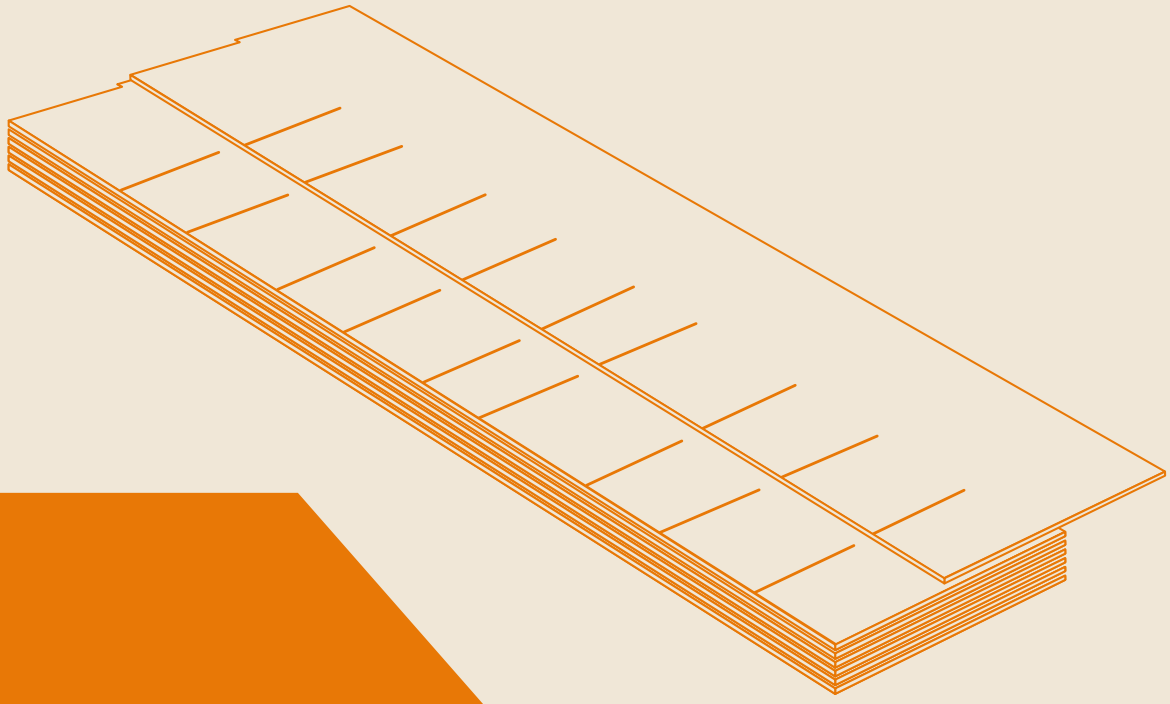
# ACRE

# INSTALLATION REQUIREMENTS

## Perfection Shingle Siding



MODERN·MILL
BUILDING REVOLUTIONS

# CONTENTS


| | |
|---|---|
| General Construction | 3 |
| ACRE Field Coating Requirements | 5 |
| Perfection Shingle Siding | 7 |
| Expansion & Contraction | 8 |
| Installation | 9 |


## PRODUCT APPLICATIONS DISCLAIMER

Please consult with a Modern Mill representative to ensure your intended use of ACRE products is fit for purpose. Published and current installation guidelines must be followed for ACRE's warranty to remain valid. For example, ACRE Siding is only approved as shiplap and board and batten and must follow prescribed installation guides. Lap Siding is not an approved application.

**This guide applies exclusively to ACRE Shiplap siding products.** Modern Mill makes no warranty for use with any other siding products or materials. **You assume all risk when using this information with non-ACRE products,** including other siding materials or construction applications.

## EXTREME HEAT WARNING

Be aware of excess heat on ACRE surfaces such as but not limited to fire, direct or reflective sunlight, reflective sunlight from energy-efficient window products. Low-emissivity (Low-E) glass can harm ACRE products because Low-E glass products are designed to prevent passive heat gain within a structure and can cause unusual heat build up on exterior surfaces from sunlight reflection. The extreme rise of surface temperatures can create an environment which exceeds normal exposures and may create scenarios which can cause ACRE products to melt, sag, warp, discolor, expand and contract beyond acceptable tolerances or accelerate weathering. Be sure to consult Modern Mill's coatings guide, sales representatives or contact us at zen@modern-mill.com or 601-869-5050 for consultative assistance before installation.

These installation instructions reflect current best practices and may be updated over time. Always check for the latest guide version at www.modern-mill.com/tech-and-training/ or contact your sales rep for the most current installation procedures.

Be sure to take our installation course and review all best practices before building with ACRE.

**https://modern-mill.com/courses/acre-product-installation-course/**

## STORAGE AND HANDLING

- Store ACRE Siding horizontally, fully supported on a flat surface. Do not stack pallets directly on the ground.
- Keep covered, in a dry place out of direct sunlight, and away from surfaces that can develop excessive heat such as blacktop or reflected light
- If stored on a damp surface, place a vapor barrier under the pallet.
- Retain factory pallet covers to keep material clean and protected; replacements are available through your Modern Mill rep.
- DO NOT pull boards from a stack from the end – always pick up boards from the center and carry on edge.
- Boards must be installed immediately after cutting.
- Watch for ambient temperature changes during installation that could affect product gapping.

