



EXTERIOR INSTALLATION ACCLIMATION MAINTENANCE MANUAL

Failure to install or maintain *ranchwood*, *AquaFir*, *Charwood* in accordance with applicable building codes and these instructions may affect

its performance and void the limited warranty. All *ranchwood*, *AquaFir*, *Charwood* products are pre-finished with a NO VOC, NON TOXIC, Environmentally friendly Seal-Once waterproofing sealant. For additional information on Seal-Once please reference www.seal-once.com

Design and Construction Considerations

Every building structure should be designed and constructed to minimize any possible infiltration of moisture. Moisture infiltration can be reduced and controlled by incorporating construction practices that:

- Do not allow moisture to accumulate for extended periods without runoff
- Minimize moisture penetration by sealing and flashing
- Allow water that has penetrated the exterior envelope to easily drain away from the structure

The use of flashing around wall penetrations, such as around window and door openings, can reduce moisture, but the performance of any building system depends on how its entire design and construction addresses local environment and climate conditions, building codes, and product and material limitations. Design and installation of flashing and sealing systems are the responsibility of the architect, contractor and installer, not that of the manufacturer of the building materials.

ranchwood, *AquaFir*, *Charwood* are manufactured to give years of satisfaction and performance to our customers. The best performance will result from installation in accordance with standard building practices for wood construction. In addition to following our installation and maintenance instructions, all installers of *ranchwood*, *AquaFir*, *Charwood* should follow these industry standards.

The DO NOT's

- Do not allow *ranchwood*, *AquaFir*, *Charwood* to be in contact with the ground
- Do not backfill or place sod, mulch, etc., closer than 8 inches to *ranchwood*, *AquaFir*, *Charwood*
- Do not place in direct contact with concrete, masonry, patios, porches, and/or roofs
- Do not install where water sprinklers can regularly wet *ranchwood*, *AquaFir*, *Charwood*
- Do not install in a manner to allow water to be entrapped behind *ranchwood*, *AquaFir*, *Charwood*
- Do not use caulking sealant as a substitute for flashing
- Do not install directly over rigid foam insulation. Use furring strips to create an air space and a building wrap directly against foam insulation
- Do not assume your installation crews know what to do

The DO's

- Do adhere strictly to *ranchwood*, *AquaFir*, *Charwood* installation, acclimation, and maintenance instructions
- Do follow the local building code requirements
- Do follow the highest building industry construction standards
- Do install siding to create easy drainage planes to shed water accumulations
- Do be aware of potential sources of moisture penetration, including condensation, around the building, and modify design to avoid exposure
- Do re-coat all surfaces exposed by jobsite field cuts during installation
- Do re-seal every 10 years for siding and 6 years for decking, or sooner if needed
- Do make sure your installation crews know how to install *ranchwood*, *AquaFir*, *Charwood* properly



ranchwood, AquaFir, Charwood Installation Instructions

Install *ranchwood, AquaFir, Charwood* only according to these instructions and your local building code.

Before You Begin

- Read the entire installation instructions
- Ensure window and doors are installed in accordance with the manufacturer's instructions and local building code specifications
- Ensure flashing is installed at all windows, doors, band boards, fascia, skirts, posts, and other areas where moisture must be directed away from the building
- Ensure house wrap/building paper is installed in accordance with the manufacturer's instructions and local building code specifications
- Ensure that *ranchwood, AquaFir, Charwood* is not installed directly over rigid foam insulation. Use furring strips to create an air space and a building wrap directly against foam insulation
- Before installation, protect *ranchwood, AquaFir, Charwood* from exposure to direct sunlight, water saturation, and dirt. Do not allow it to come in contact with the ground.
- Before installation, ensure *ranchwood, AquaFir, Charwood* is dry
- During cutting and handling, avoid marring and scuffing *ranchwood, AquaFir, Charwood*
- Immediately after cutting, re-coat all exposed surfaces with 2 coats of *ranchwood, AquaFir, Charwood* specially formulated sealer

ACCLIMATION AND STORAGE

Until installed, *ranchwood, AquaFir, Charwood* needs protection from direct sunlight, water saturation, dirt, and other elements. Store *ranchwood, AquaFir, Charwood* flat and off the ground on stringers so that moisture is not absorbed through the bottom boards of the stack. Protect with a waterproof covering elevated in the center so that water does not pool on the cover. Do not completely seal the bundle, as good air circulation is required. Ideally, *ranchwood, AquaFir, Charwood* should be stored in an enclosed building such as a garage prior to use.

