

EXTERIOR DECK SYSTEMS DESIGN GUIDE



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Noble Company is an Authorized Provider of Continuing Education for AIA and IDCEC. We conduct seminars for design and construction professionals. These seminars provide information about cost-effective solutions to problems created by today’s fast-paced, cost-driven construction techniques.

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NOBLE COMPANY IS A MEMBER OF THE FOLLOWING ORGANIZATIONS & ASSOCIATIONS:



INSTRUCTIONAL VIDEOS

Noble Company offers free online instructional videos. The videos demonstrate installation techniques of full mortar bed and thin-set methods for showers, as well as an overview of the FreeStyle Linear Drain™ system.

These helpful videos can be found online at noblecompany.com or www.YouTube.com/user/NobleCompany

Considerations Before You Begin...

ALWAYS REFER TO AND FOLLOW ALL OFFICIAL AND CURRENT MANUFACTURERS' INSTRUCTIONS

• Time Constraints

- Manage time constraints and consider what can be completed within environmental conditions.
- Ensure all material is on-hand, available, and protected from the elements.

• Validate Deck Substrate

- Verify expansion joints to EJ-171 and deflection. Reference current TCNA Handbook.

• Wood Decks

- Wood substrate to be exterior grade plywood – Exposure 1 or C-C plugged, etc.
- Verify deflection criteria (not to exceed 1/360 or 1/720 for natural stone).
 - This is determined by ANSI-A108.01 Subsurfaces and Preparations by other trades – Section 2.3 Deflection.

• Concrete (Mortar Bed) Decks

Verify Concrete Surface and Control Joints

Concrete surface and control joints must adhere to national codes and industry guidelines.

• When using ProBase EX, substrate must be flat and level.

• When using Noble Deck on a mortar bed installation, substrate must be flat and sloped at 1/4" per foot away from structure.

• Allowable substrate variation:

ANSI 2.6.2.2 - Allowable Substrate Variation

- Tiles with all edges less than 15" must have a maximum variation of 1/4" in 10' and no more than 1/16" variation in 1'.
- Tiles with at least one edge greater than 15" must have a maximum variation of 1/8" in 10' and no more than 1/16" variation in 2'.

• Weight Considerations

- Ensure the structure can support the additional weight of the deck to be installed, including live and dead load.
 - Mud-Bed weight = 12 pounds per square foot at 1" thick.
 - ProBase EX weight = less than 1 pound per square foot at 1" thick (95% less than traditional mud bed).
 - Additional Weight of Tile and Thin-set = 5 pounds per square foot.
 - "Live / Dead Weight" (Additional weight of furniture and people). Consult an engineer or design professional when placing a hot tub or other heavy item on the finished tile assembly.

• Protecting the Installation

- Determine method of shading and protecting the installation from the elements (sun light, direct UV exposure, rain, etc.) during the installation process and before tile is installed over the Noble Deck.
 - ProBase EX, Noble Deck, NobleBond EXT, and polymer modified thin-set should be protected from direct exposure to the elements.
 - Avoid direct sun / excessive temperature (hot or cold).

• Temperature

- Understand the freeze-thaw conditions of where the deck will be located and impact of temperature during the installation process as well as on the completed system.
- Check instructions and technical data sheets for manufacturers' required working temperature.

2 • ProBase EX panels should be spaced apart (up to 1/8") to allow for expansion and contraction of the panels.

Required Tools

Standard Tile Installation Tools



Level

To ensure substrate is flat and level prior to installation of ProBase EX.



Tape Measure

For measuring.



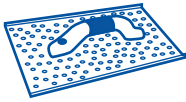
Utility Knife

For cutting and trimming ProBase EX panels to fit into given size locations. Also used to cut Noble Deck Sheet Membrane.



Margin Trowel

For tooling in NobleSealant 250 at seams, installation accessories, and edges of material.



Sanding Rasp

Optional tool used to rough up foam base prior to embedding into bonding agent for enhanced grip.



Weather Protection

Light in color tarp, tenting, or other types of protection to keep installation area and all installation products out of the sun and elements. A thermal gun may also be used to monitor surface temperature. If surface temperature exceeds 170°, contact Noble Company.



Trowel

For applying bonding agents.



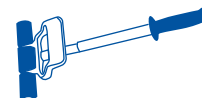
Caulk Gun

For applying NobleSealant 250.



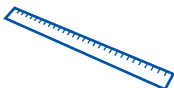
Plate Vibrator (optional)

Helps in embedding ProBase EX panels into bonding agent for full coverage.



Floor Roller

To help embed Noble Deck sheet membrane into bonding agent to ensure suitable coverage. (Minimum 75 pounds / Maximum 100 pounds)



Straight Edge

To help ensure rows and columns of ProBase EX panels are straight and square to each other.

Laying Out the Deck

Review deck plans and evaluate layout per the following:

Required Rise in Slope over given run ($\frac{1}{4}$ " per foot)

Calculate the amount of rise over the given distance of slope. Start with the thickness of the drainage system at the front edge of the deck and add in $\frac{1}{4}$ " per foot over the given span.

Example for 16' deep deck using Noble ProBase EX system:

1. thickness of backer board under ProBase EX = $\frac{1}{4}$ "
2. front edge thickness of ProBase EX = $\frac{1}{2}$ "
3. slope at $\frac{1}{4}$ " per foot over 16' = 4"
4. thickness of tile = $\frac{3}{8}$ "

Total height required below door threshold (based on example above) = $5\frac{1}{8}$ "

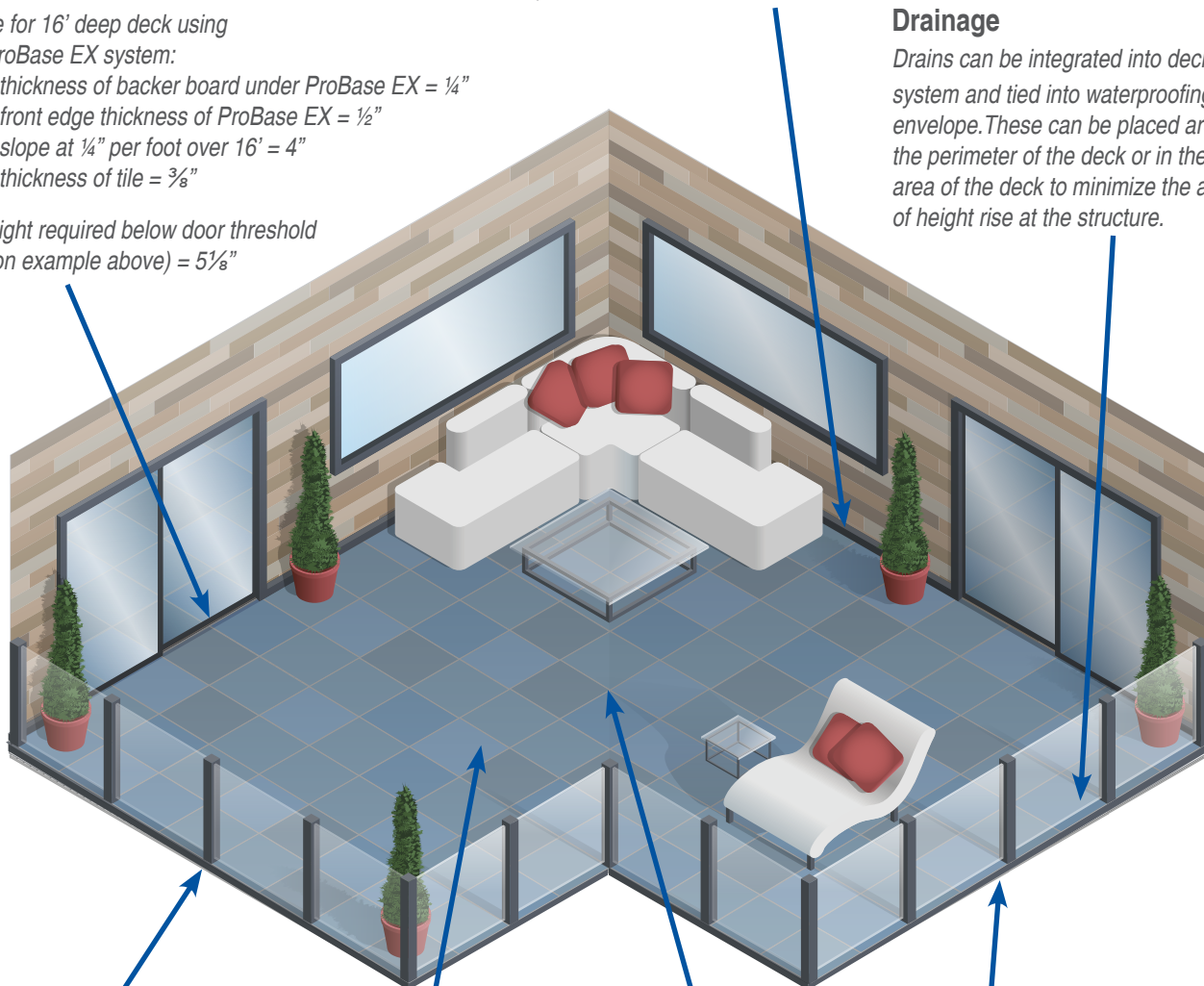
Flashing to House

Change of plane transitions from deck to house need to be flashed to the house (behind finished wall material or into reglet in brick wall).

NOTE: Noble Deck is not self-terminating, all ends and overlaps must be sealed with NobleSealant 250.

Drainage

Drains can be integrated into deck system and tied into waterproofing envelope. These can be placed around the perimeter of the deck or in the center area of the deck to minimize the amount of height rise at the structure.



Penetrations

Any penetrations in deck structure must be flashed and sealed.

Slope Direction

Determine the direction of slope necessary to move water away from the structure and to the edge of the deck or to a drain integrated into the deck system.

Drip Edge

If water is to drain off the edge of the deck, accommodations must be made to finish this edge (usually with a drip edge profile). See detail in later section.

Corners / Changes in Direction

Noble offers inside valley corners and outside ridge corners to accommodate changes in direction of the drainage when required.

Industry Standards

The TCNA Handbook covers exterior floor installations in Details F103 - F105. There are several key items in these details to consider, including:

Slope

Industry standard is (2%) or ¼" rise per 1' of run to accommodate suitable evacuation of water from a substrate



Waterproofness

ANSI A118.10 covers the ability of a material to provide a waterproof barrier to the substrate in a direct bond application.



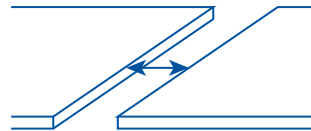
Cracks

ANSI A118.12 covers crack isolation membranes. Standard performance is for horizontal movement greater than ¼" but less than ⅜". High performance is for horizontal movement greater than ⅜".



Movement and Expansion Joints

TCNA EJ171 and ANSI A108.01, Section 3.7.2



Weight / Load

Ensure structure is able to support all the elements that will add weight to the deck. This includes exterior rated backer board, sloped substrate, and live load.



Thin-Set

ANSI A118.15 references premium exterior rated modified thin-set (or ISO C2S1).



Deflection

ANSI A108.01, Section 2.3

For framing, refer to ANSI 3.4.2.1; maximum spacing of 16" on center.

