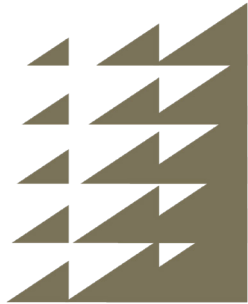


ABRI Pattern Portfolio



2022 Edition



ABRI
MASONRY
VENEERS

ABRI redefines the look of masonry

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

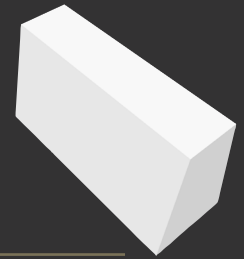
The ABRI units are designed to be used singly or as a kit of parts in combination to create a multitude of fresh designs.

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

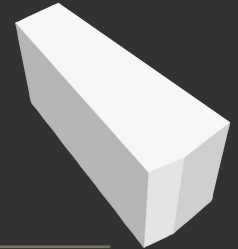
Kit of Parts

ABRI has five shapes for 2020

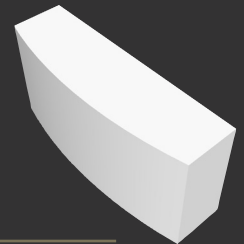
Shingle



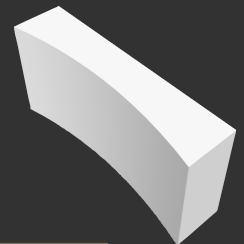
Wedge



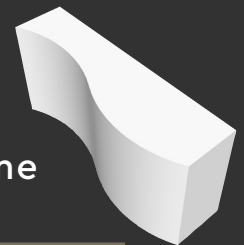
Convex



Concave



Serpentine



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- Practical Considerations

- Angles and Curves

- Bond Pattern

- Unit Orientation

- Pattern Transitions

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- Wall Panels – Curves

- Wall Panels – Angles

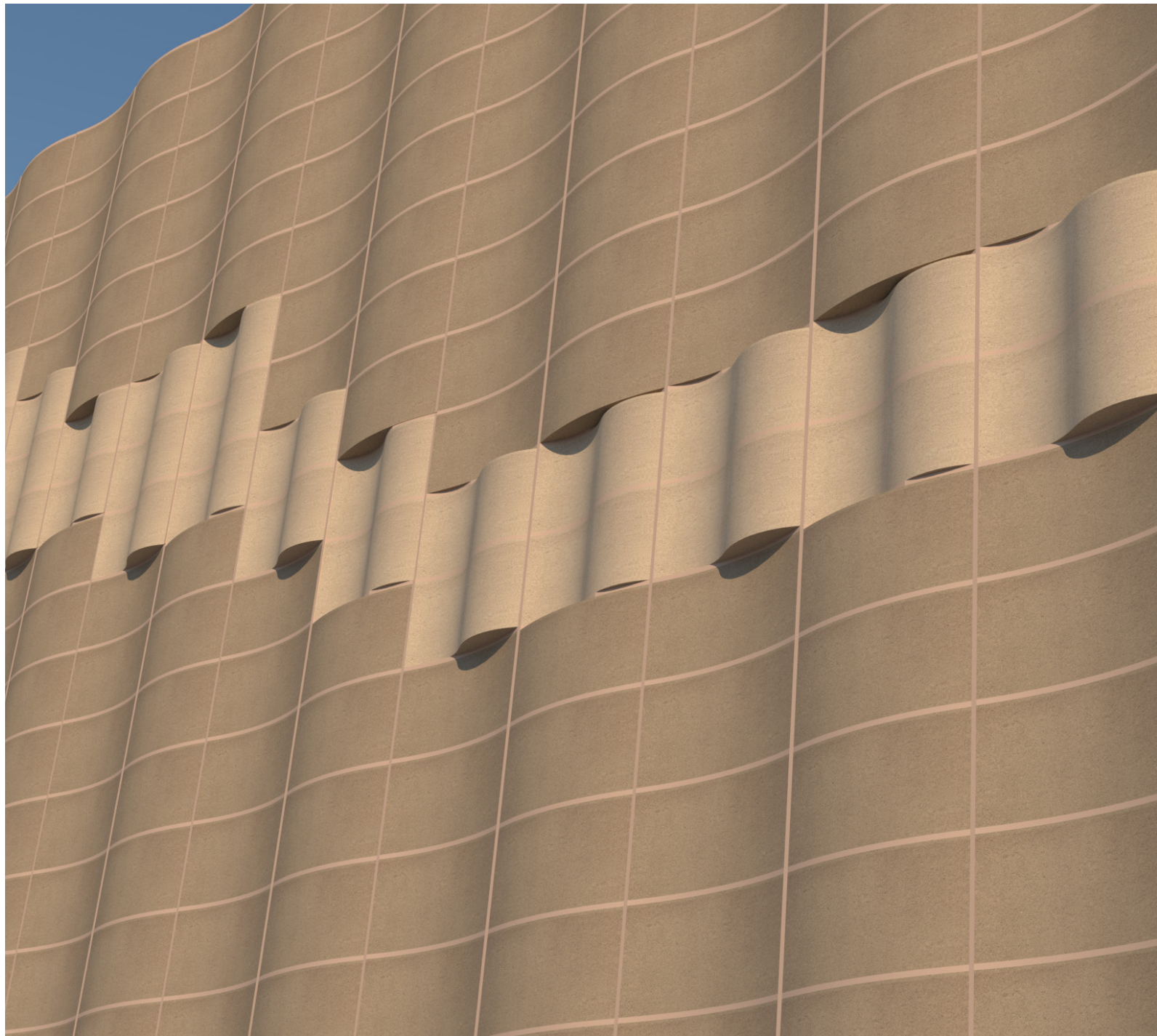
- Columns

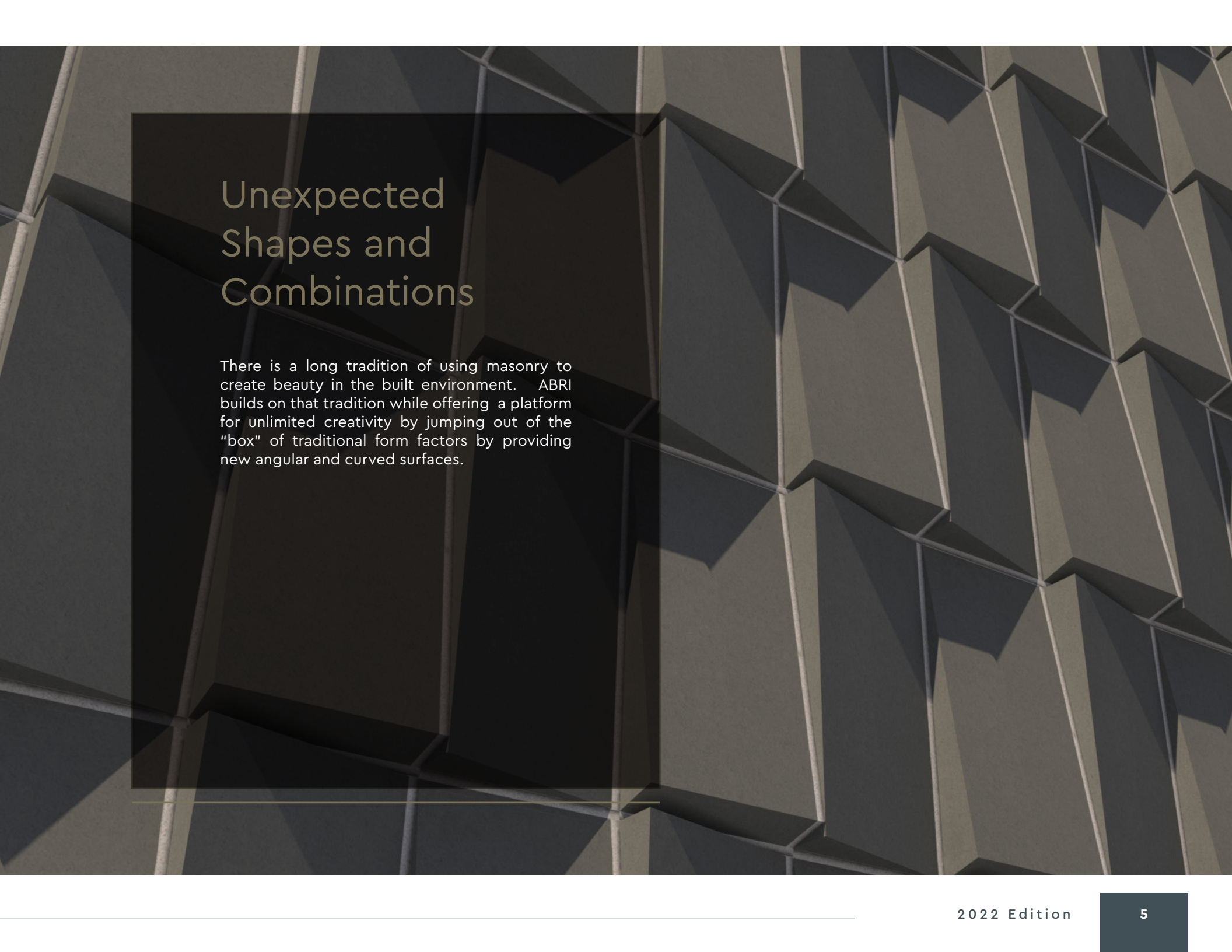
- Bands

Applications



ABRI
MASONRY
VENEERS

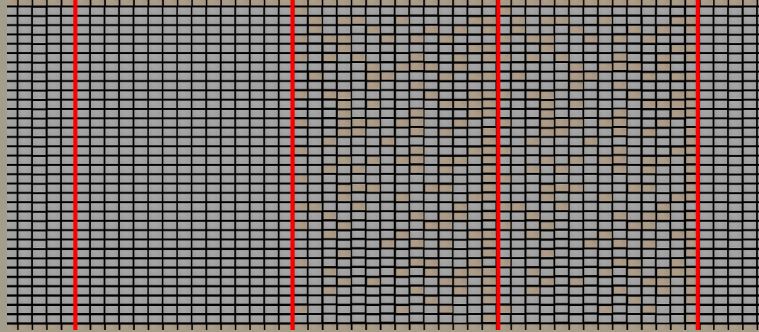




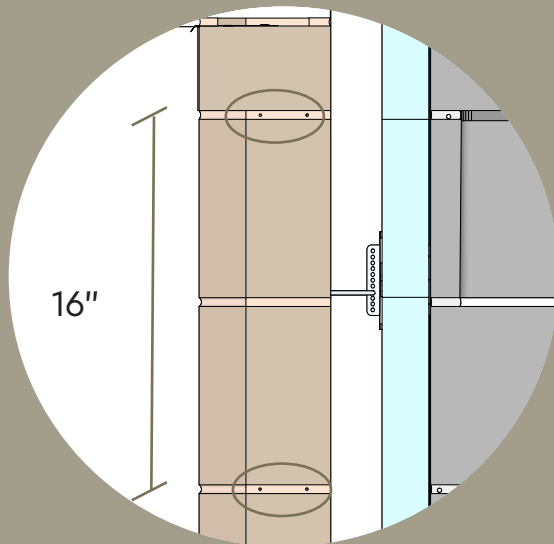
Unexpected Shapes and Combinations

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.

Design Choices Practical Considerations



Veneer Panel Movement Joints



Horizontal Joint Reinforcement Placement

Movement Joints and Reinforcement

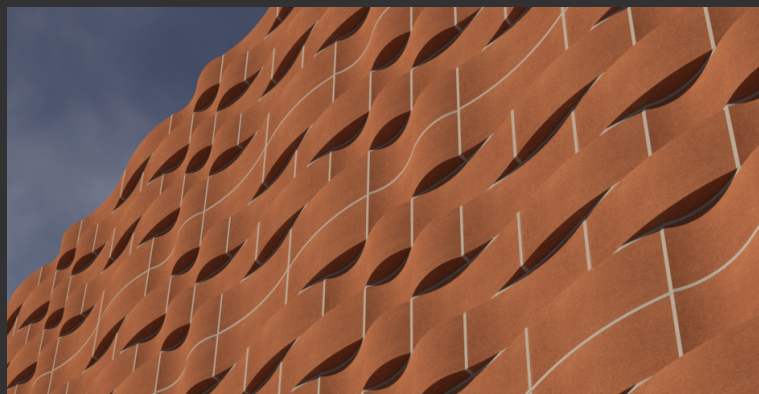
Masonry movement joints, along with horizontal joint reinforcement, are means to control cracking in the wall panel due to shrinkage or other causes.

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.

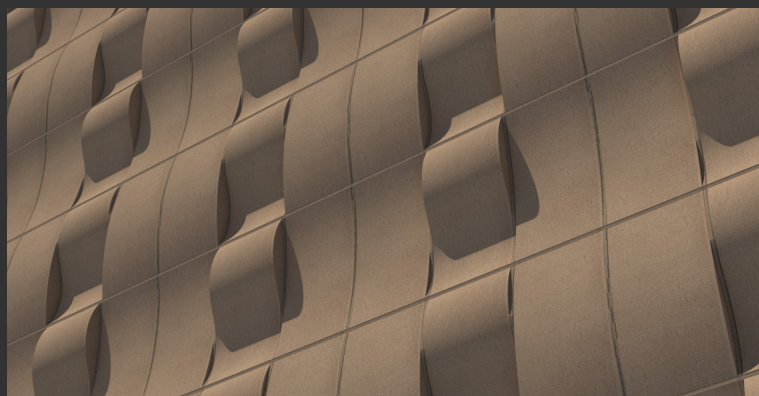
The movement joints should be sealed with an appropriate bead sealant and backer rod for weather protection.

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.

Design Choices Practical Considerations

Design Resources

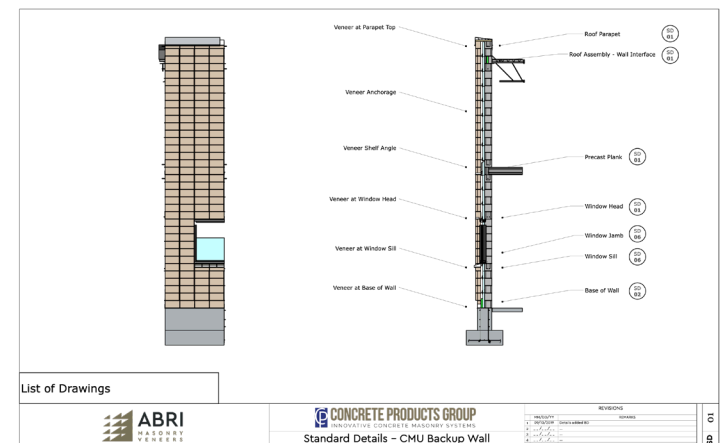
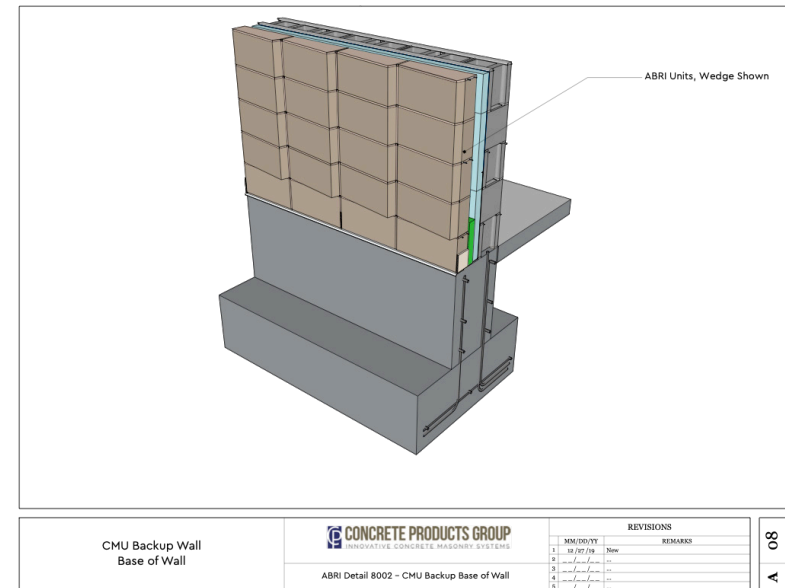
ABRI Veneers may be used for the full range of exterior and interior applications for masonry veneers. We have developed a set of standard construction details for the ABRI product line with instructions on how to lay the patterns shown here, and with recommendations for how to successfully detail walls built with the ABRI products for commonly encountered situations in the field.

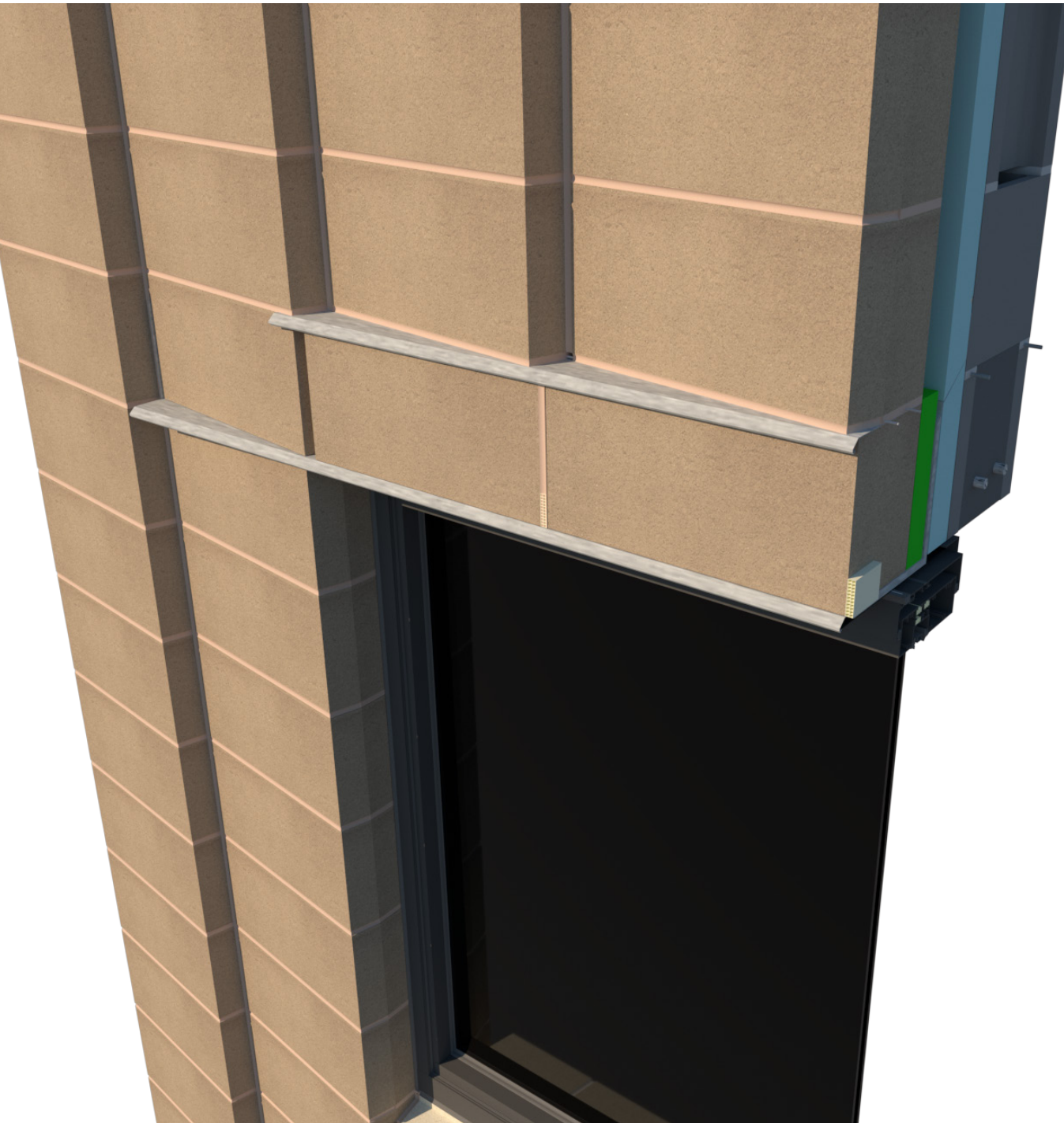
Please refer to the following resources for more information:

- 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

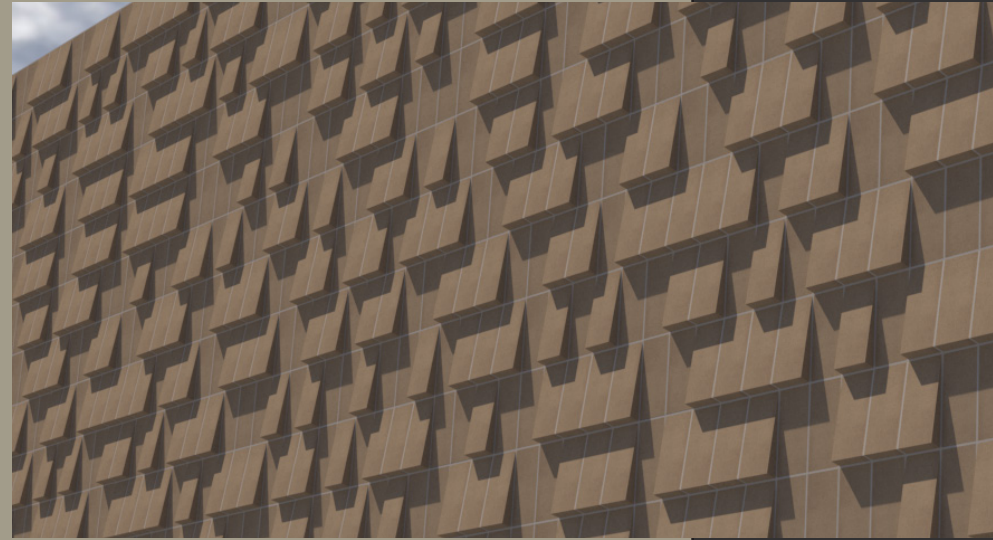
Door Openings

Parapet and Roof Assembly

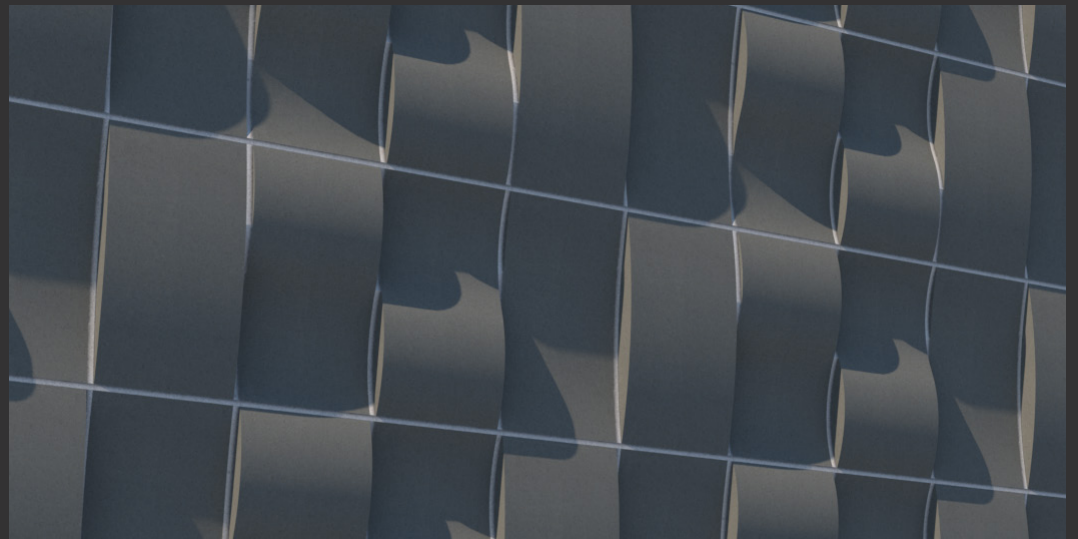
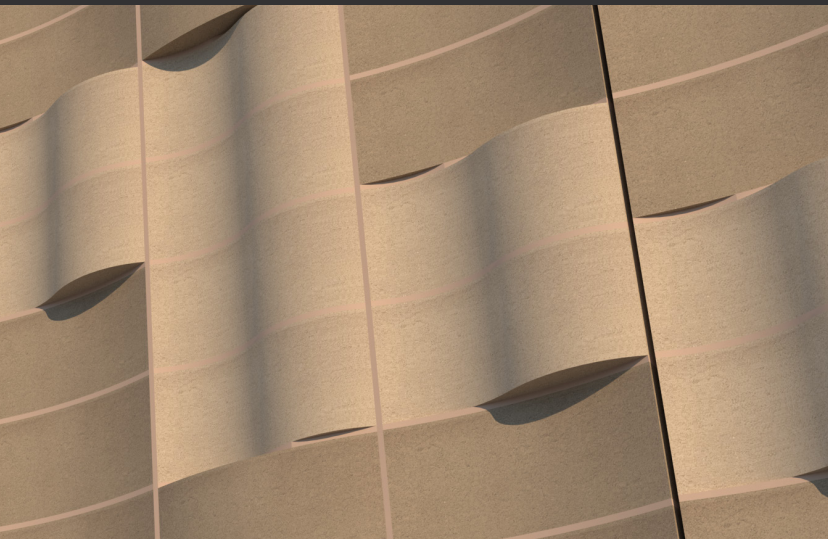
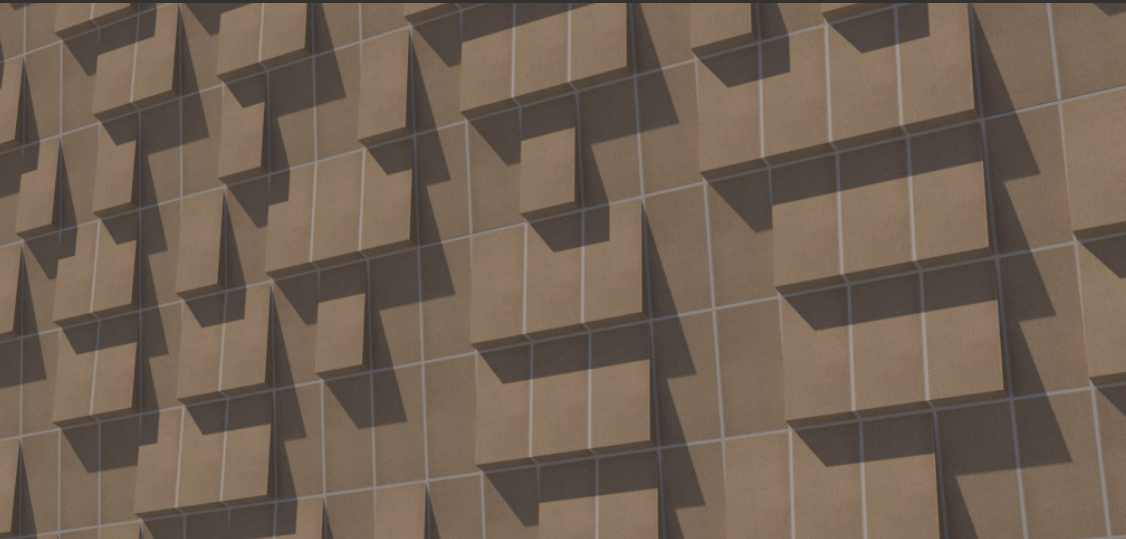
Corners

Design Choices Profile

The ABRI kit of angular
and curved surfaces
provides a new tool box
for design possibilities

