ABRI redefines the look of masonry

ABRI masonry veneers allow designers to create infinitely diverse designs using a simple five piece kit of parts.

The ABRI units are designed to be used singly or as a kit of parts in combination to create a multitude of fresh designs.

This pattern portfolio is meant to provide inspiration for further ideas and designs – please explore and have fun!
Contents

Unexpected Shapes and Combinations

Design Choices
  Practical Considerations
  Angles and Curves
  Bond Pattern
  Unit Orientation
  Pattern Transitions

Themes

Patterns
  Wall Panels – Curves
  Wall Panels – Angles
  Columns
  Bands

Applications
Unexpected Shapes and Combinations

There is a long tradition of using masonry to create beauty in the built environment. ABRI builds on that tradition while offering a platform for unlimited creativity by jumping out of the “box” of traditional form factors by providing new angular and curved surfaces.
Masonry movement joints, along with horizontal joint reinforcement, are means to control cracking in the wall panel due to shrinkage or other causes.

Movement joints should be included in the concrete masonry veneer design. The registered design professional should address the appropriate spacing for the movement joints along the wall, and at corners or other special conditions. Typically, maximum spacing should not exceed 20 feet in the field of the wall and half of the maximum spacing near corners.

The movement joints should be sealed with an appropriate bead sealant and backer rod for weather protection.

Horizontal joint reinforcement should also be included in the veneer panel design. Again, the registered design professional should address appropriate spacing requirements. Typically, maximum spacing of layers of joint reinforcement should be no greater than 16” O.C. for ABRI 8” high units. Segments of horizontal joint reinforcement should be lapped 6” minimum at intersections with other segments, and terminated at movement joints.

For more information, refer to the ABRI Construction Guide and NCMA TEK 10–2D (Crack Control in Concrete Masonry Walls).
Running bond patterns may result in frequent ledges

Gallitan Pattern with soldier course bond – no ledges.

Weather and Climb
Hazard Considerations

Assembly patterns that produce horizontal ledges may be vulnerable to water infiltration and efflorescence in exterior applications that are exposed to rain or snow.

In addition, ledges in the wall in accessible areas may pose a risk due to the hazard of children or others climbing the wall.

There are several approaches that may be used to reduce these risks.

Select patterns that either eliminate or protect ledges from water accumulation – these types of patterns are highlighted in this portfolio.

Avoid ledges in accessible portions of the wall, or only have them to a limited height so that climb hazard is eliminated.

ABRI units for exterior applications should include compatible integral water repellent in the ABRI units and mortar. Use a breathable post-applied sealant/stain to provide additional protection.

For some patterns with limited ledging, it may be practical to install flashing above ledges.

The mortar may be installed with a slight wash. Though a wash helps, it may not be a long-term solution since mortar is itself vulnerable to water penetration.
ABRI Veneers may be used for the full range of exterior and interior applications for masonry veneers. We have developed a set of standard construction details for the ABRI product line with instructions on how to lay the patterns shown here, and with recommendations for how to successfully detail walls built with the ABRI products for commonly encountered situations in the field.

Please refer to the following resources for more information:

- ABRI Design Guide
- ABRI Standard Details
- Anchored Veneer Design Manual
- Construction Detail and Pattern 3D Models in Sketchup and AutoCAD (all patterns shown in this manual are included.)

All of these resources are available on the Concrete Products Group’s Online Design Resource Center:

www.resources.concreteproductsgroup.com
ABRI Standard Details

Weather Protection: Drainage, Flashing and Weep Systems

Base of Wall

Horizontal Joint Reinforcement

Movement Joints

Veneer Anchorage options

Window Sills, Jambs, and Heads

Door Openings

Parapet and Roof Assembly

Corners
The ABRI kit of angular and curved surfaces provides a new tool box for design possibilities.
Angles and Curves
Design Choices
Bond Pattern

SOLDIER COURSE
ABRI Pattern: Wicker Vertical

RUNNING BOND
ABRI Pattern: Stepped Shingles
This pattern creates shadows and contrast.
The pattern creates many ledges, which should be considered prior to specifying it for outdoor use or in areas where climb risk may be present.
RUNNING BOND
ABRI Pattern: Shingle Running
Strong Bands of Horizontal Shadowing
No Ledges.

STACK BOND
ABRI PATTERN: Second Wave
Subtle Shadows, no ledging
Design Choices
Unit Orientation

ABRI Pattern: Opposed Wedges
Stack Bond – horizontal

ABRI Pattern: Serpentine
Alternating Soldier
Soldier Course Bond – vertical
ABRI Pattern: Ripple
Horizontal Running – horizontal

ABRI Pattern: Waffle
Mixed Vertical and Horizontal Stack
Design Choices
Shadows

Complex Shadow Patterns
ABRI Pattern: Komodo

The Shingle and Wedge Units produce dramatic shadowing when in combined as part of a wall pattern. Note that while this pattern has a great deal of surface depth, the units are placed so that ledges that might collect moisture are not present.
Placing curved ABRI units in stack bond will produce shadow patterns that have greater gradation and subtlety.