Substrate deflection with tile is not to exceed $\frac{L}{360}$

Substrate deflection with stone is not to exceed $\frac{L}{720}$

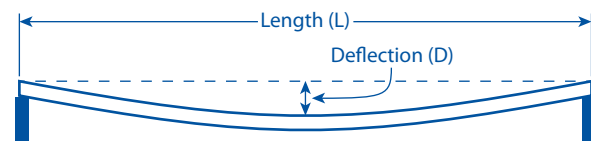
Calculating Deflection

Maximum allowable deflection (D) for joists is equal to L/360

For example, if L = 15' - 0" :

$$\text{Deflection (D)} = \frac{L}{360} = \frac{15' \times 12''}{360} = \frac{180''}{360} = 0.5'' = \frac{1}{2}''$$

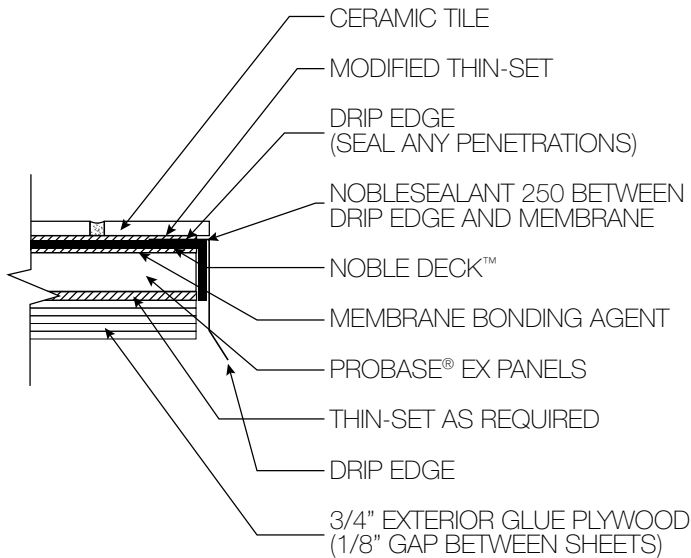
So, for a 15' length span, the max allowable deflection is ½".



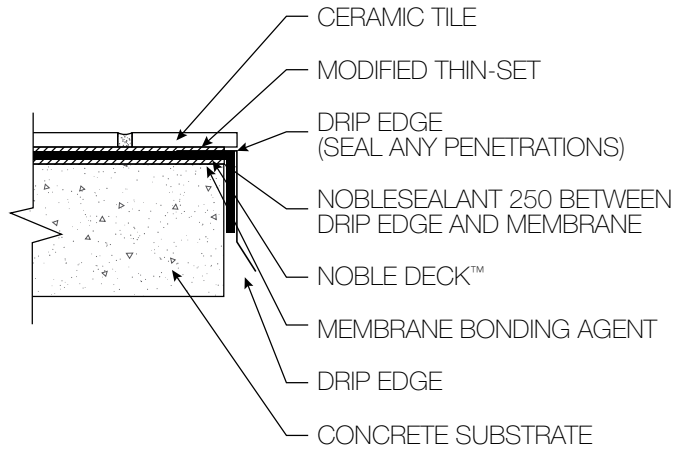
Treating Penetrations / Edge Details

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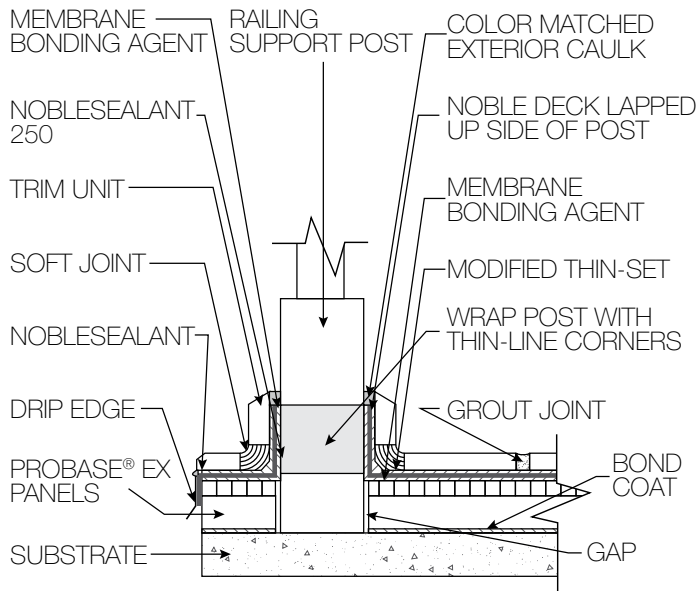
PLYWOOD WITH BACKER BOARD



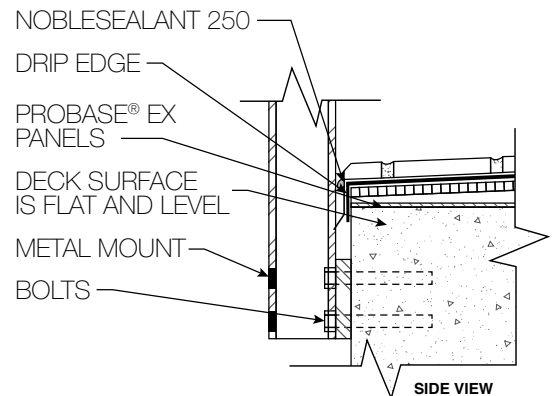
CONCRETE SUBSTRATE



POST AND EDGE



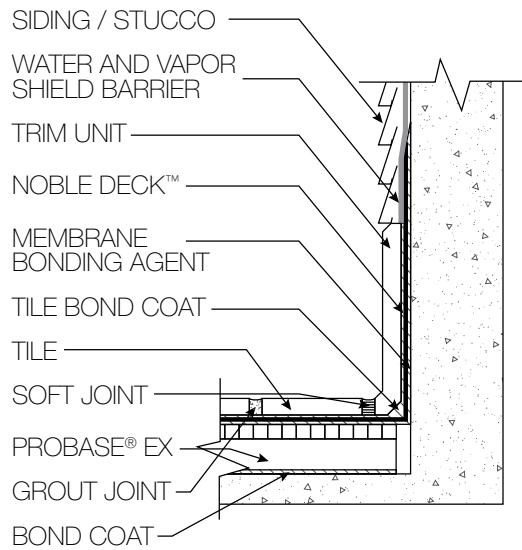
HAND RAIL MOUNTING



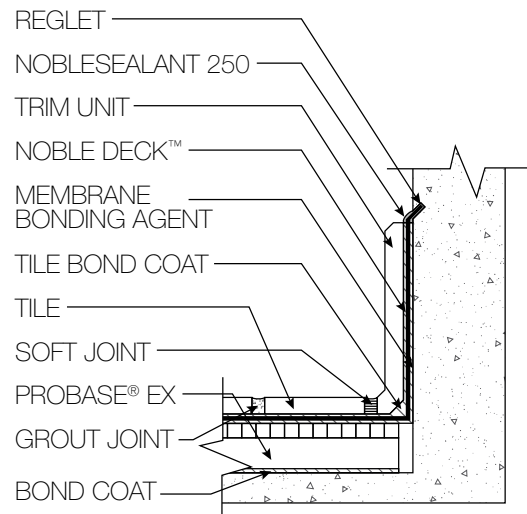
Treating Penetrations / Edge Details

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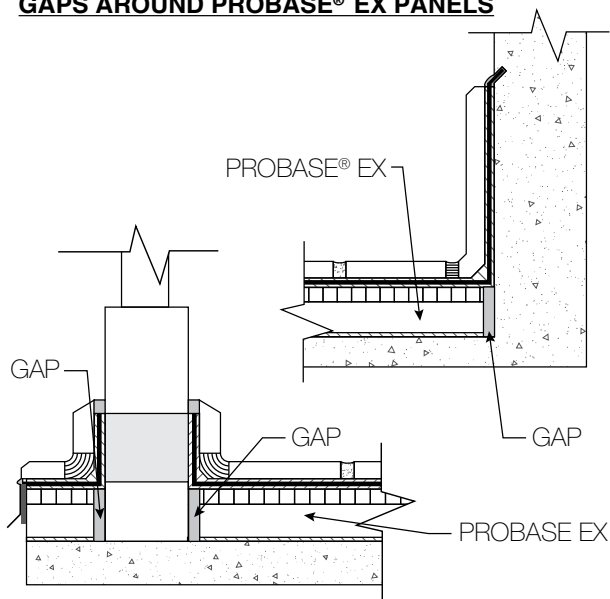
EXTERIOR WALL: BEHIND SIDING



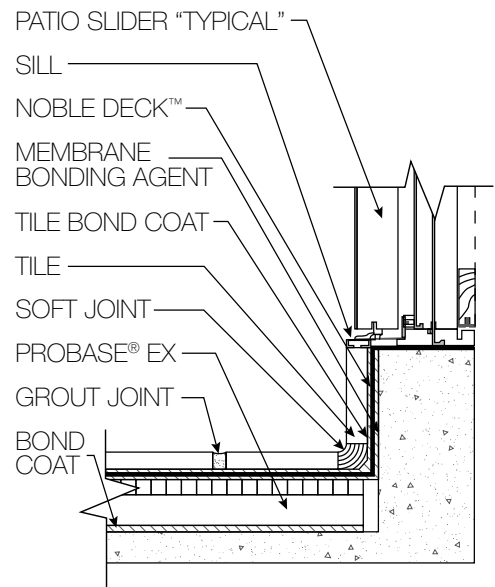
EXTERIOR WALL



GAPS AROUND PROBASE® EX PANELS



SLIDING DOOR



GAPS

Ensure you maintain a 1/4" gap around penetrations and changes of planes to allow for expansion and contraction.

Movement / Expansion

EJ171 is a reference guide for movement joints and expansion and can be found in the TCNA Handbook.

Exterior Joint Width for Tile

Width shall be a minimum $\frac{3}{8}$ " for joints 8' on center and minimum $\frac{1}{2}$ " for joints 12' on center. Minimum widths must be increased $\frac{1}{16}$ " for each 15° F tile surface temperature change greater than 100° F between summer high and winter low. For example, for a 115° F temperature change, add $\frac{1}{16}$ " to the minimum joint width; for a 130° F change, add $\frac{1}{8}$ ".

Movement / Expansion, and Control Joints

Movement Joints - Also known as "Expansion Joints"; a joint in the ceramic tile, extending through the setting materials which is intended to minimize stresses in the bond layer due to differential movement of ceramic tile relative to the substrate, caused by expansion and contraction.

Control Joints - A joint cut or tooled into the concrete surface to control the location of cracks. A control joint in the tile to be located above the control joint in the substrate or above any construction cold joints. Saw cuts to be applied within the first twelve hours of concrete placement.

Location and Frequency of Exterior Joints for Tile

8' to 12' in each direction. More frequent joint placement may be required depending on materials and environmental conditions.

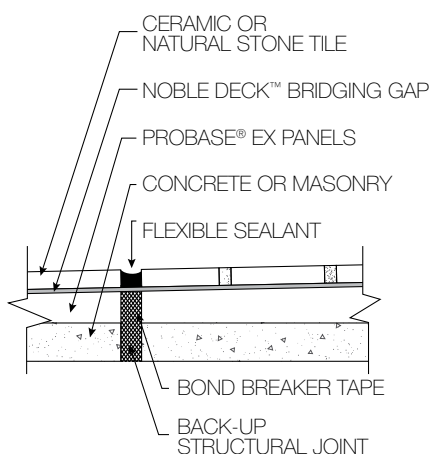
Exterior change of plane movement joints are required at all inside and outside corners.

True Expansion Joints

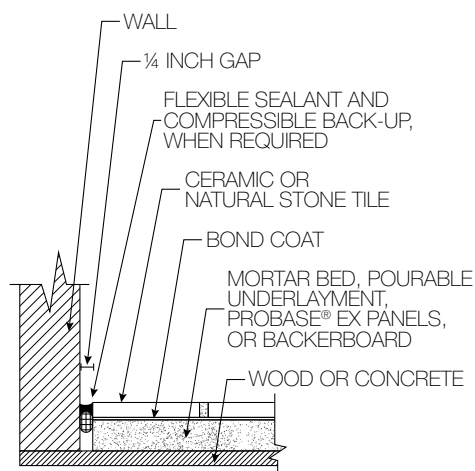
When dealing with True Expansion Joints or dissimilar substrates that may experience vertical displacement, it may be essential to cut the ProBase EX and tile to appropriately accommodate the expansion joint. For detailed guidance on this process, please refer to the current TCNA handbook EJ171. Adhering to these specifications will help ensure a successful installation.