## SAFETY

- Wear safety glasses and appropriate personal protective equipment (PPE) for job site conditions.
- Make sure all tools are in good working order and that their use is clearly communicated on site.
- Follow proper safety practices for all power tools and job site equipment.
- Fasteners have sharp edges – use proper care when handling.
- Safety Data Sheets can be downloaded from modern-mill.com/resources.

## BEFORE INSTALLATION

ACRE contains PVC. Review spacing requirements, coatings, and all installation guidelines before starting – this ensures ACRE products perform as intended. Modern Mill will not accept liability under warranty for product failure caused by an application that does not meet ACRE requirements.

- **Rice hulls, like wood, can vary slightly in color – this is a unique feature of ACRE and can be seen both before and after staining. For best appearance, consider proper layout by mixing boards from various pallets or points of the stack.**
- **Inspect all boards prior to installing for breakage, foreign objects, surface defects, and correct product/color before installing.**
- Do not install product with manufacturing errors – installation is considered final acceptance.
- Ensure boards are dry before installation; do not finish or install wet or saturated material.
- For cutting, use a fine-toothed finish blade for best results; a jigsaw can be used to cut around obstructions.
- Keep boards out of direct sunlight when cutting or staging.

## WALL REQUIREMENTS & MOISTURE

- Framing, sheathing, proper flashing, and weather-resistive barrier must comply with all applicable state and local building codes.
- Min 1-1/4" penetration into solid framing.
- ACRE requires a minimum 7/16" OSB or minimum 1/2" plywood sheathing.
- The use of a draining/vented WRB is strongly recommended.
- The use of button cap fasteners can create a non-planar surface, can interfere with shiplap siding engagement, and should be avoided.
- Ensure no nails or screws are protruding – remove, replace, or add fasteners to create a smooth, continuous surface.
- Avoid installing in standing water or areas that prevent water from draining away from the building.
- For furring application, install 12" OC for vertical/diagonal siding installation and 16" OC for horizontal siding installation. Additional furring members may be needed at joints.
- Furring should be secured to solid framing whenever possible.
- Wood or rigid composite furring strips are recommended.

## MOVEMENT, CLIMATE & INSTALLATION TEMPERATURE

ACRE will expand and contract with environmental temperature changes, most significantly where extreme temperatures exist. Ambient temperature, direct sunlight, and finish color all affect the degree of movement and must be factored into gapping at the time of install. Take particular care near a black or dark metal roof, which radiates excessive heat and can significantly increase movement.

- To minimize the effects of temperature-related expansion and contraction – especially where gap quality is a primary concern – use shorter boards, lighter colors, and follow all fastening requirements.
- Fasten ACRE as soon after cutting as possible to further minimize expansion and contraction effects.
- Use ACRE Rabbeted Trim, or shorter boards with scarfed/rabbeted joints, to conceal the effects of expansion and contraction at board ends.
- For best results, use the Cortex face-fastening system.
- Allow 1/4" clearance from obstructions in the wall – windows, doors, mounting blocks, and similar.
- When a course of siding runs underneath a window, fasten into solid framing every 8".
- Seal all vertical joints along window and door edges with a high-grade exterior caulk.
- Glue mitered corner joints, and pin nail to hold boards in place while curing; do not glue other trim joints – leaving them unglued allows for necessary movement.

## GAPPING BY TEMPERATURE

| TEMPERATURE | GAP |
|---|---|
| 70°F | 1/16" gap |
| 70+°F | No gap |

## FASTENING & ADHESIVES

### FASTENING

- Use proper fasteners: minimum 8d x 2-1/2" ring shank nails (0.099" diameter or larger), or minimum #8 x 2-1/2" screws.
- Do not use brads, finish/trim head nails or screws, or staples, unless otherwise directed in the installation instructions.
- Fasten with a minimum of 1-1/4" or greater penetration into solid framing, driven to proper depth.
- Underdriven button-cap fasteners may inhibit engagement of siding panels.
- Use a minimum of 5/8 "(3/4" preferred) material when using Cortex screws. See Cortex installation guide for proper fastening.
- Install fasteners flush to avoid any wall protrusions.
- To help keep mitered corners tight while the adhesive is curing, pin nail (stainless steel may apply) with a minimum of 2 pin nails, 3 for wider profiles and dark colors (LRV of 55 or lower)
- Fasten mitered corner assemblies into solid framing members.

### ADHESIVES

- Use Titebond or other high-quality exterior grade adhesive for PVC for mitered corners.
- Apply construction adhesive to substructure for expansion/contraction management.
- OSI Quad Max (color-match) / Extreme Adhesive Fill & Flex (paintable) – Pliable with temperature changes.
- Recommend overlapping joints (shiplap, scarf) while color matching the interior joints.
- OSI Quad Max or any pliable adhesive-based caulk is recommended and can be used in the joint as needed to conceal gapping.
- In applying the adhesive, avoid long continuous horizontal application. Apply adhesive in vertical or diagonal fashion to ensure free water flow and ventilation.

## TOOLS

- IMPACT OR STANDARD DRILL/DRIVER
- CIRCULAR SAW
- SPEED SQUARE
- PENCIL
- COIL SIDING NAILER
- TABLE SAW
- CONSTRUCTION ADHESIVE
- HIGH-QUALITY EXTERIOR GRADE CAULK/ADHESIVE
- MITER SAW
- EYE PROTECTION
- HAMMER
- DRILL
- JIGSAW
- TAPE MEASURE
- LADDER

## BURNING WARNING

Do not burn ACRE products or scraps. ACRE products are not safe to discard by burning and must not be used as firewood, kindling, or any other fuel source to create or maintain a fire or heat source.

