

# Installation Guide Maibec em+<sup>®</sup> Siding

(installed with staples)

Read this entire guide before installing your siding. For proper installation, you must understand and follow all requirements and steps correctly. **DOWNLOAD THE LATEST VERSION ONLINE AT MAIBEC.COM.** For any questions, please contact Maibec's technical service toll-free at 1-800-363-1930, Monday to Friday from 8:30 a.m. to 4:30 p.m. (Eastern Time)

#### IMPORTANT: COMPLIANCE WITH MAIBEC'S INSTALLATION, STORAGE AND MAINTENANCE REQUIREMENTS, AND WITH ALL APPLICABLE BUILDING CODES IS MANDATORY. PROBLEMS CAUSED BY FAILURE TO COMPLY WITH THESE REQUIREMENTS AND CODES MAY NOT BE COVERED BY THE APPLICABLE WARRANTIES.

#### Maibec em+® siding is for exterior use only.

Drawings in this document are not to scale and are used solely to illustrate best practices. All dimensions in this document are given in inches.

# 1. BASIC PRINCIPLES FOR INSTALLING EXTERIOR SIDING

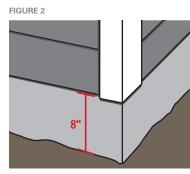
Exterior siding is essential for protecting a home against water infiltration, but is not watertight. Water accumulation and variations in moisture levels behind the siding can cause boards to warp, mould to form and even lead to rot inside the wall. This will affect the siding's performance, durability and appearance.

#### **1.1 MANAGING WATER**

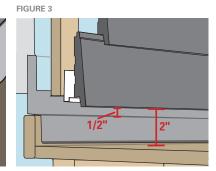
The following requirements must be respected to properly manage water:

- Water must be able to drain away freely between the siding and water-resistive barrier.
- Install flashing over all openings, flat surfaces and wherever moisture drainage is needed.
- Use weather-seal tape/membrane around windows, doors and all other openings to ensure a tight seal with the water-resistive barrier. This will protect the wall from water infiltration.
- No horizontal furring strips or surfaces at the bottom of walls to prevent water accumulation.
- · Install gutters and deflective flashing on roofs.

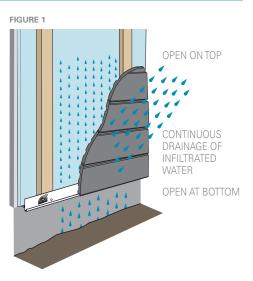
#### ALLOW A MINIMUM CLEARANCE OF:

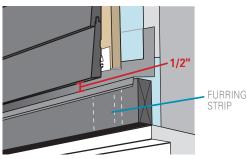


8" from the ground



- 2" from adjacent horizontal structures (e.g. decks, low walls, roof shingles)
- 1/2" between siding and flashing





1/2" space between the siding and the flashing over all openings

FIGURE 4



#### **1.2 VENTILATING THE WALL**

- Continuous wall ventilation will allow heat and moisture to escape from between the siding and the insulating material. Using furring strips, create ventilated spaces (called air gaps or rainscreens) and leave a 1/2" minimum space at the bottom and top of walls to allow air to enter and exit across the entire height and width of the wall.
- Wall ventilation is especially important when dark-coloured siding and/or foam insulation panels are used. Dark siding absorbs more heat and is more prone to thermal expansion. Foam insulation panels also tend to trap heat.
- Maibec ventilated strips\* will allow proper water and heat management while preventing potential rodents and certain insects from getting in behind the siding.
  - Ventilated starter strip: Starter course around the entire building. [SECTIONS 7, 10]
  - **Ventilated universal "L" strip:** Top of windows, top and bottom of walls, and other types of installation. [SECTIONS 10, 11, 12]
  - Ventilated "J" strip: Bottom of windows and tops of walls. [SECTIONS 11, 12, 13]
  - Ventilated universal band: Can be folded and cut on-site to meet any installation requirement. [SECTIONS 8, 10, 12]
  - Ventilated strip for soffits: For optimal ventilation in soffits.
  - \*If non-Maibec ventilated strips are used, they must have a minimum 50% opening to ensure adequate ventilation of the wall.