All wood products require proper acclimation to ensure positive product performance. With changes in ambient moisture all wood products expand and contract. Please follow these steps (prior to installation) to help minimize movement of wood product:

- 1) Acclimate wood as close to the point of usage. For indoors, locate in the room of usage.
- 2) Acclimate wood off the ground making sure no moisture seeps from underneath, cover the top only and protect from direct sunlight and precipitation.
- 3) Stack each layer using spacers. This will allow for free air circulation.
- 4) Acclimate for 10-14 days or longer depending on conditions.

The goal is for the moisture content of wood to be as close as possible to that of the place of usage before installing. Allow your wood to acclimate before installation. Improper acclimation is the mistake most often made and the most costly. Once the wood arrives to the job site it will begin changing size to adjust to its new climate. Installing wood during this phase is the worst thing you can do. This is true of all seasoning and all grades. Wood will take 10 to 14 days to acclimate completely. Size changes will be seasonal and minimal after this acclimation period. Following these simple steps are the most important thing to perform when installing any wood product.

Fastening

Stainless steel and Galvanized nails are recommended. For best results use "split-less" ring shank stainless steel siding nails. These nails have thin shanks and blunt points to reduce splitting when fastening. Near edges and ends, nail holes may need to be pre-drilled to avoid splitting.

Nails must be long enough to go through the underlying materials, such as sheathing and insulation, and penetrate into at least 1-¼ inch of solid wood. Siding should be fastened to each stud with nails spaced a maximum of 24" on center. Nails must penetrate 1 ¼ inch into the solid wood frame. Two nails per course for 6-inch & 8-inch patterns, three nails per course for 10-inch patterns.

Nails should be driven with care. Heavy nailing distorts the wood and may cause splitting. Like all wood products, *ranchwood, AquaFir, Charwood* should be hand-nailed. The use of pneumatic fasteners is discouraged for exterior use; but if used, they must employ stainless steel nails and a flush nailing device to ensure that nails are driven snug with the surface.



For siding application, *ranchwood*, *AquaFir*, *Charwood* must be double nailed and fastened at a maximum of 24 inches on center. Double nail all joints and do not nail any closer than 2 inches from the edge of material without drilling pilot holes.

All joints where two pieces meet end to end must occur over framing. Butt joints are recommended for both horizontal and vertical trim. In runs of 16 feet or less, the ends should lightly touch. Runs over 16 feet require a gap of 1/8 inch, which should be sealed with exterior caulk. Attach to the framing members with two nails on each side of the joint. Drill pilot holes first to avoid splitting.

Siding that extends down to a roof (dormers, second floors, etc.) and decks requires a minimum 2-inch gap to avoid wicking.

Flashing

Flashing is an important line of defense against moisture in wall assemblies. Use flashing to intercept and direct the flow of water away from the building to designed drainage paths. Install horizontal flashing extending from the top of all windows and doors and where there is any change in material or direction. The flashing should tilt downward to allow water to drain away from the wall. Do not caulk where the flashing, Siding, Trim or other materials meet. Note that caulking in lieu of flashing is not acceptable.

Caulking

Use exterior grade high-performance acrylic-latex, silicone, acrylic, or urethane caulks and sealants to seal gaps around windows, doors, corners, and other exterior joints that are exposed to potential water intrusion. Caulking is not a permanent solution and as such requires regular maintenance. If not inspected and maintained, caulking may fail and trap water, creating severe moisture problems. Do not rely on it as the only barrier to moisture penetration. Do not caulk areas that will prevent moisture from escaping the wall cavity (e.g., under windows and around flashing). Avoid three-sided adhesion. The caulk should only adhere to the two surfaces that create the opening in the surface plane, not to any rigid substrate behind. For gaps wider than 1/4 inch, insert a backer rod into gaps where caulk seals are to be made, and then caulk over. In all cases, follow the caulking manufacturer's recommendations.