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ISOLATION / EXPANSION JOINT

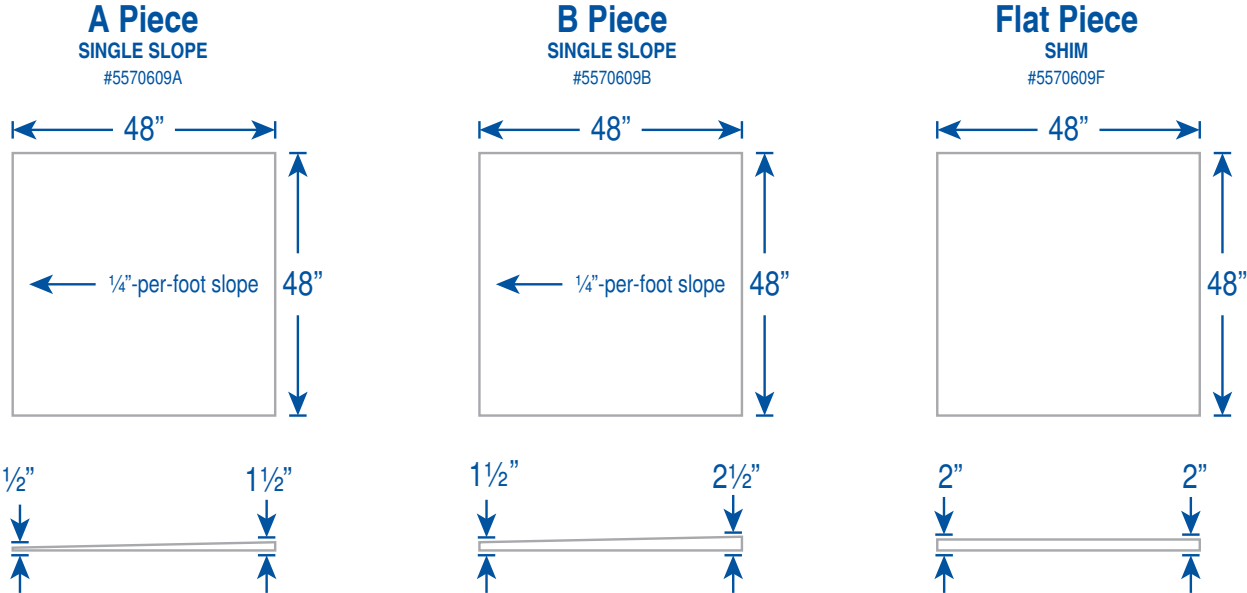


PERIMETER JOINT

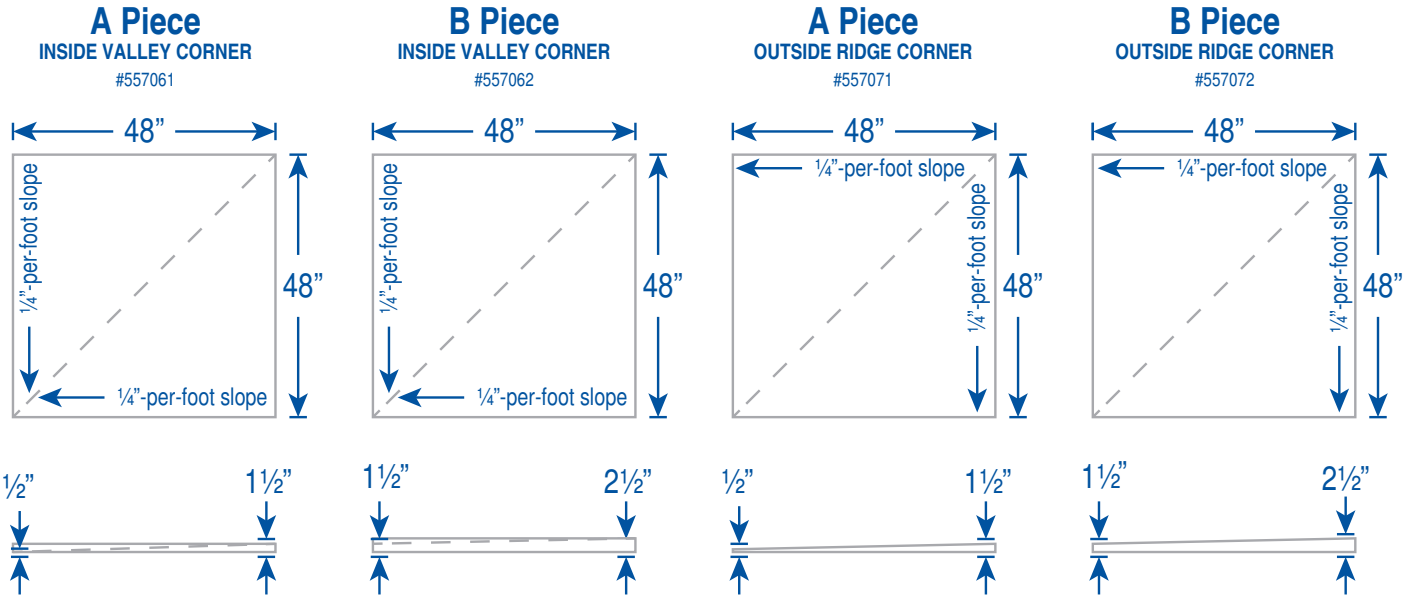


Noble Company's ProBase® EX

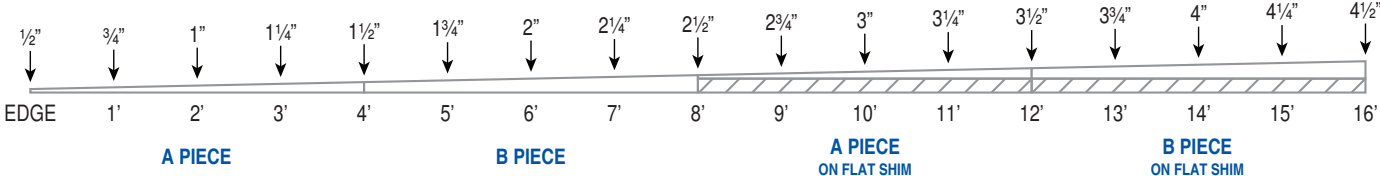
ProBase EX is a modular panel system which uses standard components to expand both in depth and in width.



ProBase EX Inside Valley and Outside Ridge Corners can handle the transition of a deck changing direction while ensuring the flow of water continues in an uninterrupted manner.

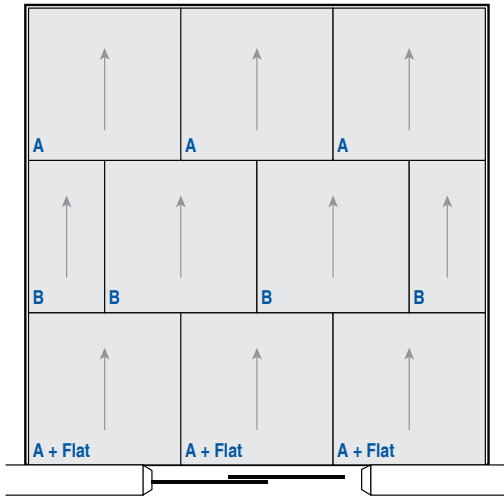


PROBASE EX PANELS HEIGHT REFERENCE CHART

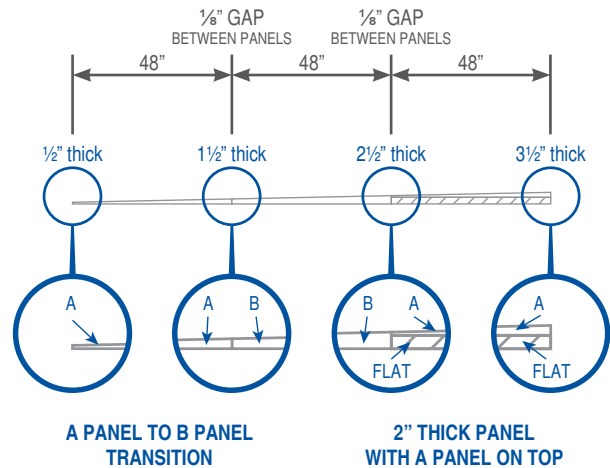


Noble Company's ProBase® EX

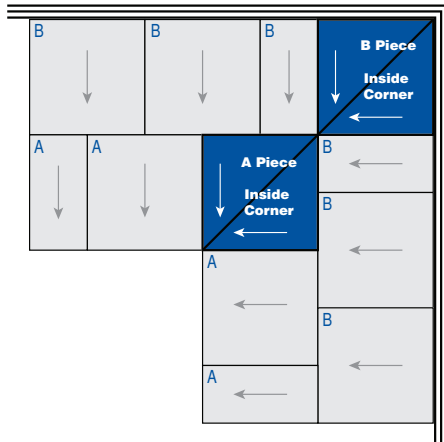
12' x 12' EXAMPLE DECK LAYOUT



SIDE VIEW



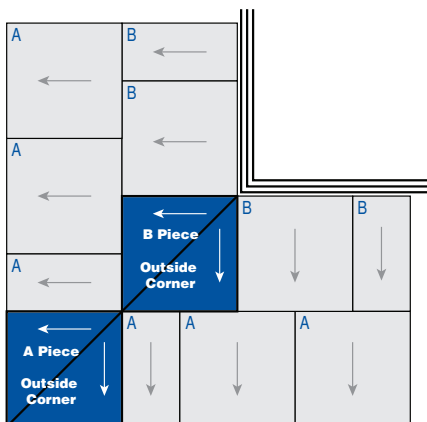
INSIDE (VALLEY) CORNERS



Inside Valley Corners are used to transition the continuous slope in a valley fashion to continue the evacuation of water to the drain or edge of the deck. The A Panel corner continues the plane of standard A Panels while the B Panel corner continues the plane of B Panels. These can also be set on top of the 2" Flat Shim to match the depth of any deck.

The panels can also be trimmed if necessary to align with construction details.