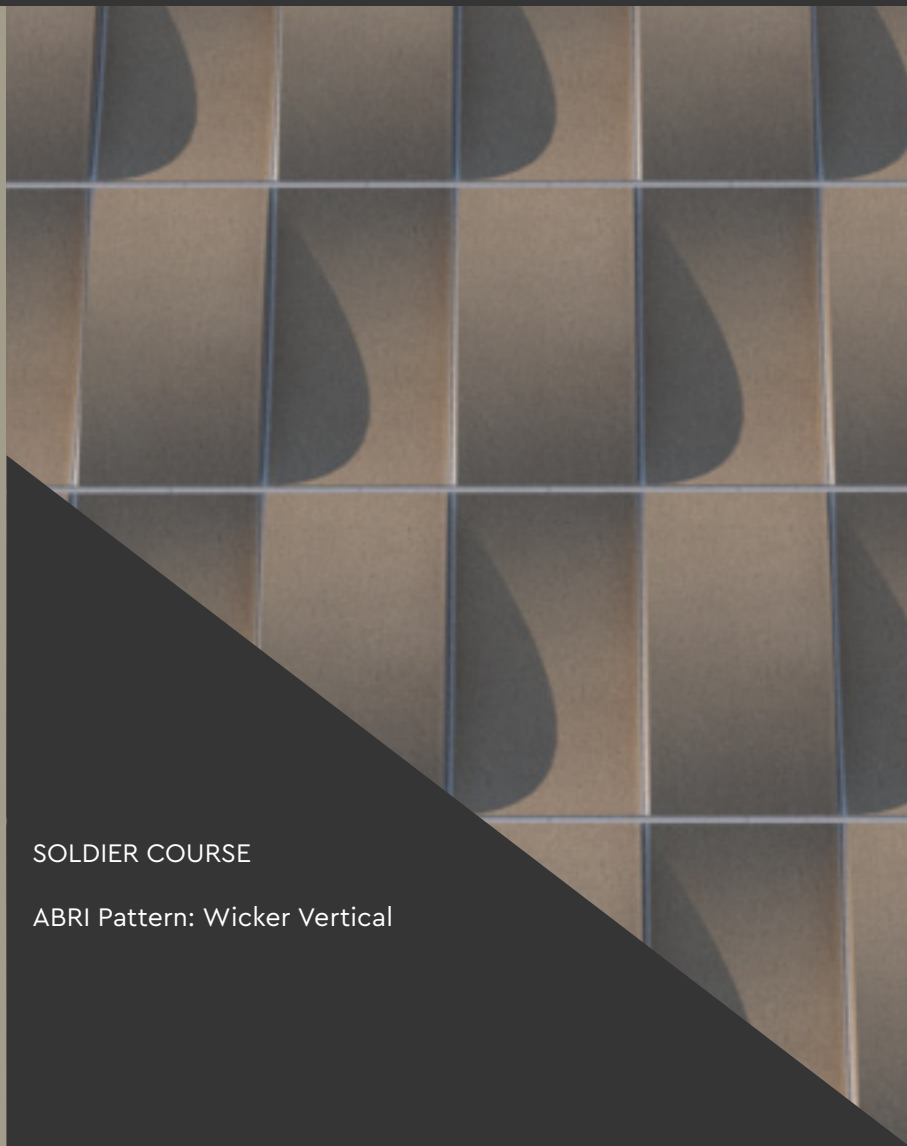


Angles and Curves



Design Choices

Bond Pattern



SOLDIER COURSE

ABRI Pattern: Wicker Vertical

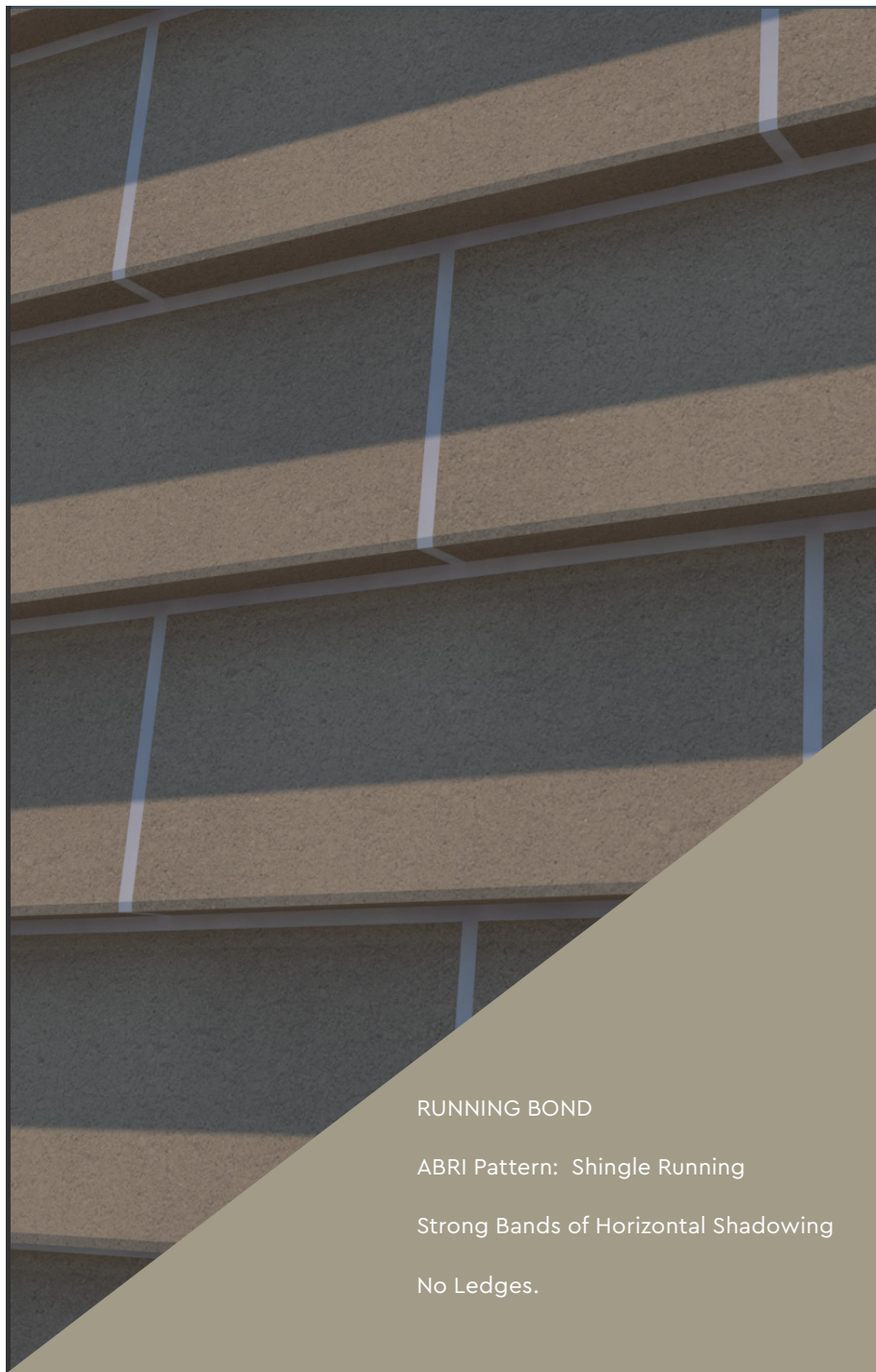


RUNNING BOND

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.

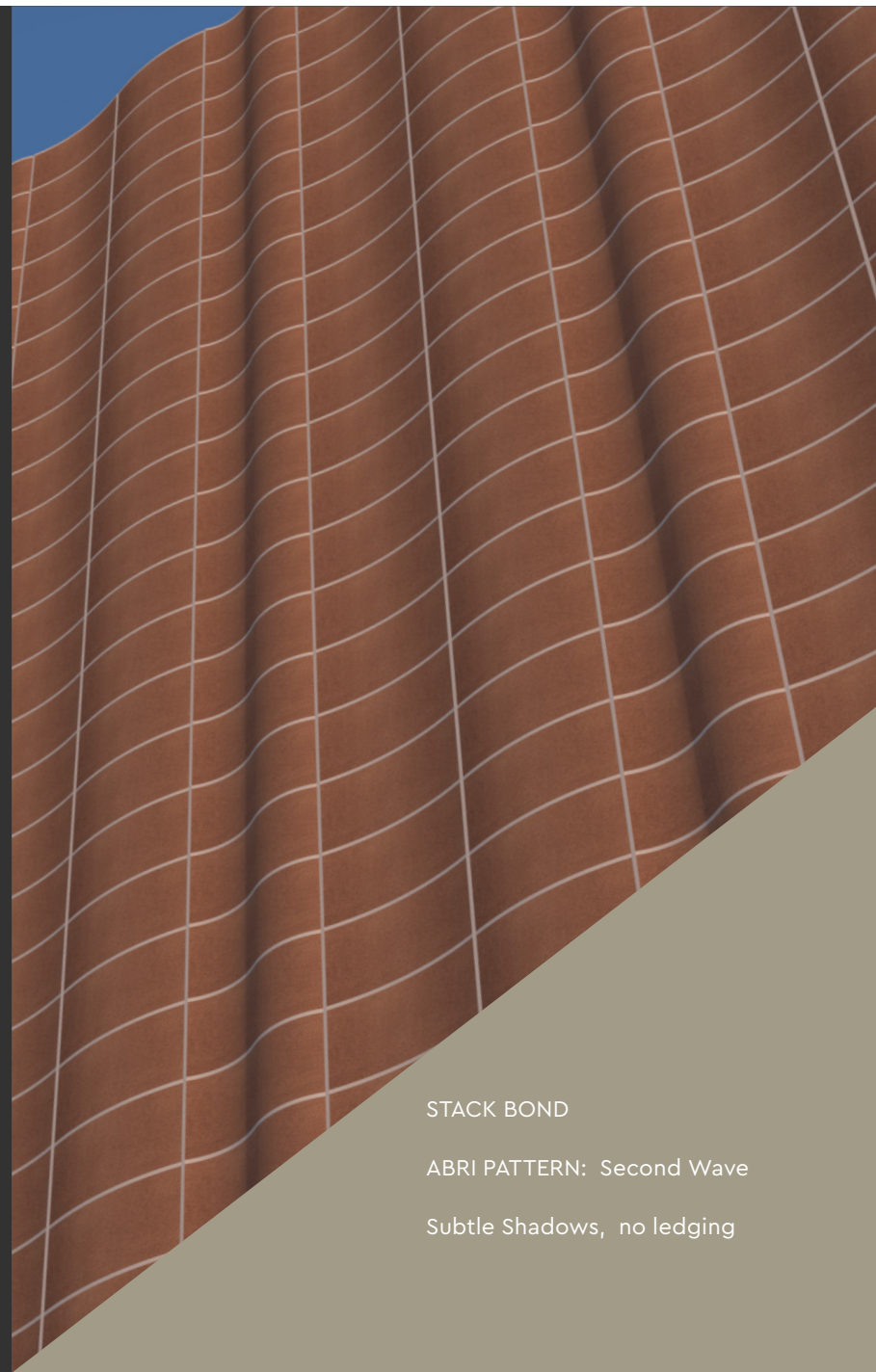


RUNNING BOND

ABRI Pattern: Shingle Running

Strong Bands of Horizontal Shadowing

No Ledges.



STACK BOND

ABRI PATTERN: Second Wave

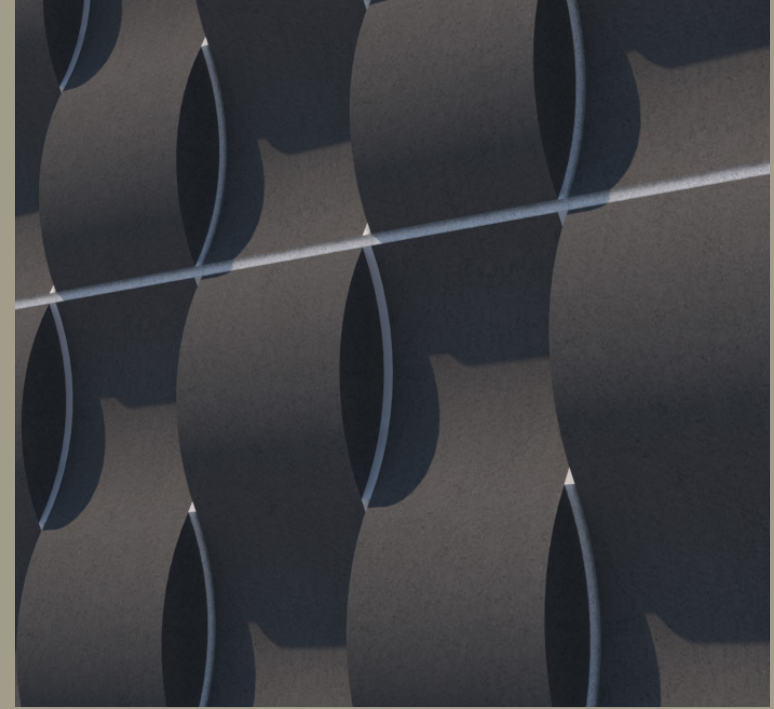
Subtle Shadows, no ledging

Design Choices

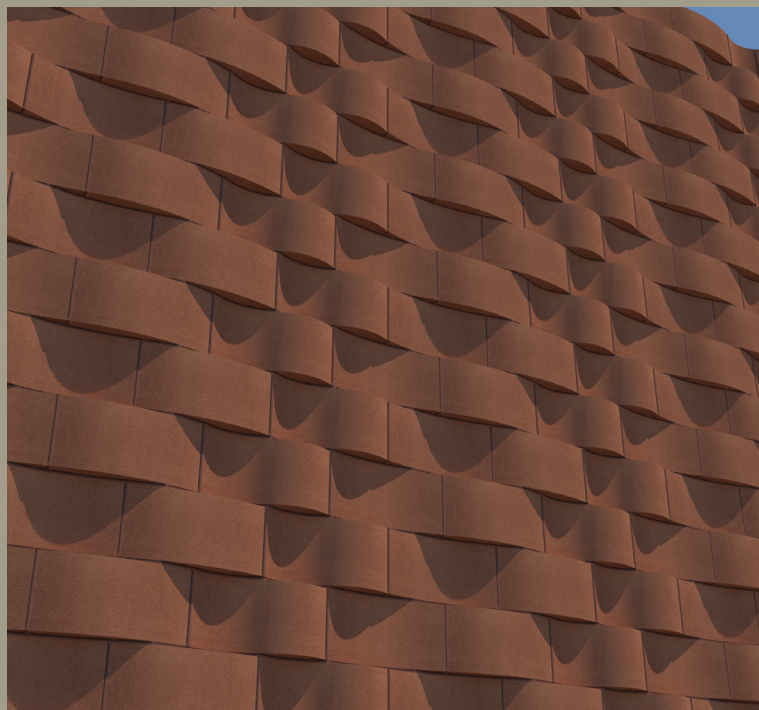
Unit Orientation



ABRI Pattern: Opposed Wedges
Stack Bond – horizontal



**ABRI Pattern: Serpentine
Alternating Soldier**
Soldier Course Bond – vertical



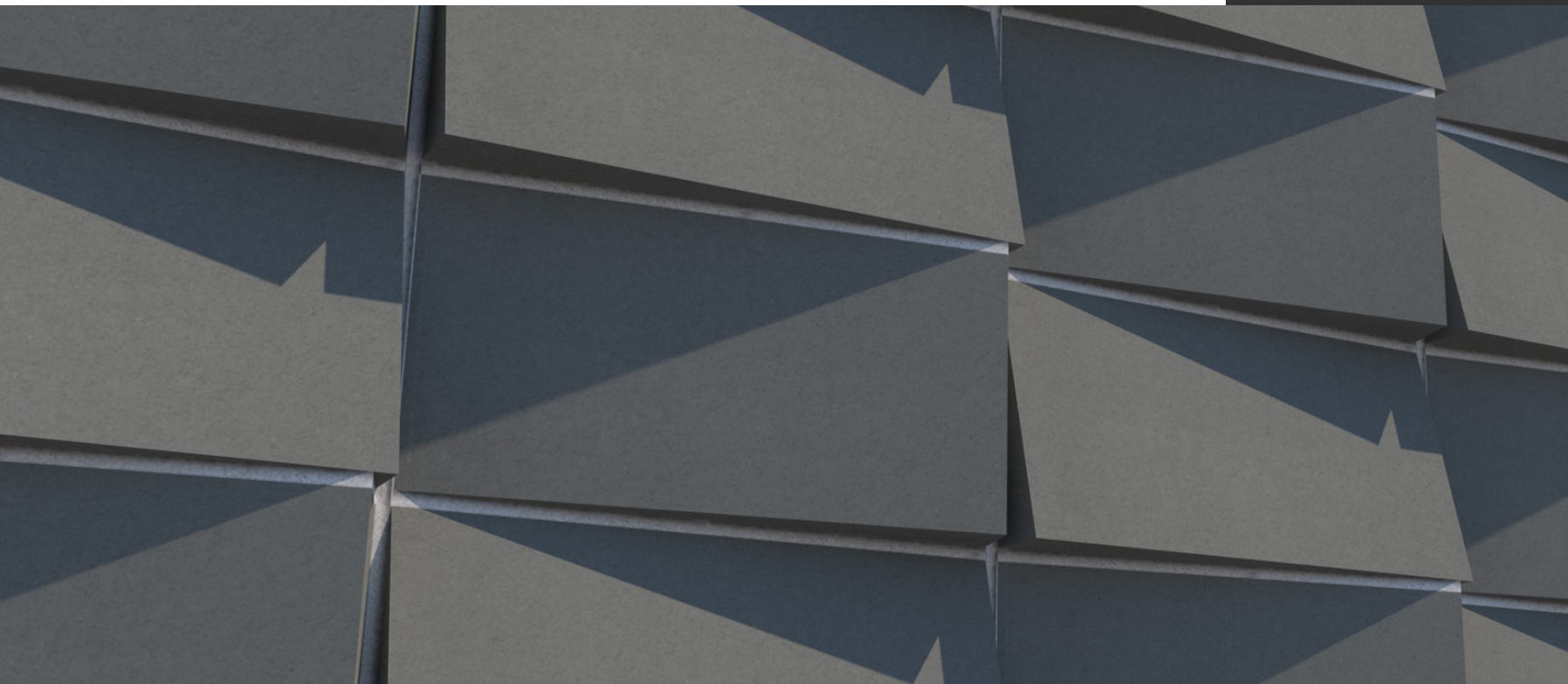
ABRI Pattern: Ripple
Horizontal Running – horizontal



ABRI Pattern: Waffle
Mixed Vertical and Horizontal Stack

Design Choices

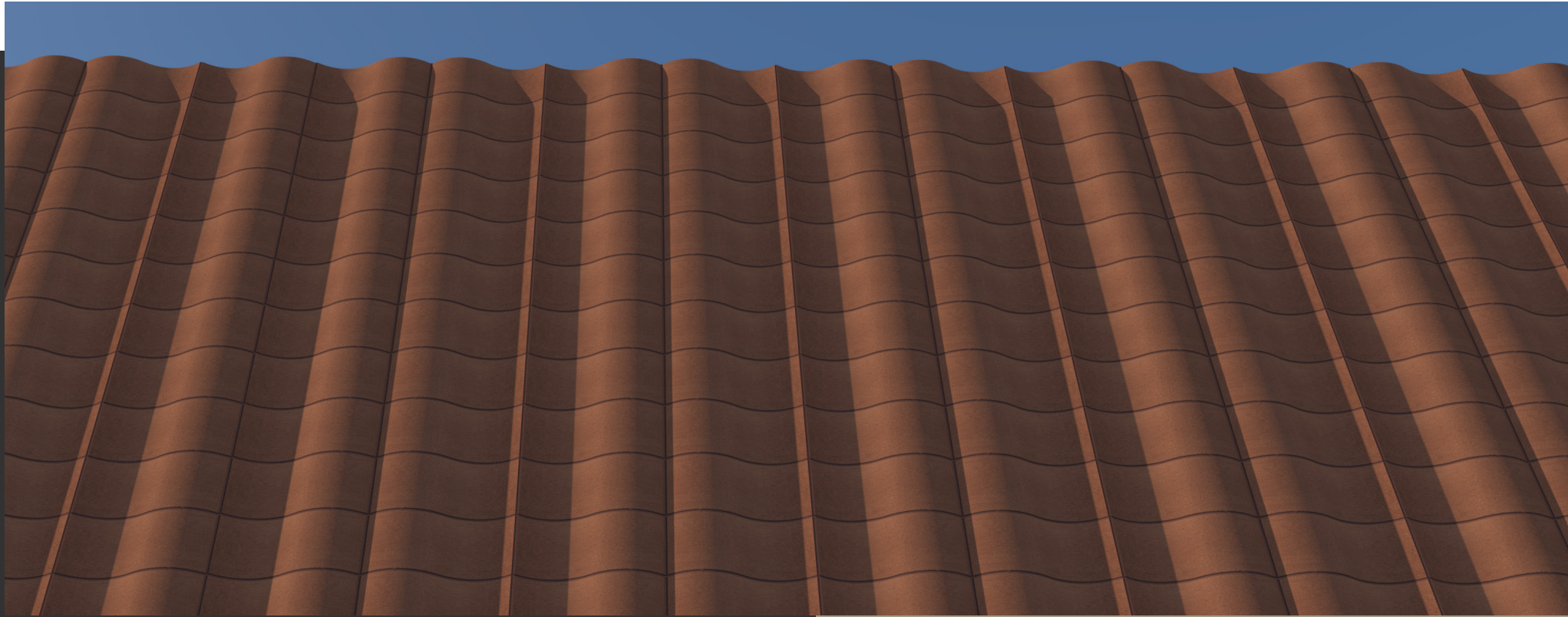
Shadows



Complex Shadow Patterns

ABRI Pattern: Komodo

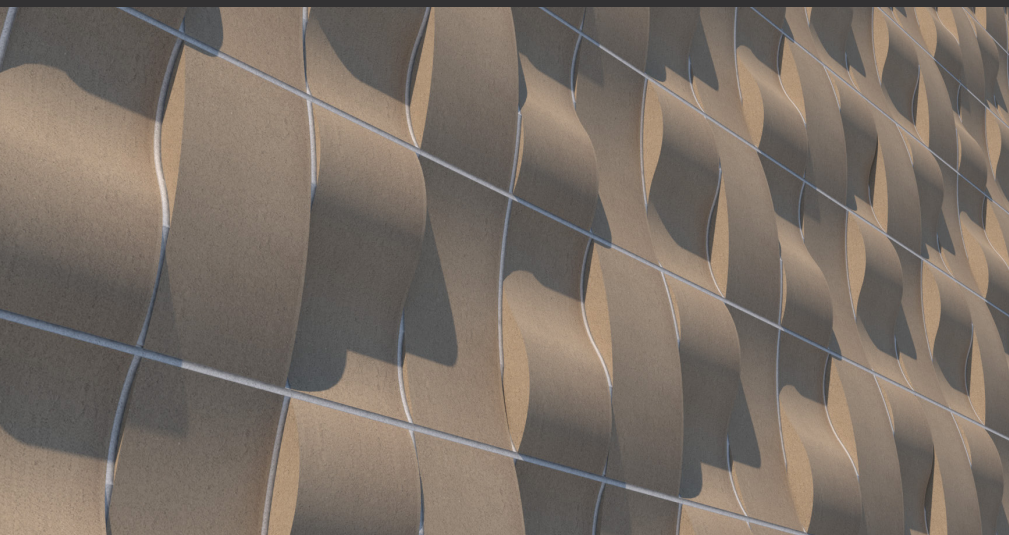
The Shingle and Wedge Units produce dramatic shadowing when in combined as part of a wall pattern. Note that while this pattern has a great deal of surface depth, the units are placed so that ledges that might collect moisture are not present.



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

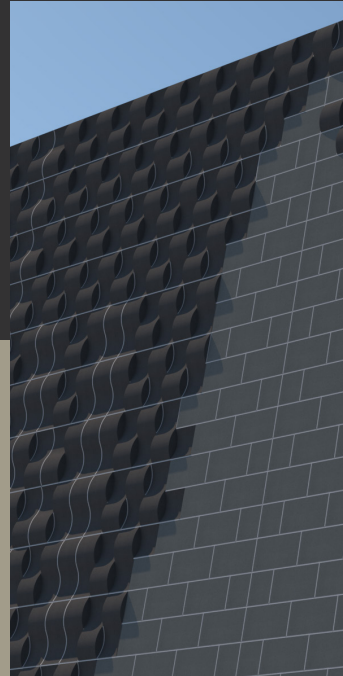
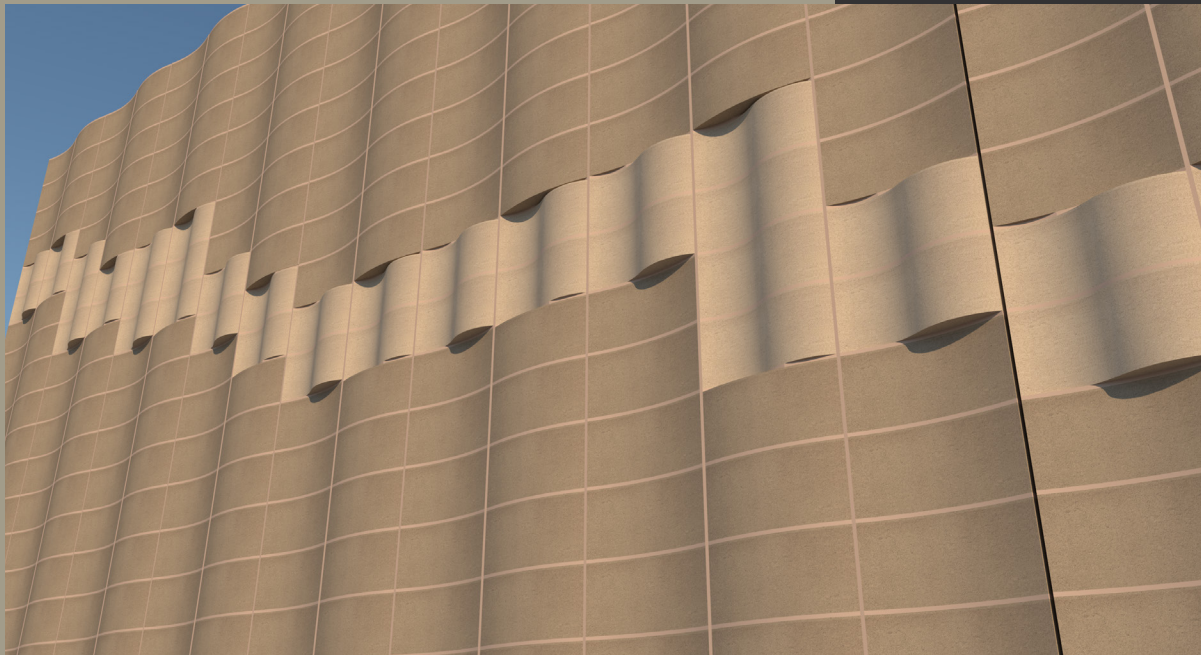
ABRI Pattern: Au Sable (at left)

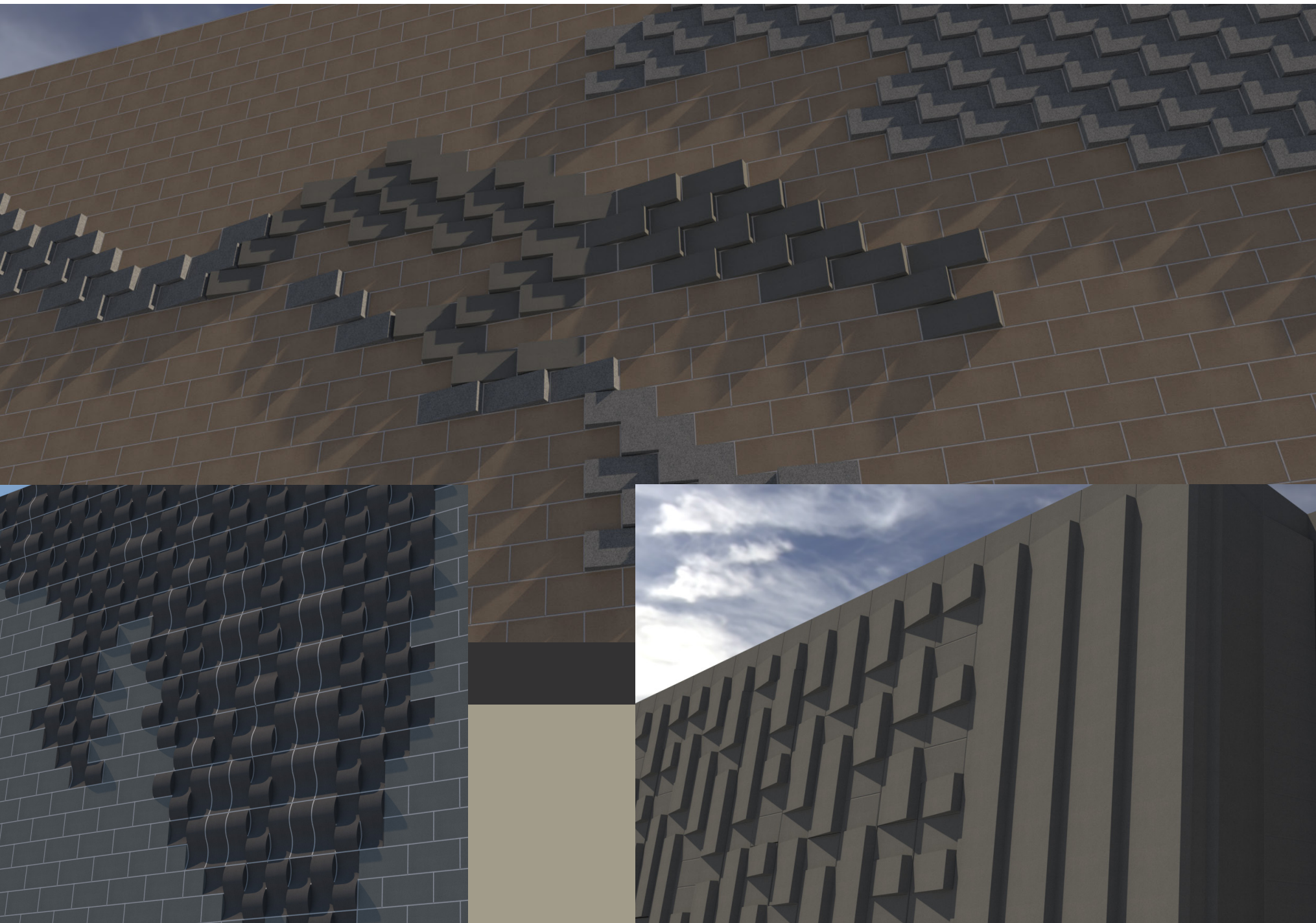
Placing curved ABRI units in soldier course bonding will produce more dramatic shadowing due to the contour changes.

