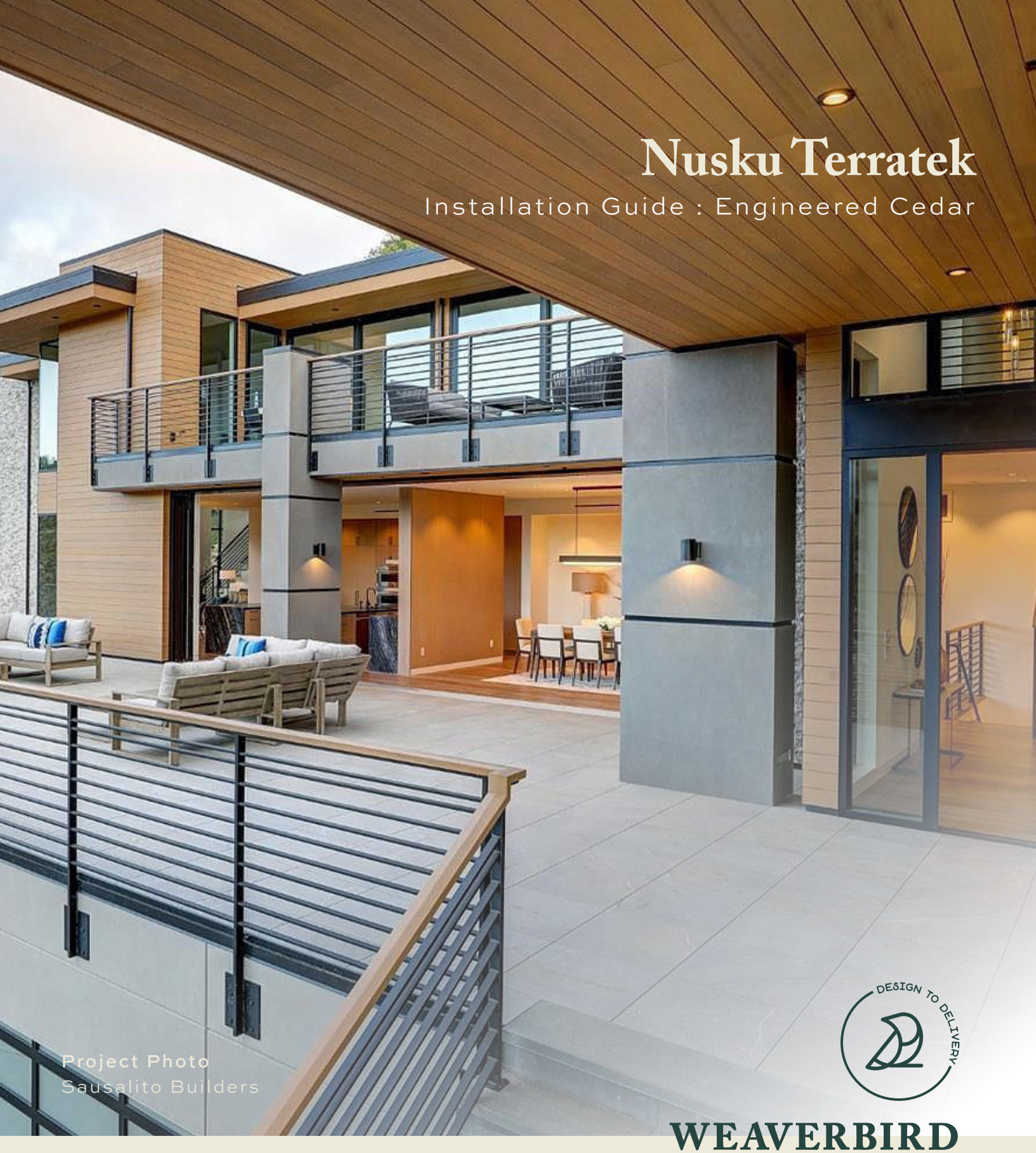
Nusku Terratek

Installation Guide : Engineered Cedar



Project Photo
Sausalito Builders

DESIGN TO DELIVERY

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Nusku Terratek

Nusku Terratek is our stain grade solution that maintains all necessary WUI Approvals for siding & eave installations. This product line is an engineered material where both the core & vertical grain veneer are 100% Western Red Cedar.

Engineered WRC Specs

Species: Western Red Cedar (Thuja plicata)
Grain: Vertical Grain Veneer
Grade: #2 Clear
Thickness: 1x
Widths: x4, x6
Lengths: Random Length Odds/Evens (6-16' with 3-5% 3-5' included)

Maintenance Guide Pages

Disclaimer

Consult your local building code to ensure your project is installed in accordance with local requirements & consult your local building office to understand permitting requirements. Drilling, sawing, sanding or machining wood products generates wood dust. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

Storage & Handling

Handle the product carefully to avoid damage.