OUTSIDE (RIDGE) CORNERS

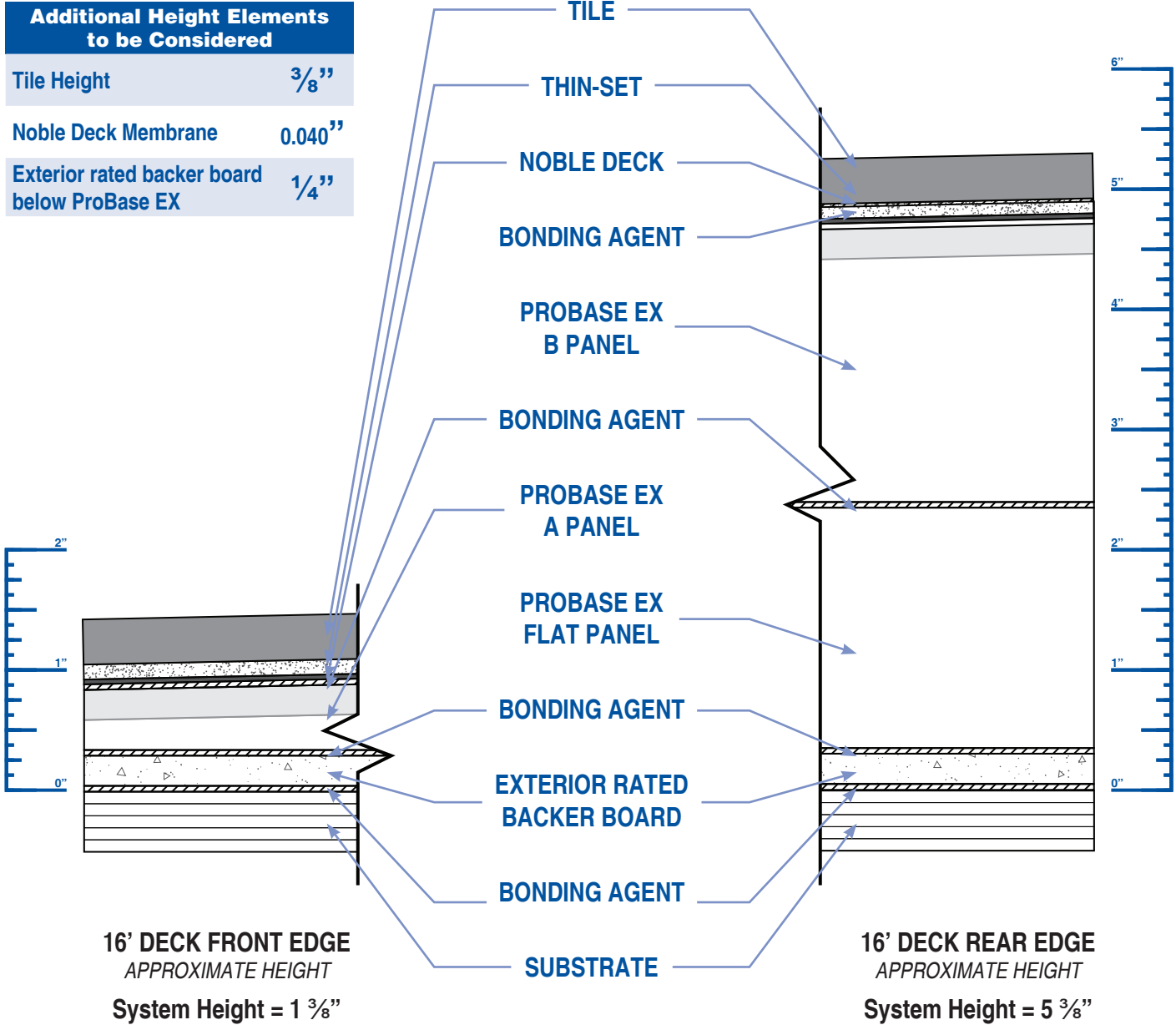


Outside Ridge Corners are used to transition the continuous slope in a ridge fashion to continue the evacuation of water to the drain or edge of the deck. The A Panel corner continues the plane of standard A Panels while the B Panel corner continues the plane of B Panels. These can also be set on top of the 2" Flat Shim to match the depth of any deck.

The panels can also be trimmed if necessary to align with construction details.

Noble Company's ProBase® EX

Additional Height Elements to be Considered	
Tile Height	3/8"
Noble Deck Membrane	0.040"
Exterior rated backer board below ProBase EX	1/4"

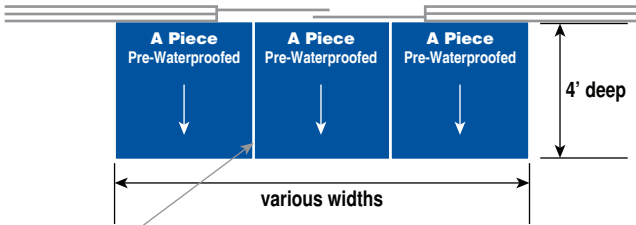


Custom Configurations - PRE-WATERPROOFED

ProBase EX's composite construction allows for ease of adapting to many standard and custom configurations. The base can easily be cut by scoring and snapping to fit a given size or to clear a post or other penetration.

Depending on the job configuration, custom panels may also be available to "fit" a given installation.

If you have a small patio deck that is one "layer" deep, the base can be pre-waterproofed to provide a faster installation time.



Overlap seam-seal the gaps between panels with cap strip to complete waterproofing

ProBase EX Installation Process

NOTE:

Refer to and follow current ProBase EX installation instructions.

1. Lay Out Deck

Confirm deck layout and dimensions. Ensure deck construction meets industry and construction standards.

The TCNA Handbook covers Exterior Floor Installations in Section F104, Section 6E, and ANSI A108 standards.

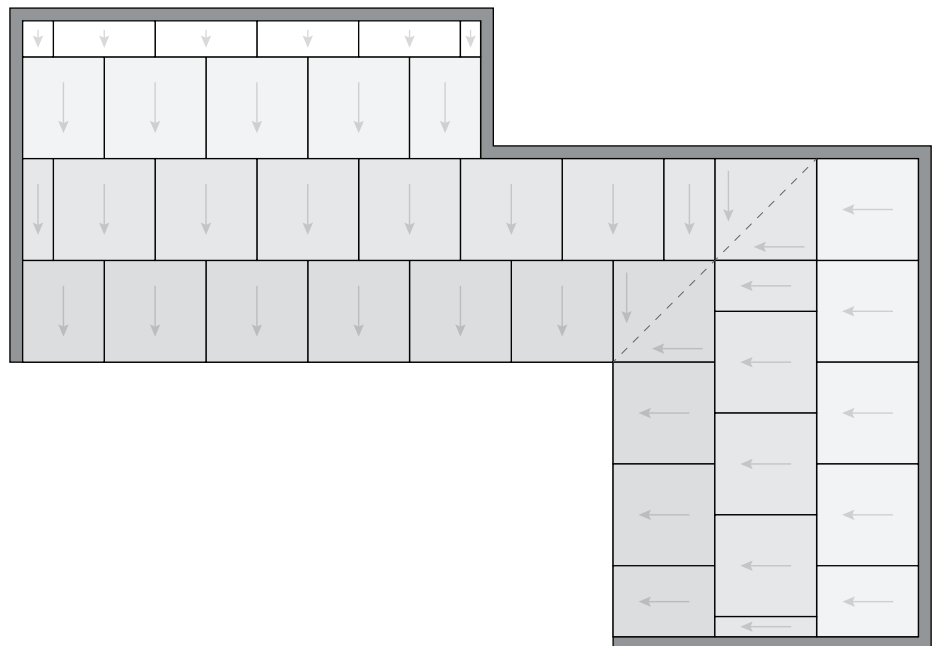
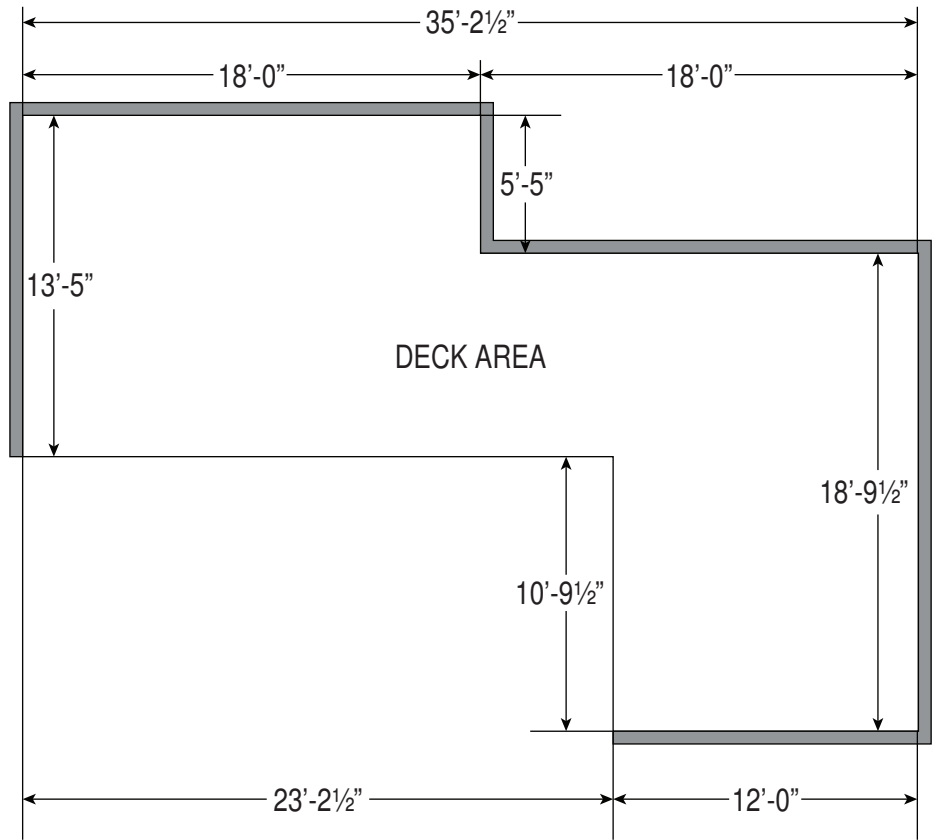
Refer to and follow all current ProBase EX installation instructions.

2. Dry Fit Panels

Lay out ProBase EX panels from determined starting point for configuration. Mark where panels need to be cut to finish a row or column. In addition, determine where panels need to be cut for clearance at any penetrations.

3. Bond Panels to Substrate

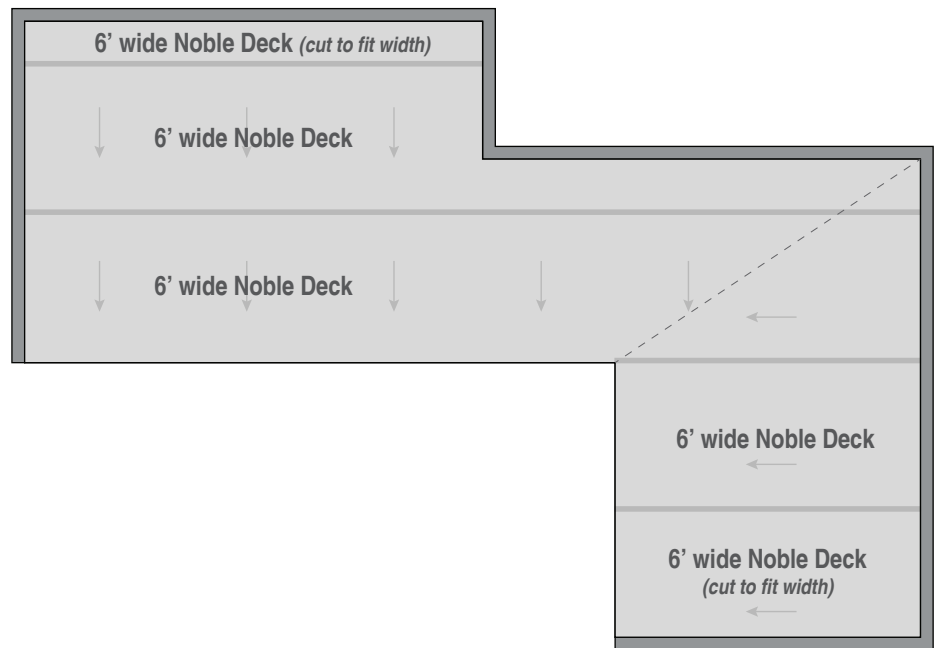
Before bonding ProBase EX panels, Noble Company recommends covering the entire deck surface with exterior rated backer board (min 1/4" thick). When complete, begin at determined starting point and apply bonding agent to a "workable" surface area so the material does not skin over before you are able to place panels. In addition, care should be taken to cover/protect the area you are installing in to prevent direct exposure to the elements. Once the bonding agent has reached desired tackiness, place panel down and walk it in, ensuring 95% surface coverage. Continue this process until the surface area of the deck is complete. A plate vibrator can be used to fully embed the ProBase EX panels into the bonding agent.