Design Choices

Pattern Transitions

Shifting Colors and
Patterns

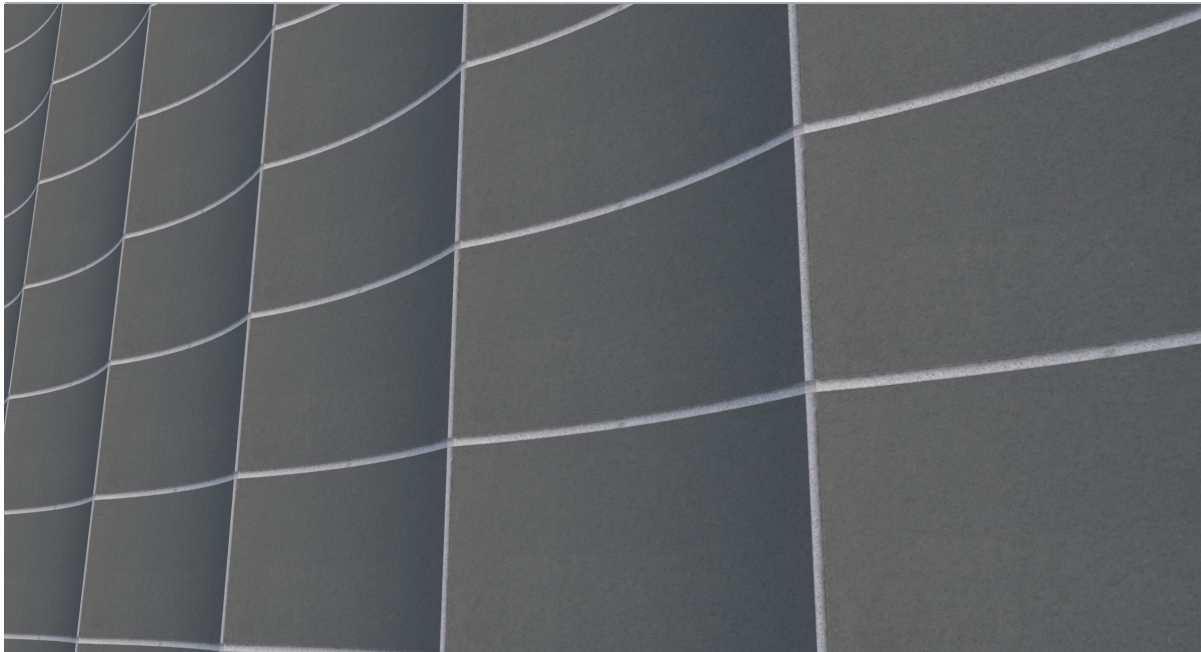






Wall Panels Curved Profiles

ABRI's curved shapes are a natural for evoking the look of flowing water.

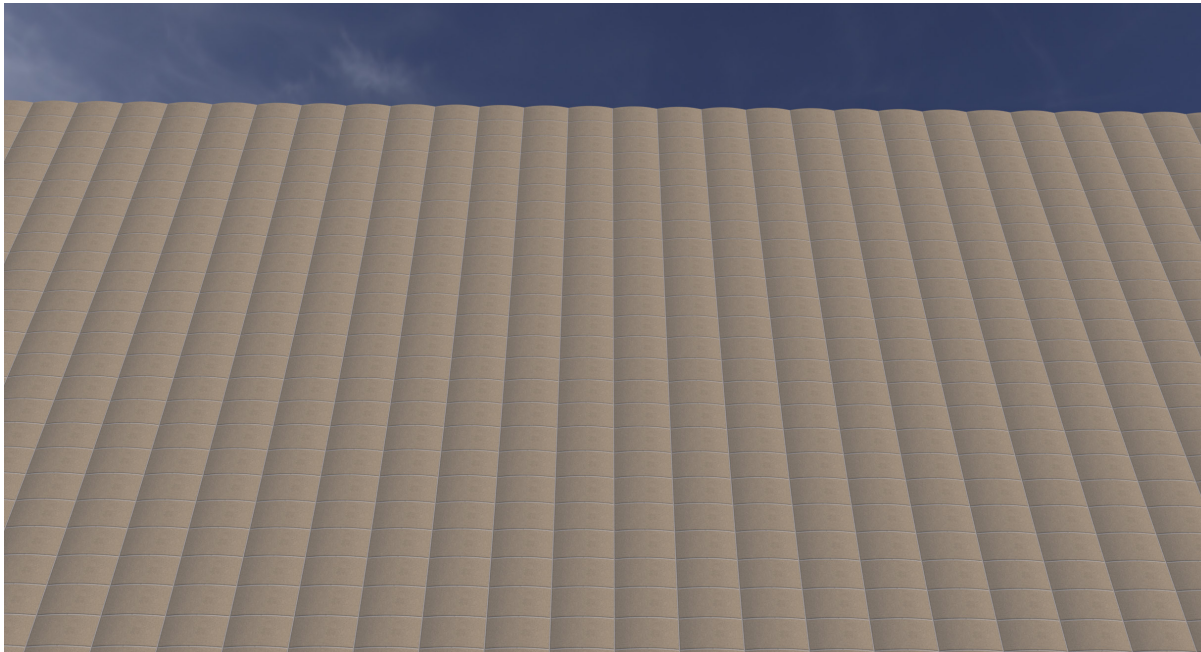


Concave Stack

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

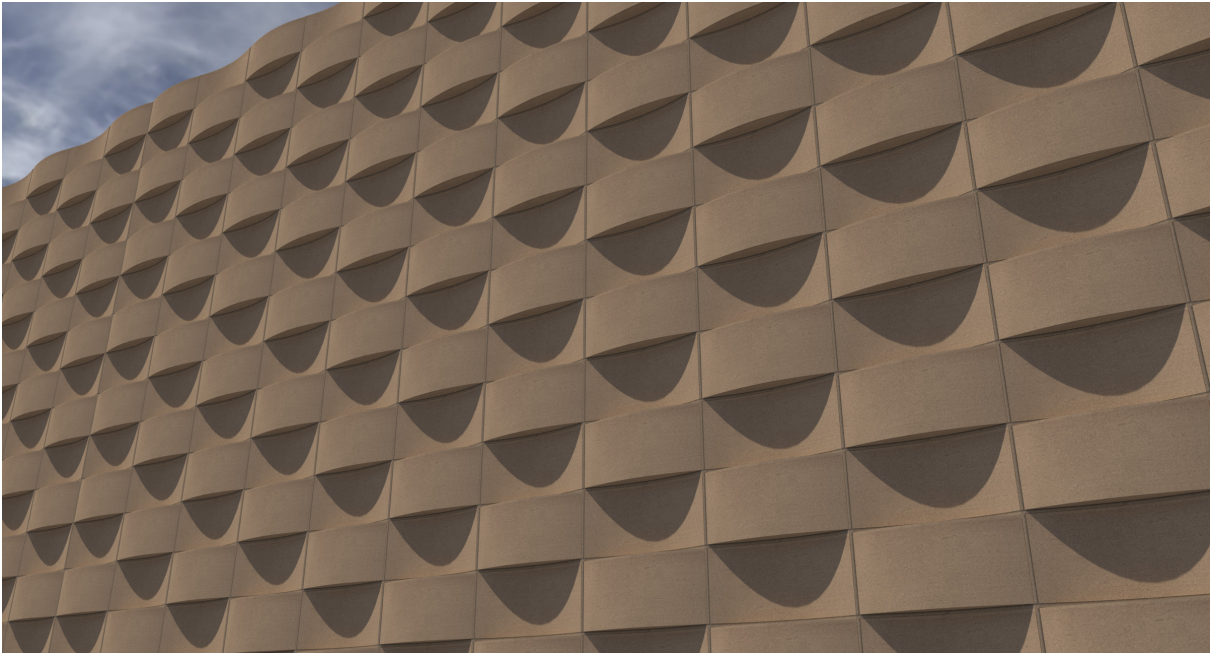
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

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.

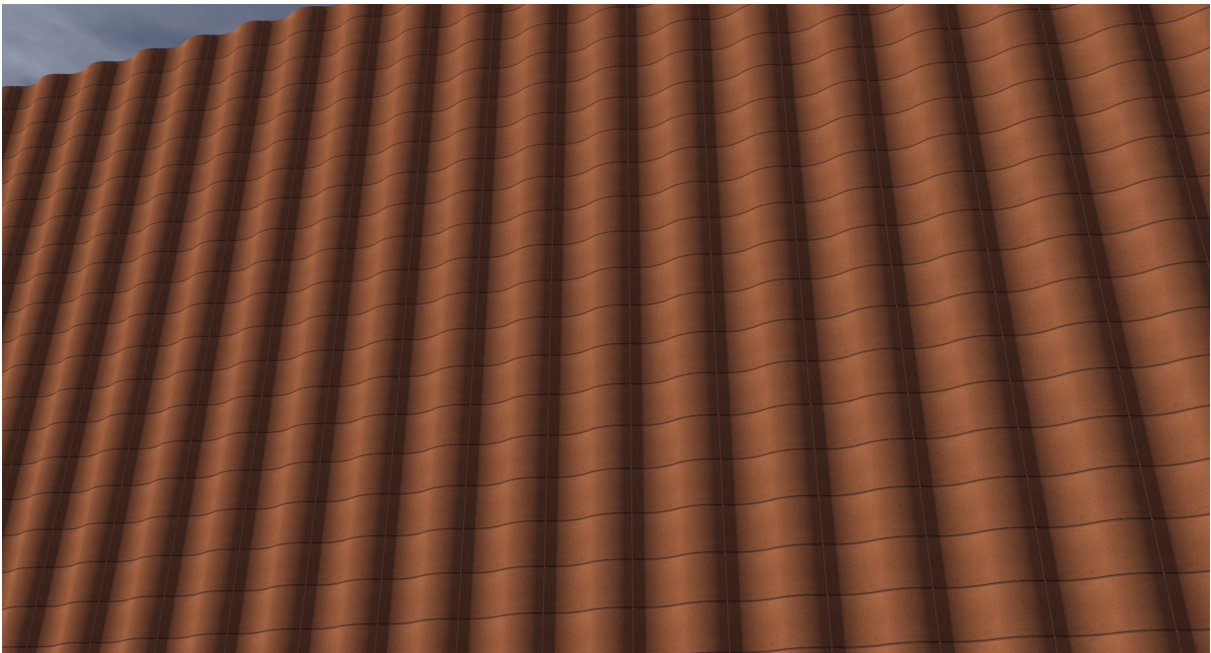


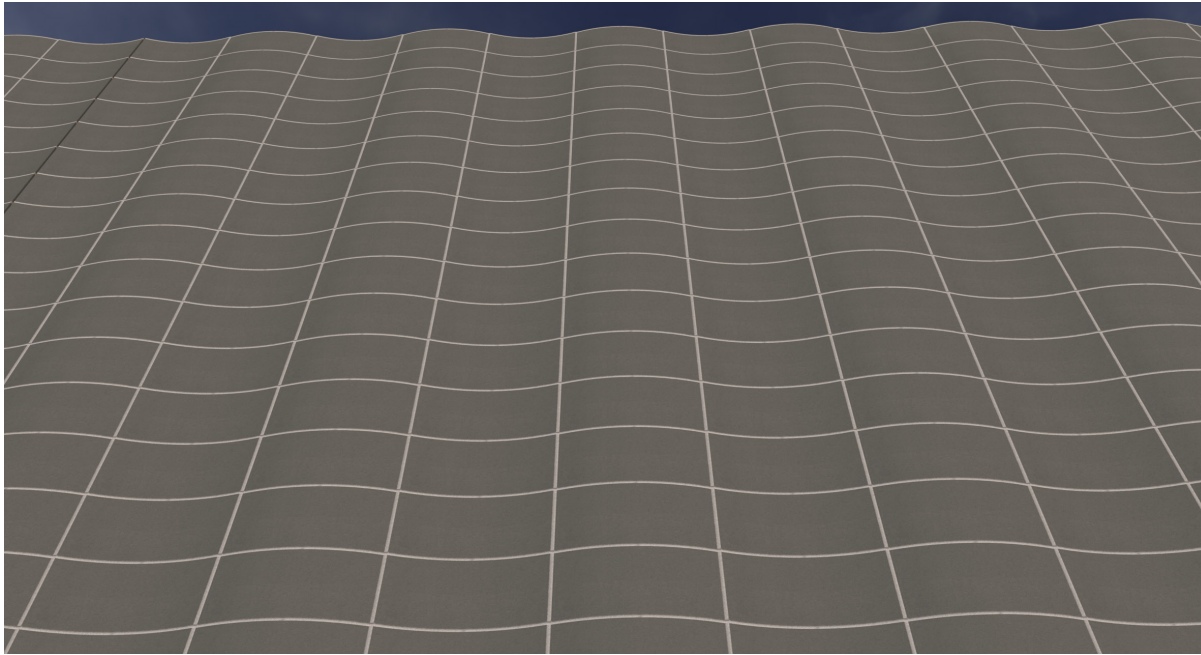
Serpentine Stack

ABRI Serpentine Stack Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint
reinforcement recommendations.





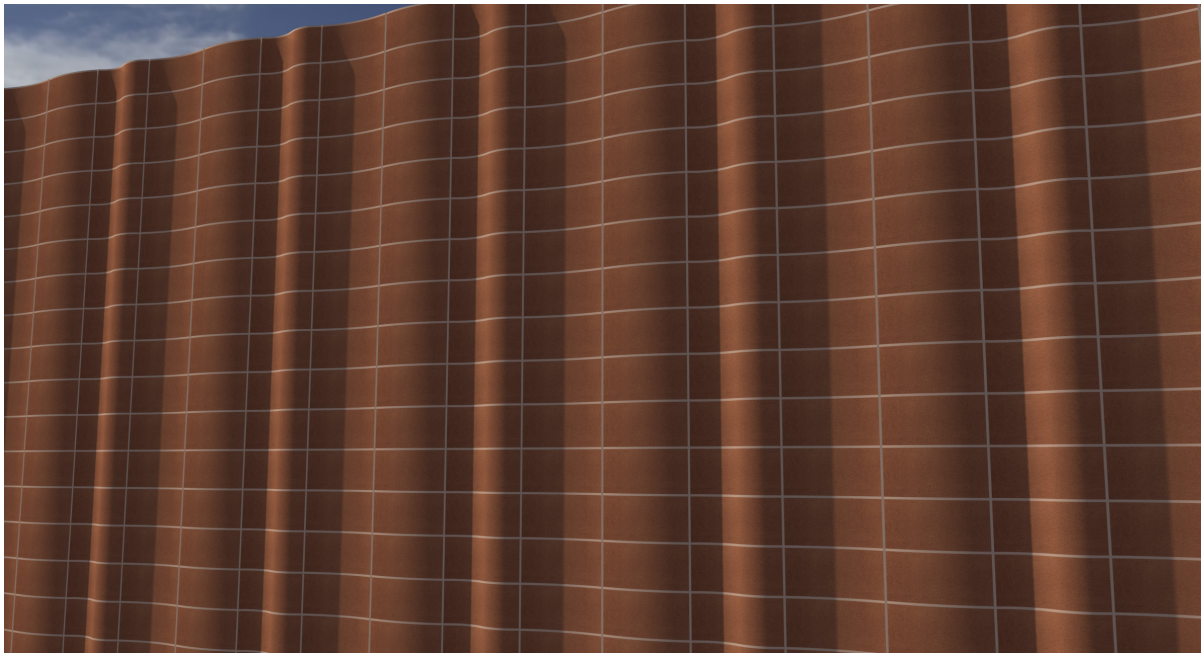
First Wave

Concave Convex

Stack Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

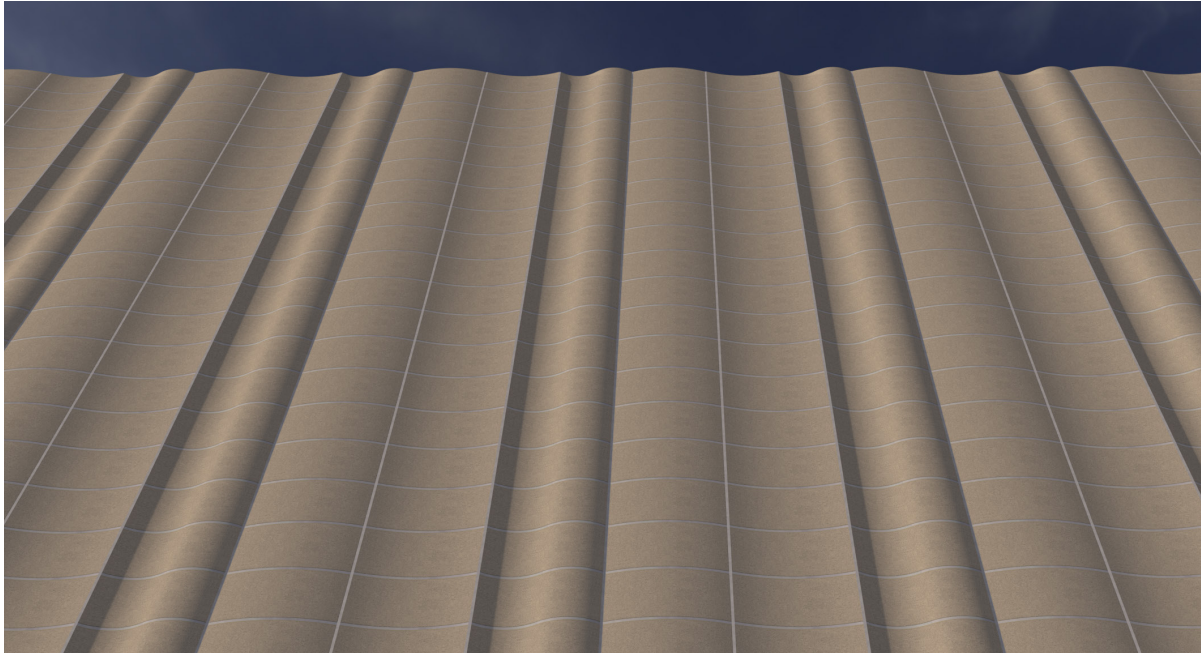


Second Wave

Concave Convex Serpentine

Suitable for indoor or outdoor use

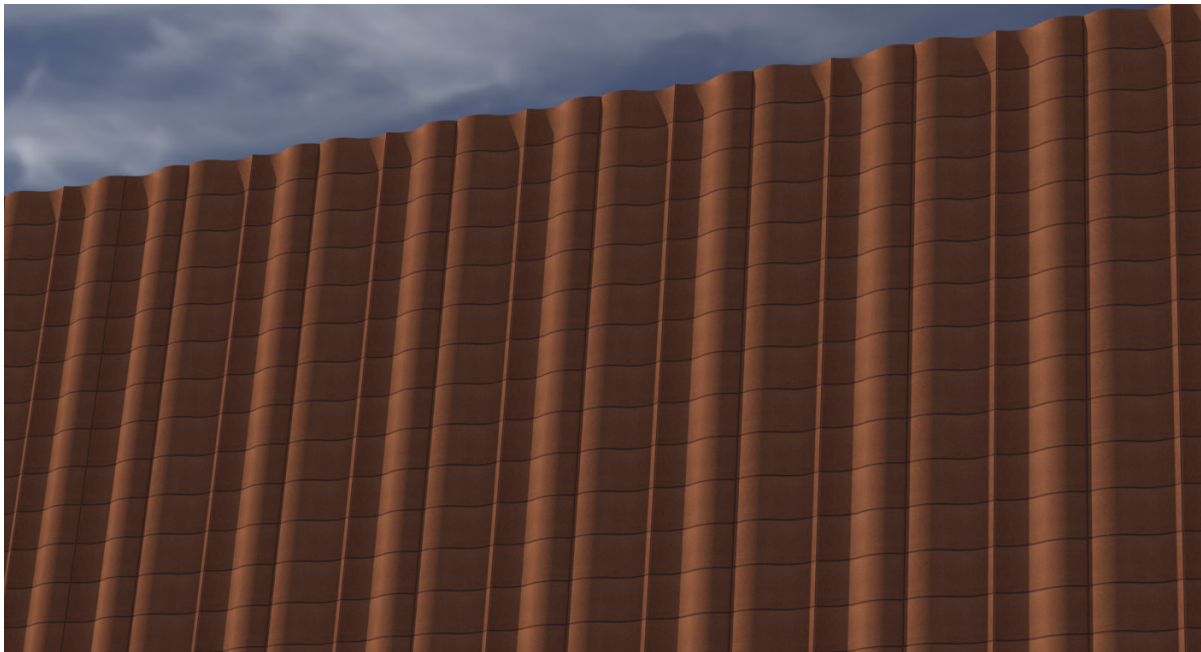
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



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

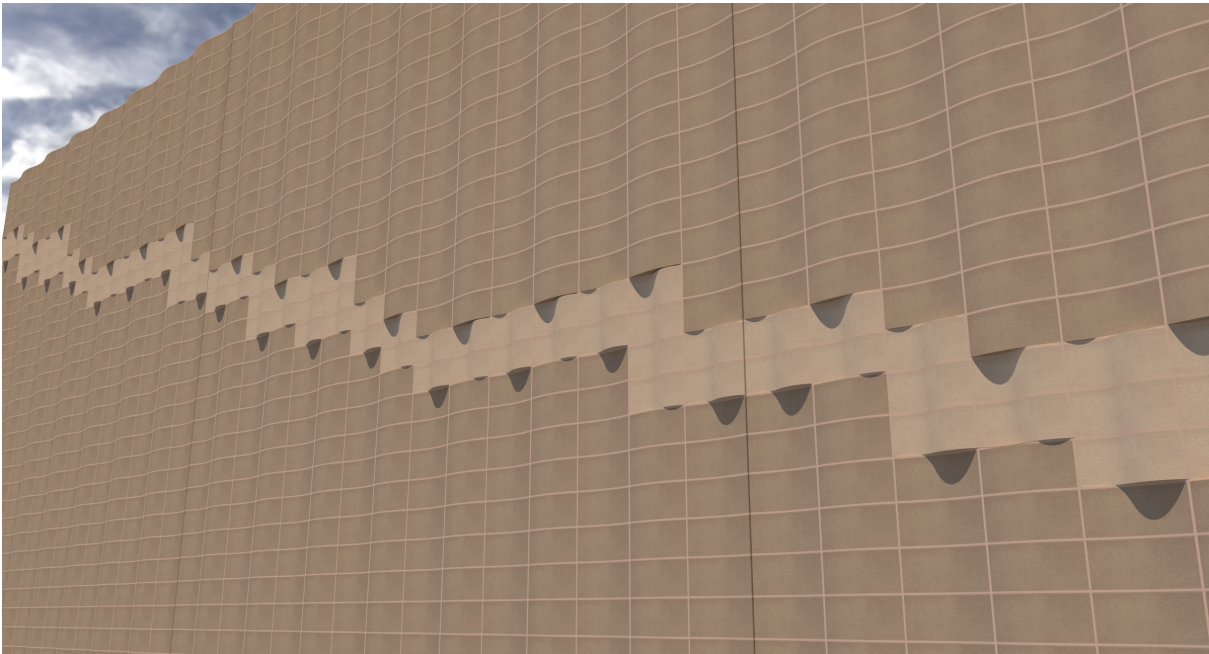
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



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.



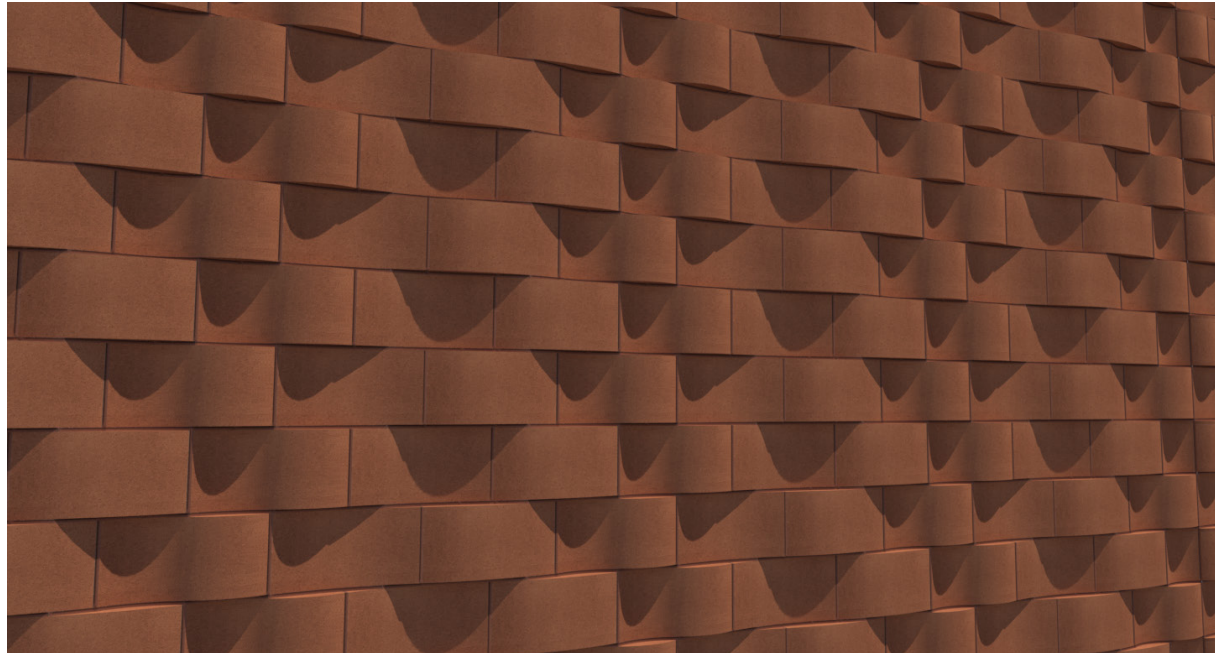
Riffle

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.