- Always protect the product from the weather, direct sunlight, water saturation & dirt by storing the uninstalled product in an enclosed building or under a waterproof cover.
- If a waterproof cover is used, do not seal the bundle to allow air circulation & acclimatization to the jobsite.
- Store the product flat (do not allow the center of the stack to sag) & at least 4" off the ground on the stringers to prevent moisture application.

Proper storage & handling of Terratek will best allow the product to acclimate to it's new environment. Reference as follows for key principles of onsite storage.

Always Allow		**Proper Circulation:** Ensure Terratek has airflow to reduce trapped moisture	Always Avoid		**Avoid Moisture:** Ensure moisture stays out of the unit stored onsite prior to install
		**Ground Clearance:** Ensure product is stored elevated above ground & concrete			**Avoid UV:** Ensure Terratek is out of direct UV/sun which can lighten the color
		**Proper Coverage:** Ensure material is covered but ends are open for breathability			**Excessive heat:** Ensure the product isn't taking excess heat in it's covered state

Moisture Content and Acclimatization

Terratek is manufactured from natural Western Red Cedar that, like every wood product, will shrink or expand accross the grain due to changes in moisture content. **It is imperative to allow the product to acclimatize to the jobsite prior to installation.**

Exterior Installation
The unistalled material must be protected from liquid water & have adequate air circulation to the stack until the porduct has reached the equillibrium moisture content (EMC) for the region.

Interior Installation
Store the unistalled material for at least 5 days in the environment in which it will be installed. Prevent exposure of the stored material to high humidity levels that come with some stages of construction such as painting or drywall mudding.

DO NOT INSTALL THE PRODUCT WITH GREATER THAN 15% MOISTURE CONTENT

USE A MOISTURE METER & INTERPRET THE READINGS WITH RESPECT TO THE TIME OF YEAR & CLIMATE CONDITIONS TO ACHIEVE OPTIMAL INSTALLATION

An example: You are installing the Terratek siding/paneling product on an exterior wall during a particularly hot & dry summer in California. Your moisture meter has an average reading of 8% moisture content, so you must leave a 1/16'' gap between successive courses to allow the product to expand due to the higher relative humidity (RH) & corresponding higher moisture content in the winter months.

Envelope & Moisture Management

Local & National Building Codes should be followed to design & build a structure that controls & manages moisture infiltration. The exterior envelope components **MUST:**

- Be installed to shed water & prevent pooling of water.
- Be designed to minimize water ingress by sealing & flashing (sealant is not a substitue for flashing.
- Utilize a rainscreen wall assembly (an airspace between the water resistive barrier & the back of the sliding & trim). A rainscreen assembly allows water to effectively drain out & away from the structure.

The exterior wall assembly of a building is a series of components that, together, create a system. Best performance of the exterior wall assembly system depends on each component being installed correctly with the consideration of local environmental consitions, building codes & product & material limitations. Performance of this system is the responsibility of the architect & installer & not the manufacturer of the building materials. Terratek assumes no responsibility for water penetration into or beyond the exterior wall assembly.

Terratek has been manufactured to the highest standards to ensure long term durability & a high aesthetic value throughout the product's service life. Please adhere to this Installation guide to obtain the maximum performance from your Terratek Engineered Western Red Cedar Siding/Paneling and to maintain the Manufacturer 10 Year Limited Warranty.

Beginning Do's & Don't's

The Do List
- Print & distribute this Installation Guide to your installation crew at project commencement.
- Adhere strictly to the Installation Guide.
- Follow all applicable local, National & International Building Code requirements.
- Strive for a "best practice" installation.
- Coat all end grain surfaces exposed by jobsite field cuts with an exterior stain or primer.
- Follow coating/paint manufacturers written instructions when applying finish.
- Install diverter flashings (kick-outs) on roofs to prevent water loading of walls.
- Use a moisture meter & interpret the readings with respect to the time of year & climatic conditions to achieve an optimal installation.

The Don't List
- Do not use this product for structural support.
- Do not install product closer than 8" to grade or 2" from decks, patios, concrete, and/or roofs.
- Do not allow product to be in contact with the ground.
- Do not allow sprinklers to regularly wet the product.
- Do not install product in a manner that allows water to pool against or behind it.
- Do not substitute caulking or sealant for flashing.
- Do not install or apply finish to product with a moisture content greater than 15%.

Before You Begin
Confirm you have purchased the appropriate product for your application & inspect the material for any defects. If any material is found to be unsatisfactory, do not install it, instead, contact your Weaverbird representative or email Weaverbird using hello@weaverbirdco.com to obtain replacement material. Installation of the product constitutes acceptance of the condition of the product.

Fasteners & Fastening Requirements

Along with moisture management, proper fasteners & fastening schedules are two of the most important components of a successful installation.