ProBase EX Installation Process

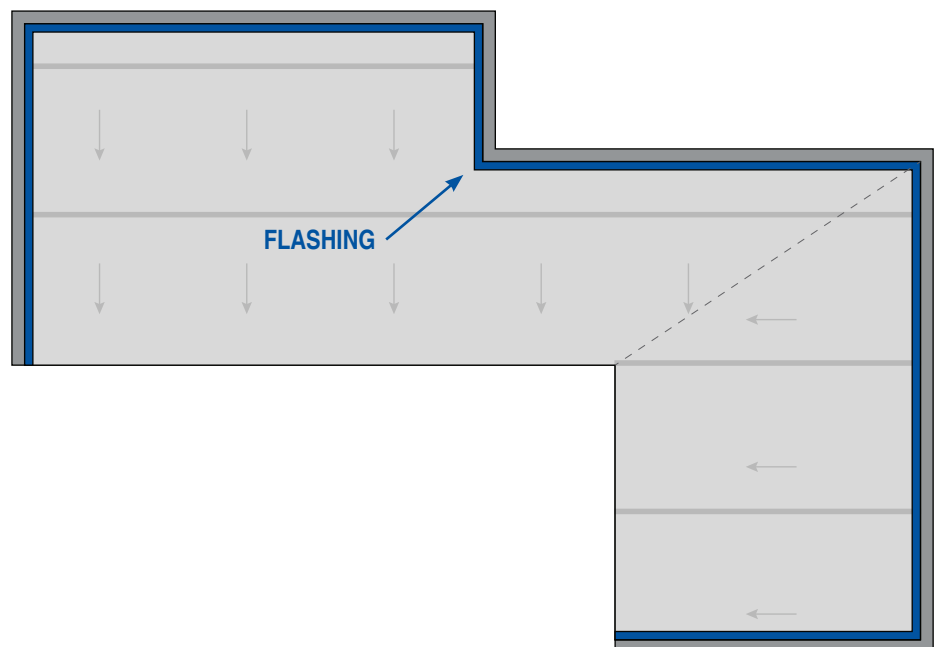
4. Install Noble Deck Membrane

Install Noble Deck sheet membrane per instructions, starting at the low side and working towards the structure – maintaining a shingle overlap of 2". Noble Deck is to be bonded to the ProBase EX system using NobleBond EXT or an ANSI A118.15 approved thin-set mortar, and the seams are to be sealed using NobleSealant 250.



5. Flash Perimeter and Penetrations

Once membrane is in place, bonded, and covering the full deck area, use the Noble Deck Flashing (8"x100' roll) to flash from the structure to the deck (with a 2" overlap onto the deck membrane). Flashing should be bonded with NobleSealant 250. Note that the Noble Deck Membrane can be cut such that it is used to flash as well. Depending on how much space between any door thresholds to the deck, you may want to consider waterproofing for at least 2' inside the structure.



Installation Process with Edge Drains

NOTE:

Refer to and follow current ProBase EX installation instructions.

1. Lay Out Deck

Confirm deck layout and dimensions. Ensure deck construction meets industry and construction standards.

The TCNA Handbook covers Exterior Floor Installations in Section F104, Section 6E, and ANSI A108 standards.

2a. Install Drains

FreeStyle Linear Drains can be installed in two orientations.

1. Set on top of the exterior rated backer board surface. The height in this method is 1 1/4" and the ProBase EX A Panel will need to be field cut to match up to this height.

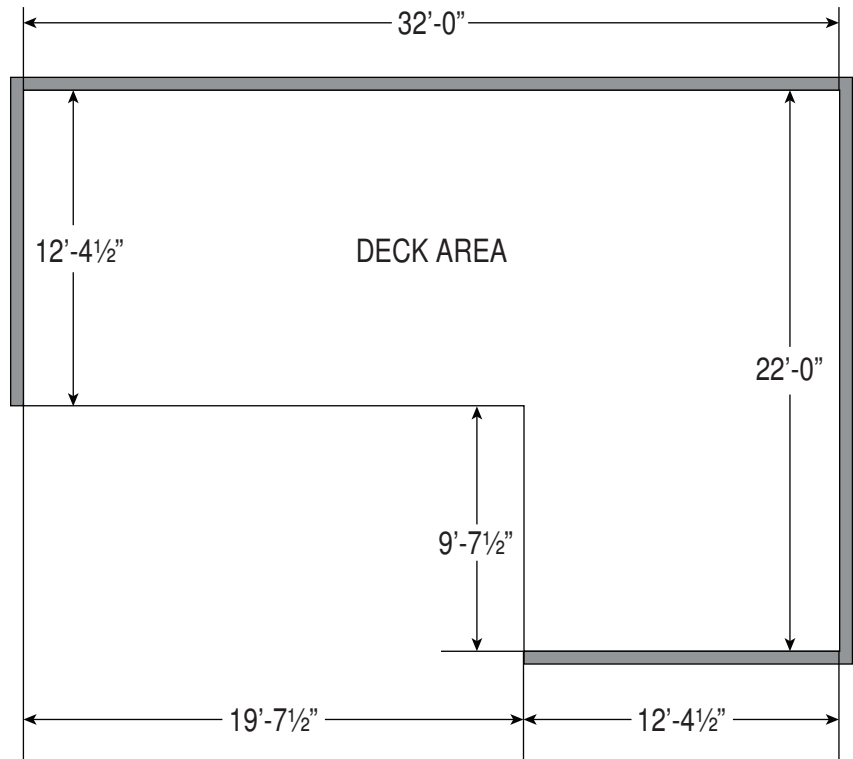
2. Cut substrate off the top of the deck or depress concrete slab 3/8". The drain will set either on the joists or on the cut substrate. There should be 3/8" extending above that surface. If the substrate is cut for the drain, it is important to add blocking to the structure below to ensure the deck still conforms to deflection standards. The ProBase EX A Panel will now meet up to the 3/8" height of drain. If panel does not match drain height, the drain may need to be shimmed.

NOTE: You can avoid cutting the ProBase EX panel at leading edge if you add 1/2" exterior rated backer board next to the drain, so that the resultant 1/2" edge of Panel A will match the 1/2" height of drain above exterior rated backer board. See detail on page 22.

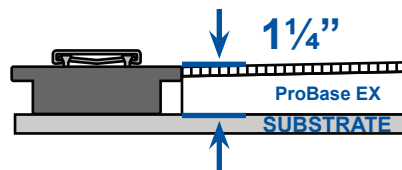
Follow current FreeStyle Linear Drain installation instructions.

2b. Dry Fit Panels and Drains

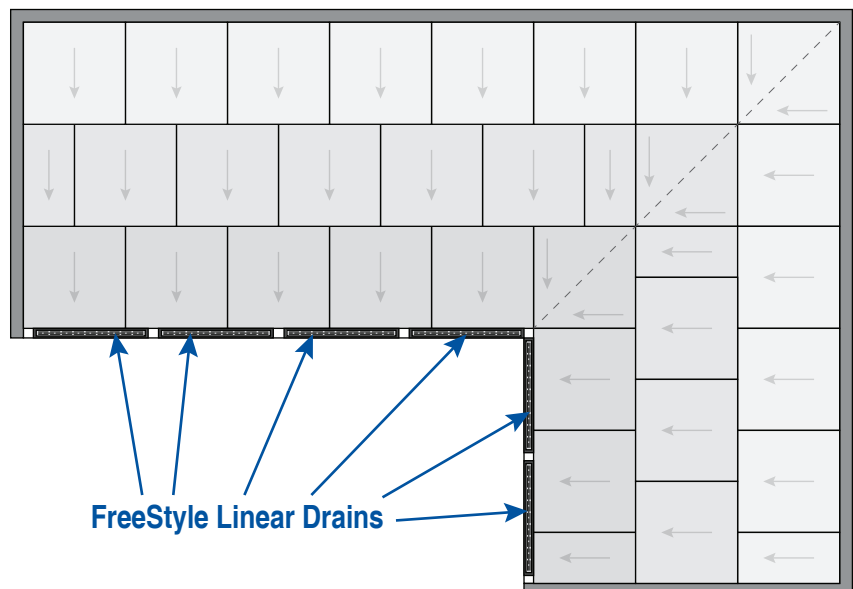
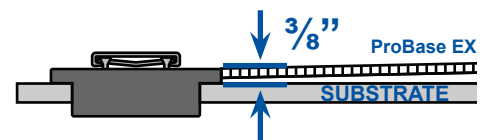
Lay out the Drains per established locations and then "fit" the ProBase EX panels from determined starting point for configuration. Mark where panels need to be cut to finish a row or column. In addition, determine where panels need to be cut for clearance at any penetrations. Note that Noble Company recommends staggering each row of panels, similar to underlayment on a deck.



FSLD ON SUBSTRATE



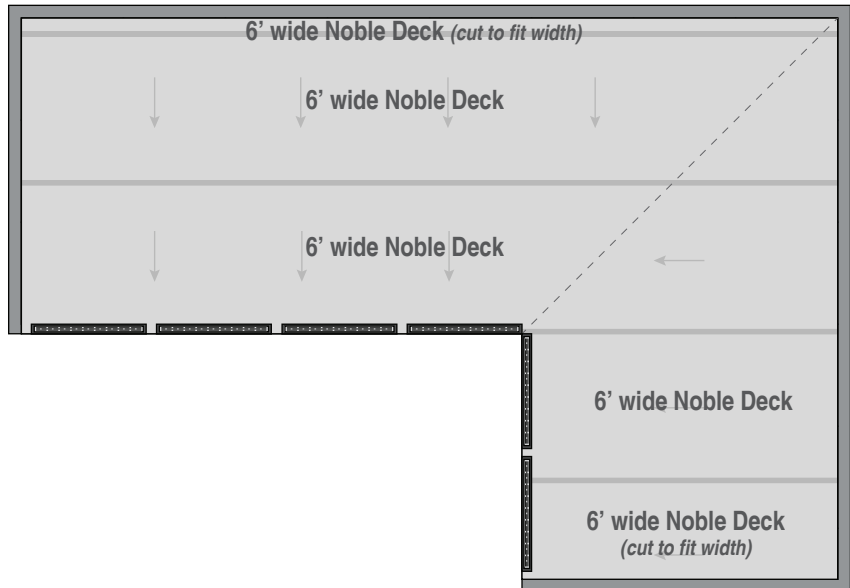
FSLD ON FLANGES



Installation Process with Edge Drains

3. Bond Panels to Substrate

Before bonding ProBase EX panels, Noble Company recommends covering the entire deck surface with exterior rated backer board (min 1/4" thick). When complete, begin at determined starting point and apply bonding agent to a "workable" surface area so the material does not skin over before you are able to place panels. In addition, care should be taken to cover/protect the area you are installing in to prevent direct exposure to the elements. Once the bonding agent has reached desired tackiness, place panel down and walk it in, ensuring 95% surface coverage. Continue this process until the surface area of the deck is complete. A plate vibrator can be used to fully embed the ProBase EX panels into the bonding agent.