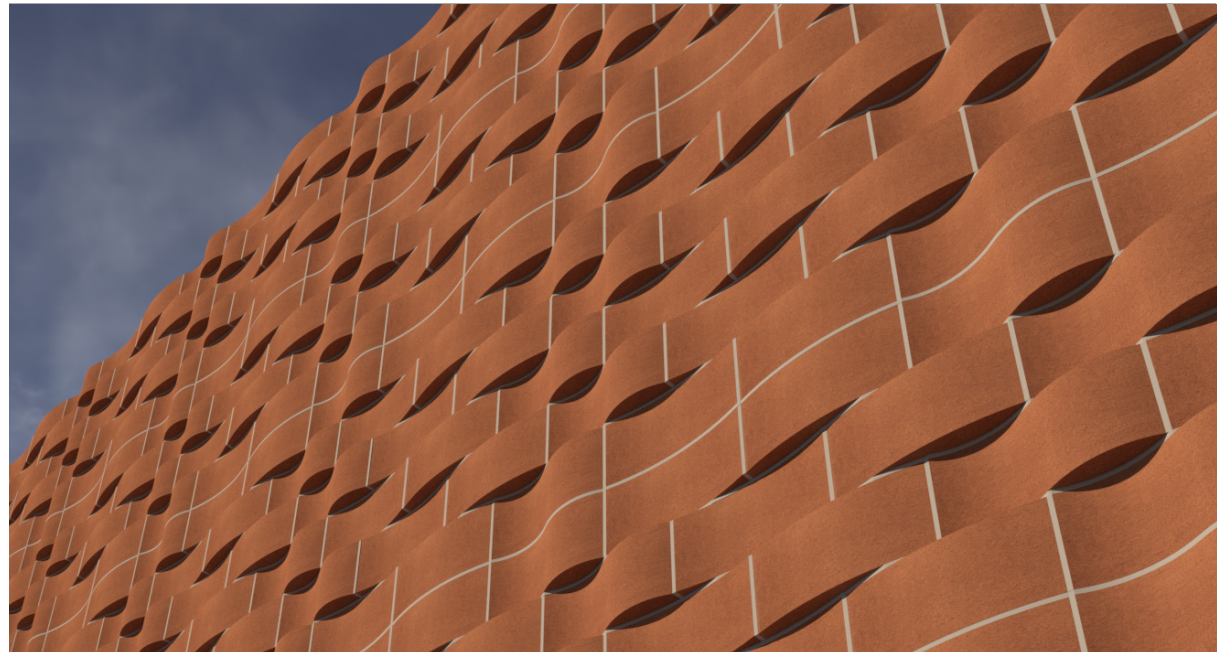


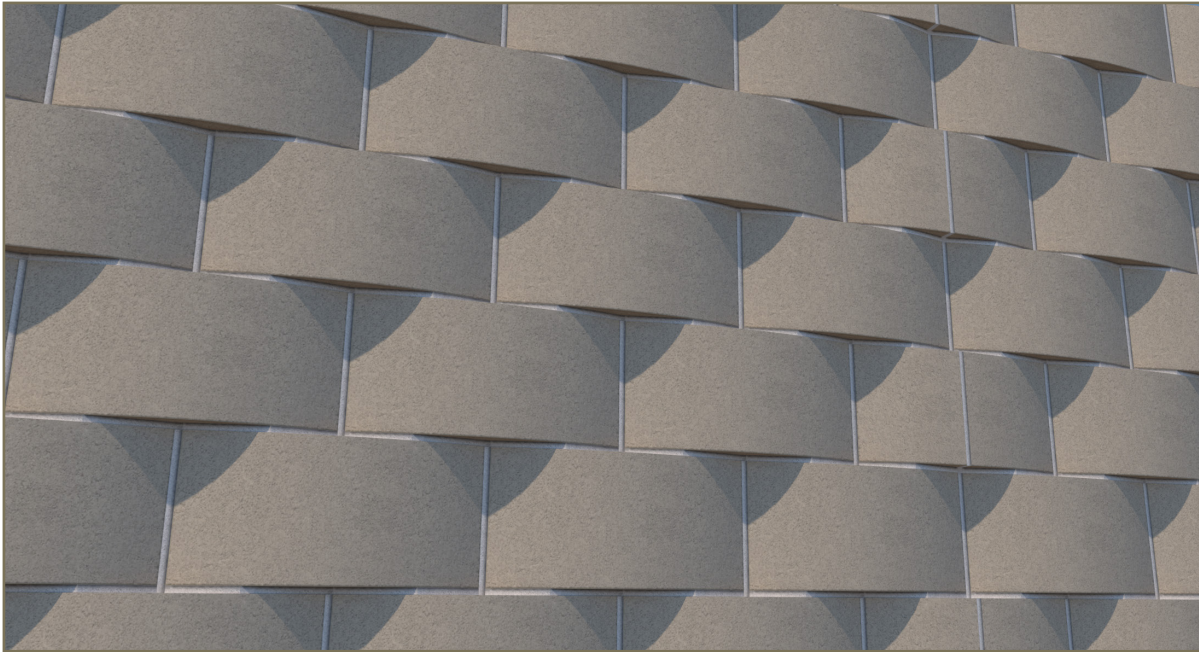
Riffle and Second Wave

ABRI Concave Convex Serpentine

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

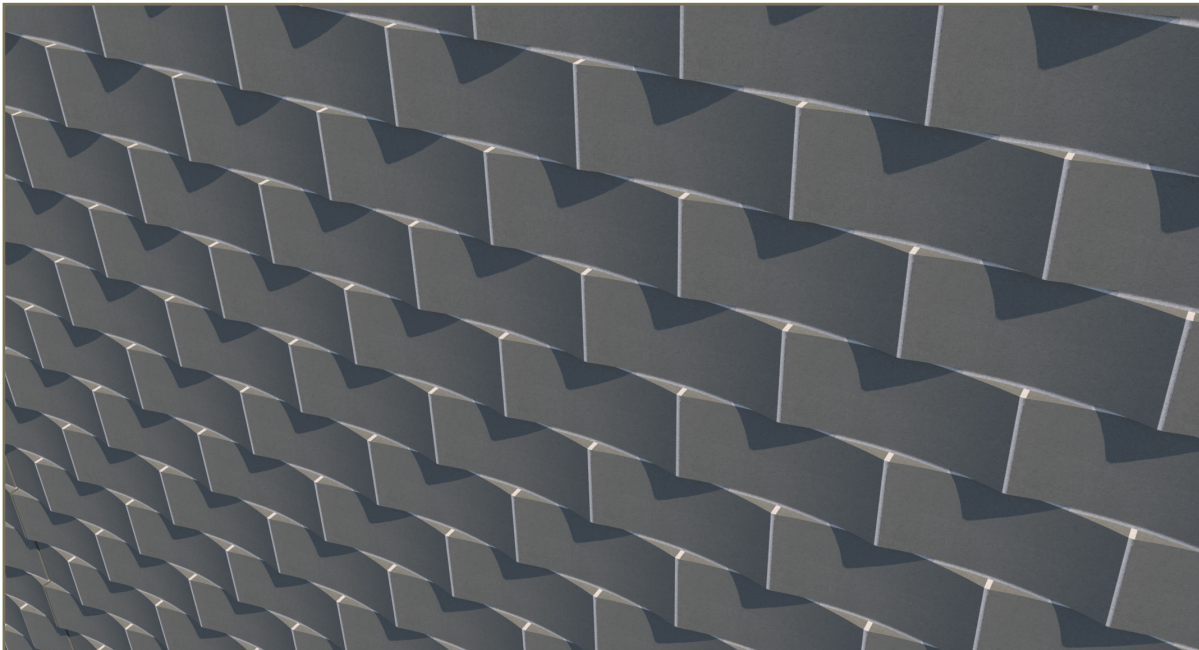




Convex Running Convex Running Bond

Ledging should be considered before using for exterior applications

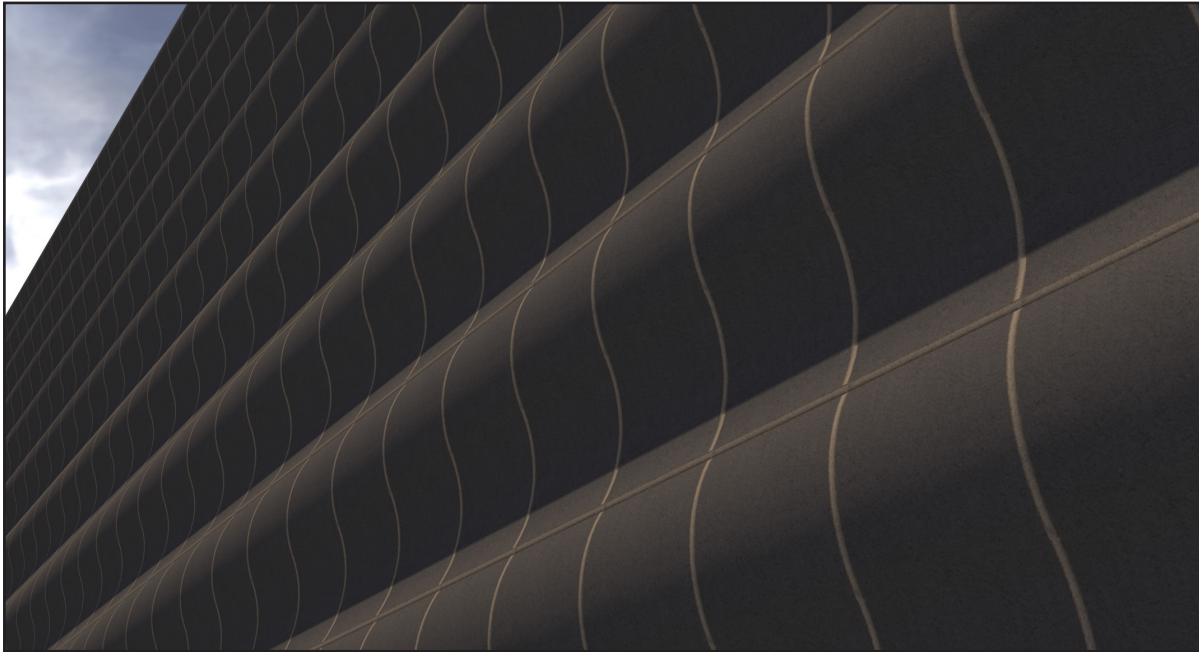
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Concave Running Concave Running Bond

Ledging should be considered before using for exterior applications

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

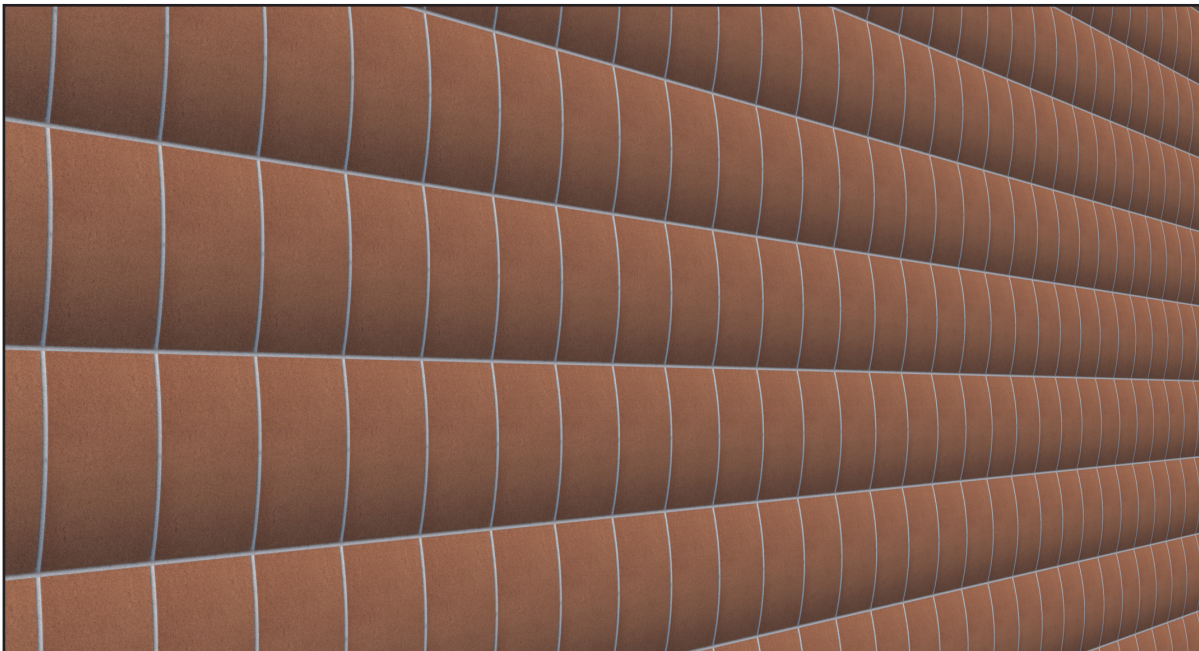


Serpentine Soldier

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

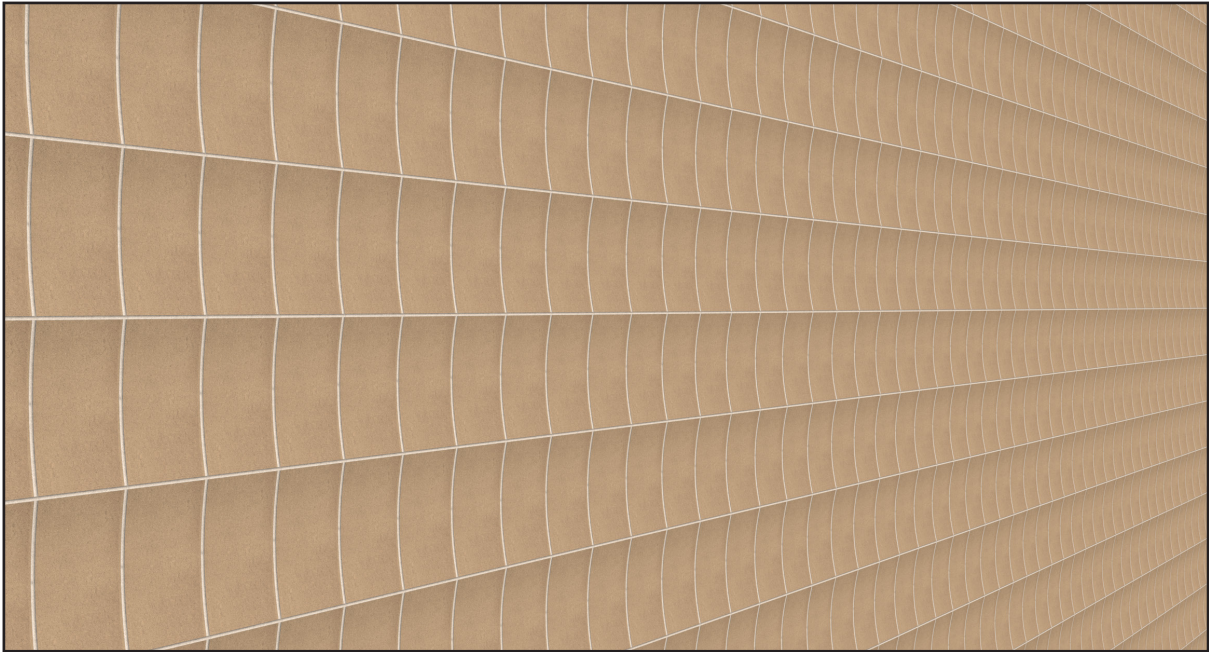
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Concave Soldier

Concave Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

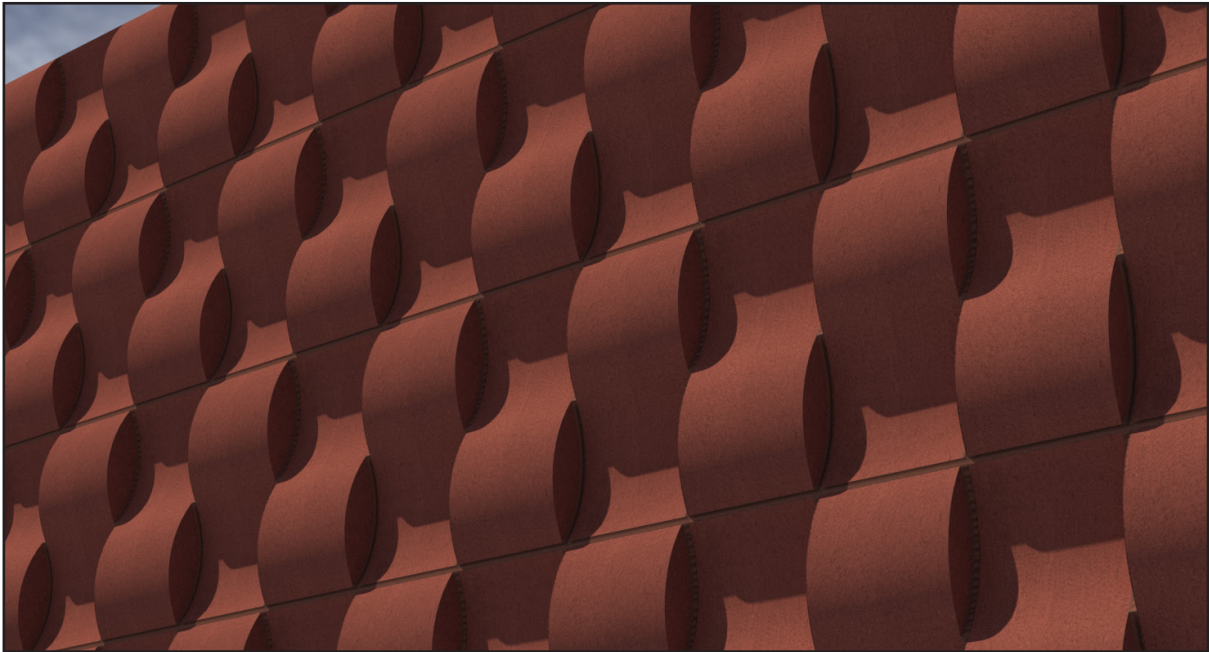


Serpentine Alternating Soldier

Serpentine Soldier Course

Suitable for indoor or outdoor use

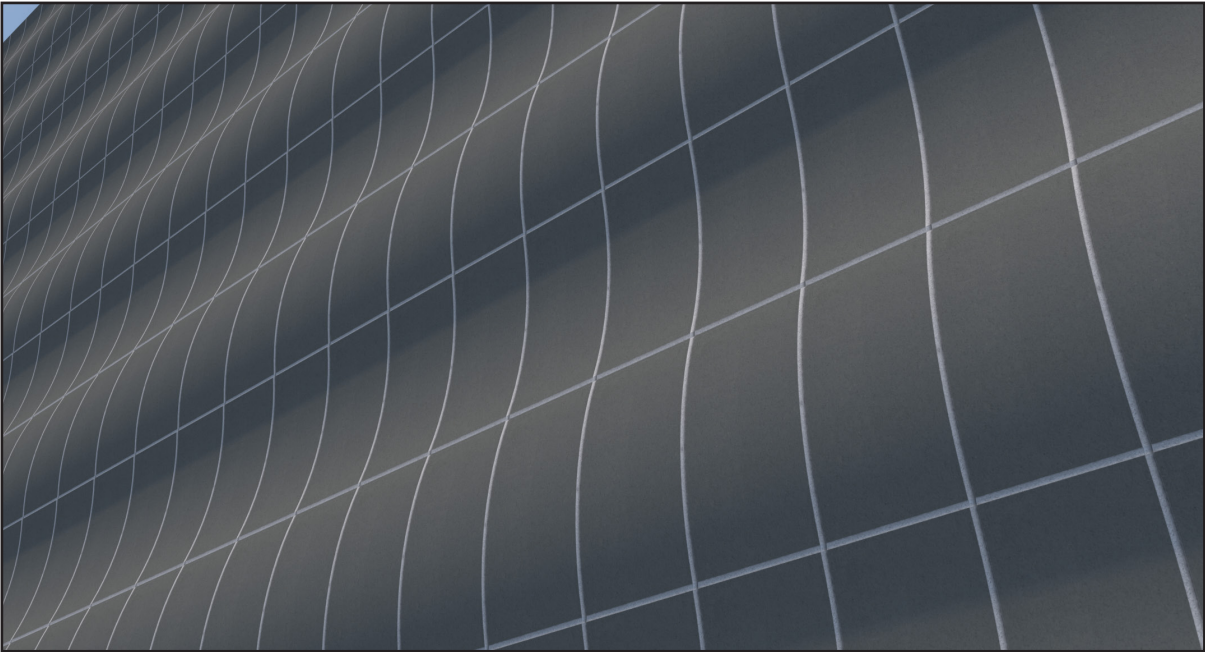
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



First Wave Soldier
Serpentine
Soldier Course

Suitable for indoor or outdoor use

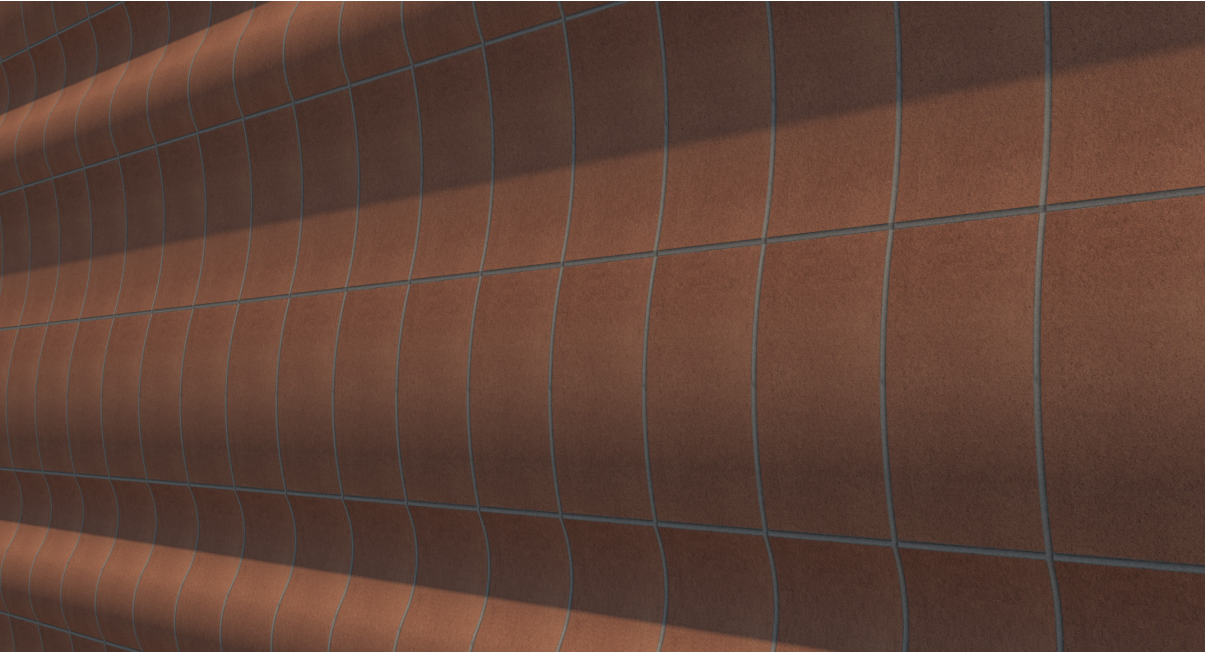
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

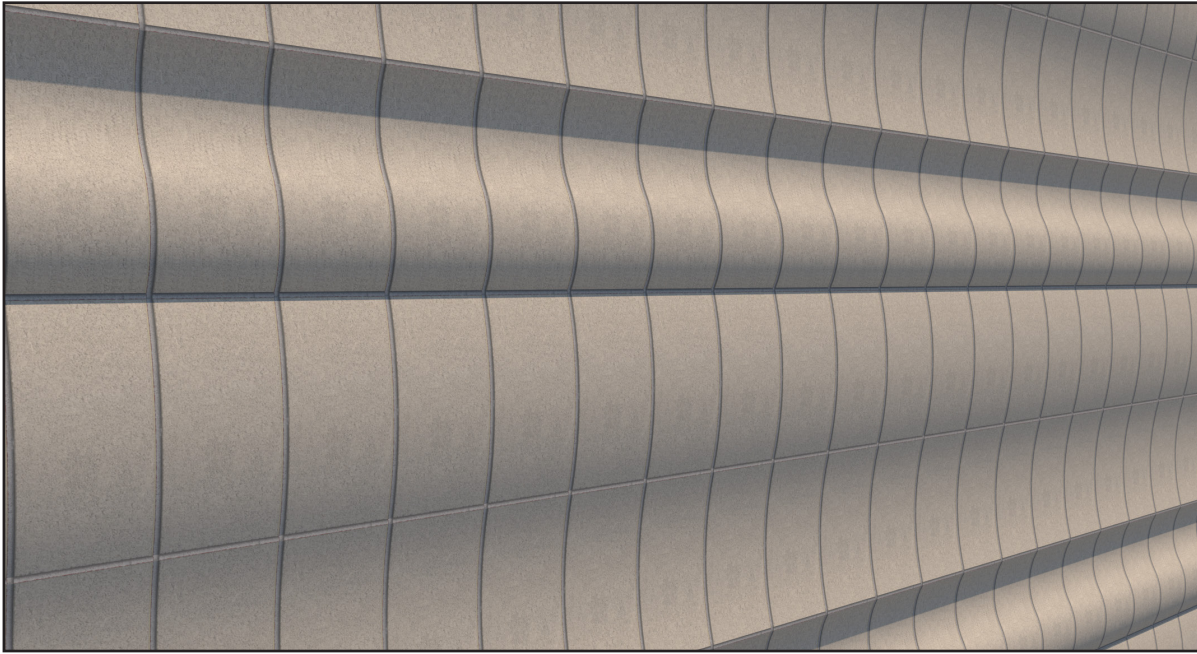


Second Wave Soldier
Concave Convex Serpentine
Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



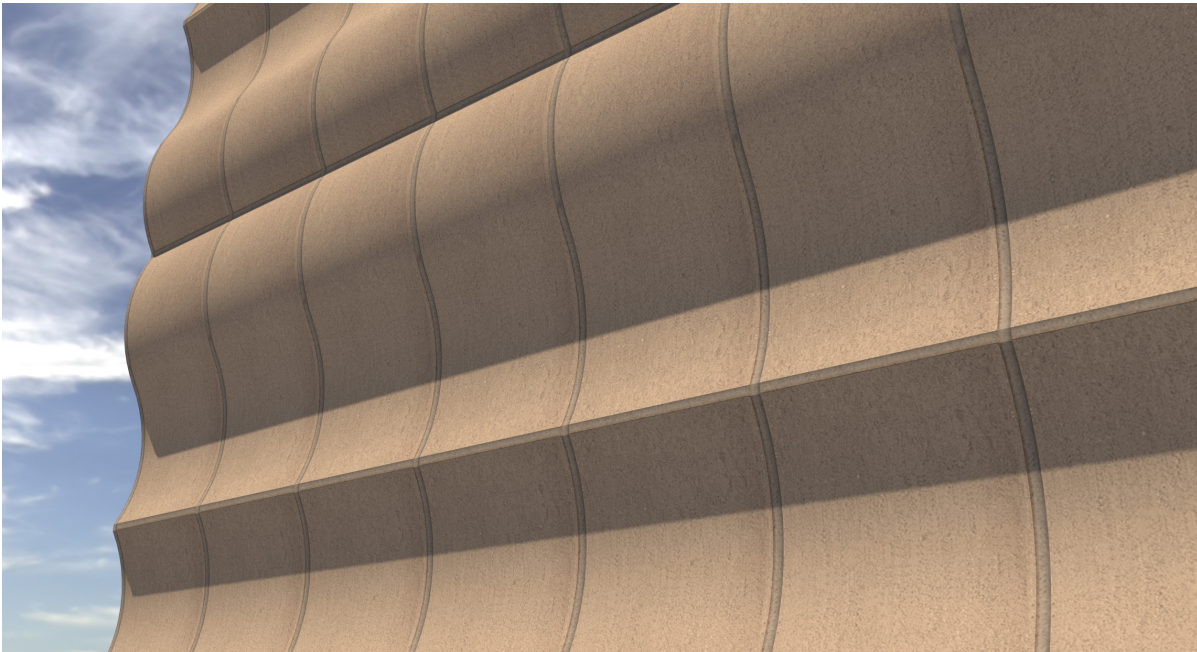


Third Wave Soldier

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

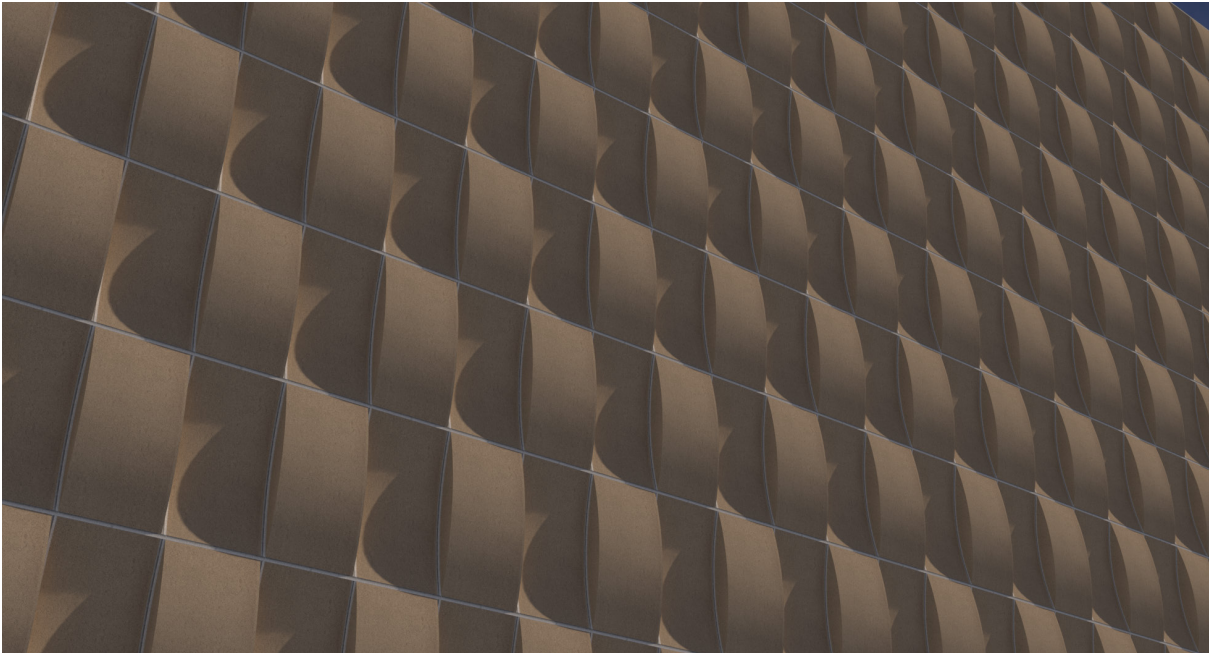
Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

Wicker Soldier
Concave Convex
Soldier Course

Suitable for indoor or outdoor use

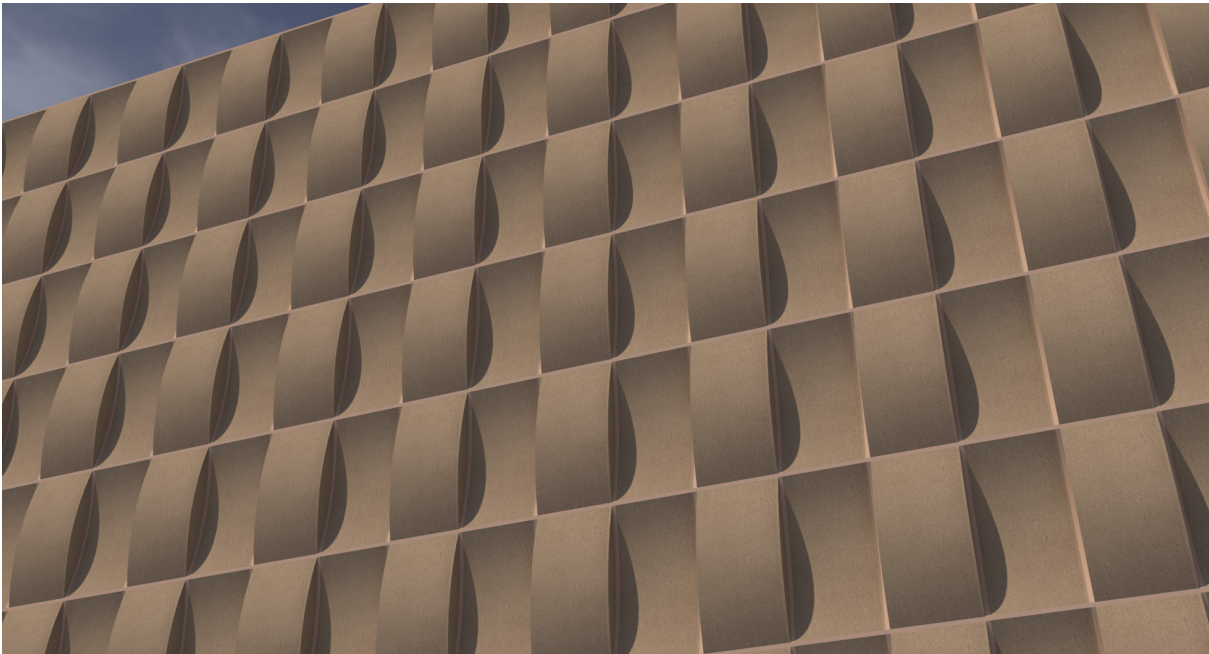
See Design Guide for anchorage and horizontal Joint reinforcement recommendations..