- Use stainless steel ring or a spiral shank nails to prevent rust stains on the product or fastener failure. These fasteners have a blunt point to prevent splitting and provide excellent holding power. Use No. 304, stainless for general installations and No. 316 stainless for coastal installations.
- Drive nails flush with the surface of material. When using a pneumatic nail gun, use a flush nailing device to prevent over driven nails.
- Overdriven nails must be filled with exterior wood putty. When a transparent or a semi-transparent finish is going to be used, flush nailing is important as wood putty may not match the natural cedar grain.
- Siding/paneling can be face nailed or blind nailed (on an angle through the tongue) when blind nailing in windy environments, hot environments or coastal exposures, an additional nail is recommended (through the face, 1" from the bottom of the board in adherence with all other fastener and fastening requirements).
- Nails are to be spaced a maximum of 24" on center.

Fasteners must provide 1 - 1/4" penetration into a solid, nailable substrate (into studs or a combination of furring strips, sheathing and/or studs)

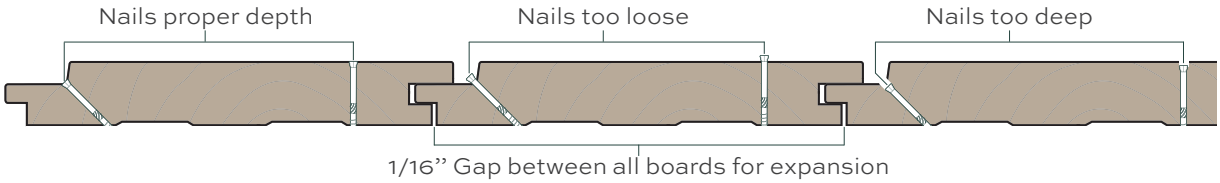
Finishing nails, brad nails and staples are NOT approved for exterior installation.

Patterns (Face Fastened Installations)

Various T&G profiles are commonly utilized with exposed fasteners. While the pattern (reveal, net dimensions) can change the installation in relatively consistent across the varied appearances. Please check the boards thoroughly for possible manufacturing, moisture or transport related damage. Once installed, products are deemed to have been accepted in terms of quality.

Tongue & Groove

Standard tongue & groove profiles create an interlocking design where the tongue side fits into the groove. When using T&G profiles, fasteners can be partially hidden by nailing at an angle at the base of the tongue. While there is a benefit of partially hidden fasteners, removing boards at a later date is challenging because of the interlocking nature.



- When installing Tongue & Groove boards in horizontal orientation, tongues point upwards.
- When installing Tongue & Groove boards in vertical orientation, tongues should point the direction where wind most commonly blows from.

Exterior Wall Assembly Construction

When installing this product adhere to the following International Building Code requirements for exterior wall assembly construction.
(Note: this is not an exhaustive list, but is provided as a guide, & there are some exceptions.)

- A water resistive barrier is required behind the exterior veneer;
- a means of draining water that has entered the assembly to the exterior, is required;
- continuous flashing must be installed above all projecting wood trim;
- Doors & windows must be installed in accordance of the manufacturer's installation instructions.

Rainscreen Construction
To prevent water from collecting within the exterior wall assembly, to promote drying of siding products & to maximize the performance of exterior wall assembly materials and coatings, we highly recommend rainscreen wall construction. To achieve a rainscreen wall assembly follow these general principles:

- Install vertical furring strips over the water resistive barrier (WRB), directly over the studs.
- Fasten the siding over the vertical furring strips.
- Ensure that all third party materials are installed in accordance with the manufacturer's instructions & building code requirements.

Note: There are three-dimensional "drainage mat" type products avaliable in the marketplace that also provide a means for water to drain behind exterior cladding.

Note: Always maintain a 1 - 1/4" gap between the bottom of the siding and the top of flashing to act as a capillary break. This location should never be caulked.

Vertical Siding - Installation Note
If horizontal furring strips are used for a vertical siding installation, 2" drainage slots are required every 18" on the back of the furring strips. Ensure that the horizontal furring strips provide an advocate 1 - 1/4" nailing base in combination with the sheathing.

Rigid Foam Sheathing - Installation Note
Rigid foam sheathing does not have an adequate nail holding capacity. Adjustments to the design and construction of the exterior wall assembly are needed to achieve a suitable nailing base. Furring strips are imperative to create an air space between the back of the siding and the rigid foam sheathing siding, install directly on top of rigid foam sheathing can result in moisture accumulation between the two materials, and may result in damage.

