	ARXX Edge 90° Corner Form Unit	6
1.1.3-1	45° Corner Form	7
1.1.3-2	ARXX Edge 45° Corner 6" Form	8
1.1.3-3	ARXX Edge 45° Corner Multiple Core Widths	9
1.1.4-1	ARXX Edge Brick Ledge Form and Rail	11
1.1.5-1	ARXX Edge Taper Top Panel	13
1.1.6-1	ARXX Edge Connectors	14
1.1.6-2	ARXX Edge Splice Connector	14
1.1.6-3	ARXX Edge Wide Block	14
1.1.7-1	ARXX Edge Tie Anchors	15
1.1.7.-2	ARXX Edge Panel Connectors	15
1.1.8-1	ARXX Edge Web	16
1.1.8-2	Assembled Block	16
1.2.1-A	ARXX Prime Height Adjusters	18
1.2.1-1	ARXX Prime Standard Form Unit	19
1.2.1.1-1	ARXX Prime Standard Concealed Web Form Unit	21
1.2.2-1	Stacked Corner Block	22
1.2.2-2	ARXX Prime 90° Corner Form Unit	23
1.2.3-1	ARXX Stacked 45° Corner Form	24
1.2.3-2	ARXX Prime 45° Corner Form	25
1.2.4-1	ARXX Prime Brick Ledge Form	27
1.2.4-2	Brick Ledge Stirrups	28
1.2.4-3	Miter Cutting a 6" Brick Ledge Form - Outside Corner	28
1.2.4-4	Miter Cutting a 6" Brick Ledge Form - Inside Corner	28
1.2.5-1	ARXX Prime Taper Top Form	30
1.2.6-1	End Cap	31
1.2.7-1	ARXX Prime Hook and ARXX Prime Claw	32
1.3.1-1	ARXX Steel Standard Form	34
1.3.2-1	ARXX Steel Corner Form	36
1.3.3-1	ARXX Steel 45° Corner Form	38
1.4.1-1	Waffle Grid Concrete	39
1.4.1-2	ARXX Steel Waffle Standard Form	41

# CONTENTS

---

1.4.2-1	ARXX Steel Waffle Corner Form	43
1.4.3-1	ARXX Steel Waffle 45° Corner Form	45
2.2.8-1	Step Footings	53
2.2.9-1	Corner Dowel Placement	54
2.2.9-2	Footing Connection	55
2.2.11-1	Squaring Foundations	56
2.2.17-1	Left-hand and Right-hand Corners	61
2.2.17-2	ARXX Lok	62
2.2.22-1	Cutting for Service Penetrations	65
2.2.22-2	Service Penetrations Details	65
2.2.23-1	Beam Void Form Detail	66
3.3.1-1	Non-contact Lap Length	72
3.3.2-1	Corner Lap Joint	73
3.4.3-1	6" Form Reinforcing	75
3.4.3-2	8" Form Reinforcing	76
3.4.3-3	10" Form Reinforcing	76
3.4.4-1	Cold Joint Reinforcement	78
3.5-1	Reinforcement Layout	79
4.1-1	Compressive Strength of Concrete	82
4.1.2-1	Slump Testing	84
4.3.4-1	Form Pressure Gradient	90
4.3.4-2	Form Pressure Per Lift	90
4.4.2-1	Vibrator	92
4.5-1	Homemade Trowel	94
4.5.2-1	Detail of Sill Plate in Wall	95
5.2.4-1	Parging	101
5.3-1	Typical Grad Beams on Piles	102
5.4-1	Shallow Foundation	103
5.5-1	Slab on Stem Wall	105
5.5-2	Slab Poured Into Top Edge	105
5.5-3	Slab into Side of Stem Wall	106
5.5-4	Crawl Space	106
5.6.2-1	Internal Plaster Details	108
5.6.2-2	Column Detail	108
5.6.3-1	Edge Corner Column	109
5.6.3-2	Edge Panel Column	109
5.8.1-1	ARXX Edge T-wall	112
5.8.2-1	ARXX Prime T-wall	113
5.8.3-1	ARXX Steel T-wall	114
5.8.4-1	ARXX Steel Waffle T-wall	114
5.9.2-1	Radius Wall	116
5.9.2-2	Hot Knife	117
5.9.2-3	Panel Cuts	117
5.9.2.3-1	Measuring Radius Angles	118