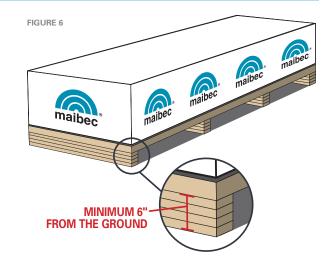
#### **1.3 PROTECTING THE INTEGRITY OF THE SIDING**

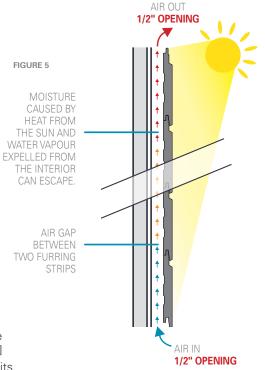
To protect the integrity of the product, always follow the instructions for touching up and fastening the siding.

- Apply touch-up stain to any bare wood to seal it. This will prevent water from seeping into the wood fibres and rotting the board, ensuring the optimal performance of the siding and stain. [SECTION 5]
- Correct fastening will result in a stable, long-lasting installation. [SECTION 4]

## 2. STORAGE

- Keep the siding in a dry, unheated and well-ventilated area at least 6" from the ground. Never let it come into direct contact with the ground.
- Cover any unused siding with its original packaging at all times, even during installation. If the original packaging is no longer in good condition, cover the siding with a waterproof tarp.
- Install siding within 10 weeks of delivery, after which it should be kept in a dry, unheated, and well-ventilated area away from direct sunlight to prevent the wood from drying out.
- Touch-up stain must always be kept at room temperature (max 38°C/100°F).





 Never install a product that appears to be or that you think may be defective. Installed defective

Maibec at 1 800 363-1930.

products are not covered by the warranty. Contact

# 3. BEFORE YOU BEGIN INSTALLATION

#### 3.1 CHECK YOUR ORDER

- Make sure the product(s) delivered matches your order (colour, profile, quantity, nails, accessories, etc.).
- · Have on touch-up stain on hand.

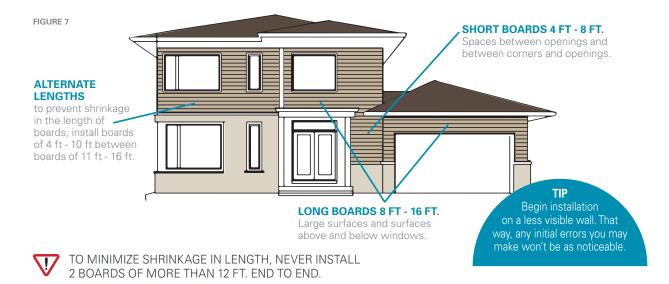
#### 3.2 CONSULT THE BUILDING CODES

Make sure you are familiar with the specific requirements of all applicable federal and provincial building codes and municipal by-laws for your region with respect to installing siding, water-resistive barrier, sealant, etc. For the water-resistive barrier and the sealant, follow the manufacturers' instructions.

For more information, see the National Model Construction Codes on the Government of Canada's website at *nationalcodes.nrcc.gc.ca*.

#### 3.3 PLANNING THE ARRANGEMENT OF THE BOARDS

- Each bundle contains boards of varying lengths, which are indicated on the label on the pallet. This label identifies the product and the quantity of each board length.
- Using boards of different lengths on the space to be covered will produce an harmonious appearance. [FIGURE 7]



# 4. FASTENING SYSTEM

Maibec em+® siding is quickly and easily installed with staples and a pneumatic stapler equipped with the Maibec em+® stapler guide.

Maibec em+<sup>®</sup> siding features a stapling line for easier, more uniform installation. This line is hidden by subsequent rows of siding\*.

If you prefer, you can also install Maibec em+<sup>®</sup> siding by hand using stained Maibec nails. Keep in mind that the nail heads will remain visible, however. If you choose this method, you must refer to the regular siding installation guide for nailing instructions.

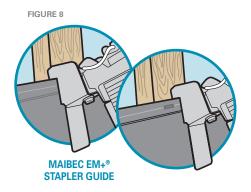
\* DUE TO THE SLIGHT MOVEMENTS THAT OCCUR NATURALLY IN WOOD AND THE ADJUSTMENTS THAT ARE SOMETIMES NECESSARY WHEN INSTALLING THIS PRODUCT, SOME STAPLES MAY BECOME VISIBLE AT TIMES. THIS IS NORMAL AND WILL NOT IMPACT THE PRODUCT'S PERFORMANCE.