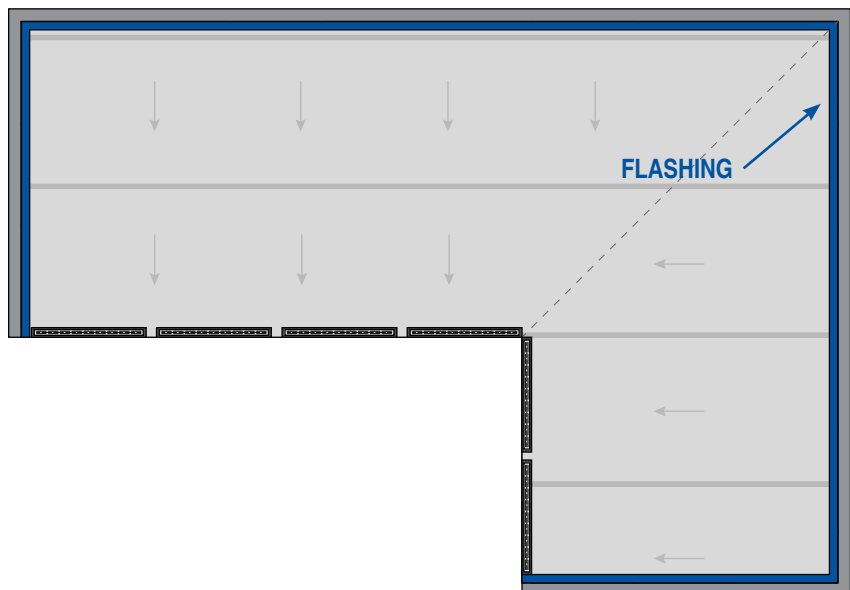


4. Install Noble Deck Membrane

Install Noble Deck sheet membrane per current written instructions, starting at the low side and working towards the structure – maintaining a shingle overlap of 2".

Noble Deck is to be bonded to the ProBase EX system using NobleBond EXT or an ANSI A118.15 approved thin-set mortar, and the seams are to be sealed using NobleSealant 250.

NOTE: When waterproofing over the drains, ensure that any overlap occurs between drains and not in the clamping ring area.



5. Flash Perimeter and Penetrations

Once membrane is in place, bonded, and covering the full deck area, use the Noble Deck Flashing (8"x100' roll) to flash from the structure to the deck (with a 2" overlap onto the deck membrane). Flashing should be bonded with NobleSealant 250. Note that the Noble Deck Membrane can be cut such that it is used to flash as well. Depending on how much space between any door thresholds to the deck, you may want to consider waterproofing for at least 2' inside the structure.

Installation Process with Center Drains

Envelope-Cut Tile Installation

NOTE:

Refer to and follow current ProBase EX installation instructions.

1. Lay Out Deck

Confirm deck layout and dimensions. Ensure deck construction meets industry and construction standards and guidelines.

(TCNA Handbook Detail F104 and ANSI A108 standards).

2a. Install Drains

FreeStyle Linear Drains can be installed in two orientations.

1. Set on top of the exterior rated backer board surface. The height in this method is 1 1/4" and the ProBase EX A Panel will need to be field cut to match up to this height.

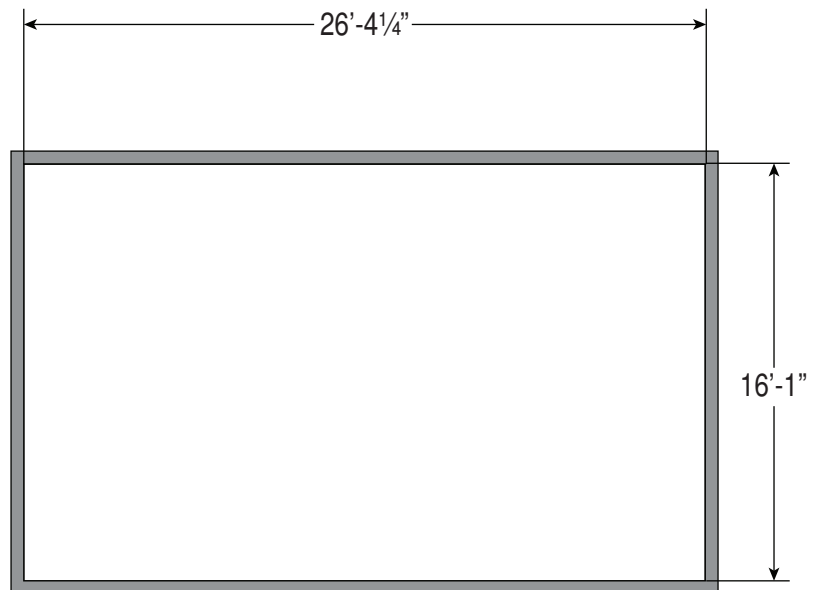
2. Cut substrate off the top of the deck or depress concrete slab 7/8". The drain will set either on the joists or on the cut substrate. There should be 3/8" extending above that surface. If the substrate is cut for the drain, it is important to add blocking to the structure below to ensure the deck still conforms to deflection standards. The ProBase EX A Panel will now meet up to the 3/8" height of drain. If panel does not match drain height, the drain may need to be shimmed.

NOTE: You can avoid cutting the ProBase EX panel at leading edge if you add 1/2" backer board next to the drain, so that the 1/2" edge of Panel A will match the 1/2" height of drain above backer board. See detail on page 22.

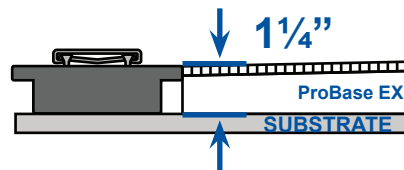
Follow current written FreeStyle Linear Drain installation instructions.

2b. Dry Fit Panels and Drains

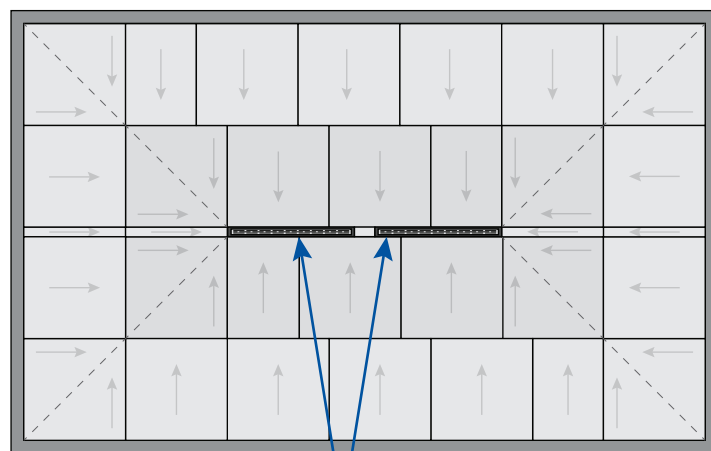
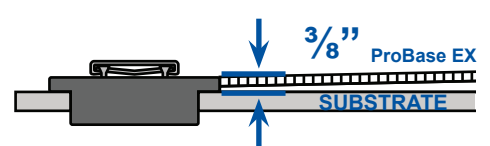
Lay out the drains per established locations and then "fit" the ProBase EX panels from determined starting point for configuration. Mark where panels need to be cut to finish a row or column. In addition, determine where panels need to be cut for clearance at any penetrations. Note that Noble Company recommends staggering each row of panels, similar to underlayment on a deck.



FSLD ON SUBSTRATE



FSLD ON FLANGES



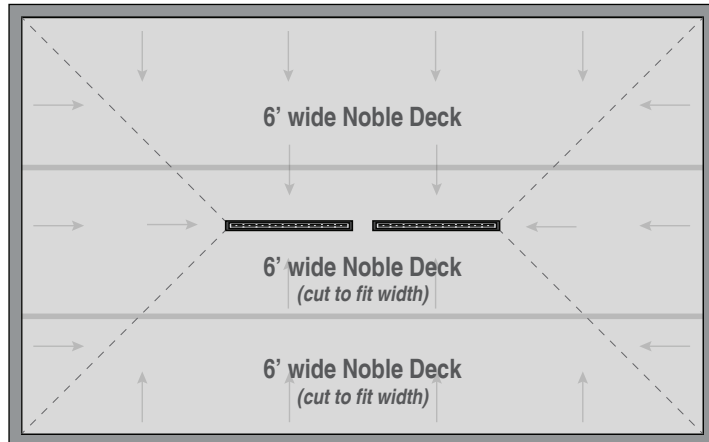
FreeStyle Linear Drains

Installation Process with Center Drains

Envelope-Cut Tile Installation

3. Bond Panels to Substrate

Before bonding ProBase EX panels, Noble Company recommends covering the entire deck surface with exterior rated backer board (min 1/4" thick). When complete, begin at determined starting point and apply bonding agent to a "workable" surface area so the material does not skin over before you are able to place panels. In addition, care should be taken to cover/protect the area you are installing in to prevent direct exposure to the elements. Once the bonding agent has reached desired tackiness, place panel down and walk it in, ensuring 95% surface coverage. Continue this process until the surface area of the deck is complete. A plate vibrator can be used to fully embed the ProBase EX panels into the bonding agent.



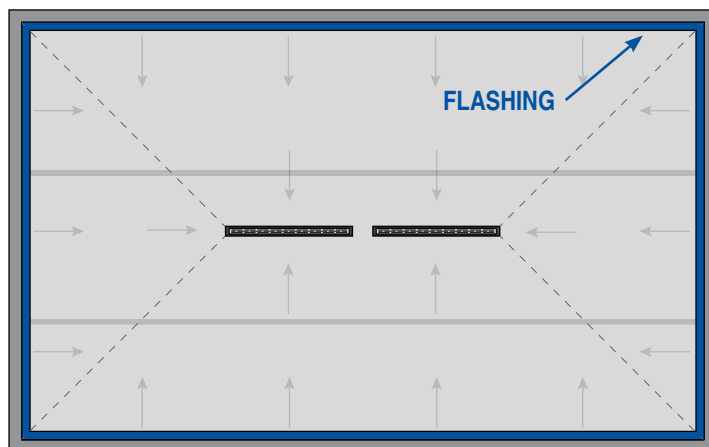
4. Install Noble Deck Membrane

Install Noble Deck sheet membrane per instructions, starting at the low side and working towards the structure – maintaining a shingle overlap of 2". Noble Deck is to be bonded to the ProBase EX system using NobleBond EXT or an ANSI A118.15 approved thin-set mortar, and the seams are to be sealed using NobleSealant 250.

NOTE: When waterproofing over the drains, ensure that any overlap occurs between drains and not in the clamping ring area.

5. Flash Perimeter and Penetrations

Once membrane is in place, bonded and covering the full deck area, use the Noble Deck Flashing (8"×100' roll) to flash from the structure to the deck (with a 2" overlap onto the deck membrane). Flashing should be bonded with NobleSealant 250. Note that the Noble Deck Membrane can be cut such that it is used to flash as well. Depending on how much space between any door thresholds to the deck, you may want to consider waterproofing for at least 2' inside the structure.



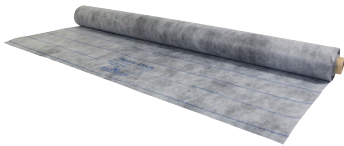
Noble Deck™



Noble Deck™

EXTERIOR WATERPROOFING & CRACK ISOLATION

¹TCNA
Exposure
Classification:



Decks
Plazas
Balconies
Walkways
Pool Decks

FEATURES & BENEFITS

The most effective sheet membrane for thin-bed waterproofing and crack isolation of exterior tile installations. For new construction and renovation of concrete decks, plazas, balconies, walkways, etc.

- High performing crack isolation membrane: Bridges more than 1/8" movement
- No need for additional waterproofing
- Sheet membrane: Ensures uniform quality, thickness, and minimizes variables in overall workmanship
- More than 20 years of proven performance
- Suitable over some plywood decks that are covered with backer board or a reinforced mortar bed
- No curing – install tile immediately
- For best results install with NobleBond EXT as bonding agent
- Made from Chlorinated Polyethylene (CPE)
- 10-YEAR PRODUCT WARRANTY

DIMENSIONS

Nominal Thickness: 0.040" (1.0mm)
Roll Sizes: 6' × 50' = 300 sq ft

LISTINGS & APPROVALS



- Meets ANSI A118.10 Thin-Bed Waterproofing
- ASTM C627 (Robinson Test) "Extra Heavy"
- ANSI A118.12 (Jig Test) "High Performance"

TEST DATA

PROPERTY	TEST METHOD	NOBLE DECK
Service Requirements	ASTM C627 (Robinson Test)	"Extra Heavy" (cycles 1-14)
Breaking Strength	ANSI A118.10	passed
Dimensional Stability	ANSI A118.10	passed
Shear Strength Water Immersion (7 day)	ANSI A118.10	passed
Fungus & Microorganism Resistance	ANSI A118.10	no growth
Waterproofness	ANSI A118.10	no moisture
Crack Isolation Performance	ANSI A118.12 (Jig Test)	"High Performance" (>1/8")

Installation Accessories



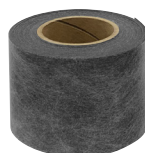
Noble Deck™

EXTERIOR WATERPROOFING & CRACK ISOLATION



Noble Deck Flashing

The 8"x100' flashing is used to flash from the Noble Deck Waterproofing substrate to the wall of the house to create a pan envelope to ensure proper drainage of water away from the house.