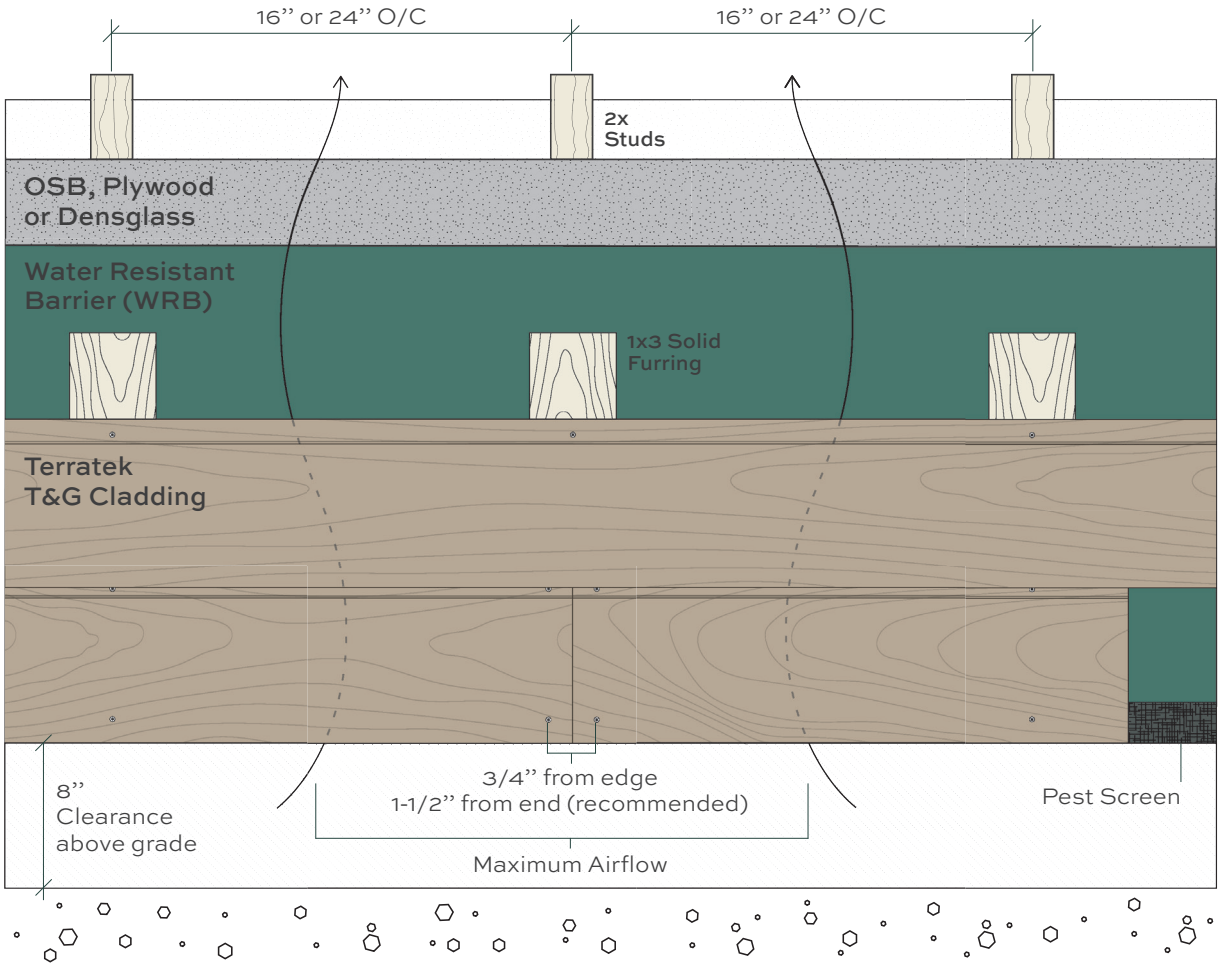
Horizontal Cladding Installation (T&G)

Terratek cladding requires a rainscreen wall assembly. When installing Terratek T&G horizontally, furring strips must be fastened directly over studs. Refer to local building regulations for required batten spacing based on wind loads. Never exceed 24'' O/C batten spacing.

Proper Substructure & Spacing

- Recommended furring strip spacing: 16'' O/C
- Minimum distance above grade: 8''
- Minimum thickness if solid wood/marine plywood furring: 3/4'' Net
- Minimum thickness if composite furring/drainage mat: 3/8'' Net
- Recommended gap between courses: 1/16''

When fixing horizontal cladding, the end of each Terrratek board must land on the vertical battens. Ensure all nails are gapped minimum 3/4'' from edges & ends to reduce splitting. For best practice, add an additional batten & keep nails gapped 3/4'' from edges & 1-1/2'' from ends.