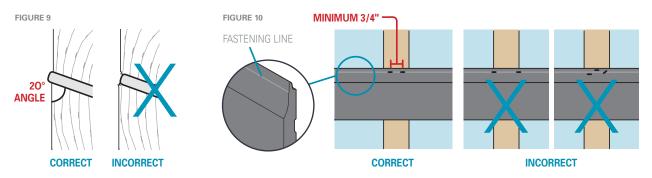
#### 4.1 STAPLES

- Staples used solely for siding: 2" length, 7/16" crown, 16 gauge, resin-coated stainless steel SUS 304 staples.
- · Always press the board firmly against the furring strip.
- Maibec strongly recommends using the Maibec em+<sup>®</sup> stapler guide which ensures:
  - Constant positioning along the fastening line.
  - Desired angle when installing staples.
  - Spacing between staples.

The stapler guide prevents installing the staple above this line which may cause the tongue to crack or below the line which will cause it to be visible on the wall. For a list of compatible pneumatic staplers, go to maibec.com/ en/Support. [FIGURE 8]



- Staples must be positioned directly along the fastening line indicated on the board's profile. The staple head must not sink into the wood but sit flush on the surface. [FIGURE 9] Most pneumatic tools have an adjustable depth of drive. See the manufacturer's user manual.
- Install TWO staples centred on each furring strip at a 20° angle, leaving a minimum 3/4" space between them. [FIGURE 10] To do so, align the stapler guide with the left side and the right side of the furring strip. [FIGURE 8]
- Ensure staples have a minimum real penetration of 1" in a solid substrate.



#### 4.2 NAILS

- Stained Maibec nails must be used on any edged boards that have had the tongue and groove system removed. Sealant cannot be used to hold the board in place. If you have to adjust a board by more than 1/16", nail the bottom of the board in place.
- Use Maibec hot dipped zinc galvanized ring shank nails with textured heads, factory-stained to match the siding colour. These nails must be ordered at the same time as your siding. Use the hammer cap to protect the stain on the nail heads.
- Ensure nails have a minimum real penetration of 1" in a solid substrate.
- Nails must be driven so that the head sits flush on the wood's surface. [FIGURE 11]

# FIGURE 11

#### NAIL LENGTHS

• **2" Stained** Siding and 1" mouldings 3" Stained

Other mouldings

For information on how to correctly position nails for your specific siding profile and type of installation, consult the Maibec Regular Siding Installation Guide.

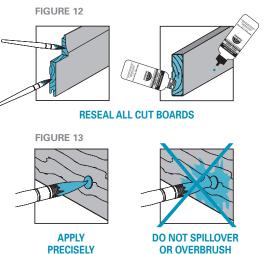
If Maibec siding is installed in Coastal regions\*, unstained stainless steel grade 316 ringed nails must be used for installing siding and mouldings. Failure to comply with this requirement will void the warranties.

<sup>\*</sup> APPLICABLE COASTAL REGIONS INCLUDE THOSE LOCATED LESS THAN 600 M (2,000 FT) FROM THE COASTLINE IN THE ATLANTIC PROVINCES (NEW BRUNSWICK, PRINCE EDWARD ISLAND, NOVA SCOTIA, NEWFOUNDLAND AND LABRADOR), IN SAINT-PIERRE-ET-MIQUELON, AND IN THE U.S. EAST COAST STATES.

# 5. TOUCH-UPS FOR SEALING THE WOOD

- To ensure the optimal performance of the siding and stain, all bare wood on cut boards must be resealed. This will prevent water from seeping into the wood fibres and causing rot over time.
- · Apply touch-up stain to all cut or planed surfaces and to all bare wood, even if it will not be visible after the siding is installed. Always touch up boards **BEFORE** installing them. [FIGURE 12]
  - Touch-up stain in a can Use a polyester, nylon or any synthetic applicator with firm bristles approved for water-based coatings.
  - Natural Tones siding Use the Maibec touch-up applicators:
  - » One bottle for siding CUTS.
  - » One bottle for NAILS.

- Touch-up stain is included with your order. If you need more, you can purchase a Maibec-approved stain from your retailer. See the list of Maibec-approved stains in the Staining Guide at maibec.com/en/support/ maintenance-program
  - NEVER APPLY TOUCH-UP STAIN OVER NON-DAMAGED FACTORY COATED MATERIAL. IMPROPER APPLICATION OF THE TOUCH-UP STAIN CAN RESULT IN DIFFERENCES



IN COLOUR THAT WILL NOT NECESSARILY APPEAR IMMEDIATELY, BUT WHICH MAY BECOME MORE NOTICEABLE OVER TIME AFTER PROLONGED EXPOSURE TO ULTRAVIOLET RAYS.

For more information, consult the touch-up guide that accompanies the touch-up stain or go to maibec.com/en/ support under Installation Guide.