Reciprocation
Concave Convex
Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

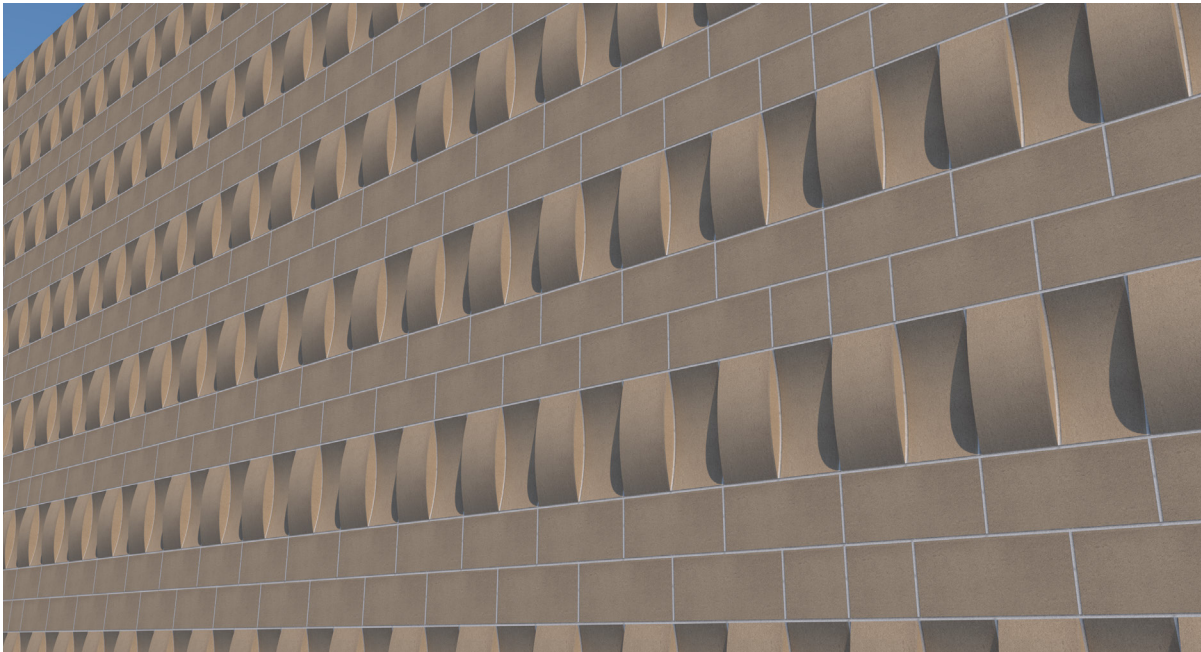




Double Weave Concave Convex Alternating Stack

Ledging should be considered before using for exterior applications

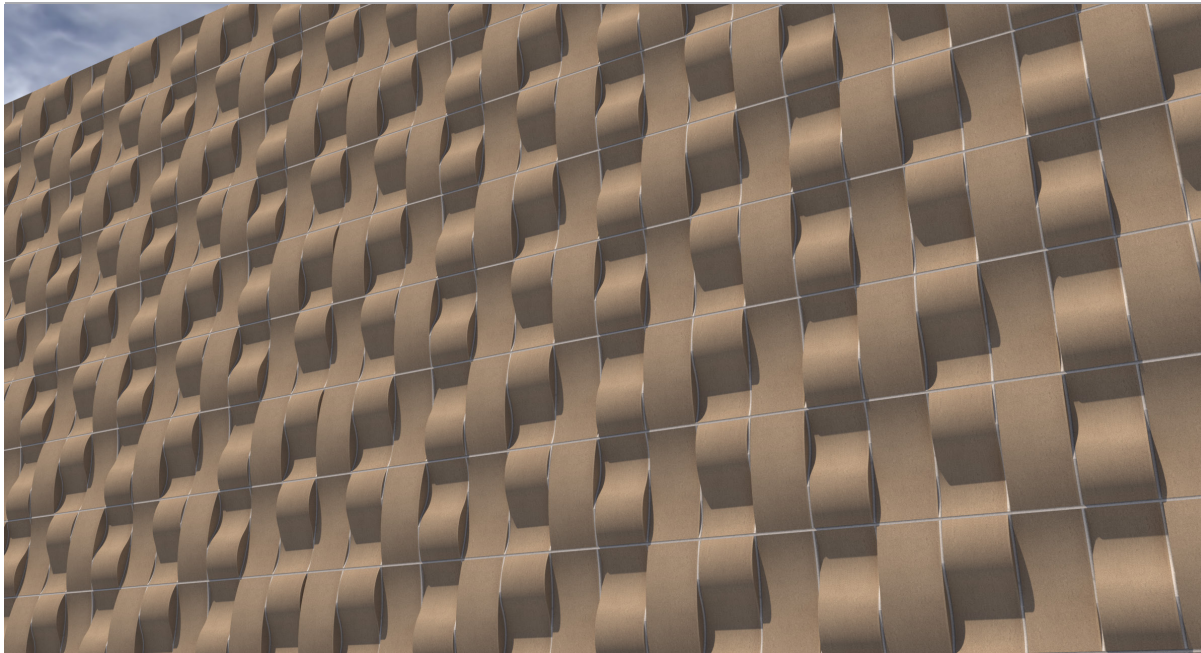
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Wicker Stripe Concave Convex Flat Stack and Running Bond

Suitable for indoor or outdoor use

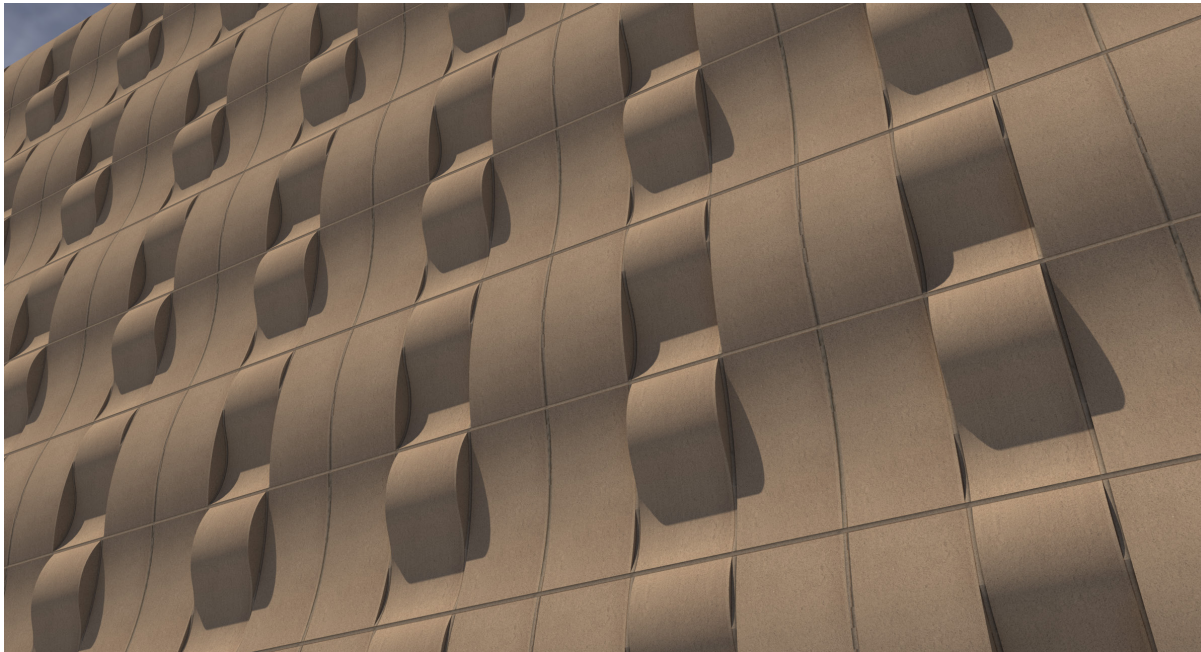
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Madison Serpentine Concave Convex Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations..



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

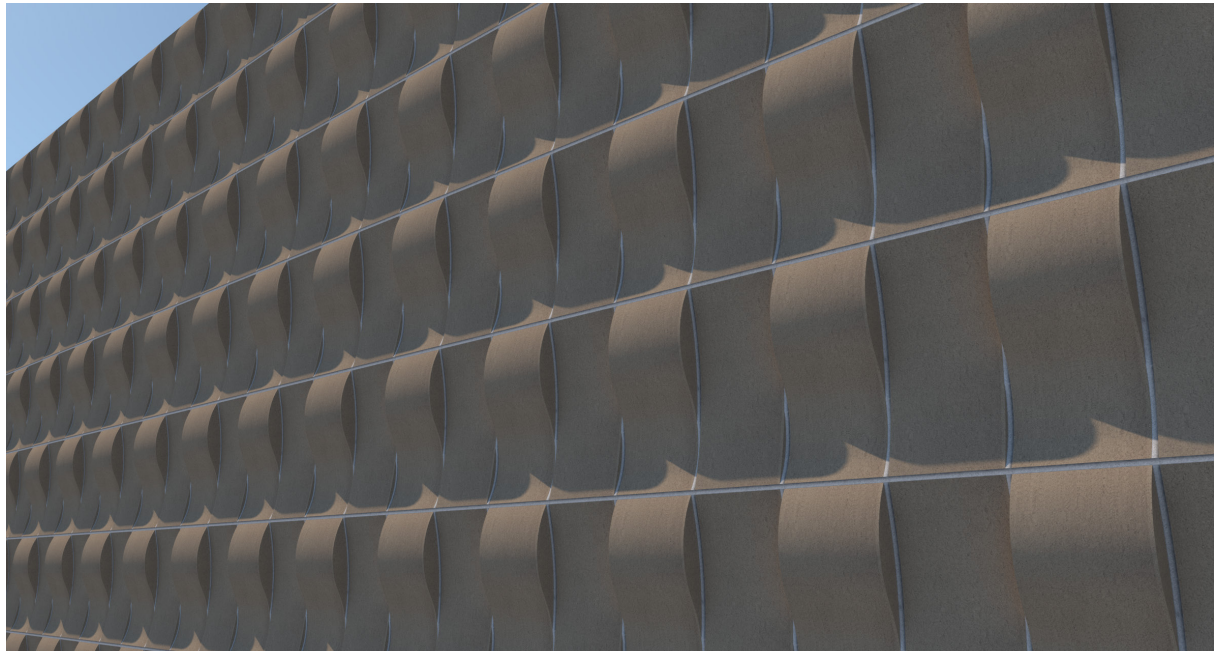
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



St Croix **Serpentine Concave** **Soldier Course**

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



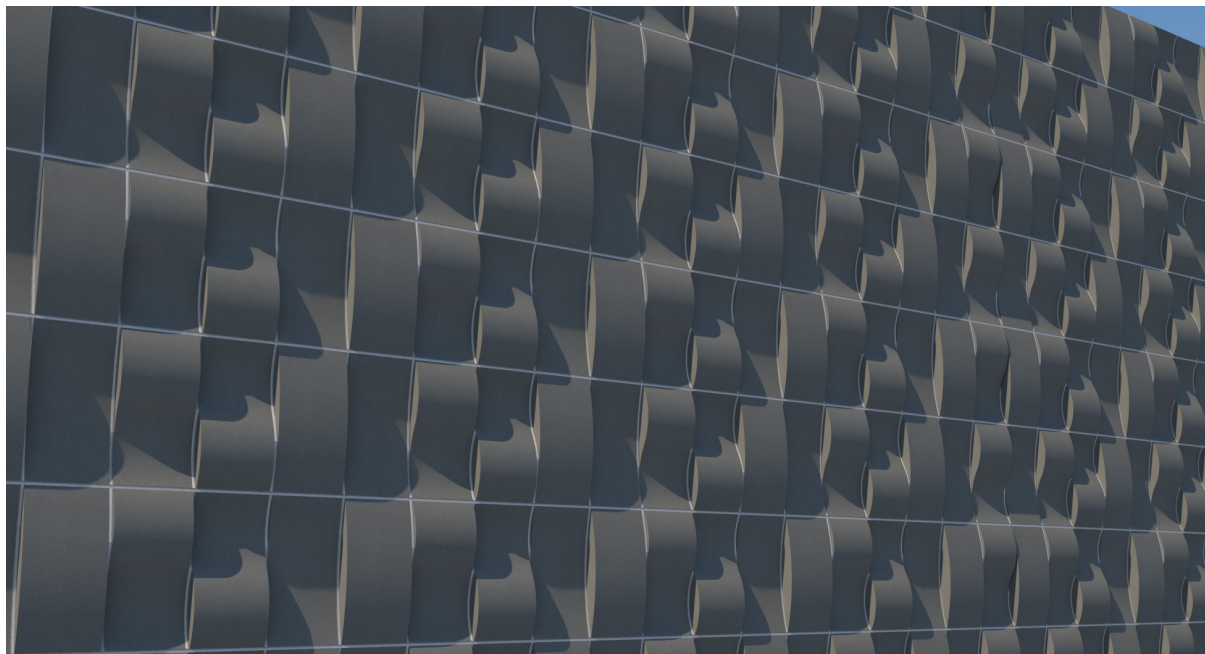
Au Sable

Serpentine Concave Convex

Soldier Course

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Waterfall

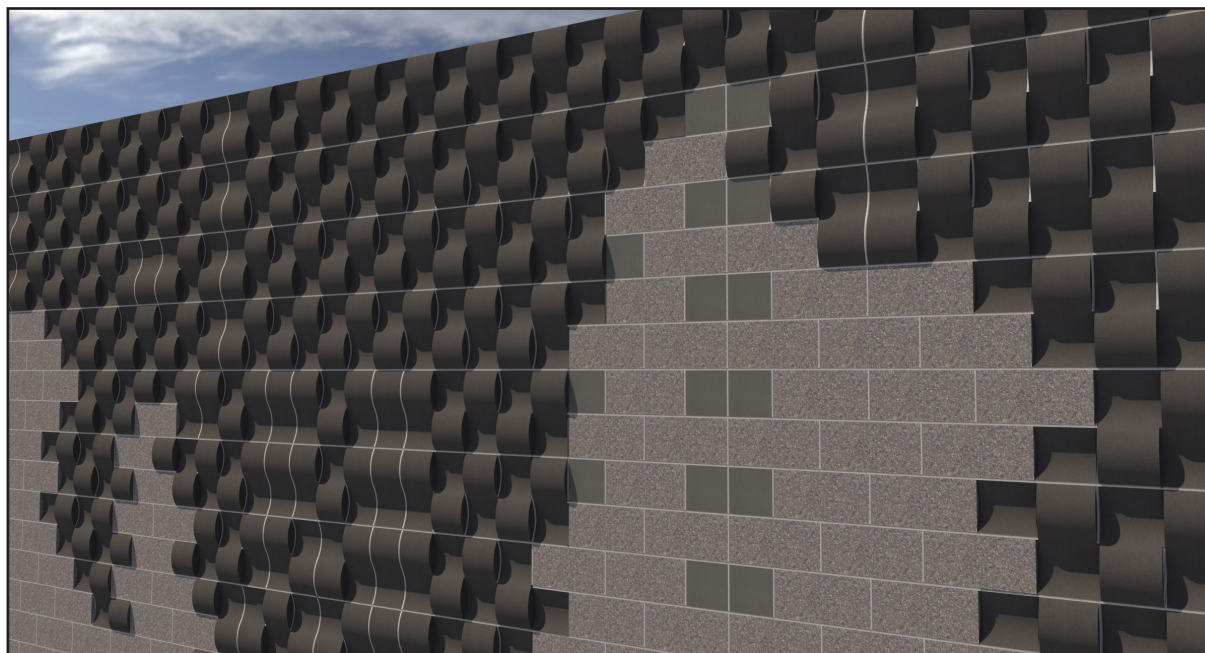
Serpentine Half Serpentine

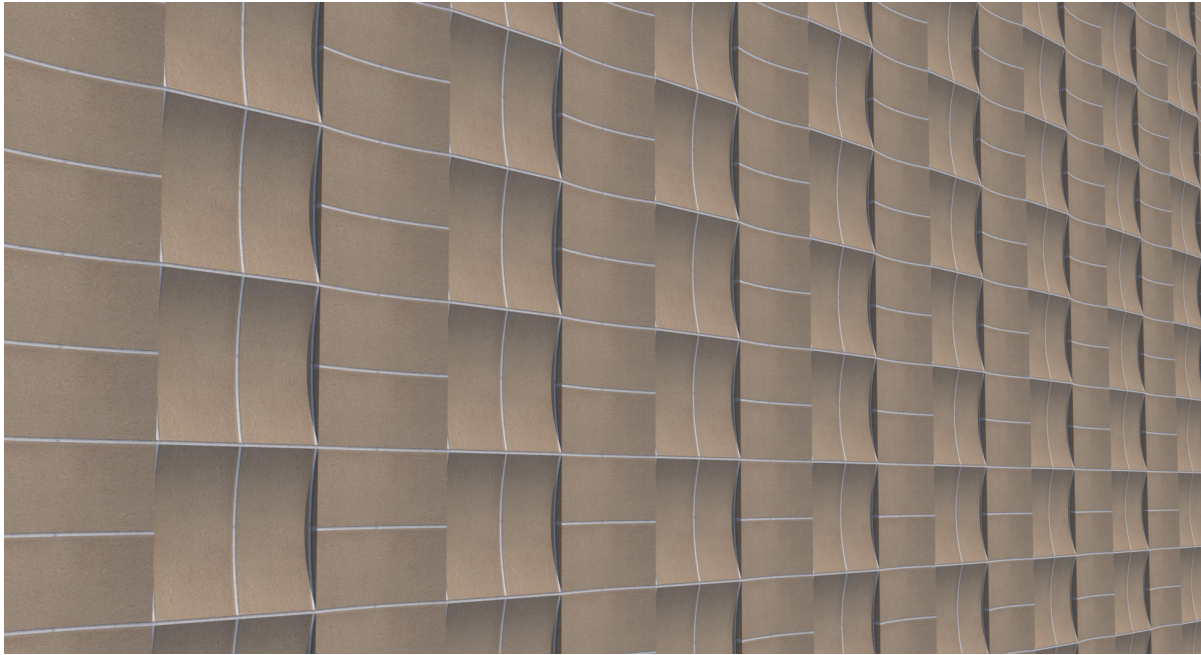
Flat

Soldier Course/Running Bond

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.





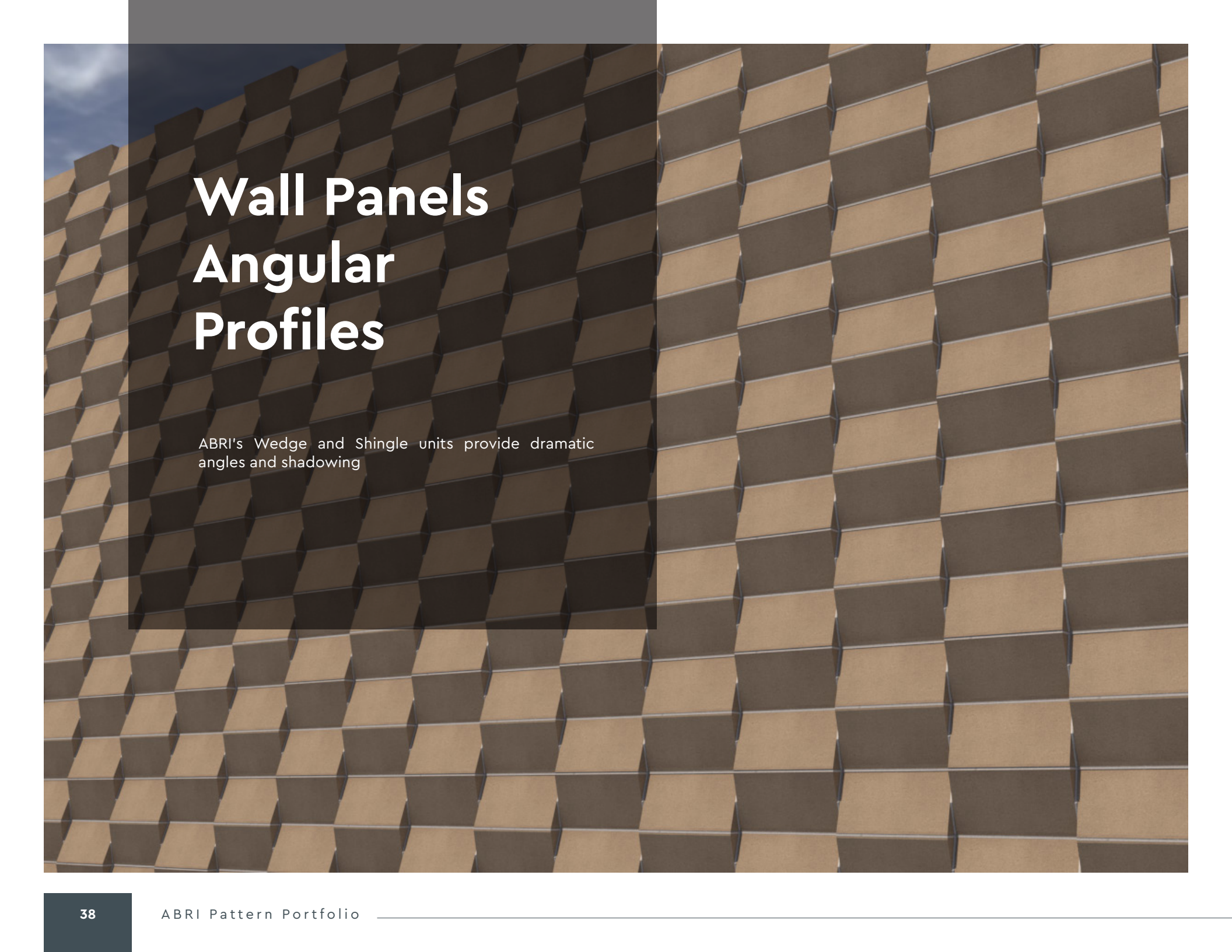
Waffle

Serpentine Concave Convex

Soldier Course

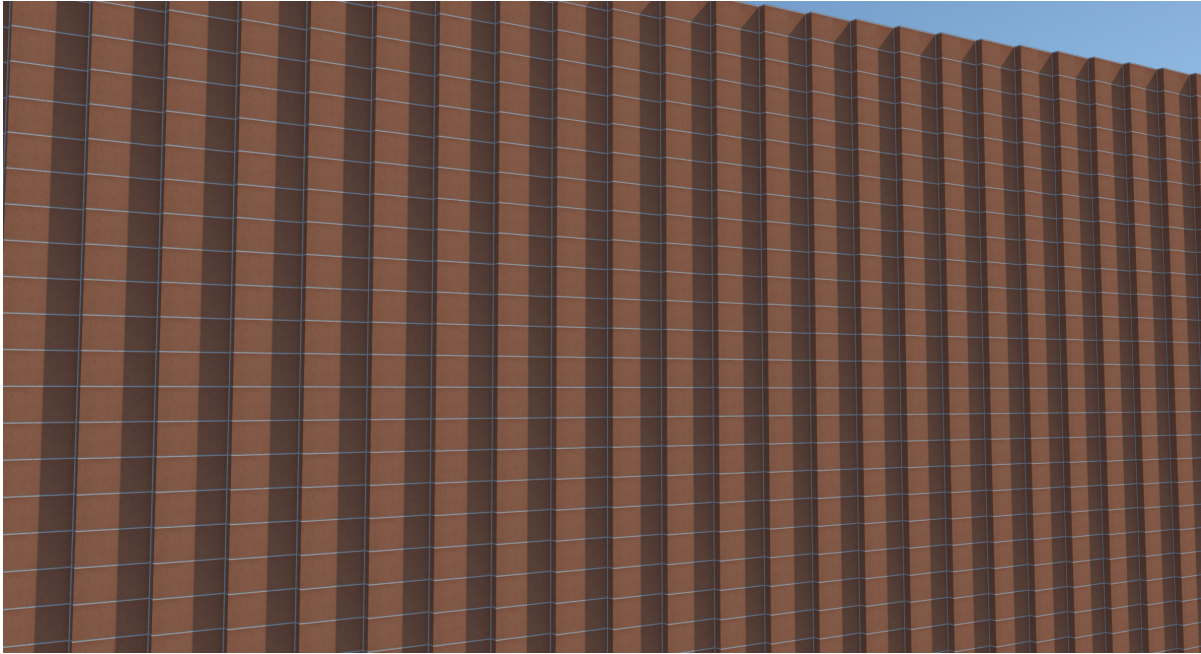
Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Wall Panels Angular Profiles

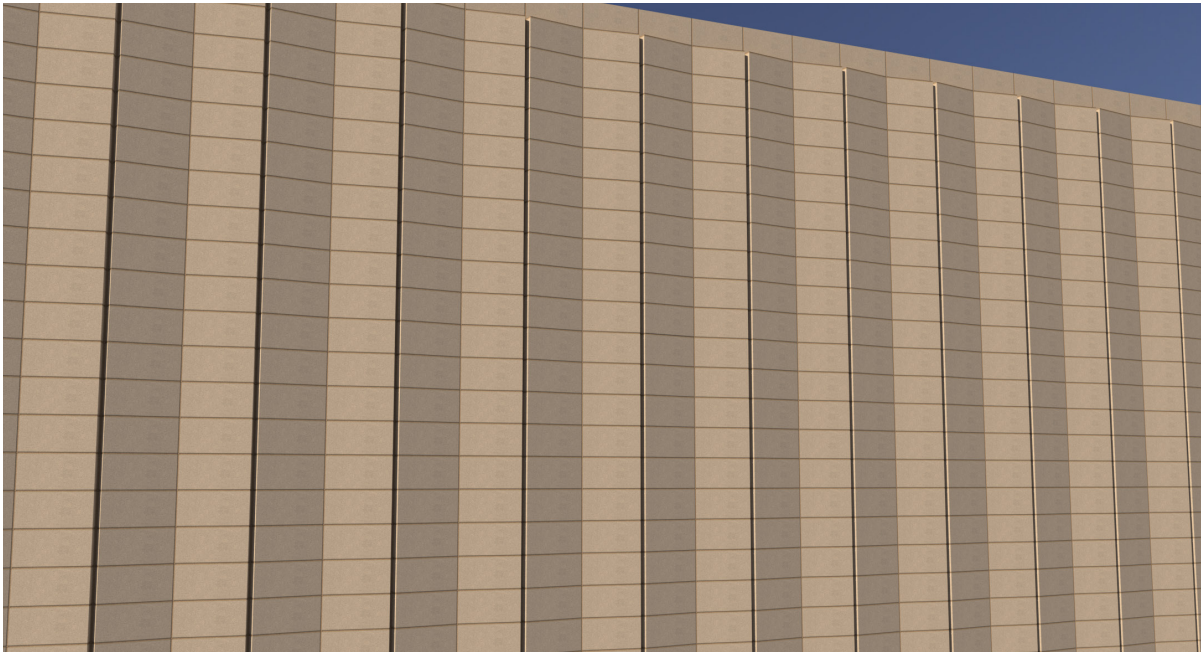
ABRI's Wedge and Shingle units provide dramatic angles and shadowing