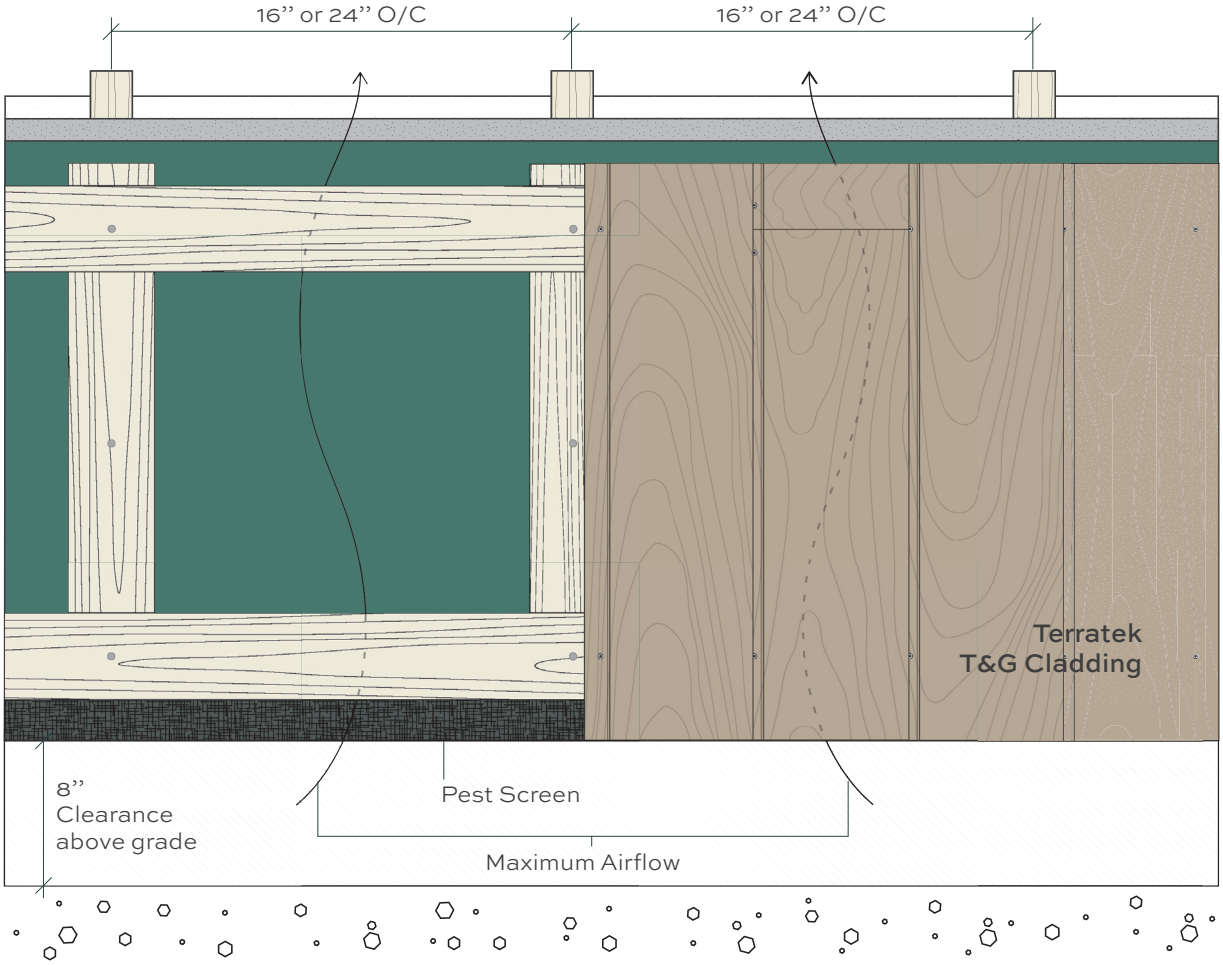
Vertical Cladding Installation (T&G)

Terratek requires a rainscreen wall assembly. When installing Terratek T&G vertically, install vertical furring directly to studs followed by a horizontal layer. This “furring grid” creates a solid base for fasteners & allows airflow. Refer to local building regulations for required batten spacing based on wind loads. Never exceed 24’’ O/C batten spacing.

Proper Substructure & Spacing

- Recommended furring strip spacing: 16’’ O/C
- Minimum distance above grade: 8’’
- Minimum thickness; solid wood/marine plywood furring: 3/4’’ Net
- Minimum thickness; composite furring/drainage mat: 3/8’’ Net
- Recommended gap between courses: 1/16’’

When fixing vertical cladding, the end of each Terratek board must land on the horizontal battens. Ensure all nails are gapped minimum 3/4’’ from edges & ends to reduce splitting. For best practice, add an additional batten & keep nails gapped 3/4’’ from edges & 1-1/2’’ from ends.



Cladding Fastening (T&G)

Along with moisture management, proper fasteners & fastening schedules are two of the most important components of a successful installation.