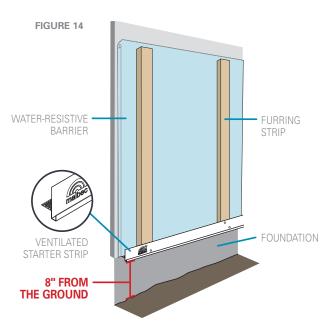
# 6. GENERAL STRUCTURE OF THE WALI

Siding must be installed over:

- A standard maximum 16" on centre stud built wall.
- Nailing base consisting of furring strips and OSB (oriented strand board) or plywood or foam insulation panels combined with OSB or plywood.
- Approved water-resistive barrier (Tyvek<sup>®</sup>, Typar, etc.).
- · Flashing installed over all openings, flat surfaces and wherever moisture drainage is needed.
- Weather-seal tape/membrane around windows, doors and all other openings to ensure a tight seal with the water-resistive barrier. This will protect the wall from water infiltration.
- Ventilated barriers preventing rodents and certain insect from infiltrating behind the siding. [SECTION 7.2]

Verify the structural integrity of the wall, making certain that it is solid, straight and ready for siding to be installed. Maibec cannot be held responsible for any damage to the siding caused by the movement of a structure that has not been built on a frost-protected foundation.

Verify that the wall's moisture drainage is ensured by a properly installed water-resistive barrier and appropriate flashing.



If you are using insulating concrete forms (ICF), please contact Maibec for technical assistance.



# 7. HORIZONTAL SIDING INSTALLATION

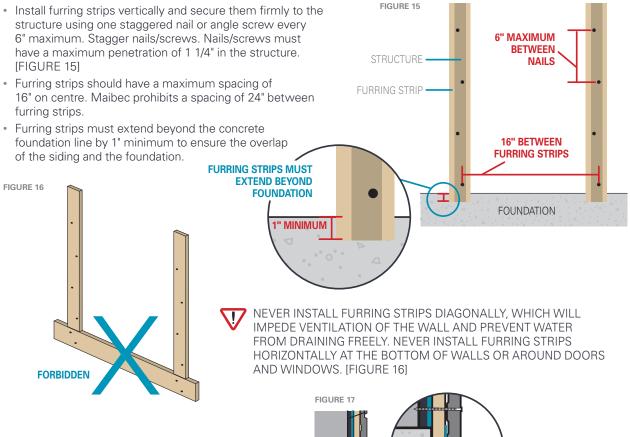
#### 7.1 VERTICAL FURRING STRIPS

Vertical furring strips create a ventilated space (called an air gap or rainscreen) between the siding and the water-resistive barrier. This space allows any water that may infiltrate behind the siding due to driving rain, wind or morning dew to escape rather than accumulating behind the siding. It also allows water vapour from inside the building released by the water-resistive barrier to escape without damaging the wall.

#### FURRING STRIP SPECIFICATIONS

- 1" x 3" furring strips (1" x 4" is acceptable). If the nailing base is not sufficient, use 2" x 3" furring strips.
- Kiln-dried with a moisture content below 19%.
- Furring strips must be new, straight and undamaged. If the siding is being installed as part of a renovation project, replace all existing furring strips with new compliant strips.

#### INSTALLING FURRING STRIPS

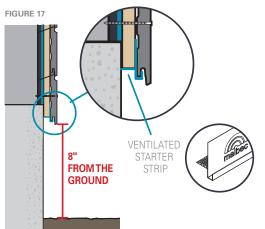


#### 7.2 PREPARING THE BOTTOM OF WALLS AND THE STARTER COURSE

#### BOTTOM OF WALLS

Install siding at least 8" from the ground to avoid exposing the wood to splashing rain and soil moisture. [FIGURE 17]

Siding should never come into direct contact with the ground.



16'

VENTILATED

STARTER STRIP

7.2 Preparing the bottom of walls and the starter course (cont'd)

#### STARTER COURSE WITH MAIBEC VENTILATED STRIPS

- Use one of the following ventilated strips\* for the starter course:
  - Ventilated starter strip: Starter course all around the building. Eliminates the need for face nails on the starter course. [FIGURE 18]
  - Ventilated universal "L" strip\*\*
  - Ventilated universal band\*\*: Use the universal band if furring strips exceed 3/4" in thickness or if insulation panels are used. The ventilated band will cover the furring or insulation panels while preventing potential rodents and certain insects from getting in behind the siding.
  - \*If non-Maibec ventilated strips are used, they must have a
  - minimum 50% opening to ensure adequate ventilation of the wall. \*\*The first course must be nailed when using the ventilated "L" strip or ventilated band
- Install the ventilated strip with a precision (laser) level or other type of level directly over the furring strips. The bottom of the furring strips should reach to the bottom of the ventilated strip. Secure with 2 nails horizontally every 16".
- If a ventilated strip other than the ventilated starter strip is used, the bottom of the first course of siding must extend at least 1/4" but no more than 1" past the bottom of the furring strip to allow for adequate water drainage.