Wedge Stack Wedge Stack Bond

Suitable for indoor or outdoor use

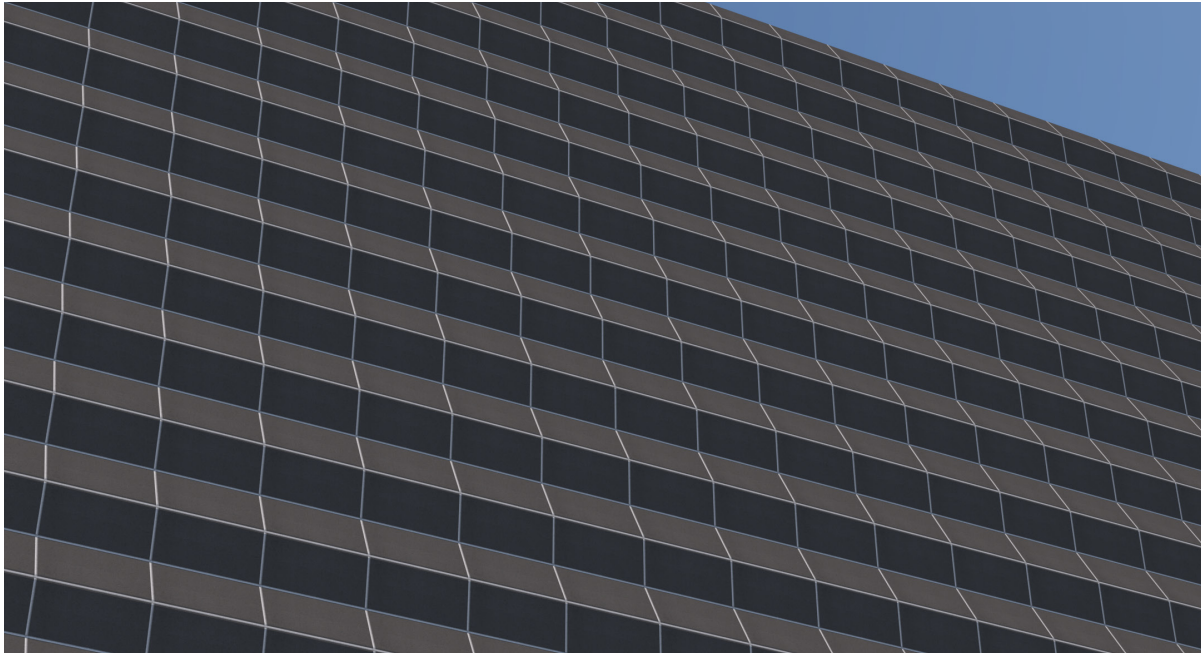
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Opposed Wedge Stack

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

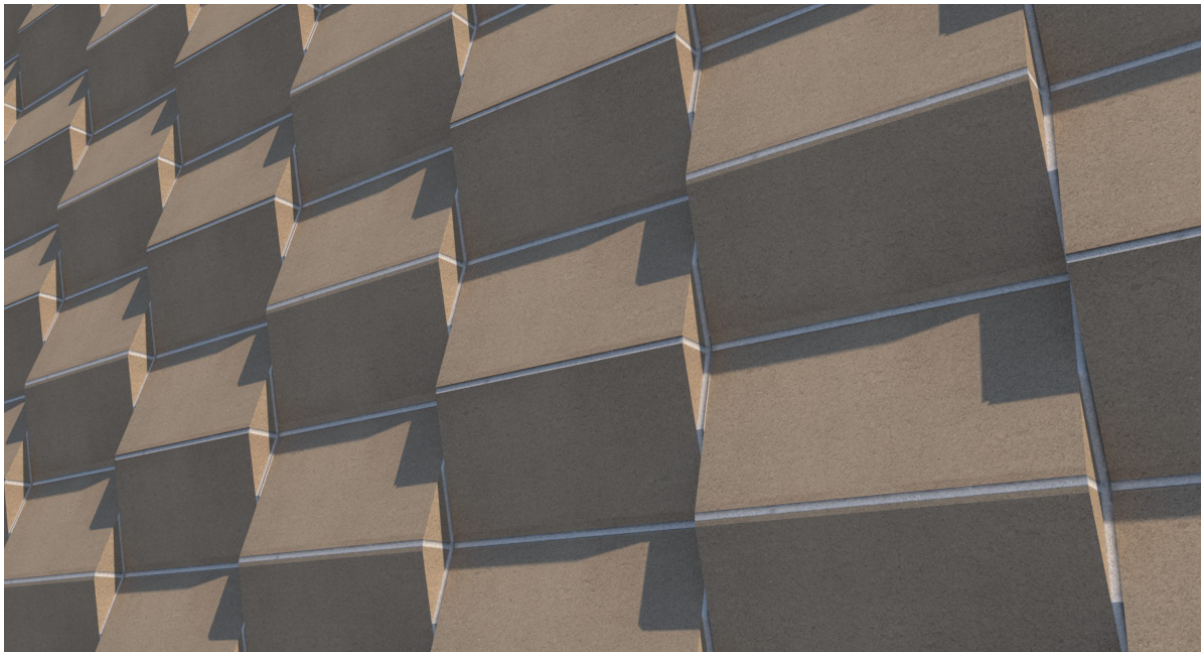


Map Fold Shingle and Flip Shingle Stack Bond

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

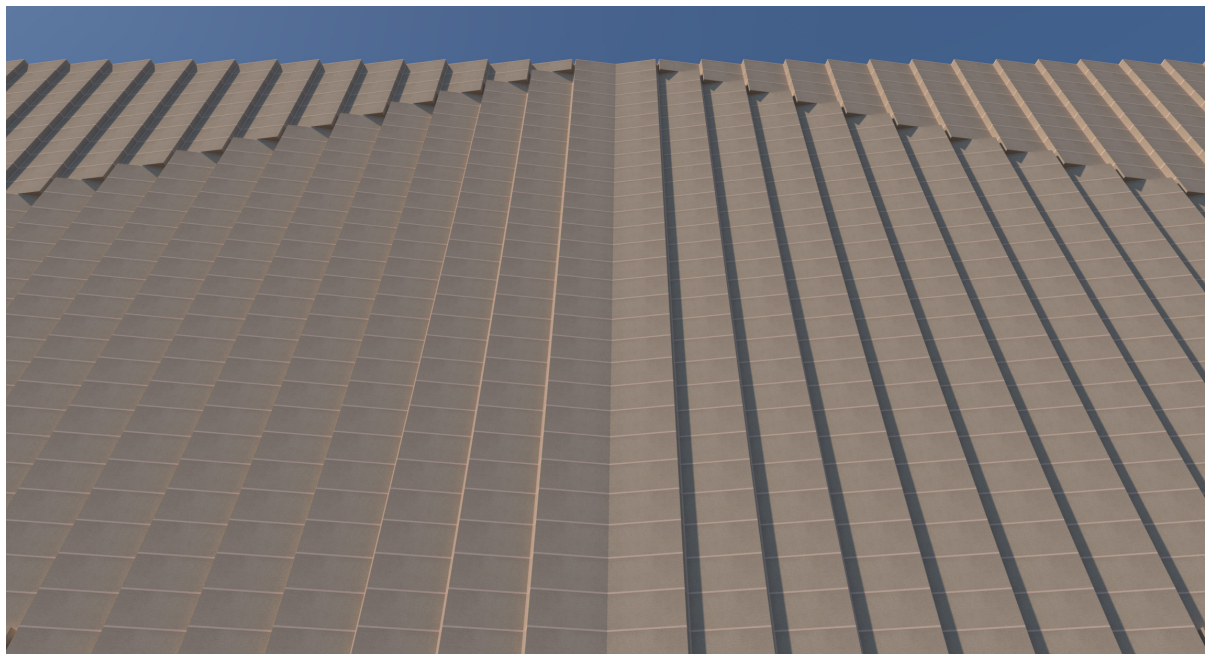
Suitable for indoor or outdoor use

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.

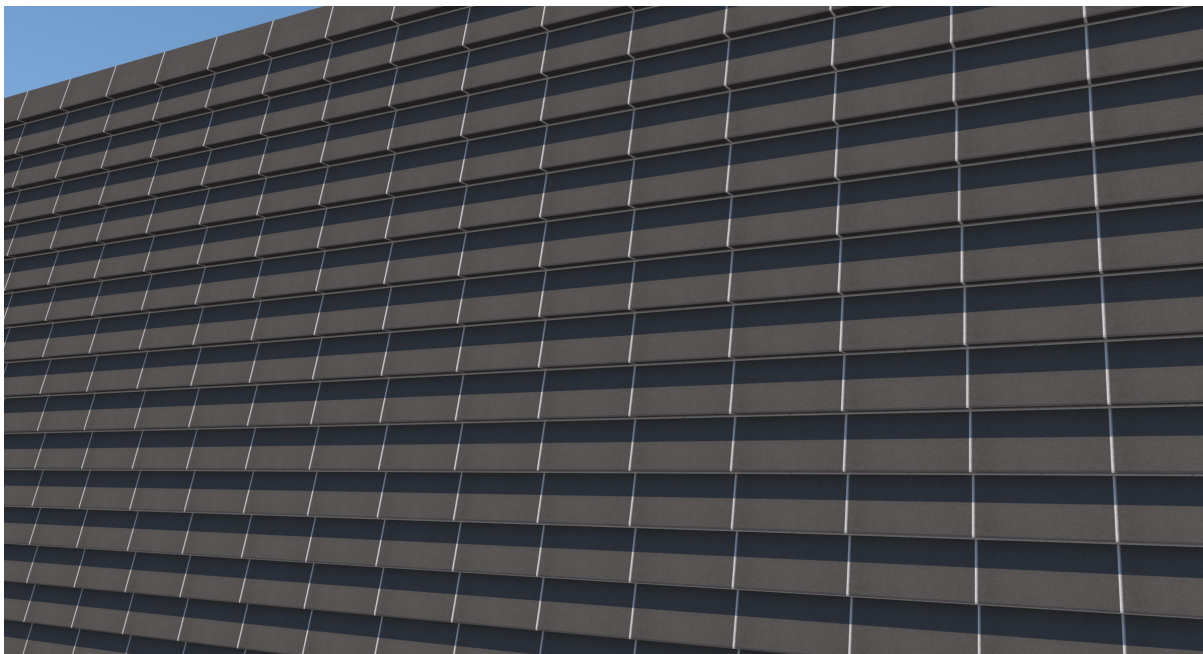


Shingle Stack

ABRI Shingle

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

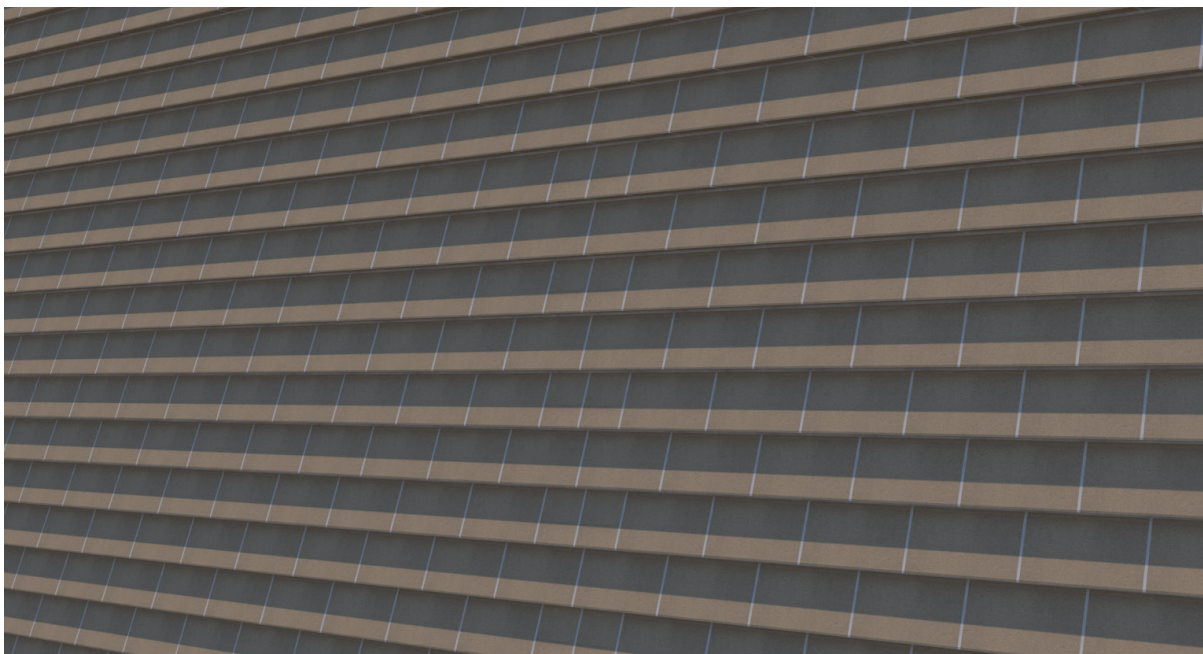


Shingle Running Bond

ABRI Shingle

Suitable for indoor or outdoor use

See Design Guide for anchorage and horizontal Joint reinforcement recommendations.

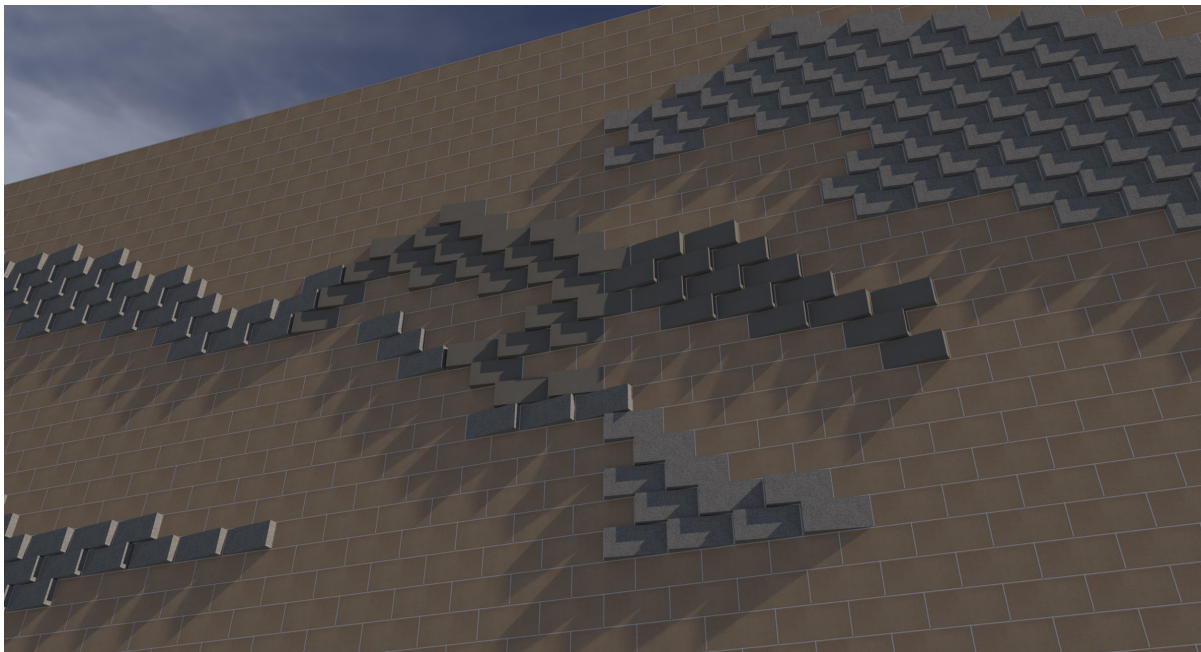




Wedges Running ABRI Wedge Units Running Bond

Ledging should be considered before using for exterior applications

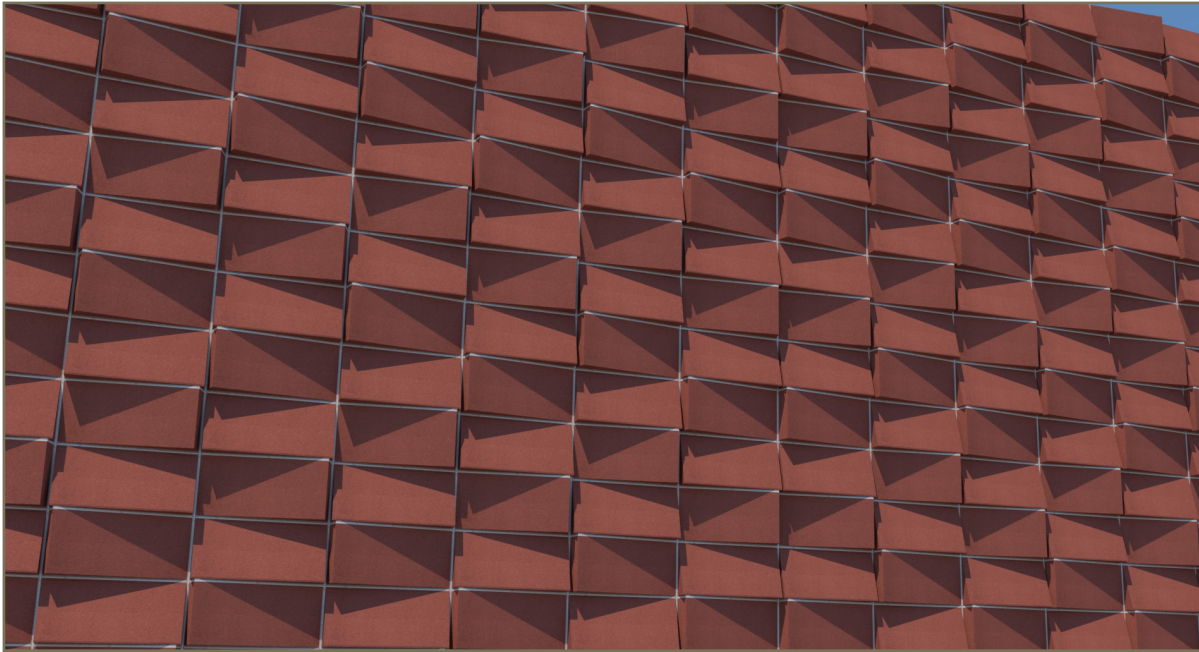
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Wedge Outcrop Wedge and Flat CMU Running Bond

Ledging should be considered before using for exterior applications

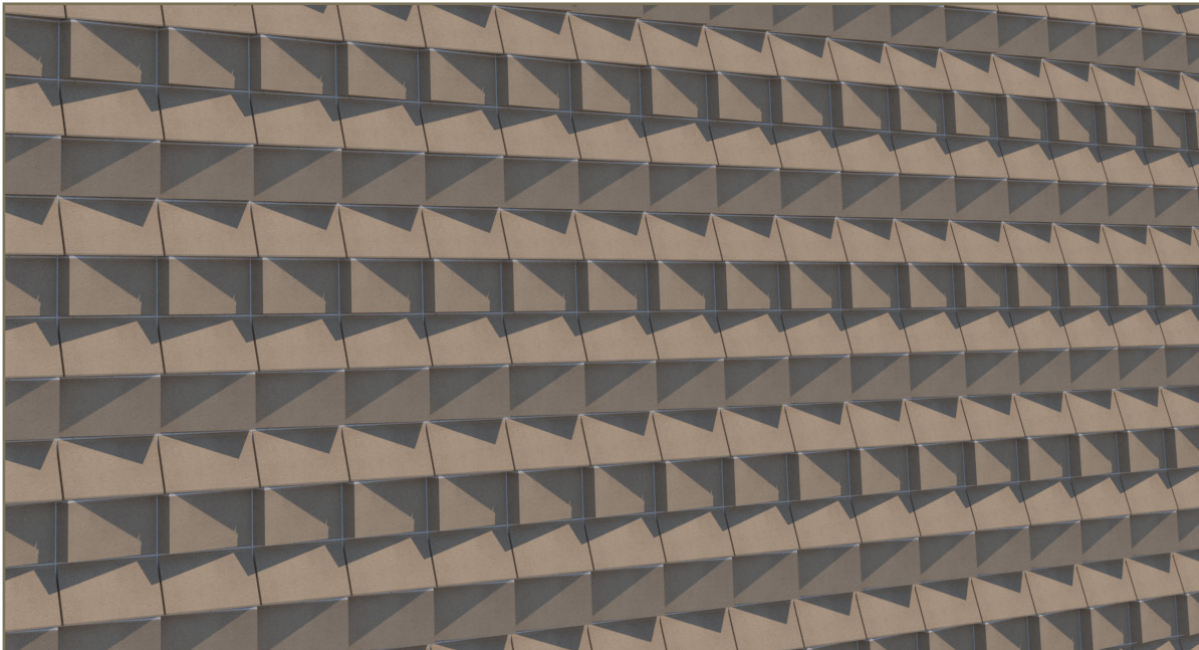
See Design Guide for anchorage and horizontal Joint reinforcement recommendations.



Dragon Shingle Wedge Stack Bond

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.



Igauna Shingle Wedge Stackbond

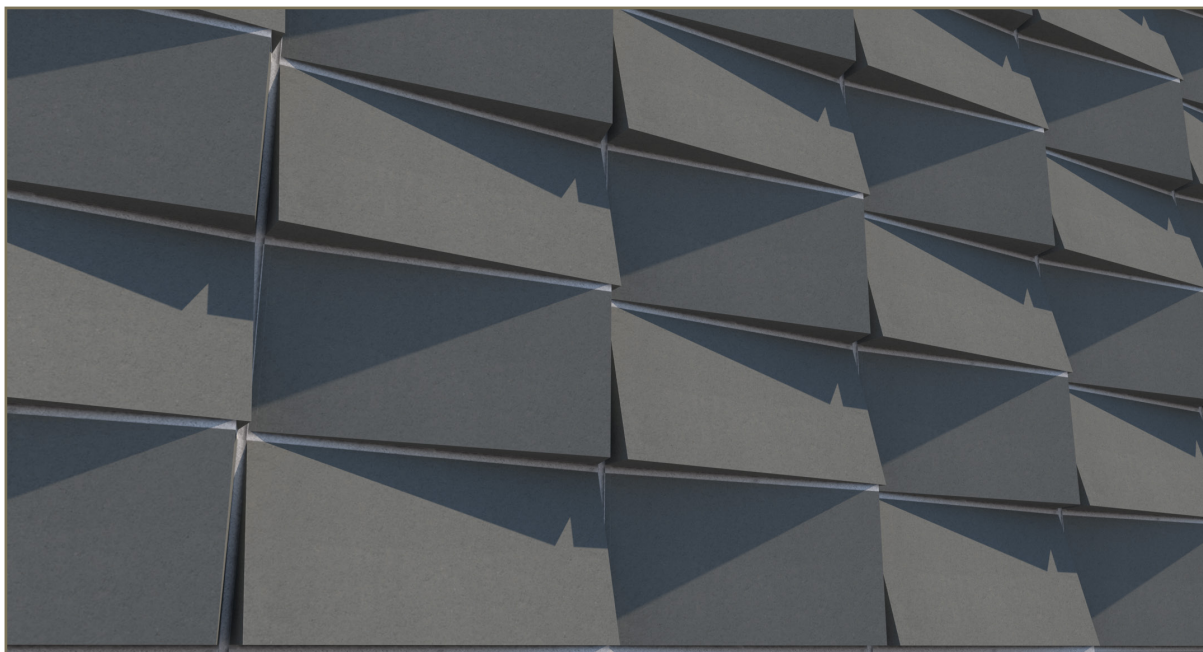
Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

Komodo Shingle Wedge Stack Bond

Suitable for indoor or outdoor applications.

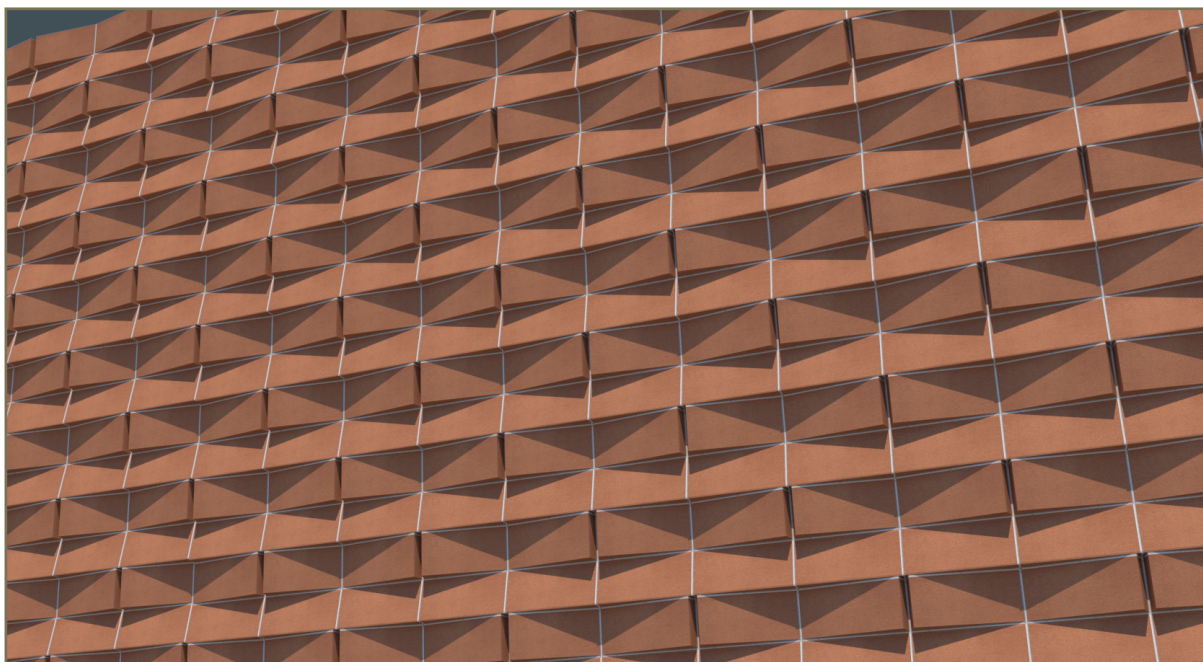
Please see Design Manual for anchorage and reinforcement suggestions.



Gecko Shingle Wedge Shingle Wedge Stack Bond

Suitable for indoor or outdoor applications.

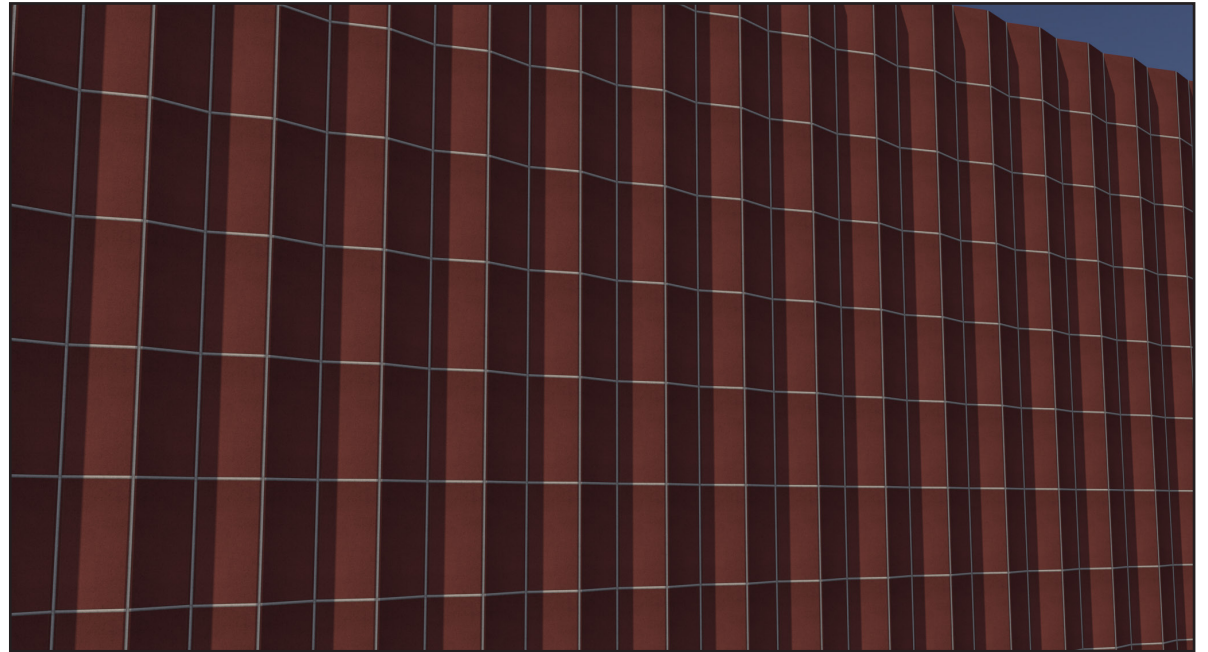
Please see Design Manual for anchorage and reinforcement suggestions.