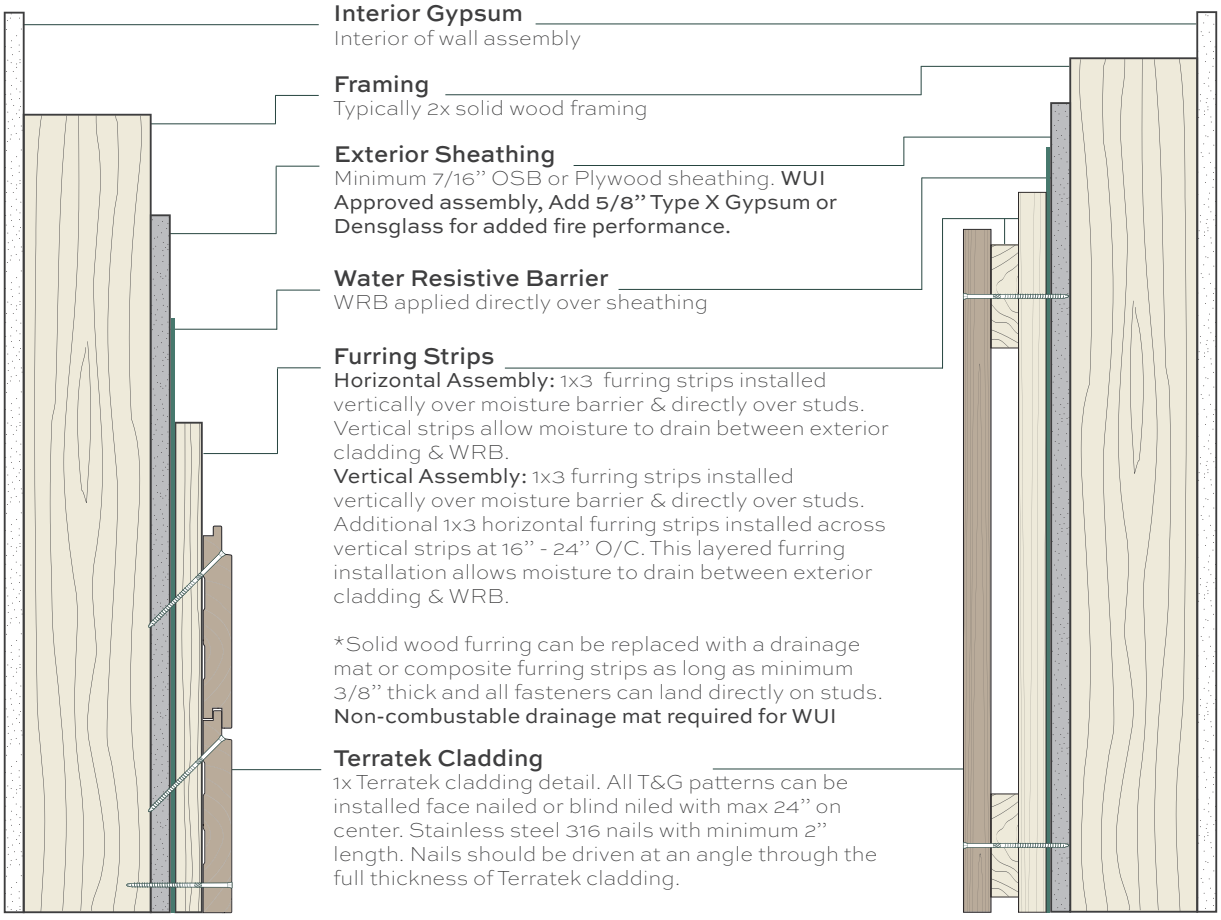
Fastening, Sizes & Use

When installing Terratek T&G in soffit assembly, keep in mind that finishing nails, brad nails and staples are NOT approved for exterior installation.

- Recommended nail length: 2" (or minimum 2.5x the material net thickness)
- Standard fasteners per board (1x6): 1 (2 on starter board)
- Coastal & extreme climate fasteners per board (1x6): 2
- Fastened at every stud

These are the minimum recommended fastening requirements. Please consult local building regulations that might require other dimensions or fixing types.

Horizontal Assembly (Side View) **Vertical Assembly (Side View)**



Interior Gypsum
Interior of wall assembly

Framing
Typically 2x solid wood framing

Exterior Sheathing
Minimum 7/16" OSB or Plywood sheathing. **WUI Approved assembly, Add 5/8" Type X Gypsum or Densglass for added fire performance.**

Water Resistive Barrier
WRB applied directly over sheathing

Furring Strips
Horizontal Assembly: 1x3 furring strips installed vertically over moisture barrier & directly over studs. Vertical strips allow moisture to drain between exterior cladding & WRB.
Vertical Assembly: 1x3 furring strips installed vertically over moisture barrier & directly over studs. Additional 1x3 horizontal furring strips installed across vertical strips at 16" - 24" O/C. This layered furring installation allows moisture to drain between exterior cladding & WRB.

*Solid wood furring can be replaced with a drainage mat or composite furring strips as long as minimum 3/8" thick and all fasteners can land directly on studs. **Non-combustable drainage mat required for WUI**

Terratek Cladding
1x Terratek cladding detail. All T&G patterns can be installed face nailed or blind niled with max 24" on center. Stainless steel 316 nails with minimum 2" length. Nails should be driven at an angle through the full thickness of Terratek cladding.