#### 7.3 SUBSEQUENT COURSES

With Maibec em+® siding, end joints do not need to be cut and joints can fall anywhere between two furring strips. No sealant is required. To prevent unwanted movement in the boards, use boards that are long enough to cover at least two furring strips.

- Fit boards tightly into one another lengthwise, with a maximum variance of 1/16" between boards. [FIGURE 19]
- Two staples centred on each furring strip.

FIGURE 19



- The upper alignment of boards can be adjusted up to a maximum of 1/16", taking care not to leave any visible staples. [FIGURE 20]
- Nail the bottom of the board if an adjustment of more than 1/16" is needed.

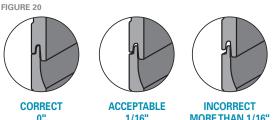
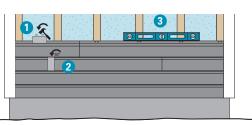


FIGURE 21

#### TIPS

- To fit boards together tightly with a hammer without damaging the tongues and grooves, use a block of siding 3" high and of a length equal to the visible portion (1).
- As a gauge guide, turn the block of siding over at a 90° angle. The block should be equal to the visible surface. This means the boards are properly fitted together. If there is a space, the boards need to be fitted FIGURE 22 more tightly (2).
- Verify course alignment with a level every 3rd or 4th row and adjust the board as needed. A variance of 1/16" to 1/8" in height between boards is considered normal (3)
- Using a reference line 3/4 from the top of the wall, place nails every 8 feet so that you can take measurements that will allow you to periodically verify alignment and make slight adjustments as needed.



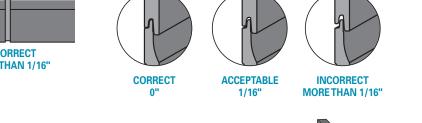


FIGURE 18



#### 7.4 END JOINTS

#### BOARD-TO-MOULDING

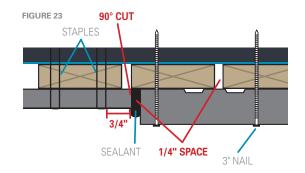
- Cut the end of the board so that it abuts with the moulding at a 90° angle. Apply touch-up stain as required to seal the wood. [FIGURE 23]
- Do not install staples less than 3/4" from the ends of boards.
- Use sealant for a smoother finish and to better protect the joint. Consult the applicable building codes and the manufacturer's instructions for the correct type of sealant to use.



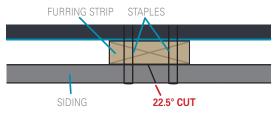
VISE SEALANT ONLY WHERE NEEDED. IMPROPER USE OF SEALANT MAY PREVENT WATER DRAINAGE.

BOARD-TO-BOARD AND MOULDING-TO-MOULDING

- If you have to make a joint cut, make 22.5° cuts at the ends of both boards to be butted, apply touch-up stain as recommended. No sealant is required. [FIGURE 24]
- Joint cuts must be stapled to a furring strip.







# 8. VERTICAL SIDING INSTALLATION

ONLY THE FOLLOWING PROFILES MAY BE INSTALLED VERTICALLY:

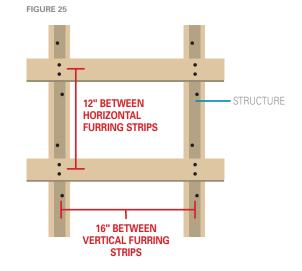
#### 6" Modern and 6" Channel

A vertical installation may result in some visible staples. For this reason, be sure to fit the interlocking boards firmly together.

#### 8.1 DOUBLE FURRING

- Start with the vertical furring as per instructions in Section 7.1.
- Then install horizontal furring strips over the vertical furring strips every 12".
- Double furring is mandatory in Quebec and the Maritimes to ensure continuous ventilation and water drainage. Recommended in Ontario. [FIGURE 25]
- Horizontal furring only allowed in Ontario provided you have:
  - Furring strips every 12"
  - 1" spacing between the ends of furring strips for adequate water drainage
  - A full 1" nailing base, obtained either by combining a furring strip and OSB or plywood or by using an actual 1" or 2" x 3" furring strip.