## CONTENTS

---

5.9.2.3-2	Marking Block for Radius Cuts	118
5.9.2.3-3	Radius Block Segments	118
5.9.2.3-4	Setting Radius Block Segments	119
5.9.2.3-5	Tieing Radius Walls	119
5.12.1-1	Typical Gable End	122
6.1.1-1	Buck Install Options	125
6.1.2-1	Wood Buck Installation: Method 1	126
6.1.2-2	Wood Buck Installation: Method 2	127
6.1.3-1	Vinyl Buck System	128
6.1.3-2	Typical Door Installation with Vinyl Buck	129
6.1.3-3	Door Installation with Masonry Veneer	129
6.1.4-1	Window Flashing	130
6.1.6-1	Radius Top Openings	133
6.1.7-1	Door Swing	134
6.2.10-1	Elevation and Section	138
6.2.10-2	Lintel Section and Elevation	139
6.2.11-1	Lintel Section and Elevation	140
6.2.12-1	Lintel Section and Elevation	141
7.1.1-1	Platform Framing	144
7.1.1-2	Brick Veneer	145
7.1.2-1	Garage Foundation at Floor	146
7.1.4-1	Anchor and Bolt Ledger Connection	148
7.1.5-1	Ledger Connection System	149
7.1.5-2	Ledger Connector Installation	151
7.1.5-3	Ledger Intall Locations	151
7.1.5-4	Ledger Detail	152
7.1.6-1	Wood Floor Truss Connection	153
7.1.6-2	Crawl Space	154
7.2.2-1	Typical Hambro Floor Connection	156
7.2.3-1	Typical Composite Deck Floor - Parallel to Wall	157
7.2.3-2	Typical Composite Deck Floor - Perpendicular to Wall	157
7.2.4-1	Typical Precast Deck Detail - Parallel to Wall	158
7.2.4-2	Typical Precast Deck Detail - Perpendicular to Wall	159
7.2.5-1	EPS Floor Deck Bearing on the Wall	160
7.2.5-2	EPS Floor Deck Parallel to the Wall	160
7.3.1-1	Typical Rafter Roof Connection	162
7.3.1-2	Typical Rafter Roof Connection with Hurricane Straps	163
7.3.2-1	Typical Flat Roof Connection	164
8.1-1	Cavity Wall	166
8.1-2	ARXX Wall	167
8.3.3-1	Brick Ledge Form	173
8.3.3-2	Taper Top Form	173
8.3.4-1	Acrylic Stucco	174
8.3.5-1	Traditional Stucco	175

## CONTENTS

---

8.3.6-1	Corner Strapping	176
8.3.6-2	Corner Sheet Metal	176
8.5.1-1	Cabinet Attachment Figure	181
8.5.1-2	Light Accessory Support	181
9.1.3-1	Installation of Wiring	185
9.1.7-1	Panel Box	186
9.2.4-1	Plumbing Pipe Chase	188
10.3.1-1	Model R-100 Assembly, 100" High Wall (6 courses)	191
10.3-2	Gravity Pin	192
10.3-3	Gross Positioning Pin	192
10.3-1	Model R-120 Assembly, 120" High Wall (7 courses)	193
10.3.3-1	Model R-144 Assembly, 142" High Wall (8.5 courses)	194
10.4.8-3	Fastener Requirements - Model R-100	199
10.4.8-4	Fastener Requirements - Model C-120	199
10.4.8-5	Fastener Requirements - Model C-144	200
10.10-1	Tall Wall System Scaffold	203
A.6.1-1	ARXX Lintel Reinforcement Layout	218
B.2-1	Termite Infestation Probability Map	222
C.3.2-1	Overlap of Dimensions	229