**LEGAL DISCLAIMER:**

This document offers general installation guidance reflecting Modern Mill's recommended best practices for ACRE Siding. It does not substitute for engineering judgment, code compliance, or manufacturer instructions. Modern Mill assumes no liability for damage, injury, or product failure resulting from installation that does not conform to its published requirements.

IF YOU ENCOUNTER A SITUATION NOT COVERED BY THIS DOCUMENT, CONTACT US AT **601-869-5050** OR **INSTALL@MODERN-MILL.COM**

# ACRE FIELD COATING REQUIREMENTS

**ACRE is a PVC-based product. Correct coatings must be used to ensure optimal performance.** For warranty protection, ACRE must be finished only with coatings that meet the following requirements or on Modern Mill's lists of approved colors. Colors that do not meet the requirements must be submitted to Modern Mill for testing and approval.

- Water-based only (100% acrylic latex for exterior paints).
- Light Reflective Value (LRV) of 55 or greater. Below 55, or if unsure, contact Modern Mill for approval.
- Clear coats can slightly darken ACRE's appearance – test on a sample area before full application.

**Never have colors custom-tinted at local paint stores, home centers, or big-box retailers – untested customization can cause performance issues and void warranty coverage. Coating warranties are handled by each coating's manufacturer.**

## LIGHT REFLECTIVE VALUE (LRV)

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

**BLACK** **WHITE**

LRV measures how much light a color reflects, from 0 (black, absorbs all light) to 100 (white, reflects all light). Unreflected UV rays create excessive heat which can distort and contribute to additional expansion and contraction. Using approved colors helps minimize expansion and contraction in your installed ACRE product.

## FIELD APPLICATION INSTRUCTIONS

- Rice hulls, like wood, can vary slightly in color – this is a unique feature of ACRE and can be seen both before and after staining. For best appearance, mix boards from various pallets or points of the stack, and inspect all boards prior to installing for breakage, foreign objects, surface defects, and correct product/color before installing.
- Ensure boards are cool and dry before applying coating.
- ACRE products should be finished prior to installation. Modern Mill recommends utilizing any factory-finish options before choosing to field finish.
- Tip: For the best results when field coating, we recommend applying paint, stain or clear coats on a smooth flat surface. If unsure, test on a sample piece before applying on full boards. ACRE products may be painted after installation; however, the viscosity of the coating and individual work time could result in an uneven appearance if not monitored closely.
- Tip: Consider working time while staining ACRE – the longer the board, the shorter the working time before curing.
- If multiple coats are being applied, contact Modern Mill at **install@modern-mill.com** for testing and approval.

## DECKING APPLICATION

- Only use Sherwin-Williams SuperDeck® stains for deck application.
- For paints and stains outside of the above mentioned, contact Modern Mill at **install@modern-mill.com** for testing and approval.

# APPROVED COLORS GENERAL INFORMATION

- Choose an approved color from one of the following manufacturers. Each brand's full color list and current LRV values are maintained on Modern Mill's site.
- Digital colors are approximate – always confirm against a physical sample or manufacturer swatch before final selection.
- Contact the coating manufacturer directly for warranty questions on a specific product.
- When in doubt about LRV, water-based formulation, or approval status, contact Modern Mill at **install@modern-mill.com** before purchasing or applying.

# APPROVED PAINTS

**Pittsburgh Paints – SidingSafe® palette + Signature 897 Collection**

**CENTRAL**
Pittsburgh Paints
2510 Independence Dr
Ft Wayne, IN 46808
260-373-2373
Paf9270@pittsburghpaints.com

**EAST**
Pittsburgh Paints
1455 Trademart Blvd
Winston-Salem, NC 27127
336-771-8878
Paf9490@pittsburghpaints.com

**WEST**
Pittsburgh Paints
2720 Crater Lake Highway
Medford, OR 97504
541-772-7107
Paf8083@pittsburghpaints.com

**NORTHEAST**
Pittsburgh Paints
750 Page Blvd, Springfield,
MA 01104
413-734-8270

**Sherwin-Williams – VinylSafe® palette**

**Benjamin Moore – Colors for Vinyl® palette**

**Custom / Special-Order Colors – Pittsburgh Paints Signature 897 custom color program**
(~6–8 week lead time)

# APPROVED STAINS

ACRE can be stained for a natural wood look.

- Options include Pittsburgh Paints' Signature Stain Collection for ACRE and Sherwin-Williams SuperDeck® IR stain colors (factory-mixed only – in-store mixing is not available for IR stains).
- Full staining brand details, colors, and special-order info: **modern-mill.com/coatings/staining-resources**

# APPROVED CLEAR COATS

Modern Mill recommends a water-based protective clear finish to resist dirt, staining, and UV fading. "Laurel" by Pittsburgh Paints is Modern Mill's recommended clear finish (also available factory-finished). Approved off-the-shelf clear sealers include Flood CWF-UV Clear Finish, Sherwin-Williams SuperDeck® Waterborne Clear Sealer, Valspar® One-Coat Clear Exterior Sealer, and ZAR® Deck & Siding Clear Sealer.

Full details here: **modern-mill.com/coatings/natural-look-resources**

# RECOAT AND TOUCHUPS

### TOUCHUPS

- Tip: Use a wire brush or a hard bristle brush to sand the spot before applying stain.
- Use a pen dauber or an artist brush to apply touch-up stain.