Double furring is strongly recommended for foam insulation panels or insulating concrete forms (ICF). This will allow any heat or moisture accumulated between the siding and the foam/ICF insulation to evacuate more readily, resulting in optimal siding performance.



 If the siding is installed vertically on a wall that exceeds 3 m (approx. 10') in height, the code's fire safety requirements may require a fire-blocking barrier. See section 10.3.

#### 8.2 PREPARING THE BOTTOM OF WALLS

Install siding at least 8" from the ground to avoid exposing the wood to splashing rain and soil moisture. [FIGURE 26]

# Siding should never come into direct contact with the ground.

VENTILATED UNIVERSAL BAND

- The ventilated band is recommended with double furring.
- Use a precision or laser level or other type of level to install the ventilated band directly over the furring strips. The bottom of the furring strips should reach to the bottom of the band. Secure horizontally with two nails every 16".

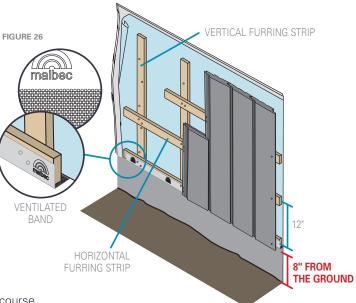
#### 8.3 SIDING INSTALLATION

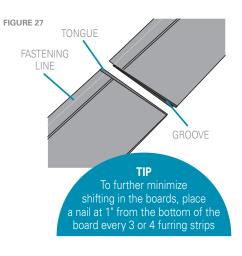
- Install siding starting on the right side of the wall. The first board is installed with nails like a starter course, with staples used on all remaining boards. [FIGURE 26]
- Two staples centred on each horizontal furring strip using the Maibec em+<sup>®</sup> stapler guide.
- To avoid water infiltration in the joint, the board must be installed with the tongue end facing upward. [FIGURE 27]
- Fit boards tightly into one another.
- Using a level, verify the alignment every 3rd or 4th row. A variance of 1/16" 1/8" between boards is considered normal.

#### 8.4 END JOINTS

#### BOARD-TO-BOARD AND MOULDING-TO-MOULDING

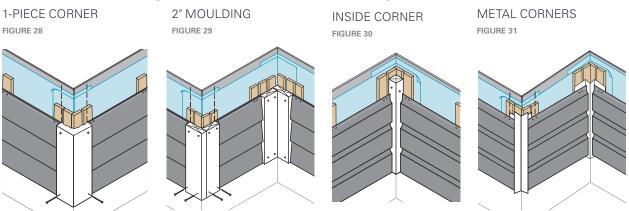
- If you have to make a joint cut, make 22.5° cuts at the ends of both boards to be butted, apply touch-up stain as recommended and fasten to the furring strip. No sealant is required.
- Joints cut at a 22.5° angle must always be nailed to a furring strip.
- Ensure the angle cut points downward to prevent water from infiltrating through the joint.





# 9. CORNERS

Maibec recommends finishing corners either with Maibec wood mouldings or metal corners.





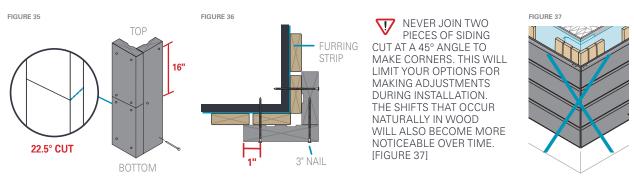
#### CUTTING AND NAILING THE MAIBEC 1-PIECE CORNER

- Cutting angle of 22.5° to allow water to drain freely. [FIGURES 32, 33]
- Use 2 nails every 16" and at 3/4" 1" from the edges of the corner. [FIGURE 34]



#### CUTTING AND NAILING MOULDINGS

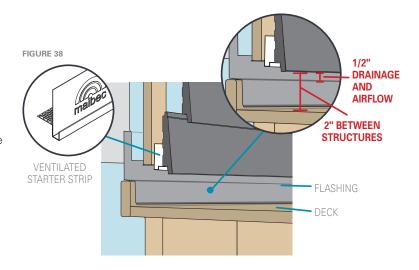
- Cutting angle of 22.5° to allow water to drain freely. [FIGURE 35]
- Use 2 nails every 16" and at 3/4" 1" from the edges of the moulding. [FIGURE 36]



# **10. JUNCTIONS**

#### **10.1 SIDING-DECK JUNCTIONS**

- Siding must never come into direct contact with a balcony or deck. At all times, the installation should allow rainwater to drain freely and prevent pooling water from ice dams from penetrating behind the siding. Leave a 2" space between adjacent horizontal structures and a 1/2" space between the siding and the flashing.
- Install the ventilated starter strip directly to the furring at the bottom of the wall.