Field Cuts

Prior to installation, all siding surfaces exposed by jobsite field cuts must be re-sealed with two coats of *ranchwood*, *AquaFir*, *Charwood* sealer. The technique for re-sealing depends on which board surface was exposed by field cuts: end-grain, edge or face. Coat all exposed surfaces including the bottom edge. Exposed end grain of any wood product absorbs liquids much faster than the wood's other surfaces, *ranchwood*, *AquaFir*, *Charwood* sealer is required to re-seal all end cuts.

ranchwood, AquaFir, Charwood maintenance instructions

No home is maintenance-free. Every building is subject to wear and tear from weather conditions and occupant usage. All building components have a design service life, which may be affected by environmental conditions and installation and maintenance measures. All building components require regular inspections and scheduled maintenance to maximize their performance and service life. The maintenance instructions here provide some guidelines for such inspections and maintenance.

The *ranchwood*, *AquaFir*, *Charwood* limited warranty is conditional upon the homeowner having undertaken proper maintenance on both *ranchwood*, *AquaFir*, *Charwood* and other components of the exterior envelope which are integral in moisture control. If any damage to siding occurs due to the homeowner's failure to follow proper maintenance procedures, or to mitigate any damage, including damage caused by water penetration, it is excluded from the *ranchwood*, *AquaFir*, *Charwood* warranty coverage.

Caulking

Flexible sealing compounds are referred to as caulking. Caulking is used to seal gaps between dissimilar materials on the building exterior and to seal gaps or joints in exterior finishes. Buildings normally experience some settlement/shrinkage of the building components which, in turn, causes settlement of flashing and cracked caulking. These areas should be immediately corrected as failure to do so will likely lead to moisture ingress into the building envelope. As a building moves during settlement, the caulking materials experience considerable stress. Since caulking helps keep water out of the building envelope, it should be examined annually before the wet weather arrives. Any cracked, damaged, or loose caulking should be removed and replaced with exterior grade high-performance acrylic-latex, silicone, acrylic, or urethane caulks or sealants. Siding should be checked for cracks or holes in the wood. Cracks should be filled with exterior grade wood putty.



Flashing

Flashing redirects water away from the face of the building and allows water to drain from behind the exterior wall finish. Flashing is normally installed at junctions of dissimilar materials and above door and window openings. Flashing may also be installed at each floor level to anticipate movement in the exterior finish as the building settles. Flashing requires periodic washing to remove grime and re-sealing when corrosion of metal appears. Upon installation, flashing is sloped downwards to the outer edge in order to drain water. If, with building settlement, flashings begin to slope upward towards the building, repairs should be made to correct the slope which, ideally, should be 15 degrees.

Nails

Rusty nails indicate that moisture is soaking into the wood siding. If rusty nails are found, the moisture source must be eliminated and the siding checked for moisture damage. If the trim was installed by counter sinking nails, the putty used to fill nail holes should also be checked. If it has fallen out, the holes must be filled with an exterior grade wood putty designed for filling exterior nail holes.

Site maintenance

The building envelope is comprised of components and materials which separate and protect the interior of the building from adverse climate conditions such as moisture penetration, or heat and air flow. Exterior wood siding is only one component of the building envelope, but its optimal performance can depend on the entire building having been properly maintained. Failures or decay in wood siding are usually caused by moisture penetration, which may result from improper installation or negligent maintenance.

Windows

The flashing and caulking used to prevent moisture from entering behind the window and trim should be checked annually. Most window designs incorporate a drainage track at the bottom of the window to collect any condensation. These tracks have weep holes to the outside to drain this moisture. These holes must be kept clean and can be maintained with a short piece of wire or a cotton swab.