**Subtle Shadows**
**ABRI Pattern: Fourth Wave (above)**

Placing curved ABRI units in stack bond will produce shadow patterns that have greater gradation and subtlety.

**Drama**
**ABRI Pattern: Au Sable (at left)**

Placing curved ABRI units in soldier course bonding will produce more dramatic shadowing due to the contour changes.
Shifting Colors and Patterns

Design Choices
Pattern Transitions
ABRI's curved shapes are a natural for evoking the look of flowing water.
Concave Stack
ABRI Concave Stack Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Convex Stack
ABRI Convex Stack Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Wicker Stack
ABRI Concave Convex
Stack Bond

Primarily suitable for Indoor applications
Ledges are present – consider weather and climb risk
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Serpentine Stack
ABRI Serpentine
Stack Bond

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
First Wave
Concave Convex
Stack Bond

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Second Wave
Concave Convex Serpentine

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Third Wave
Concave Convex Serpentine

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Fourth Wave
Serpentine Units

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Open Book
Concave Convex
Stack Bond

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

First Wave with Serpentine Accent
Concave Convex Serpentine Stack Bond

Suitable for indoor or outdoor use
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
**Riffle**

**Concave Convex Serpentine**

**Running Bond**

This pattern is built by repeating a sequence of Concave, Convex and Serpentine Units in a running bond pattern with two alternating courses. Shown with red mortar.

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

---

**Riffle and Second Wave**

**ABRI Concave Convex Serpentine**

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Ledging should be considered before using for exterior applications.

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Convex Running
Convex
Running Bond

Concave Running
Concave
Running Bond

Ledging should be considered before using for exterior applications.

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Serpentine Soldier
Serpentine Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Convex Soldier
Concave Convex Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
**Concave Soldier**
**Concave Soldier Course**

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

---

**Serpentine Alternating Soldier**
**Serpentine Soldier Course**

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
First Wave Soldier
Serpentine Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Second Wave Soldier
Concave Convex Serpentine Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Third Wave Soldier
Concave Convex Serpentine Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Fourth Wave Soldier
Concave Convex Serpentine Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Wicker Soldier
Concave Convex
Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Reciprocation
Concave Convex
Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Double Weave
Concave Convex
Alternating Stack

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Wicker Stripe
Concave Convex Flat
Stack and Running Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal joint reinforcement recommendations.

Madison
Serpentine Concave Convex Soldier Course

Gallatin
Serpentine Concave Convex Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal joint reinforcement recommendations.
Brule
Serpentine Concave Convex
Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

St Croix
Serpentine Concave
Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Au Sable
Serpentine Concave Convex
Soldier Course

Waterfall
Serpentine Half Serpentine
Flat
Soldier Course/Running Bond
Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Wall Panels
Angular Profiles

ABRI’s Wedge and Shingle units provide dramatic angles and shadowing.
Wedge Stack
Wedge Stack Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Opposed Wedge Stack

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
**Map Fold**
Shingle and Flip Shingle
Stack Bond

Shingle units are placed in alternating orientation from course to course to create the folded map appearance.

Suitable for indoor or outdoor use.

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

**Rhombus**
Shingle & Flipped Shingle
Stack bond

Suitable for indoor or outdoor use.

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Arrow
Wedge
Stack bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Stepped Shingles
Shingle and Flipped Shingle
Running Bond

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Shingle Stack
ABRI Shingle

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Shingle Running Bond
ABRI Shingle

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Wedges Running
ABRI Wedge Units
Running Bond

Wedge Outcrop
Wedge and Flat CMU
Running Bond

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.
Dragon
Shingle Wedge
Stack Bond

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

Igauna
Shingle Wedge
Stackbond

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.
**Komodo**
**Shingle Wedge**
**Stack Bond**

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

----

**Gecko**  
**Shingle Wedge**  
**Stack Bond**

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.
Accordian
Shingle
Soldier Course

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

Math Problem
ABRI Wedge and Flat Veneer Units
Soldier Course

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.
Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

Diamondback
Shingle Wedge
Soldier Course

Cobra
Shingle Wedge
Soldier Course

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.
Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

**Ridgeline**

Wedge Stack

Shingle Soldier Course

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

**Wedge Soldier Stack**

Wedge

Soldier Course

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.
Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

Zipper
Wedge Soldier Course
Wedge Stack

Gator
Wedge Stack
Shingle & Flip Stack

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.
Accent Columns

ABRI columns for vertical transitions or partitions
Shingle Vertical Tent

Shingle Vertical Trough
Convex Vertical

Concave Vertical
Accent Bands

ABRI Horizontal Accents
Applications
ABRI is excellent for construction of decorative thermal mass walls as part of a passive solar design strategy.
Corner
Diamondback pattern

Entryway
(following page)
Wedge Stack (left)
Map Fold (middle)