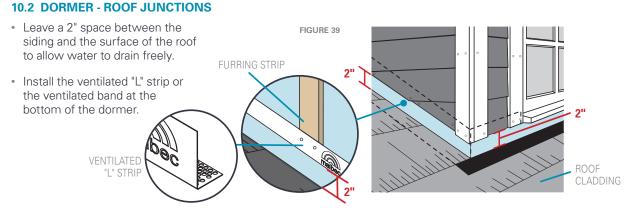


VENTILATED

1/2"

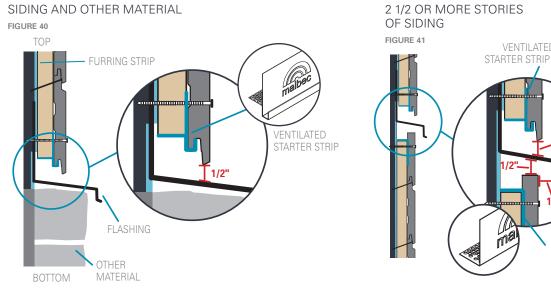
FLASH ING

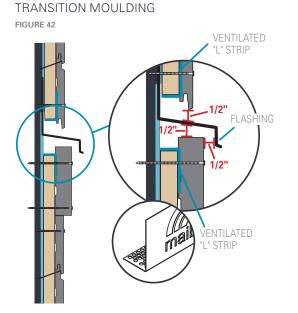
VENTILATED "L" STRIP



#### **10.3 OTHER JUNCTIONS**

Always install flashing and a ventilated strip to ensure ventilation when there is on the same wall:



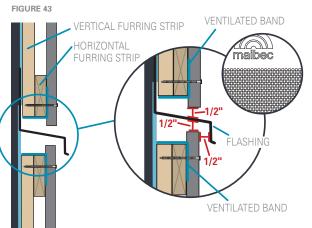


#### FIRE-BLOCKING BARRIER

The code's fire safety requirements may require a fire-blocking barrier, which can be created with flashing when the height of the wall exceeds 3 m (approx. 10') and double furring is used or furring strips exceed 25 mm (approx.1") in thickness.

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# **11. WINDOW & DOOR FINISHING DETAILS**

- The siding's installation must allow for continuous ventilation and adequate drainage above and below all openings. Maibec offers a full range of ventilated mouldings to ensure this.
- If you plan to install Maibec wood mouldings, you must properly set the window or door depth according to the thickness of the furring strips, the siding being installed and the moulding.

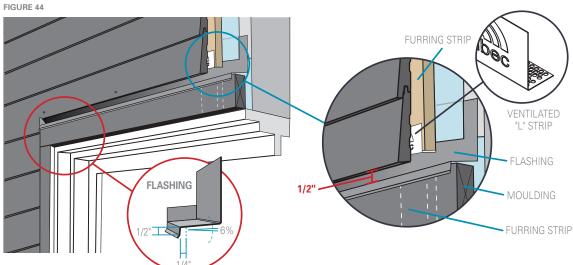
#### **11.1 ABOVE WINDOWS**

Flashings over openings must:

- Have a slope outward at an angle of at least 6%.
- Minimum 1/2" spacing between flashing and the siding to allow for adequate drainage and air flow.
- WITH WOOD FINISHING MOULDINGS

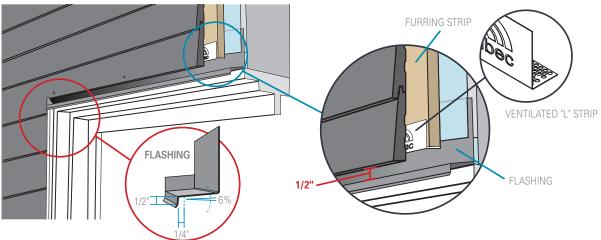
FIGURE 44

- The moulding must not extend too far past the window or door frame in areas where water can accumulate (header and sill). If the siding butts to the frame, the frame must be as deep as the thickness of the wall plus the thickness of the siding.
- Always install mouldings before installing the siding.
- Cover the building element below it vertically by at least 1/2".
- Projection of at least 1/4" beyond the outer face of the building element below it.