Noble Deck Cap Strip

The 4"x100' cap strip is an alternate method to complete waterproofing when two edges of Noble Deck butt up to each other.

FEATURES & BENEFITS

The most effective sheet membrane for thin-bed waterproofing and crack isolation of exterior tile installations. For new construction and renovation of concrete decks, plazas, balconies, walkways, etc.

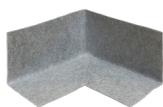
- High performing crack isolation membrane: Bridges more than 1/8" movement
- Sheet membrane: Ensures uniform quality, thickness, and minimizes variables in overall workmanship
- Suitable over some plywood decks that are covered with backer board or a reinforced mortar bed
- No curing – install tile immediately
- For best results install with NobleBond EXT as bonding agent
- Made from Chlorinated Polyethylene (CPE)



Thin-Line™

INSTALLATION ACCESSORIES

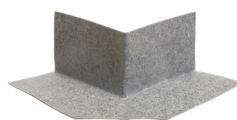
Thin-Line Inside Corner ***PREFORMED SHOWER CORNERS***



SIZE

2 1/8" high × 4 3/4" deep × 4 3/4" wide
Nominal thickness: 0.024"

Thin-Line Outside Corner ***PREFORMED SHOWER CORNERS***



SIZE

2 3/8" high × 6 3/4" deep × 6 3/4" wide
Nominal thickness: 0.024"

FEATURES & BENEFITS

Thin-Line Installation Accessories are ultra-thin and protect against leaks at vulnerable areas, including dams, outside corners, and penetrations. Use with bondable membranes (NobleSeal® TS, NobleSeal® CIS, NobleSeal® SIS, Noble Deck™, AquaSeal™)

Installation Accessories



NobleBond EXT **SHEET MEMBRANE BONDING**



SIZES

1 gallon and 4 gallon pails
Coverage: approximately 75-90 sq. ft. / gallon

FEATURES & BENEFITS

Wet-set adhesive for bonding NobleSeal and Noble Deck sheet membranes in interior and exterior applications, including showers. NobleBond EXT is a high-strength, water resistant adhesive with a fast cure time making it ideal for horizontal and vertical surfaces. Contains antimicrobial protection which inhibits the growth of mildew and bacteria. Can be used over cured concrete, cementitious backer boards, plywood that has not been chemically treated, terrazzo substrates, and more. NobleBond EXT can also be used with radiant heating systems.

SHELF LIFE

Maximum shelf life of two years from date of manufacture on unopened package. Protect from freezing.



NobleSealant 250 *Low VOC* **WATERPROOFING SEALANT AND SEAMER**



FEATURES & BENEFITS

Thermosetting elastomeric hybrid polymer that is unaffected by water when cured. It is a low VOC product used for seaming and sealing. Material is a moisture cure product which can allow for flood testing in 30 minutes to 4 hours depending on environmental conditions.

- Low VOC
- Seam Noble bonded sheet membranes (TS, CIS, SIS, ND, AS)
- Seal penetrations in the sheet membrane
- Fills cracks, voids and seams prior to using a liquid waterproofing material
- Provides seal between waterproof membrane and Noble drain body

SIZES

Available in 10.3 oz tubes and 20 oz sausage tubes
Coverage:
10.3 oz tube = approx 40 lineal feet
20 oz sausage tube = approx 80 lineal feet

SHELF LIFE

Maximum shelf life of one year from date of manufacture on unopened package. Protect from freezing.

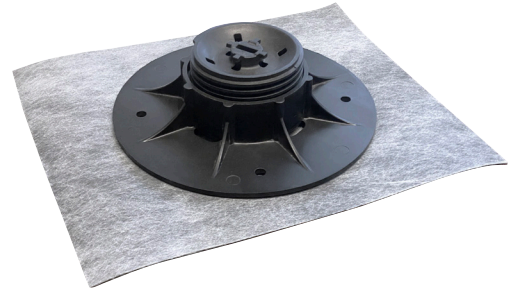
NobleSealant 250 cannot be used with Chloraloy® or PVC.

Optional Installation Considerations

Pedestals

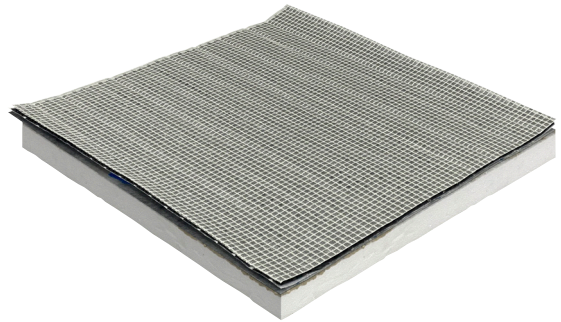
Pedestal systems can be used in conjunction with a ProBase EX system or with a conventional sloped system with Noble Deck waterproofing membrane. Noble Company (recommends placing a square of Noble Deck that is about 1" greater than the outside dimension of the pedestal base) underneath the pedestal in this type of installation.

Note: some Pedestal manufacturers offer their own pads. These pads can be either loose laid or bonded in place with NobleSealant 250.



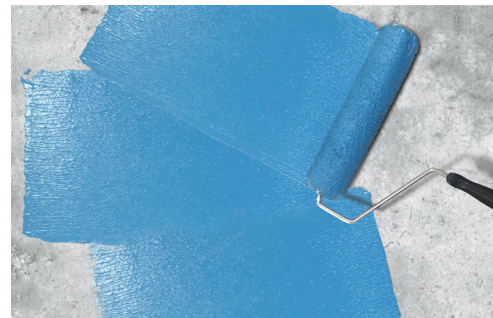
Drainage Mat

A drainage mat can be used in conjunction with an exterior system. The drainage mat should be placed above the Noble Deck waterproofing membrane to direct the water in the direction from the house to the deck edge. Follow manufacturers' directions for installation process.



AquaBlue™

AquaBlue Liquid Waterproofing Membrane can be used over occupied space on exterior decks and balconies when used in conjunction with a primary waterproofing sheet membrane (Noble Deck). It is not intended for use as a primary exterior waterproof membrane over occupied space. AquaBlue is not intended to be exposed after installation – must be covered with thin-set mortar and tile.



Panel Fasteners

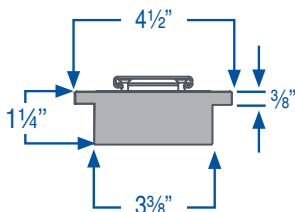
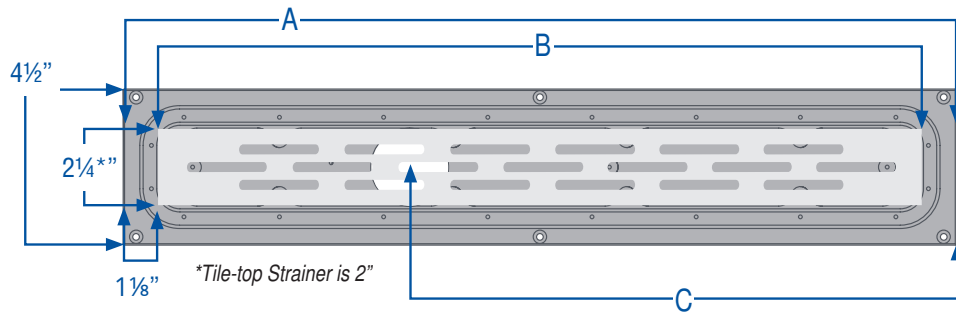
Install Noble Deck sheet membrane per instructions. Exterior rated Panel Fasteners can be used to hold panels in place while installing and prior to waterproofing. Washers and screws can be used to fasten panel to substrate after setting in place into bonding agent (thin-set mortar or NobleBond EXT). These fasteners will aid in holding panels in place while the bonding agent cures.



Drains

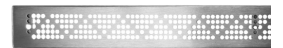


FreeStyle Linear Drains™ SHOWER DRAINS



A. Drain Length	24"	32"	36"	40"	48"	54"	60"
B. Strainer Length*	21 1/4"	29 3/4"	33 3/4"	37 3/4"	45 3/4"	51 1/4"	57 3/4"
C. Offset Hole Location	15 3/4"	19 1/2"	21 3/4"	23 3/4"	27 3/4"	30 3/4"	33 3/4"
C. Center Hole Location	12"	16"	18"	20"	24"	27"	30"

*Deduct 3/8" for Tile-top Strainers Length



Style: Pyramid¹ Finish: Stainless Steel



Style: Slotted¹ Finish: Stainless Steel



Style: Wave Finish: Stainless Steel



Style: Cross-Hatch Finish: Stainless Steel



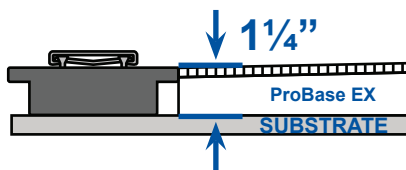
Style: Tile-top¹ Finish: Insert your tile

FreeStyle Linear Drains

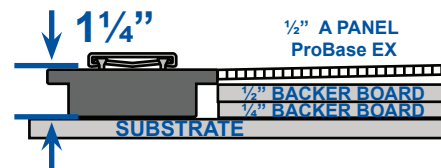
FreeStyle Linear Drains can be incorporated into a deck system to provide drainage of the water exiting the deck slope.

Standard thickness of the drain is 1 1/4", so the ProBase EX A panel would be cut at that depth to integrate to the drain. Another option is to drop the drain into the substrate, so it rests on its flanges. The 3/8" flange will then integrate to the 1/2" thickness of the leading edge of the A panel.