### RECOAT

- If painting over a different color, use a WHITE primer over the previous color first before applying desired color. DO NOT add any additional tints.
- If staining over a different color, use 220-grit sandpaper to remove existing stain before applying desired color. Please reference the above field application instructions for proper coating.
- For a maintenance schedule, follow the specific coating manufacturer's guidelines.

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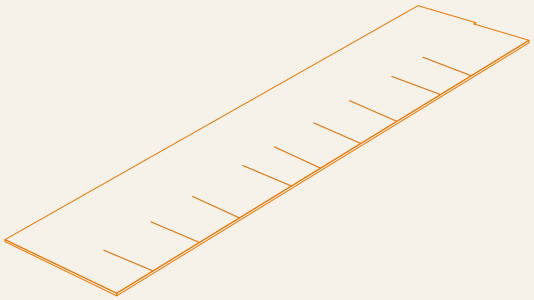
modern-mill.com
601-869-5050

# PERFECTION SHINGLE SIDING

Suited for a wide range of applications, **ACRE** is the perfect medium for executing your ideas. This revolutionary material can be cut, curved, shaped and molded to fit countless applications, both exterior and interior.



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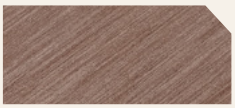
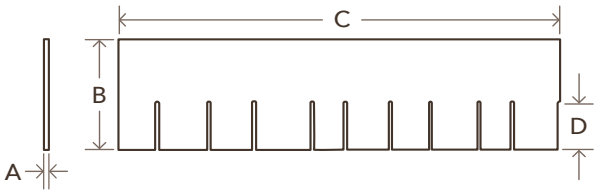


ACRE Grain

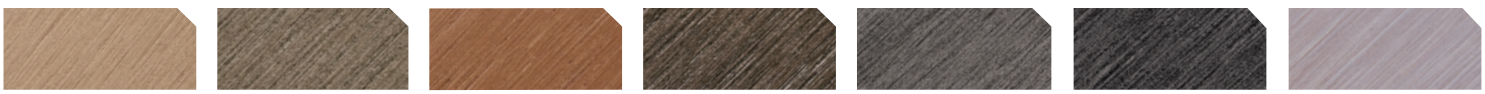
## PROFILE DETAILS




| ACTUAL THICKNESS (A) | ACTUAL WIDTH (B) | LENGTH (C) | ADJUSTABLE REVEAL (D) |
|---|---|---|---|
| 5/16" | 11-7/8" | 4' | 5" to 5-1/2" |

**ACRE Perfection Shingle Siding** has an adjustable reveal that can reach a max of 5-1/2".

## AVAILABLE FACTORY-FINISHED IN SEVEN SIGNATURE STAIN COLORS



LAUREL | BILOXI | MAHOGANY | WALNUT | AMORY | ACRE BLACK | MONTAUK GRAY

# EXPANSION & CONTRACTION

- As with other alternative building products, to minimize the effects of temperature related expansion & contraction, the use of lighter colors, and following the required fastening requirements, especially regarding face fasteners, is paramount.
- Follow gapping instructions and fastening requirements closely for best results.
- ACRE products undergo a degree of linear expansion with changes in weather or seasons. Expansion and contraction is most significant where extreme temperatures may exist.
- **Ambient temperature, direct sunlight and color of finish impact the degree of expansion and contraction of ACRE. These three factors MUST be considered when determining proper gapping at time of install.**
- Use ACRE Rabbeted Trim to conceal the effects of expansion and contraction at board ends.
- Fasten ACRE as soon after cutting as possible to minimize the effects of expansion and contraction.
- Allow 1/4" clearance from obstructions in the wall like windows, doors, mounting blocks, etc.
- Apply a high quality exterior caulk to vertical clearances only.

## FOR INSTALLATIONS WITH DARKER COLORS

- For any installation using a paint or stain color with an LRV below 55, OR if you are not sure, contact your Modern Mill rep for help and approval for use.
- **Installations with darker colors may involve additional fastening requirements to properly control the effects of heat build up.**