Doors

Exterior doors are exposed to detrimental weather conditions and extreme temperature variations from inside to outside that can harm the door surface and its surrounding components. The flashing and caulking used to prevent moisture from entering behind door trim should be checked annually.

Gutters and downspouts

Gutters are installed at the roof perimeter to control the runoff of water. Gutters also prevent water from collecting at the foundation wall where it could seep into the basement or splash onto the wall surface. If gutters or down pipes are clogged with debris or ice, water damage can occur. Twice a year, check gutters, roof drains and downspouts for obstructions such as leaves and moss.

Corner Boards

Corner Boards should be checked to ensure that all joints are tight and waterproofed and that there is no water damage on the ends where the trim and siding is in proximity to decks, concrete or landscaping.

Roof

Trim used around and on the roof should be checked to ensure it is not absorbing moisture due to inadequate clearances or snow loads. All penetrations through the roof such as skylights, plumbing stacks, vents, etc., need to be checked annually and re-sealed as necessary. Snow melting on the roof and then freezing in runoff at un-insulated roof eaves can lead to ice damming which, in turn, causes water to back up under shingles and results in a leak inside. When ice dams occur, the snow and ice should be removed from eaves and valleys.

Site Drainage and Grading

Water should not be allowed to pool against foundation walls. Site drainage patterns, such as sloping the soil away from the building, can prevent surface water from pooling against foundation walls. Flowerbeds should be graded so as not to interfere with drainage. A minimum clearance of 8 inches should separate the ground and the bottom of exterior wall cladding. Never allow soil or gravel to come in contact with exterior wood materials or finishes of the building. Review and adjust the spray pattern of sprinkler systems regularly to prevent spray onto wood building components.



Ventilation, Condensation and Relative Humidity

The optimum year-round relative humidity level within residences is approximately 50%. Due to seasonal variations, this level is difficult to maintain without specialized equipment. Building Code standards require sealing the building against incidental leakage of warm air to the outdoors. Warm air holds moisture in suspension until contact with cold surfaces causes condensation, which may then lead to mold or mildew and moisture penetration into adjacent wood. Control of humidity and condensation requires proper heating and ventilation to exchange warm moist air for dry cool air from the outdoors.

Resealing Instructions

ranchwood, AquaFir, Charwood comes pre-sealed with a 10 year sealer for siding and 6 year for exterior decking or other flat applications. Time frames may vary depending on ultraviolet rays and moisture contact. If *ranchwood, AquaFir, Charwood* are exposed to excessive UV rays (typically south or west facing side of home) and/or moisture contact, resealing may need to occur sooner. To re-seal and maintain warranty, *ranchwood, AquaFir, Charwood* must be resealed using our specially formulated Sealer comprised from customized tints and the use of Seal-Once (www.seal-once.com).

Preparation

All surfaces should be cleaned before sealing for best penetration and performance of a coating. Simply remove dust and dirt with a pressure washer.

Application

- Do not use if air or surface temperature is below 35°F
- Do not apply in rain or when rain is imminent
- RESEAL: DO NOT THIN. Mix well. Stir contents or shake thoroughly prior to use
- Apply two even coats wet on damp with garden sprayer, brush, air-assisted and/or airless sprayer. Use medium spray pattern
- For best results, apply in the evening, out of direct sunlight, and at cooler temperatures
- If applying in direct sunlight and wood is hot, spray with a mist of water and apply immediately on dampened surface
- Apply to entire exposed wood surface
- Do not use with other water proofing products
- An additional third coat may be applied on areas with extreme exposure to UV rays and moisture (typically a south or west facing wall)
- Approximate coverage: 200-300 square feet/gallon. Apply two coats. Actual coverage will vary due to porosity of surface

Drying time

- For decking allow sealer to dry completely before subjecting to light foot traffic — up to 2 hours; 24-48 hours for full cure, depending on temperature and humidity

Clean up

- Clean equipment and brushes with warm, soapy water
- Store unused product above 32°F, protect from freezing