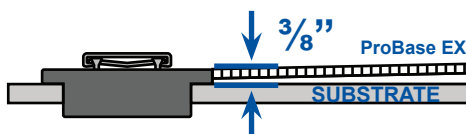
FSLD ON SUBSTRATE



FSLD DIRECT ON SUBSTRATE WITH 3/4" TOTAL EXTERIOR RATED BACKER BOARD



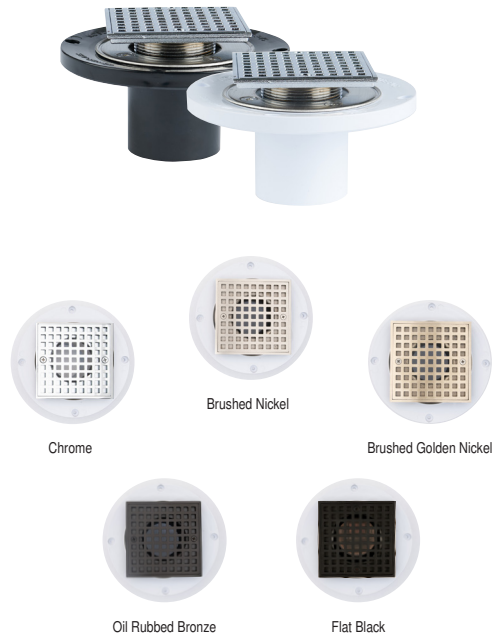
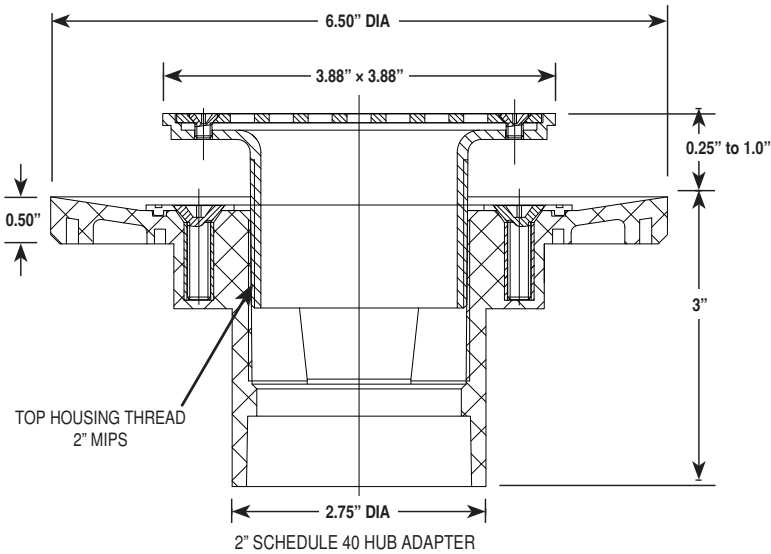
FSLD ON FLANGES



Set FreeStyle Linear Drain directly onto substrate. Do not run the 1/4" exterior rated backer board below drain body. Add 1/2" exterior rated backer board on top of 1/4" exterior rated backer board to allow leading edge of ProBase EX A panel to meet up with remaining 1/2" height of drain above backer board.



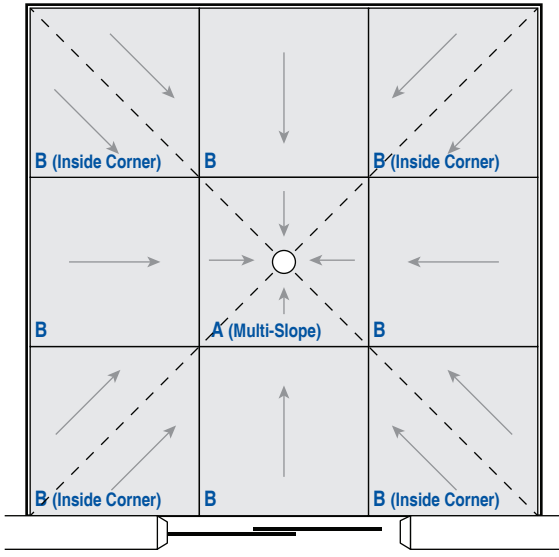
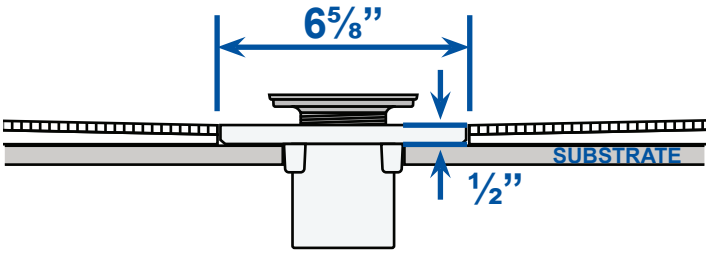
FreeStyle Thin-Bed Drains™ SHOWER DRAINS



FreeStyle Thin-Bed Drains

Noble Freestyle Thin-Bed Drain is a low-profile dependable drain that can adapt to Noble's custom Multi-Slope ProBase EX Panel. The drain is dropped into the substrate so that it rests on its flanges. The clamping ring provides for integration of the sheet membrane to drain for a watertight connection. Weep slots and holes are integrated into the drain body for maximum drainage. Available in 5 finishes and two base materials (PVC base is white, ABS base is black).

CENTER OF DECK (AT DRAIN)



Preparation and Installation Checklist

PREPARATION AND MATERIALS:

- Consult structural engineer** to confirm that framing will support anticipated loads.
 - Mortar beds weigh approx. 12 lbs./sq. ft. at 1" thickness
 - ProBase EX panels weigh less than 1 lb./sq. ft. at 1" thickness
 - Consider additional weight of tile assembly

- When using ProBase EX panels, framing must be flat and level** as the slope is built into the panels. Ensure framing has proper slope away from structure ($\frac{1}{4}$ " per foot) if installing mortar bed.

- Joist spacing and span length** must comply with TCNA deflection recommendations.
 - Two layers of exterior grade plywood may be necessary to support load requirements of wood frame decks.

- Select proper cement backer board** for exterior application.
 - When using Noble Company ProBase EX, $\frac{1}{4}$ " min. exterior rated backer board is recommended.

- Select sealant compliant with ANSI C920**, refer to TCNA EJ171 (movement joints)

- When using ProBase EX, review the drawing layout** to make sure the panels are positioned as intended and confirm field conditions.

- When dry fitting ProBase EX panels, ensure that a gap** of approx. $\frac{1}{4}$ " is in place around all penetrations and $\frac{1}{8}$ " at changes of planes to allow for expansion and contraction.

- Follow all manufacturers' written instructions.**

- Confirm all materials are suitable for exterior use.**

- Document the following:**
 - Substrate Material and Thickness _____
 - ProBase EX Panel System or Mortar Bed _____
 - When Mortar Bed – confirm $\frac{1}{4}$ " per foot slope _____
 - Bonding Agent used for ProBase EX Panels _____
 - Bonding Agent used for Waterproofing Membrane _____
 - Bonding Agent used for Tile Installation _____
 - Tile Used _____
 - Grout Used _____

Note: It may be helpful to take photos of each of these elements for record keeping

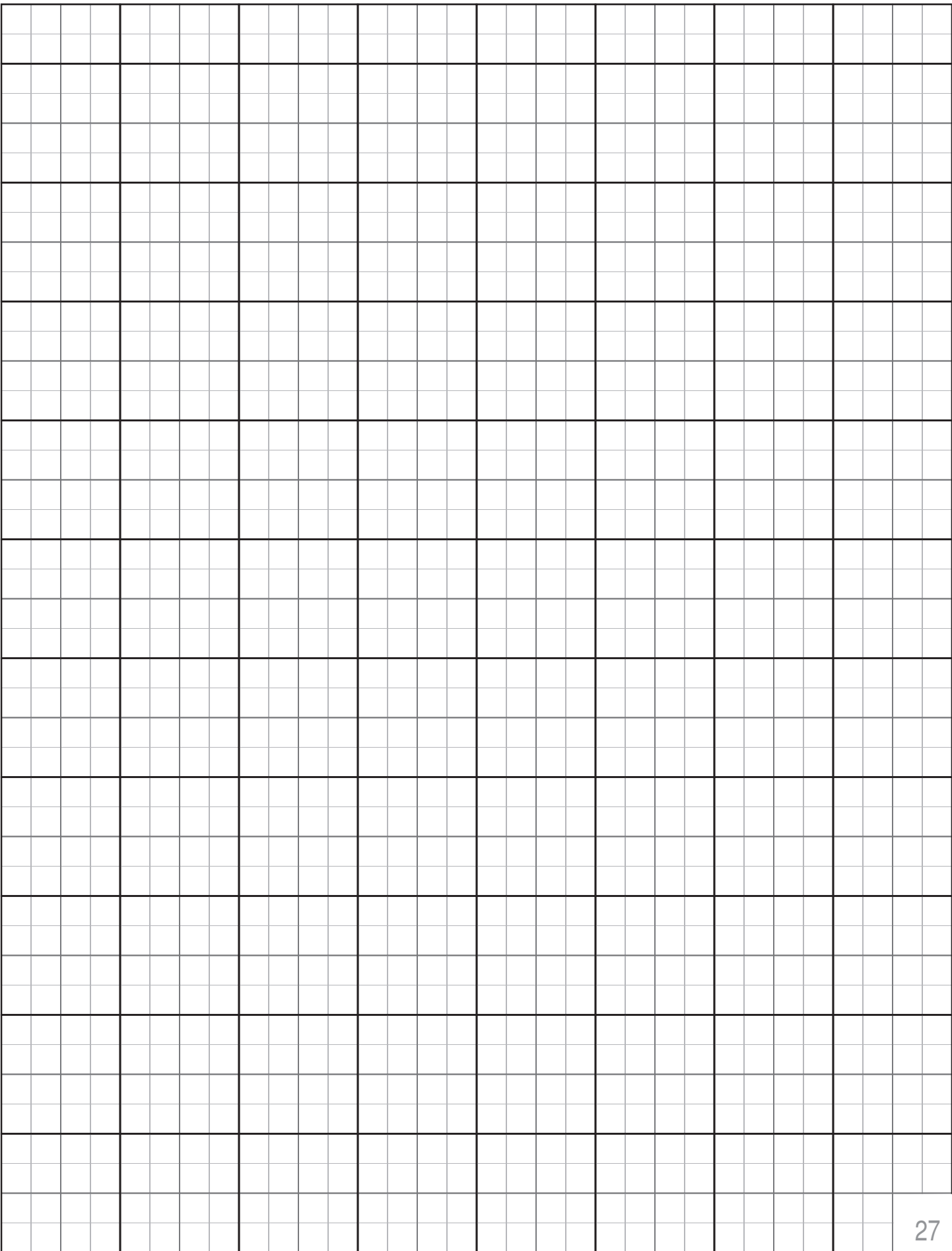
Preparation and Installation Checklist

INSTALLATION NOTES:

- Flash waterproofing at cove, walls, drains, and other penetrations.** If exterior veneer is in place and flashing behind the wall is not possible, refer to TCNA F104 Reglet detail. Flashing can be accomplished using Noble Company Noble Deck Flashing roll and/or Noble Thin-Line Inside and Outside Corners.
- Full embedding of all tile, stone, and ProBase® EX panels** is critical – no voids! Minimum 95% coverage.
Only spread as much bonding agent as can be installed into before skinning over.
- New or existing gutter systems** cannot discharge onto tiled deck installations.
- Drip edge, gutter edge, or deck flashing** must be considered and installed per industry and manufacturers' recommendations.
- Movement joints** (refer to TCNA detail EJ171):
 - Architect must specify type of joint and locations on drawings.
 - Joint width minimums are to be based on TCNA EJ171.
 - Soft joints every 8' to 12' (TCNA EJ171) in both directions and at changes in the plane or as determined by a design professional.
 - Expansion joints should be prefabricated.
 - Joints must have thin-set raked out down to the substrate.
 - *If the thin-set is not raked down to the substrate, the movement joint will not function as designed.*
 - Joints must be provided at the flooring material interface with the structure.
All penetrations, railing, etc., must be caulked.
 - Bond breaker tape installed between the joint and the substrate.
- Run water over the waterproofing prior to tiling** to ensure it exits the system and there is no ponding at all.
- PROTECT WATERPROOFING.** Keep exposed Noble Deck membrane, ProBase EX panels, and all materials covered to prevent direct exposure to sunlight, extended UV exposure, and weather elements. This should be done prior to installation of membrane and through application of bonding agent for tiling to protect integrity of membrane materials.
 - Care should be taken to provide additional protection from damage to Noble Deck membrane and ProBase EX structure due to construction traffic, materials, and tools during installation and until tile is installed.
 - Overlaps of membrane can be further optimized by applying AquaBlue over the membrane material seams.

POST INSTALLATION NOTES:

- Annual inspection** of expansion joint sealant and movement joints.
- Inspect** any silicone caulk used.





CONTACT US

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-  twitter.com/nobleco
-  youtube.com/noblecompany
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-  houzz.com/pro/noblecompany/

EXTERIOR DECK SYSTEMS DESIGN GUIDE



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