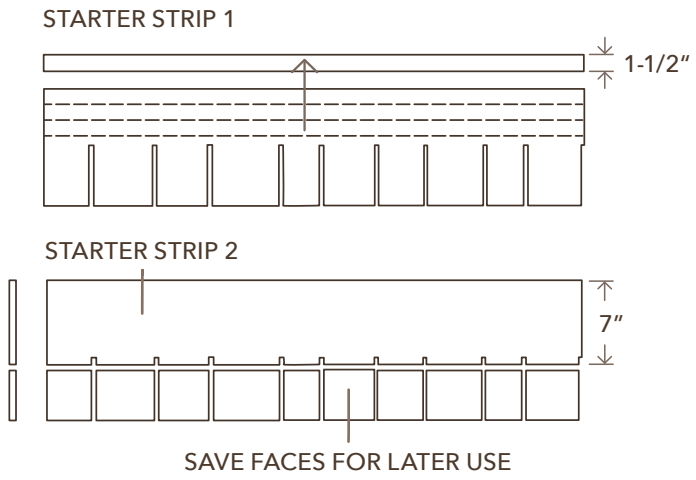
# INSTALLATION

## SHINGLE INSTALLATION: 12" X 48" X 5/16" WITH 5" REVEAL

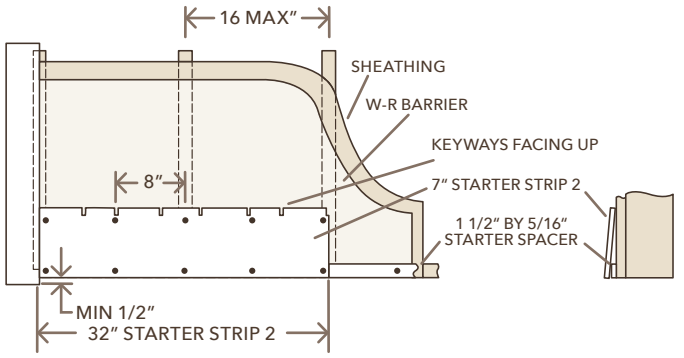
- Starter Strip 1 (5/16" x 1-1/2") can be created by cutting from the top of shingle panels or with 5/16" trim materials.
- Snap a caulk line 1-1/2" up from the base of the intended installation. Secure every 8" to create a solid starting base. Shim as needed to create a smooth & continuous surface to build from.
- Creating 7" Starter Strip 2: remove shingle faces 7" down from top of the panel.
- Carefully save these pieces in original order for use later under windows, eaves and frieze applications.

**TIP:** Set your table saw to 7" with your tabs facing out. Rip the panels and keep the tabs for later use.

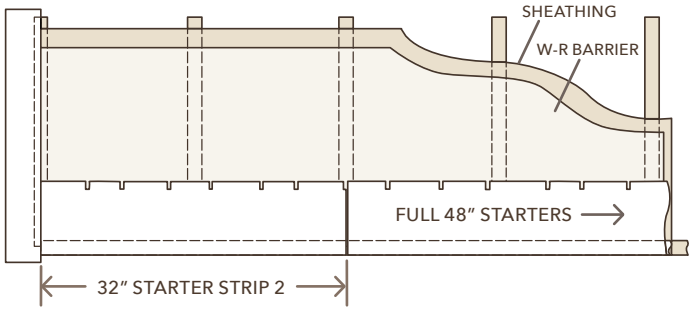
SHINGLE (EVEN LENGTH FACES)




- Reduce the length of Starter Strip 2 to 32" for the first course. Do not let starter strip butt joints and siding course butt joints end on the same stud. Flip Starter Strip 2 upside down prior to installation. Secure every 8" at both top and bottom.
- **Note:** allow 1/8" - 1/4" between starter materials when installing under 40 degrees F.
- After securing the initial 32" Starter Strip 2, continue with full 48" long starter panels, trimming the last panel to required length.



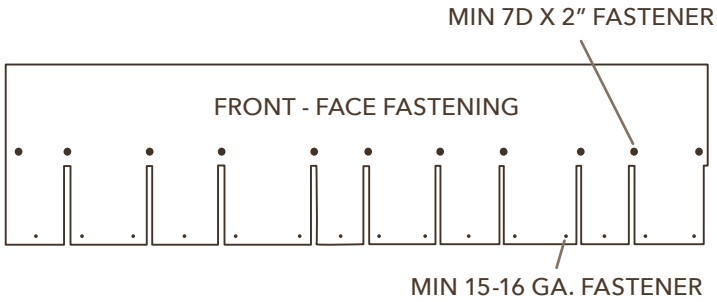

NOTE: TRIM AND CORNER POSTS SHOULD BE INSTALLED EXTENDING A MINIMUM OF 1/2" BELOW THE STARTER LEVEL.



## FOR SECURING WITH FACE FASTENERS ONLY:

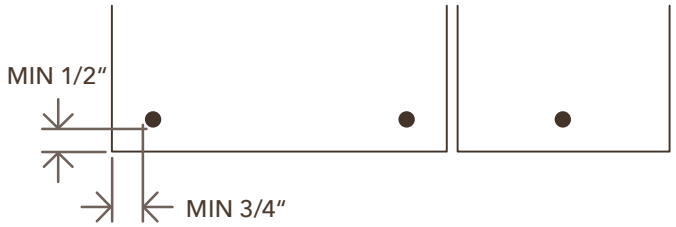
### 12" X 48" SHINGLE

- Position in place and face fasten over each keyway as shown.
- **Note:** only single trim/finish head nails are required in the narrower shingle faces (1st, 3rd, 5th, 7th, and 9th). Double fasteners are required in wider shingle faces.



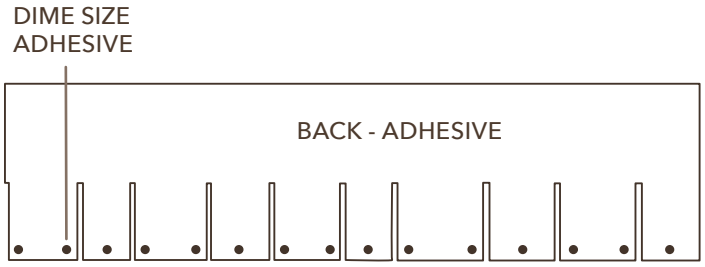

DRIVE MIN 7D X 2" RING SHANK NAILS 1/2" - 3/4" ABOVE KEYWAYS.

FINISH PANEL INSTALLATION WITH 15-16 GAUGE TRIM/FINISH HEAD NAILS THROUGH THE INDIVIDUAL FACES.