Soffit Fastening (T&G)

Along with moisture management, proper fasteners & fastening schedules are two of the most important components of a successful installation.

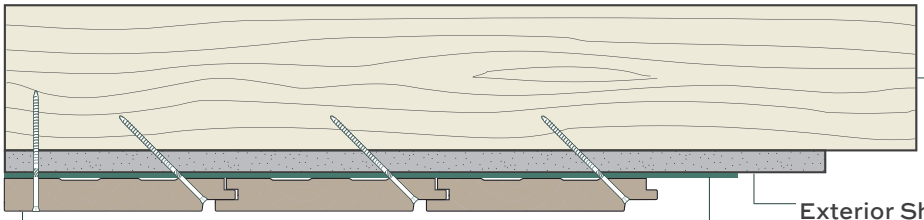
Fastening, Sizes & Use

When installing Terratek T&G in soffit assembly, keep in mind that finishing nails, brad nails and staples are NOT approved for exterior installation.

- Recommended nail length: 2" (or minimum 2.5x the material net thickness)
- Standard fasteners per board (1x6): 1 (2 on starter board)
- Coastal & extreme climate fasteners per board (1x6): 2
- Fastened at every stud

These are the minimum recommended fastening requirements. Please consult local building regulations that might require other dimensions or fixing types.

Under Eave & Soffit (Non-Ventilated Assembly)



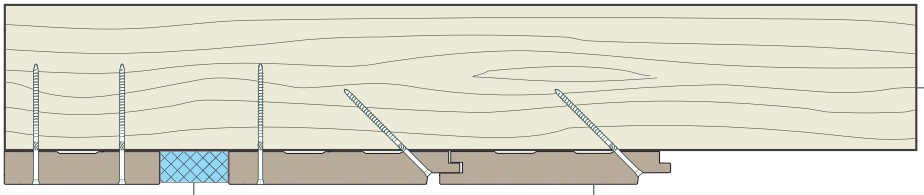
Framing
Typically 2x solid wood framing

Exterior Sheathing
Minimum 7/16" OSB or Plywood sheathing. **5/8" Type X Gypsum or Densglass beneficial in additional fire resistant performance.**

Terratek Cladding
1x Terratek cladding detail. All T&G patterns can be installed face nailed or blind nailed with max 24" on center. Stainless steel 316 nails with minimum 2" length. Nails should be driven at an angle through the full thickness of Terratek cladding.

Water Resistive Barrier
WRB applied directly over sheathing

Under Eave & Soffit (Ventilated Assembly)



Framing
Typically 2x solid wood framing

Soffit Ventilation
Terratek soffit & ceiling can be installed directly over framing members when utilized in a ventilated assembly. Please refer to local building code regulations that might impact the ability to use ventilated soffits.

Terratek Cladding
1x Terratek cladding detail. All T&G patterns can be installed face nailed or blind nailed with max 24" on center. Stainless steel 316 nails with minimum 2" length. Nails should be driven at an angle through the full thickness of Terratek cladding.

*Soffit & eave assemblies shown above are general assembly guides. Not all under eave & soffit assemblies have the same construction.

Field Joints

For aesthetics, field joints should be located throughout each elevation without a recognizable pattern. If a pattern is used, ensure that field joints on adjacent siding courses are spaced at least 2 stud bays apart.

- Cut ends at 45 degree angles to form an overlapping joint and ensure that all joints meet over studs, blocking or furring strips and that fastener penetration requirements are adhered to.
- For vertical installations, ensure that the joint is oriented to direct water to the exterior of the wall.
- When blind nailing, an additional face nail on each side of the joint is recommended to prevent the joint from opening.
- Drill pilot holes near the ends of siding/paneling to prevent splitting.

Joints must occur over solid framing or locations that provide the required 1 - 1/4" nail penetration into furring strips, sheathing and/or studs.

Corners

There are three installation methods for outside corners. Adhere closely to the following instructions per method:

Mitered Corners: Ensure that the joint is tight to prevent moisture from entering into the end grain of the siding (remember to re-coat/seal all end grain prior to installation). To prevent splitting, re-drill holes (near the corners) for the fasteners. Note: use an appropriate adhesive on any mitered corners.

Siding Installed Next to Corner Boards: Leave a 1/8" gap between siding and corner boards to allow for a properly applied bead of caulking or sealant between the two materials. Follow caulking or sealant manufacturer's instructions.

Corner Boards Installed over Siding: Do not apply caulk or sealant at the joint between the corner boards and the siding, with this installation method.

Flashing

Flashing acts as a critical component of the wall assembly. It prevents water from entering past the first line of defense and also allows infiltrated water to drain.

- Install horizontal metal flashing above all wall penetrations (or as per window and door manufacturer's instructions) and projecting wood trim, prior to siding installation.
- Ensure flashing is installed with a positive pitch to prevent water from pooling on its surface and to shed water away from the wall.