Accordian Shingle Soldier Course

Suitable for indoor or outdoor applications.

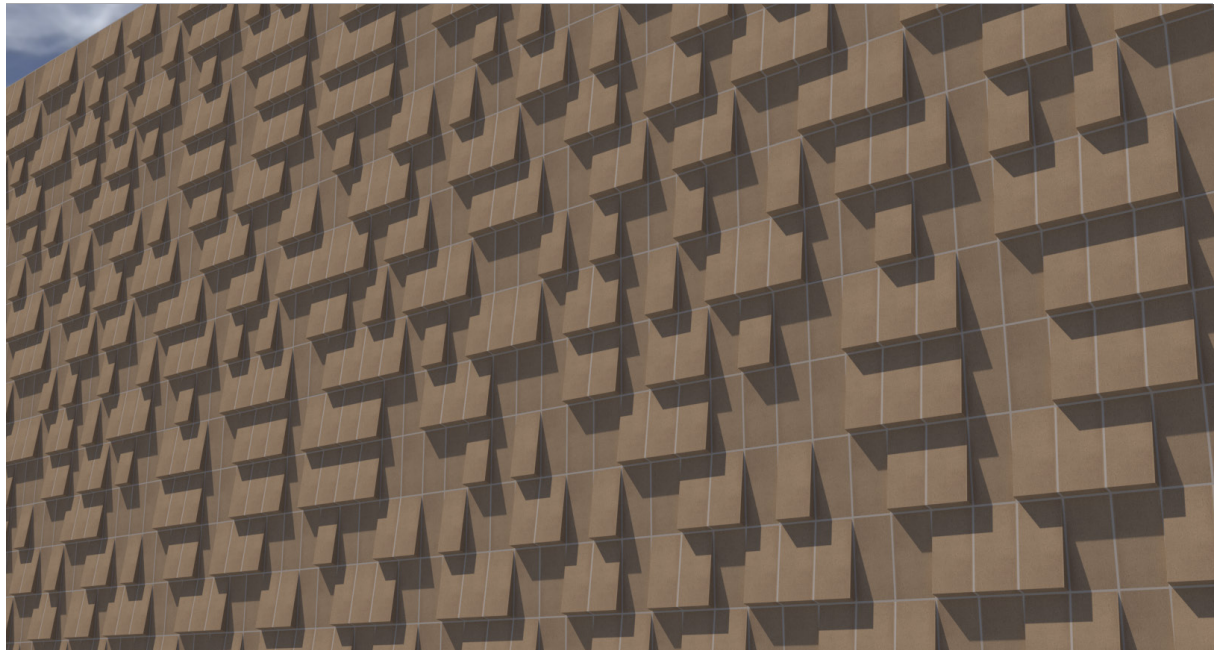
Please see Design Manual for anchorage and reinforcement suggestions.

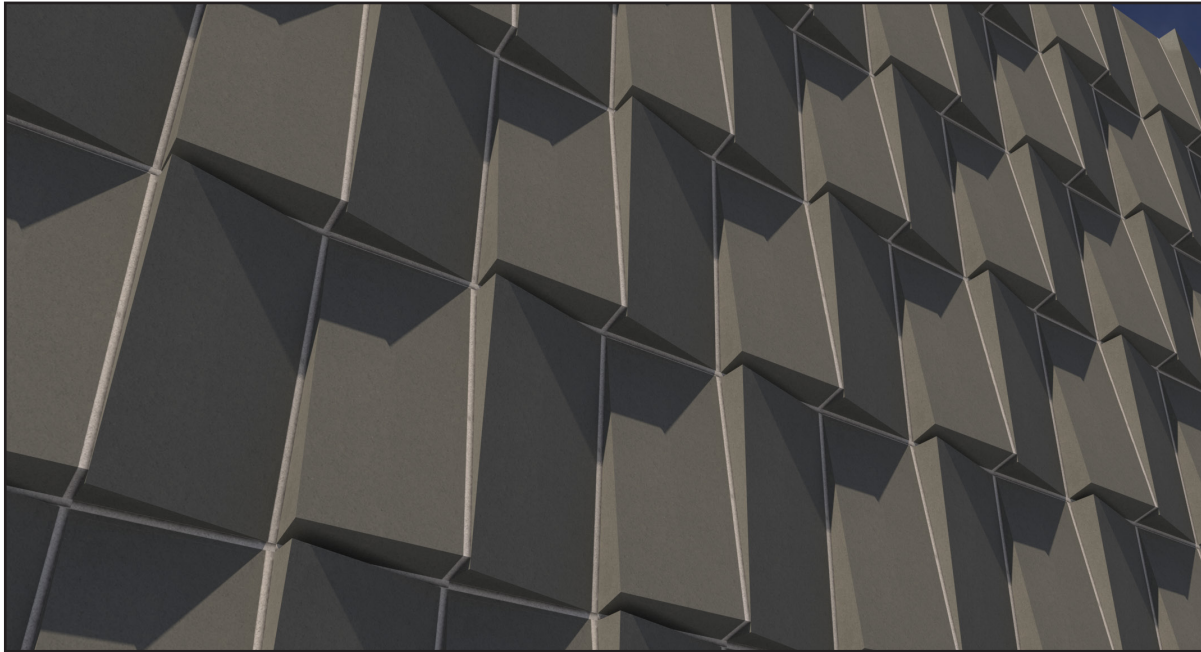


Math Problem ABRI Wedge and Flat Veneer Units Soldier Course

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

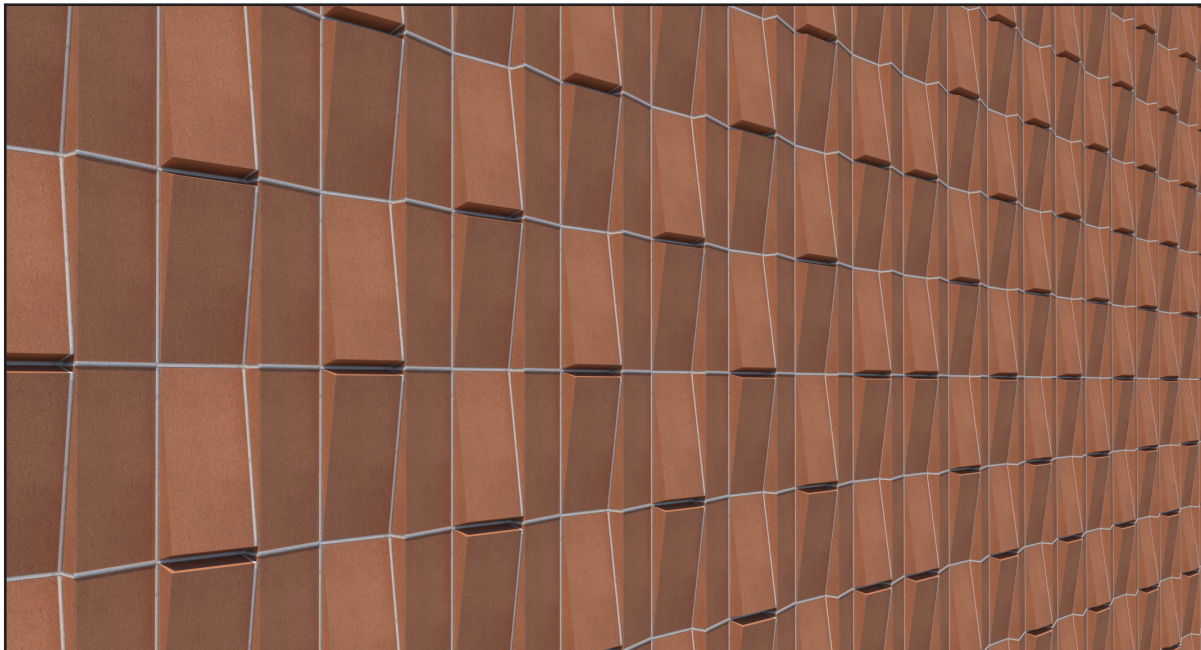




Diamondback **Shingle Wedge** **Soldier Course**

Suitable for indoor or outdoor applications.

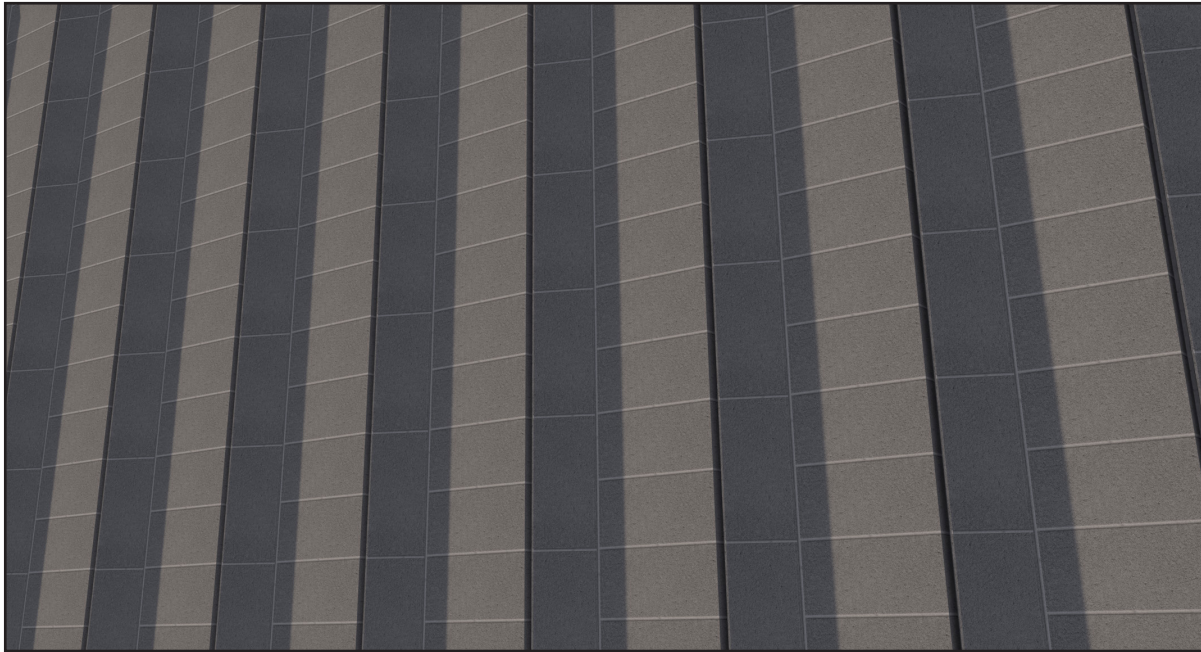
Please see Design Manual for anchorage and reinforcement suggestions.



Cobra **Shingle Wedge** **Soldier Course**

Suitable for indoor or outdoor applications.

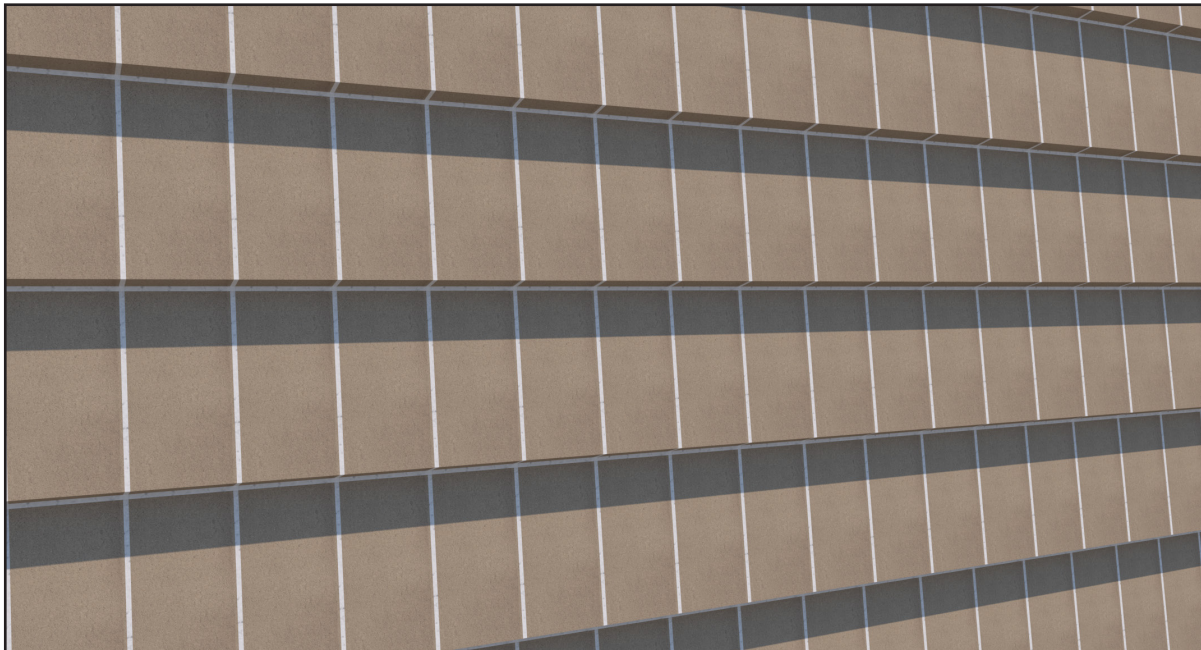
Please see Design Manual for anchorage and reinforcement suggestions.



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.

Zipper

Wedge Soldier Course

Wedge Stack

Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.



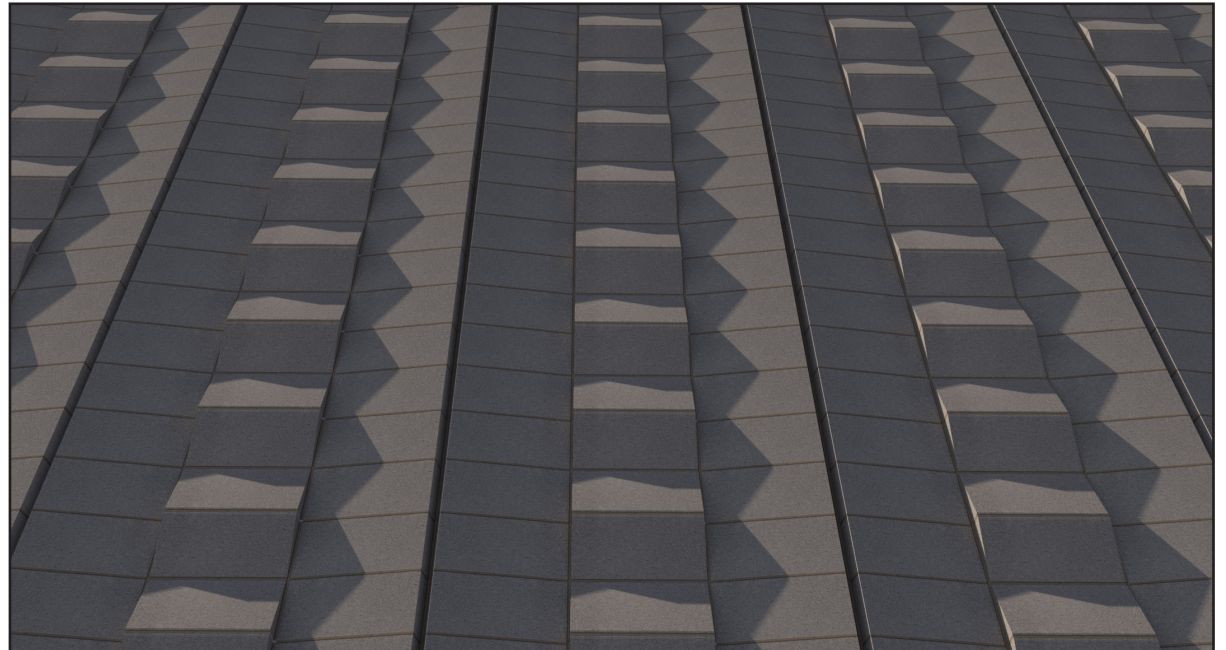
Gator

Wedge Stack

Shingle & Flip Stack

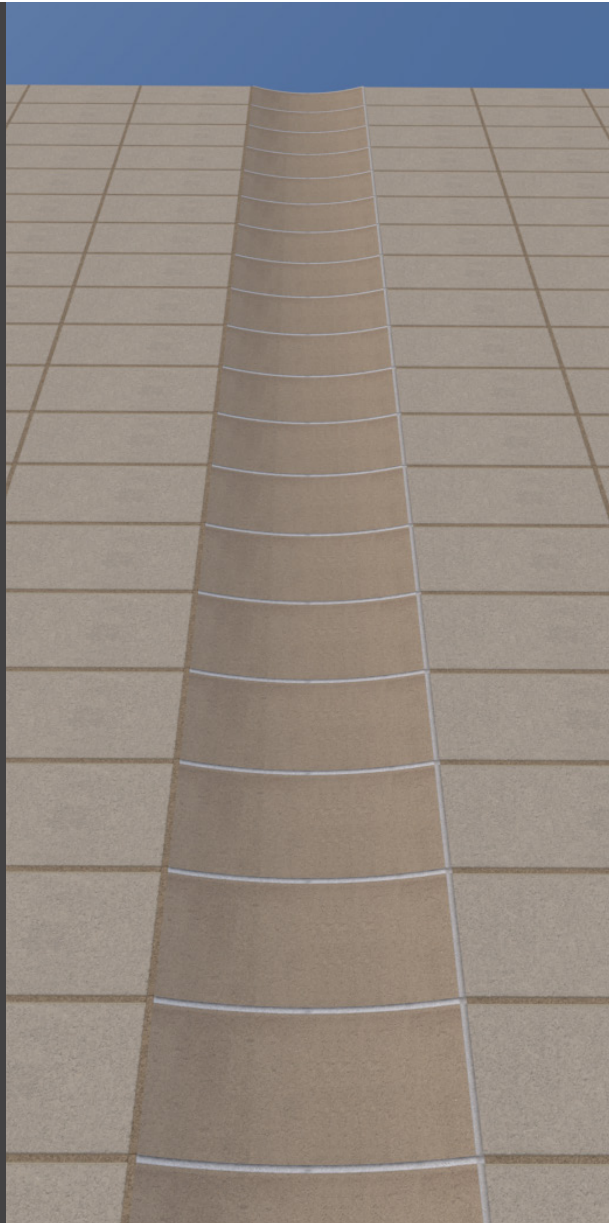
Suitable for indoor or outdoor applications.

Please see Design Manual for anchorage and reinforcement suggestions.