WITHOUT WOOD FINISHING MOULDINGS



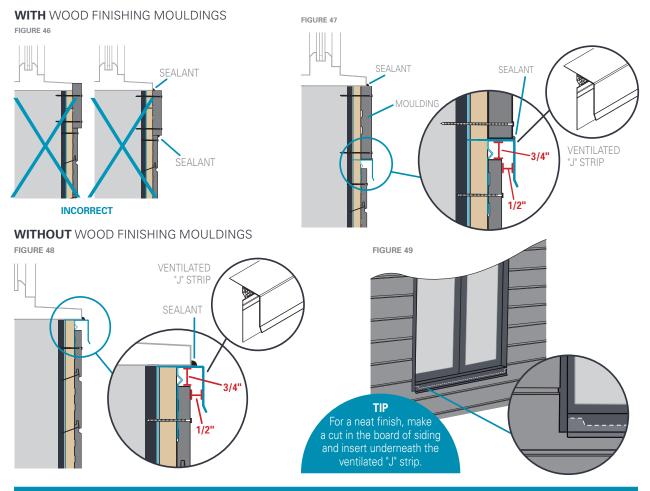


#### **11.2 BELOW WINDOWS**

All flat horizontal surfaces (such as window sills) are prone to water or snow accumulation. To avoid such accumulation, one of the following options is mandatory:

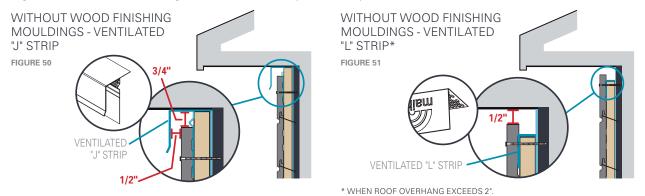
- flashing with a minimum 6% slope
- sealant [FIGURE 47]
- minimum 10% angle cut on the moulding

To minimize movements in the boards, ventilation at the bottom of windows is required when the window has a width of more than 4 ft and is located more than 4 ft from the first course.



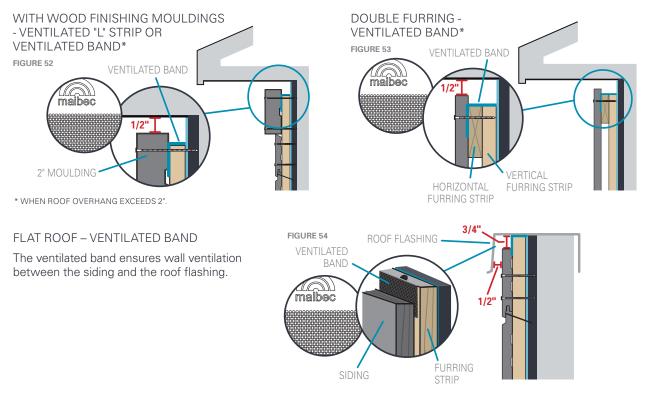
# 12. PREPARING THE TOP OF WALLS

Several ventilated mouldings can be used to allow air to circulate and for heat to escape at the top of the wall, regardless of whether the siding is installed horizontally or vertically.





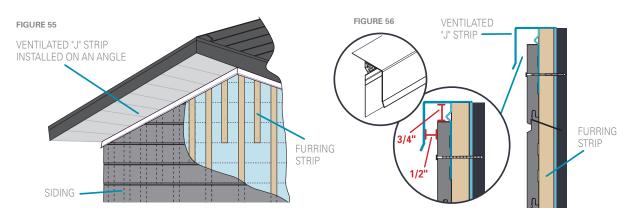
#### 12. Top of walls finishing details (cont'd)



## 13. FINISHING GABLES AND BOTTOM SIDES OF DORMERS

The ventilated "J" strip allows for proper ventilation of the wall.

Extra pieces of furring strips must be added at the top of the wall. These pieces must be long enough to allow three full rows of siding to be properly nailed in place without blocking airflow. Do not add furring diagonally as this will block airflow.



# 14. MAINTENANCE

As with all exterior products, siding is prone to organic or inorganic substances accumulating on its surface over time. This is a natural phenomena and is to be expected. To ensure the performance and longevity of your siding, check its appearance on a regular basis.

See the maintenance guide at maibec.com/en/support/maintenance program for more details.