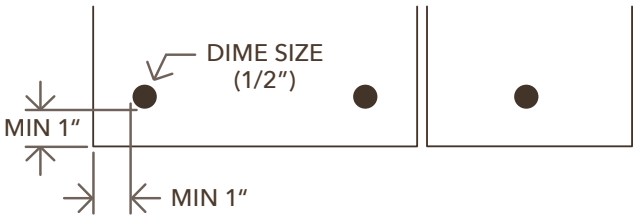



## FOR SECURING WITH FACE FASTENERS & ADHESIVES:

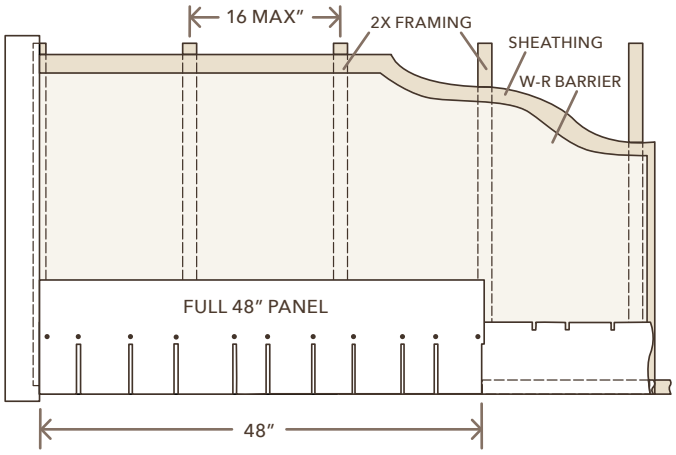
- When using an adhesive, always use a high quality exterior grade flexible adhesive that remains pliable throughout its life cycle.
- Apply two 1/2" diameter dabs of adhesive to the backside of the faces, two dabs per shingle face.
- Apply adhesive from the furthest point to the nearest to prevent smearing. Apply as dabs only to provide drainage. DO NOT apply adhesive in a horizontal line.
- The 1st, 3rd, 5th, 7th, and 9th shingles (every other) only require a single dab.
- Additional touchups may be needed around nail heads. Modern Mill requires a flush fastener if over penetration happens, we suggest utilizing a touchup in these applications.



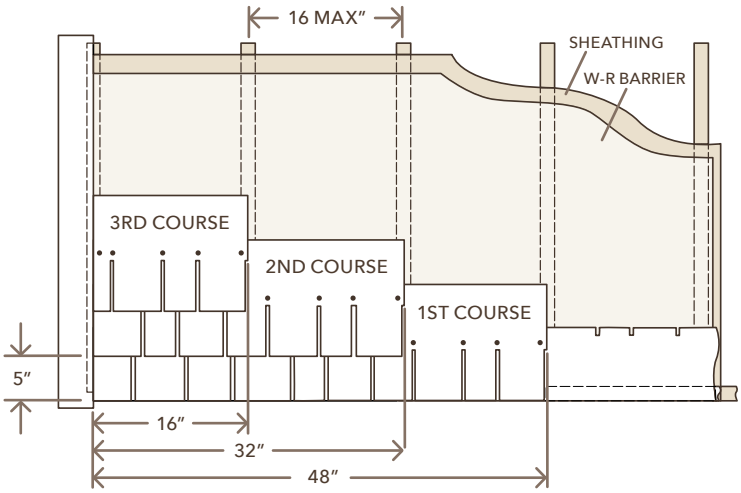

NOTE: FASTENERS OVER KEYWAYS ARE STILL REQUIRED.



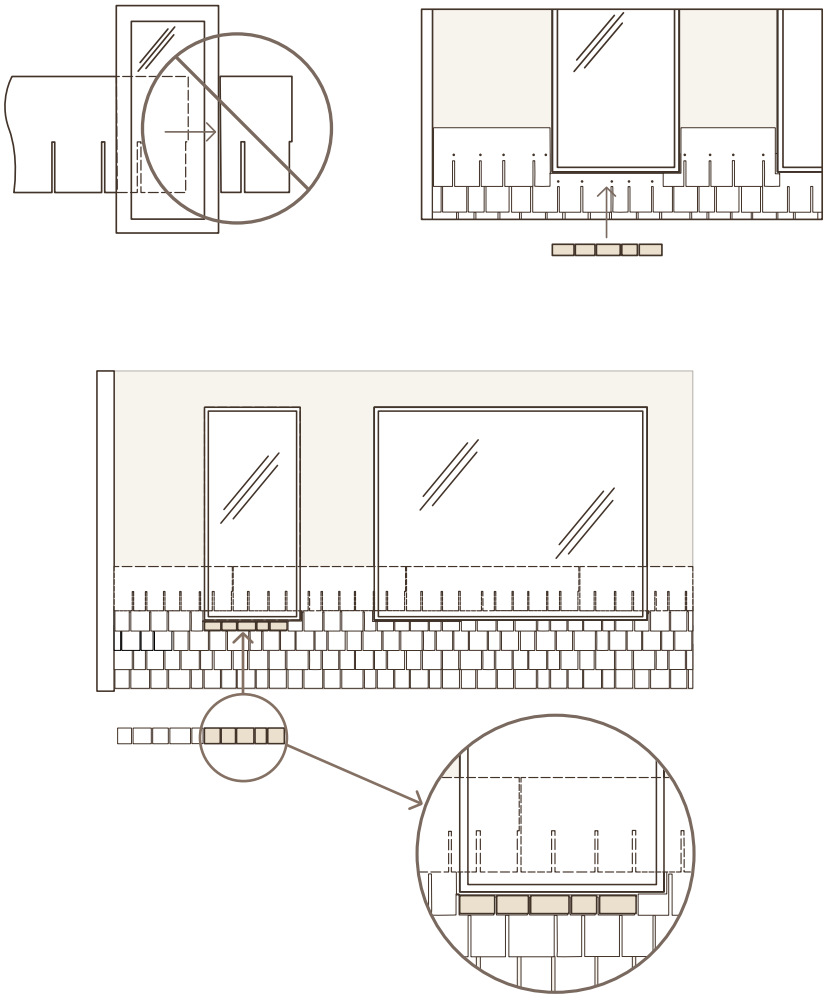
- Install the first full Shingle panel, leveling the bottom with the Starter panel. Secure the panel with fasteners 1/2″ - 3/4″ above the keyways, and not closer than 1/2″ from the panel ends.