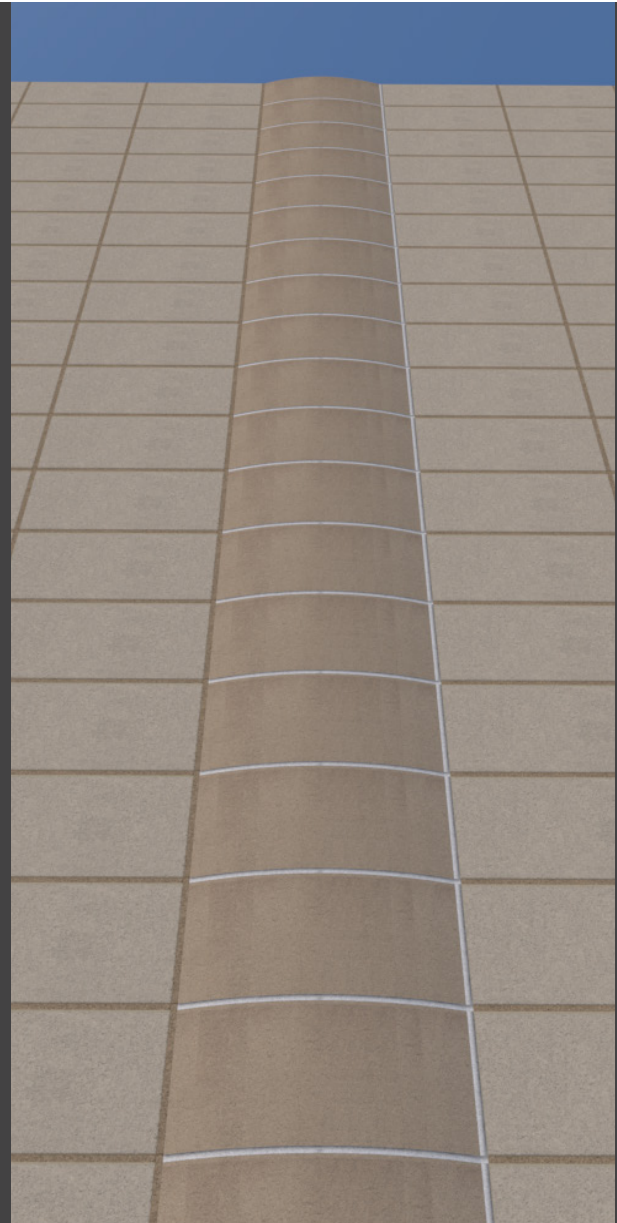


Accent Columns

ABRI columns for vertical transitions or partitions



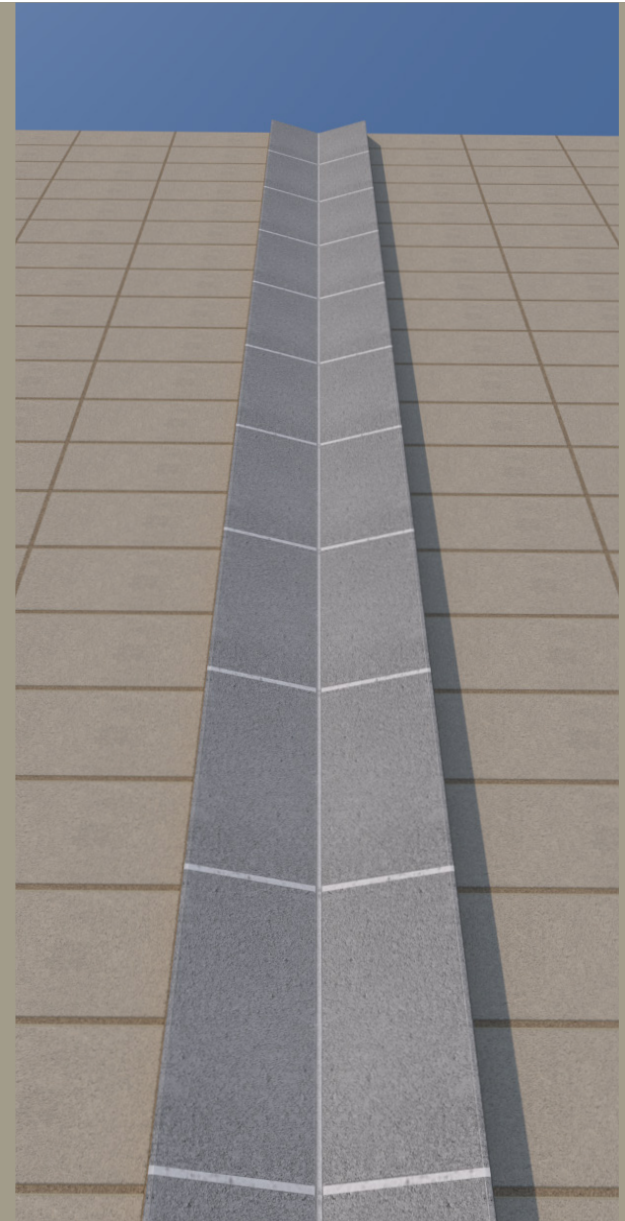
Concave



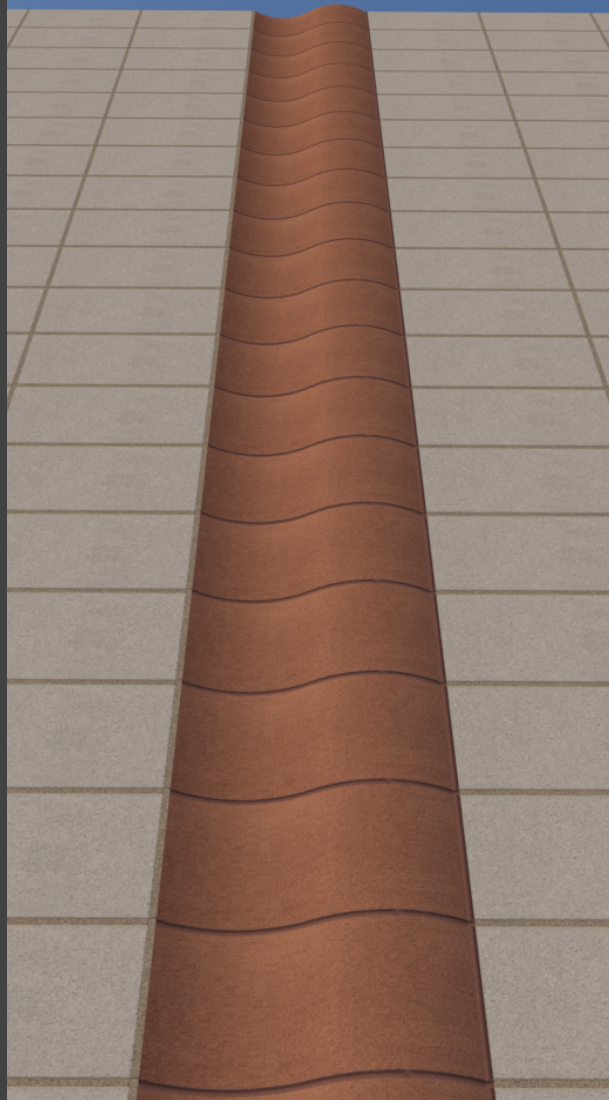
Convex



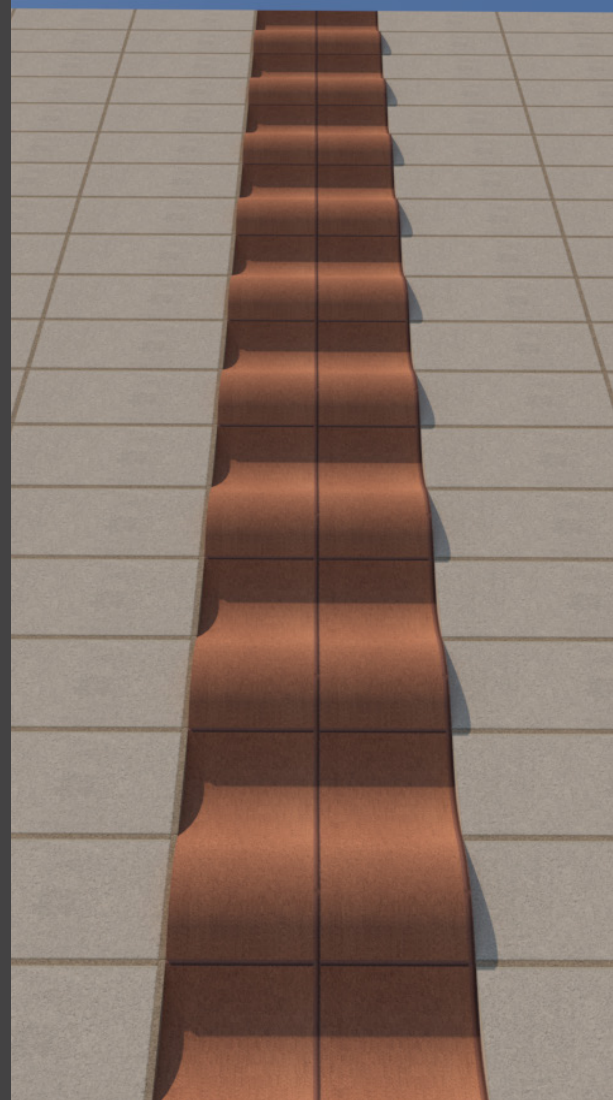
**Shingle Vertical
Tent**



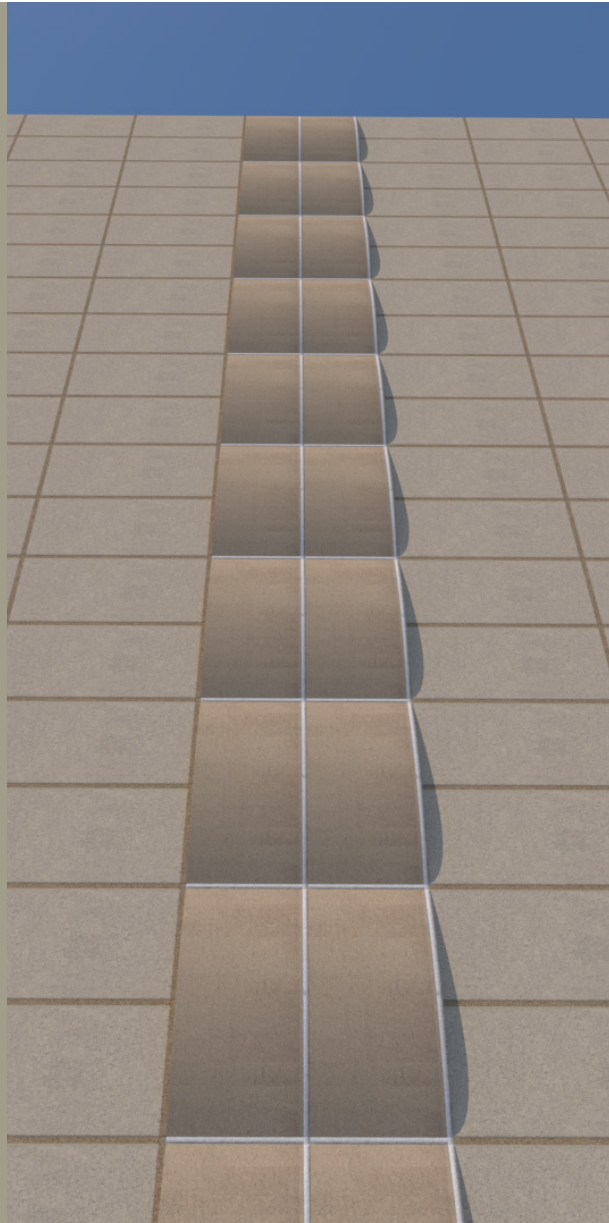
**Shingle Vertical
Trough**



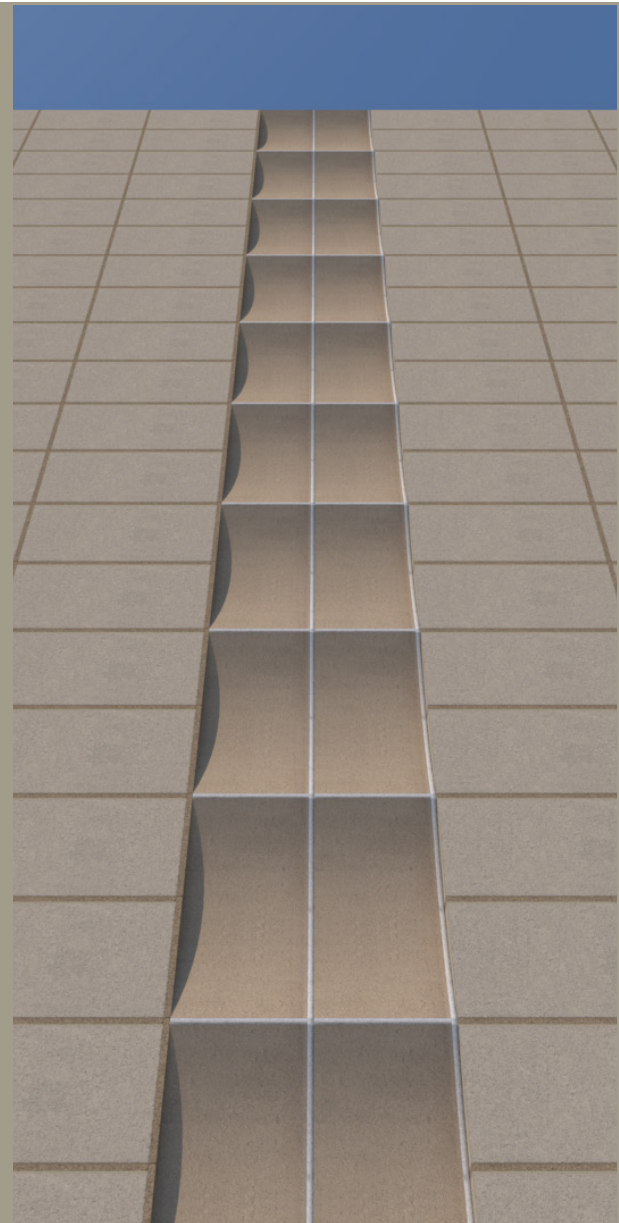
Serpentine



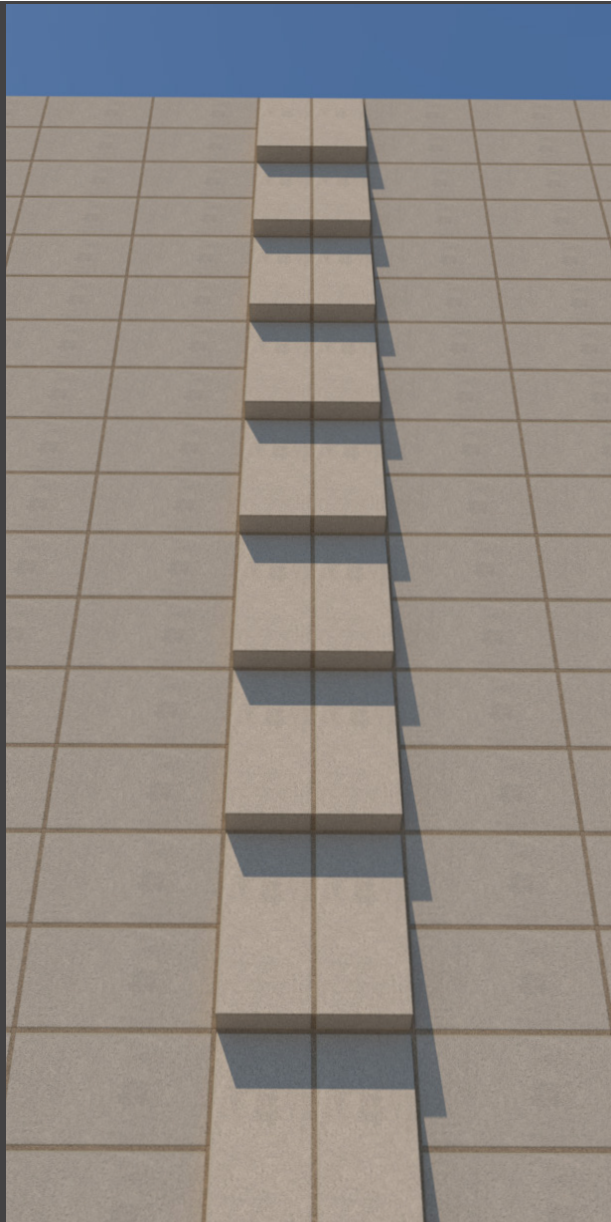
Serpentine Vertical



Convex Vertical



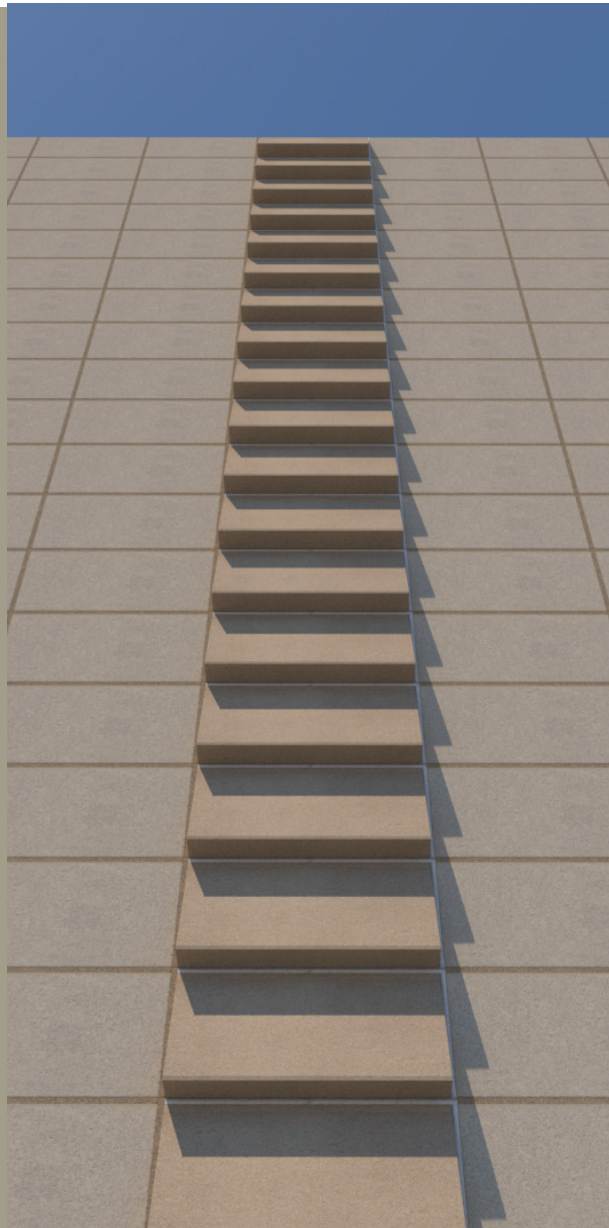
Concave Vertical



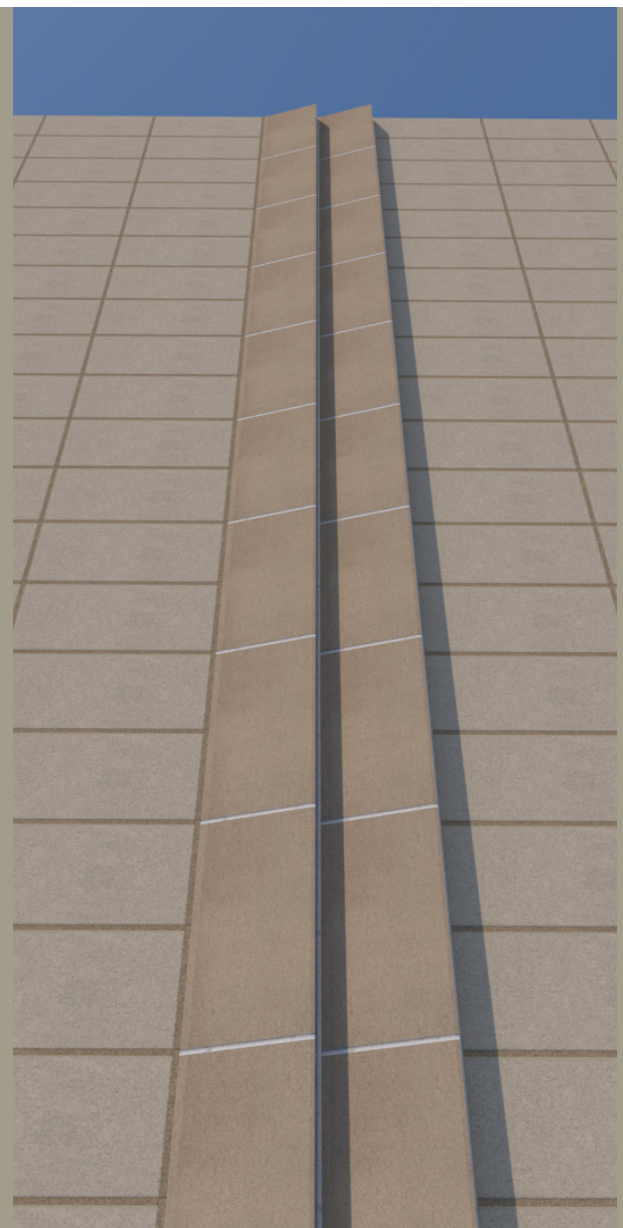
Wedge Vertical



Wedge



Shingle



Shingle Vertical

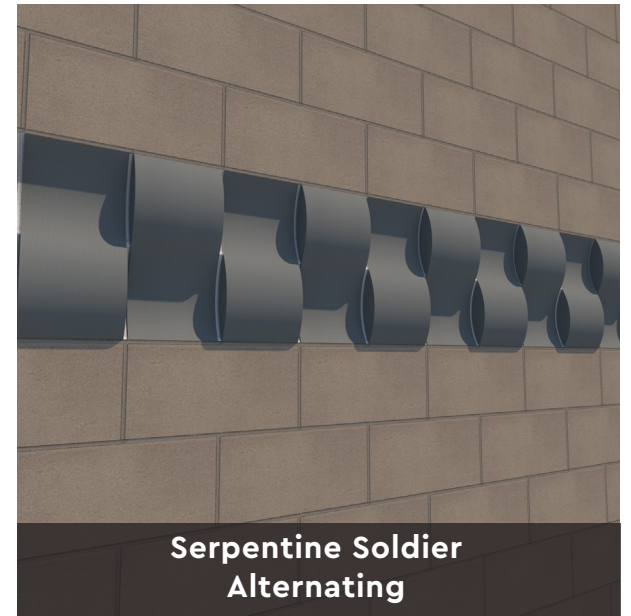
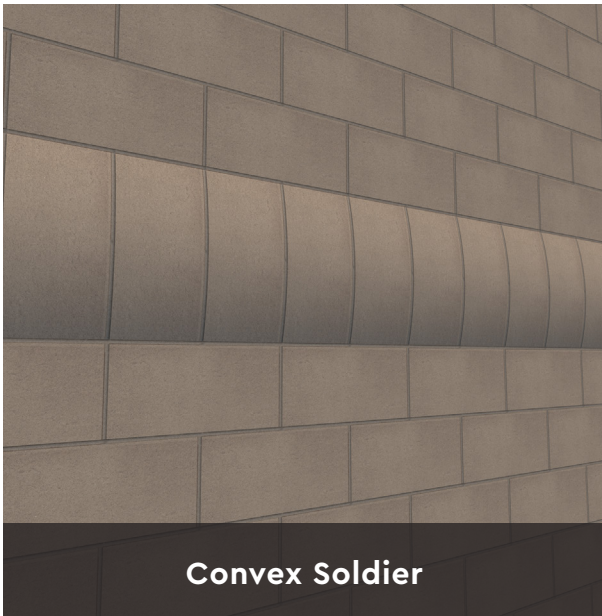
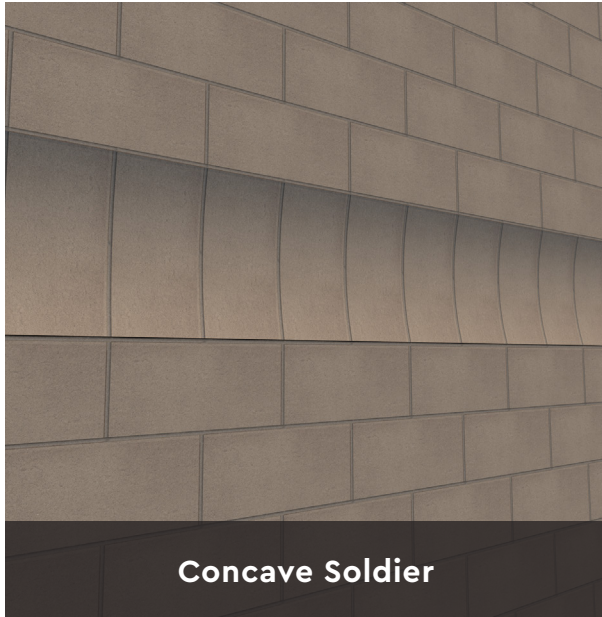


Opposed Wedges

The background image shows a close-up, low-angle view of a building's exterior. It features a series of horizontal bands or panels in different shades of brown and tan, creating a rhythmic pattern. A dark, semi-transparent rectangular overlay is positioned in the upper left quadrant, containing the title text.

Accent Bands

ABRI Horizontal Accents



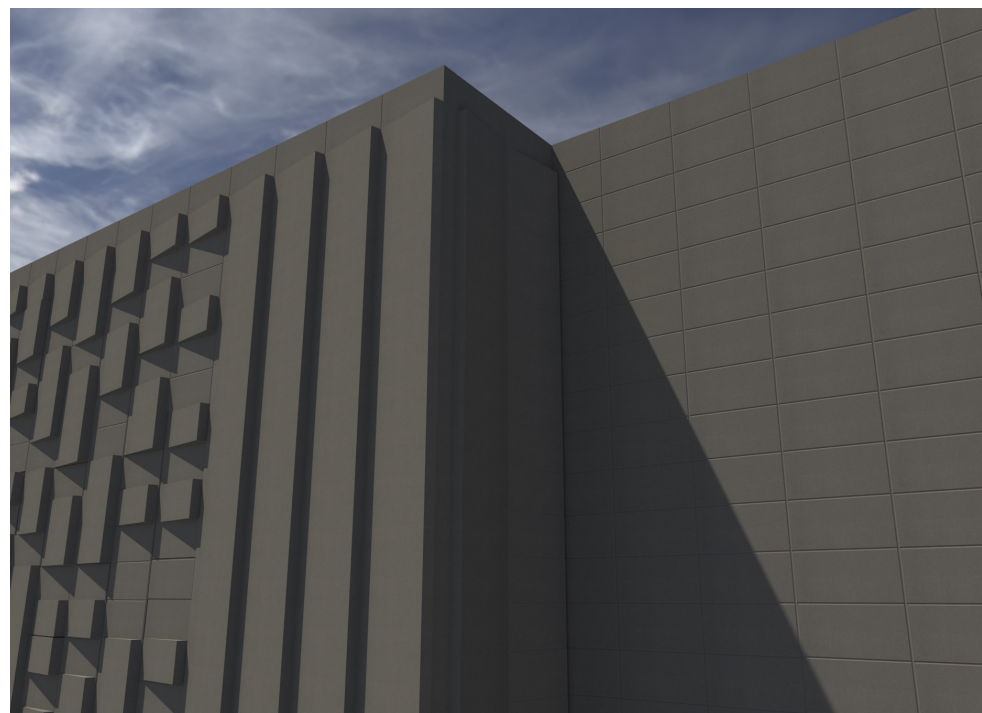
Applications



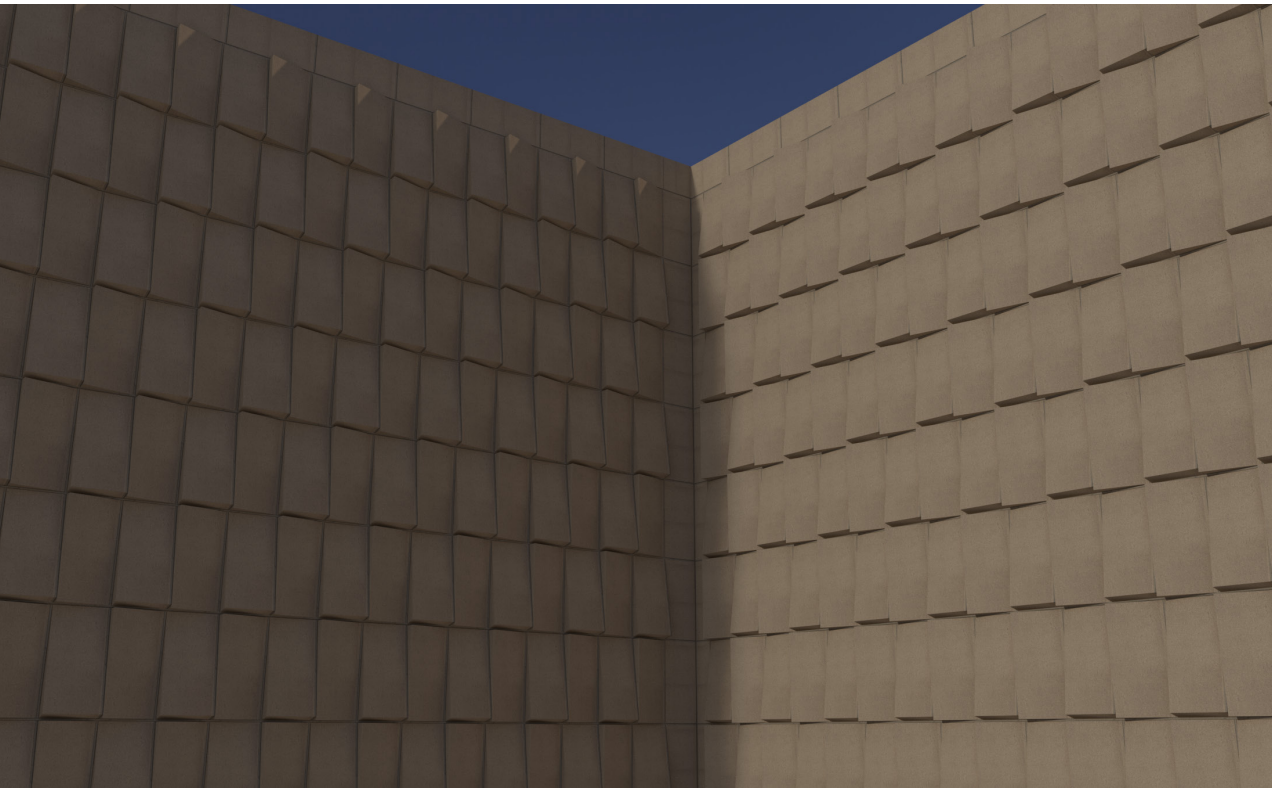


Thermal Mass Wall – Interior Rhombus Pattern

ABRI is excellent for construction of decorative thermal mass walls as part of a passive solar design strategy.



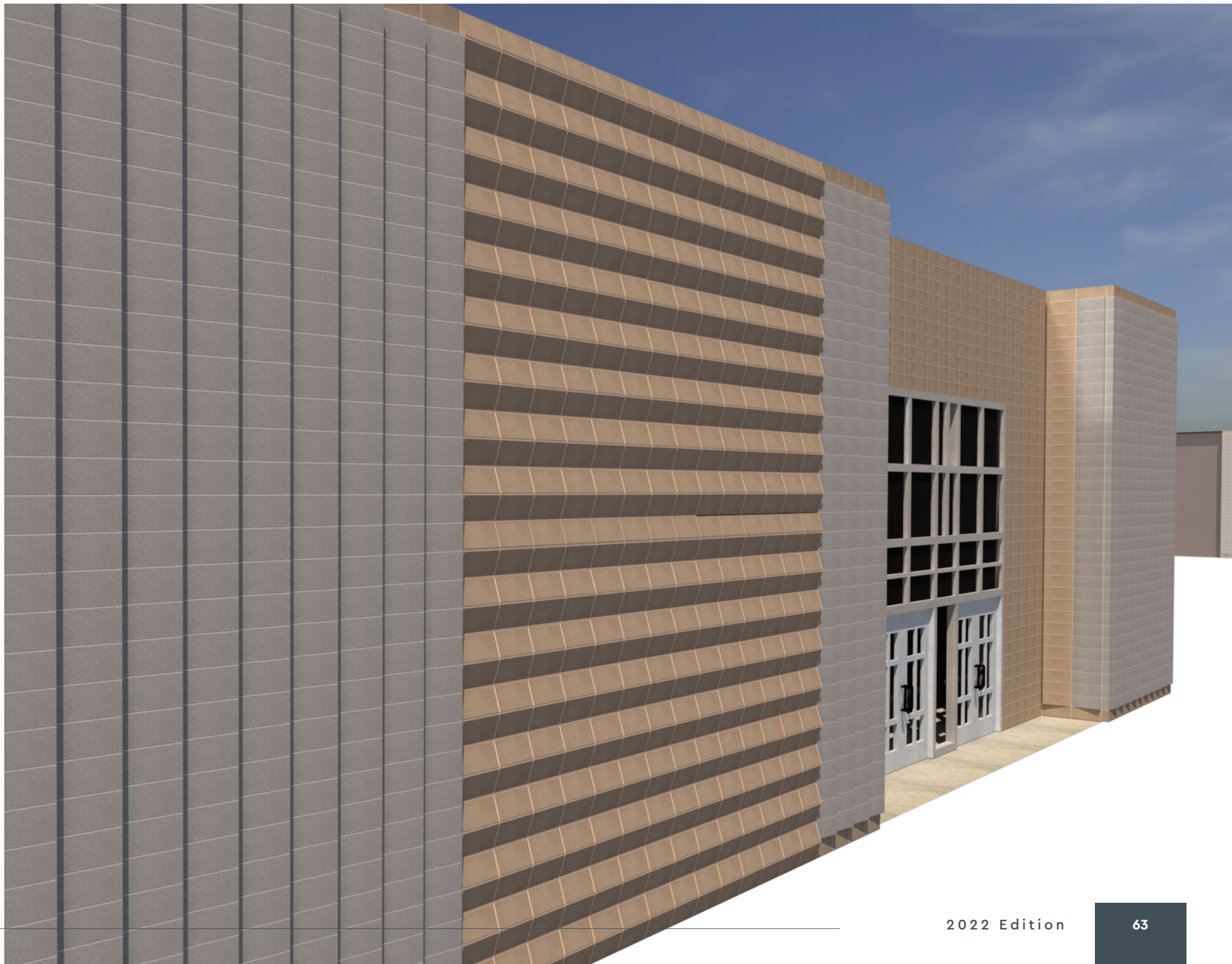
Corner Random Wedge Stack, Wedge Stack



Corner
Diamondback pattern

w

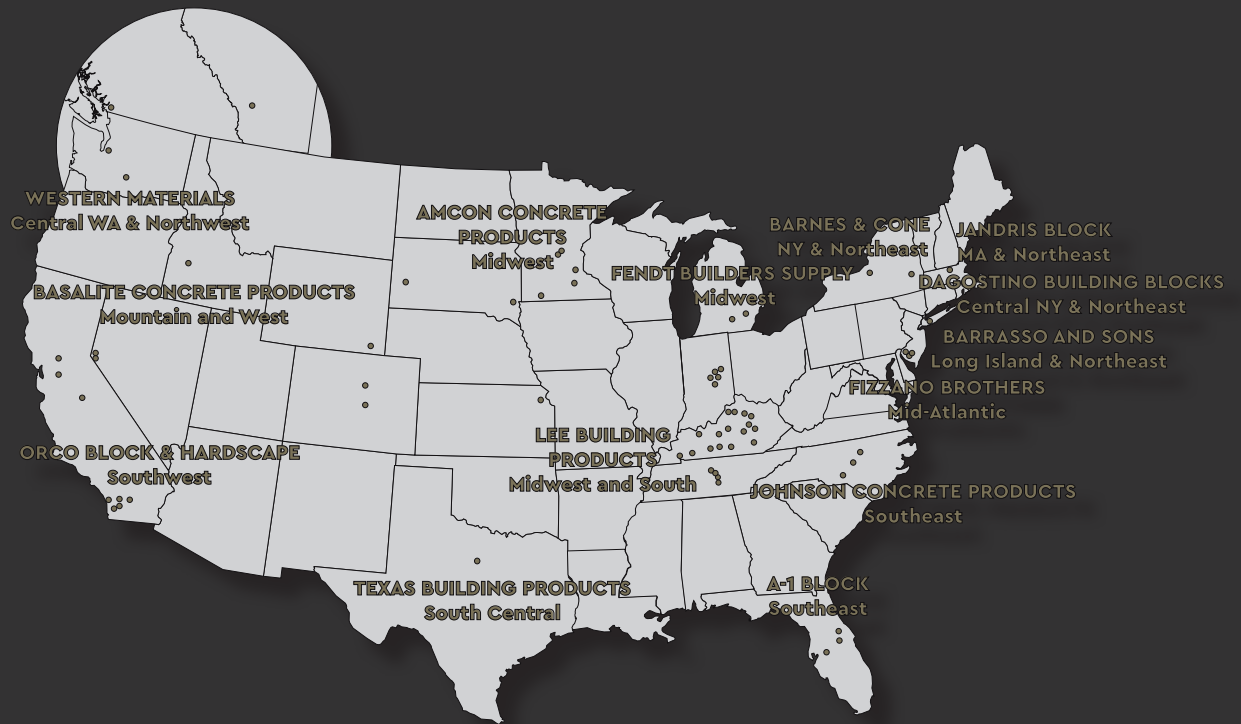
Entryway
(following page)
Wedge Stack (left)
Map Fold (middle)





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Mendota Heights, MN
55120-1221

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Syracuse, NY
13206-0280

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