Siding must be installed a minimum a quarter inch above all flashing and applying caulking or sealant is not a replacement for flashing.

Caulking

- Use an exterior grade high-performance acrylic-latex, acrylic-silicone, acrylic, polyurethane, or polysulfide caulk/sealant to seal gaps around windows, doors and where siding meets vertical trim.
- Caulking and sealants are not a permanent solution and require maintenance to prevent failed caulking from allowing water ingress into the wall assembly.
- Never seal areas that will prevent moisture from exiting the exterior envelope such as under windows and around metal flashing.

Note: Silicone caulks are not recommended for use with western red cedar.

End Grain Sealing

The end grain of lumber absorbs water over 100 times faster than any other wood surface. For this reason, it is imperative, that the end grain of your siding be sealed with an exterior stain or primer. If not sealed with an adequate coating, the end grain will absorb moisture and cause staining to the surface of your siding, as tannins and extractives leach from the natural western red cedar.

Note: All end grain and job-site cuts must be coated to prevent water absorption.

Maintenance

A number of components on your home's exterior require regular inspection and maintenance to optimize the performance of your engineered siding and paneling:

- Inspect the caulk and sealant and reapply as necessary to prevent water ingress
- Keep gutters and roof areas free of debris
- Ensure downspouts are flowing freely
- Keep the surface of your siding free of mold, mildew, algae and other biological growth
- Garden beds are to be kept 8" below siding
- Prevent trees, plants, and shrubs from growing up against siding
- Ensure that sprinklers do not spray water onto siding
- Inspect and maintain the coating/finish on the siding

Note: Proactive home maintenance is less expensive than reactive home maintenance.

Finishes for Siding

We require the application of an exterior rated finish (exterior applications) & interior rated finish (interior applications) to all sides of the product prior to installation as a best practice. Always follow the coating manufacturer's application instructions.

****ENSURE THAT END GRAIN IS COATED PRIOR TO INSTALLATION, INCLUDING JOBSITE CUTS****

The aesthetics & service life of any coating or finish is directly dependent on the quality of the coating being applied & the quality of the preparation & application. A professional factory finish application will generally provide the best results. As with any planed wood product, lightly sanding the material prior to the finish application is important to maximize coating adhesion. Always ensure the surface to be painted is free of dust or mildew.

BACK-PRIMING (COATING THE BACK SIDE) WITH AN APPLICATION RATED STAIN OR PRIMER, PRIOR TO INSTALLATION, REDUCES CUPPING & WARPING OF SIDING & EXTENDS THE SERVICE LIFE OF THE EXTERIOR TOP COAT

The Western Red Cedar Lumber Association has provided an excellent resource on finishing, available at www.realcedar.com.

Factory Finish Solutions

Pre-finishing all Terratek prior to installation ensures all 4 sides are coated evening with ideal adhesion. Ask you Weaverbird rep about factory finished options including Cutek (Exterior only) & our full Weaverbird Collection.

CUTEK® Extreme is a high-performance, oil-based wood stabilizer with a unique self-healing effect. Penetrating deeply into wood, CUTEK® Extreme highlights the natural grain & beauty of wood while providing robust & long-lasting protection. CUTEK® Extreme will not flake or peel & maintenance is fast and simple - no need to sand or strip.

Cutek Extreme

Cutek Colortones

Cutek Quickclean

Cutek Reviver

Weathering & Silver Patina

Terratek will naturally weather & patina over time. Even with Cutek + Colortone, the product will fade which means an ongoing maintenance plan is required if color retention is desired. If the cladding surface has weathered to a silver patina, light sanding or Cutek Proclean will remove the surface silvering & restore the natural tone of our Terratek. After sanding or Pro-clean, a fresh coat of Cutek can be applied bringing vibrance to your cladding.

Note: Product color & factory applied finishes are not covered under the product warranty

Warranty

Terratek cladding is covered under a limited 10-year Warranty. This warranty is made to the original purchaser of the Product(s) (the "Purchaser"); the original owner of the structure on which the Product(s) are installed; and to the next owner of that structure (together "Owner"). Terratek express warranties may not be assigned to any subsequent owners of the structure.

Terratek warrants that the Product(s) will remain free from rot & fungal degradation for a period of 10 years from the date of purchase. These warranties only apply to above-ground installations made in accordance with the instructions.

Failure to follow proper installation & finish practices will negate product warranties.

Wood is a product of nature, so individual pieces vary in performance. Siding & eaves are singular components of a building. The performance is dependent on many critical factors including the structure's design, the craftsmen's skills, the use of other material, the products exposure & the climate. The manufacturer & merchant have no control over these variables. Following this manual will help in achieving satisfactory performance under most conditions; however, it will not guarantee flawless performance. Please refer to manufacturer's warranty for additional information.