- Start the second course after removing 16″ from the left side (keep for potential use at the end of the course. Start the third course after removing 32″ from the left side (keep for potential use at the end of the course).

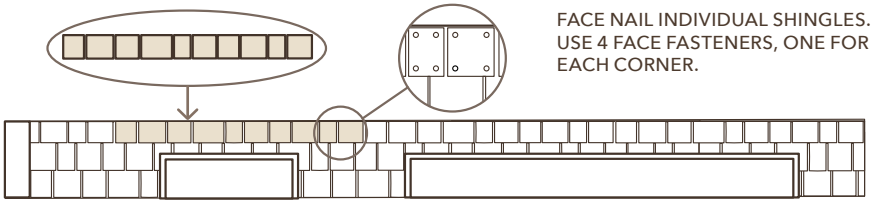


- Continue installing panels in the 48”/32”/16” panel stagger pattern up to openings, then notch panels as required leaving 1/8” - 1/4” clearance from window or door framing, utility blocks, etc.
- **It is important to cut the courses as if there was no opening to keep the proper pattern.**
- **When cutting panels for windows, doors, or other wall opening, DO NOT use the remainder as a starter on the opposite side.**
- Before installing the individual shingle faces, install both notched 48” full panels.
- Next secure the individual faces spaced randomly between 1/8” and 1/4” mimicking full panel placement. Secure with 15-16 gauge face nails, one in each corner.
- Fill in the areas under openings with individual shingles maintaining proper order, securing each shingle with four fasteners, two at the top and two at the bottom, allowing 1/2” - 3/4” from edges.



- Notch panels as needed over and around openings leaving 1/8” - 1/4” clearance vertically, and 1/4” clearance above z-flashing. Fill in the final course with individual shingles maintaining proper order securing each shingle with four fasteners, two at the top and two at the bottom, allowing 1/2” - 3/4” from edges.
- Note: proper layout and spacing of the individual shingle faces is required to maintain the proper appearance.

KEEP PROPER PATTERN ACROSS THE WALL




FASTEN AT EVERY CORNER OF THE TAB TO SECURE THE TAB TO THE WALL.

# SHINGLE PANEL INSTALL IN GABLES

- Start by plumbing a line from the gable center, then add two parallel lines 16" o.c. on both sides of center **(fig 1)**.
- Next snap two horizontal lines for the second starter course and the other the height of a full shingle panel **(fig 1)**.
- Additional horizontal lines can be snapped on 5" increments for additional courses **(fig 2)**.
- For instructions regarding starter strips, please refer to page xx.
- Create 1-1/2" starter strips from the top edge of full panels. Set aside remainder for use under windows or in soffit areas. Secure starters on max 8" spacing.
- Create the next starter course by removing 7" measured downward from the top of a full panel. **Note:** keep the individual faces in sequential order for use under windows, soffit, and frieze applications.
- Align the right edge with the gable center line **(fig 1)**.
- Start the panel installation with a full panel aligned with the rightmost vertical line **(fig 2)**.
- Continue with full panels to the rake **(fig 3)**.

FIGURE 1

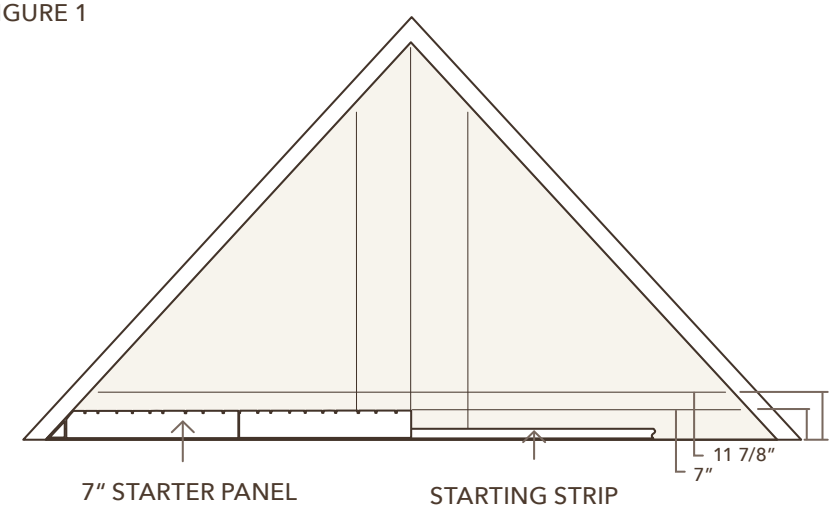



FIGURE 2

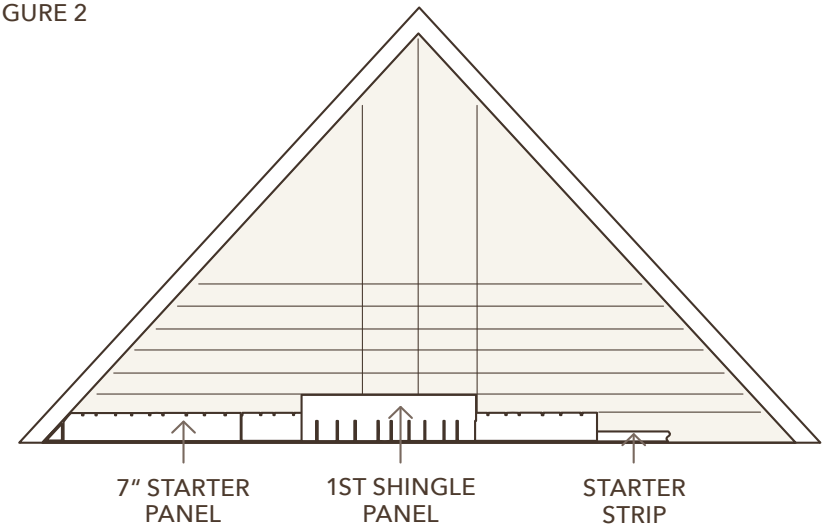
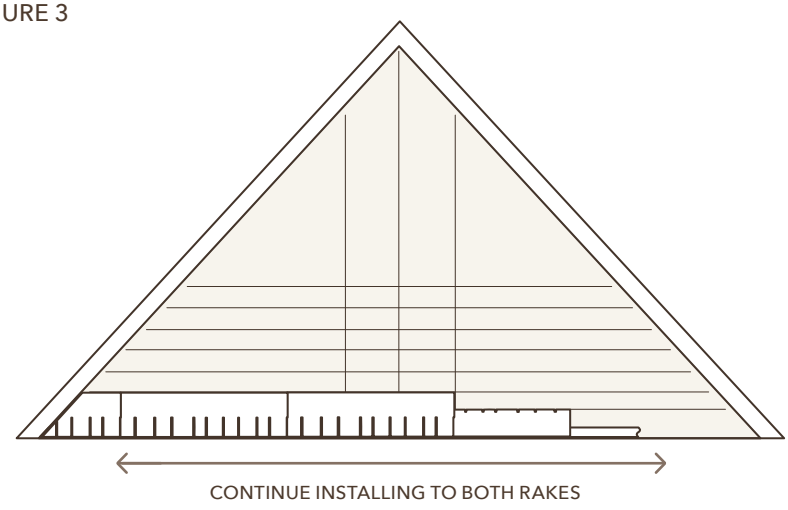
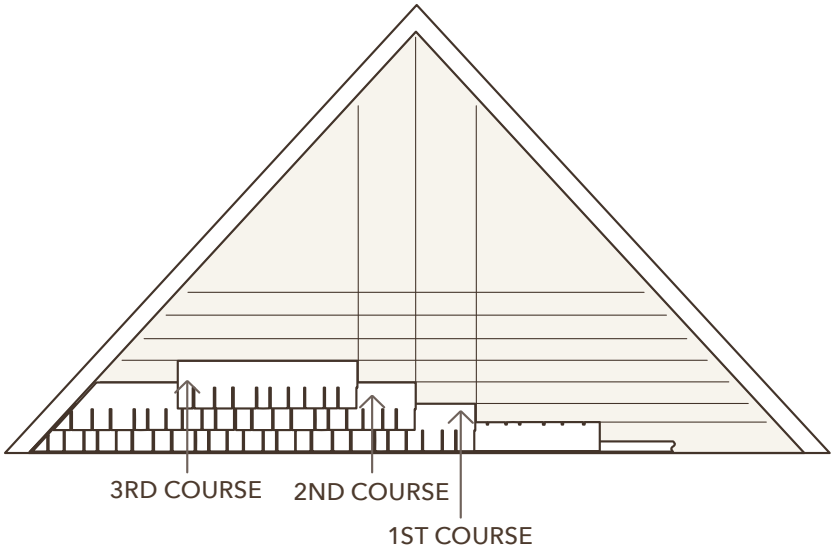



FIGURE 3



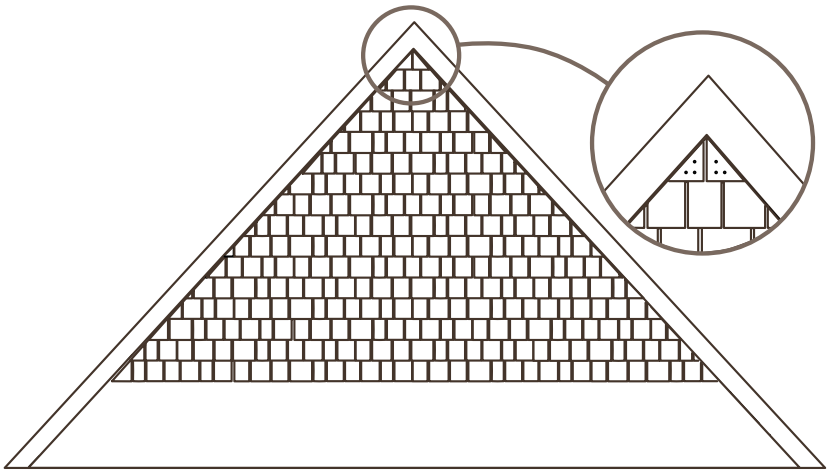
- Align the second full course with the gable center line, and continuing installing panels to the rake **(fig 4)**.
- Align the third full course with the leftmost vertical line **(fig 4)**.

FIGURE 4




- Continue stacking courses up while maintaining the 16" stagger pattern. Smaller triangle shaped pieces will require face fastening **(fig 5).**

FIGURE 5



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**ACRE Shingle Siding Installation Requirements**
**2026.08**