THERMALLY MODIFIED WESTERN HEMLOCK

TECHNICAL PRODUCT SPECIFICATION

Residential and Light Commercial Applications

STILLWOOD TIMBER



Product	Stillwood Cladding
Species	Western Hemlock
Manufacturer	Composite Recycling Technology Center
Document Reference	TM-CLAD-001 | Revision Date: November 2026

STILLWOOD TIMBER

Stillwood is manufactured from Western Hemlock (Tsuga heterophylla) sourced from the Pacific Northwest. The wood is thermally modified using a controlled heat and vacuum process that improves dimensional stability, reduces moisture absorption, and increases biological durability without the addition of conventional chemical preservatives.

INTENDED APPLICATIONS

Stillwood is designed for nonstructural exterior and interior applications, including wall cladding, soffits, screen walls, trim, and architectural finishes. Exterior cladding is intended for use in properly drained and back-ventilated rainscreen assemblies.

This specification provides general material characteristics and performance information. Product profiles and installation requirements are addressed in separate manufacturer documents. All applications must comply with applicable building codes and project requirements.

01 PRODUCT DESCRIPTION

- Thermally modified Western Hemlock produced using a thermo-vacuum process. Wood is heated to 200°C (392°F) under partial vacuum and re-conditioned with steam.
- Surface: smooth-planed, wire-brushed, and rough-sawn.
- Grade: Standard Stillwood is supplied in Tight Knot appearance grade, allowing sound, tight knots and natural wood characteristics. Alternative appearance grades, including Select Tight Knot and Construction Grade, are available upon request, subject to material availability and project requirements. Specific grading criteria and allowable defects are established at the time of order.
- Intended exposure: Above-grade (non-ground contact) only unless otherwise specifically approved.

02 DIMENSIONS AND APPEARANCE

- Dimensions and Profiles: Available in a range of dimensions and profiles, manufactured to order. Refer to the Stillwood Profile Catalog for available options.
- Custom profiles and dimensions are available upon request at additional cost.
- Natural variation in grain, color, knots, checking, and weathering is expected and is not a defect when within the stated grade.

03 MATERIAL PERFORMANCE

- Moisture Content: Typical moisture content at shipment is 5–8%. Typical equilibrium moisture content is approximately 6% at 65% relative humidity.
- Dimensional Stability and Water Absorption: Approximately 40% improvement in dimensional stability and 30% reduction in water absorption compared with unmodified Western Hemlock (ASTM D1037).
- Biological Durability: Thermal modification improves resistance to wood-decay fungi by reducing moisture absorption and altering wood constituents susceptible to biological degradation. The material remains susceptible to surface mold growth and deterioration under prolonged wet conditions.
- Performance Limitations: Thermal modification does not eliminate dimensional movement, surface weathering, or the need for proper moisture management, drainage, and ventilation.

04 MECHANICAL CHARACTERISTICS

- Thermal modification increases the brittleness of Western Hemlock and may increase susceptibility to splitting during machining and fastening. Laboratory testing demonstrates that fastener-withdrawal resistance remains comparable to untreated Western Hemlock.
- For exterior applications, use corrosion-resistant stainless steel fasteners (Type 304 or 316). Predrilling is recommended, particularly near board ends and edges, to minimize splitting. Refer to the AFP Installation Guide for specific fastening requirements.
- Janka hardness of AFP thermally modified Western Hemlock treated at 200°C (392°F), tested in accordance with ASTM D143-22, Section 13.

Surface	Average Hardness
Tangential	533.2 lbf
Radial	563.6 lbf
Transverse	892.8 lbf

05 FIRE AND CODE COMPLIANCE

- Stillwood thermally modified Western Hemlock is a combustible wood product. Laboratory fire characterization has been conducted; however, an ASTM E84 surface-burning classification has not been established for the 200°C (392°F) product. Fire-code compliance must be evaluated for the intended application and wall assembly.
- Certain fire-retardant coating systems may improve surface-burning performance. Consult applicable local and state building codes and the coating manufacturer's tested performance data. Stillwood makes no claims or warranties regarding the effectiveness or code compliance of third-party fire-retardant products.

06 STORAGE AND ACCLIMATION

- Acclimation**:** Stillwood should be stored on-site for a minimum of 30 days before finishing or installation to acclimate to local environmental conditions. During this period, material should be stored flat, elevated off the ground, and covered to protect against direct sunlight and precipitation while allowing adequate airflow.

07 REQUIRED RAINSCREEN ASSEMBLY

- Stillwood exterior cladding must be installed over a properly designed, drained, and ventilated rainscreen assembly with an appropriate water-resistive barrier and flashing. Use corrosion-resistant stainless steel fasteners (Type 304 or 316) and comply with applicable building codes.
- Refer to the Stillwood Installation Guide for detailed requirements regarding fastening, ventilation, clearances, joint spacing, and other installation procedures.

08 FINISH AND MAINTENANCE

- Finishing: Stillwood may be installed unfinished or with an appropriate exterior wood finish. Follow the finish manufacturer's recommendations for application and maintenance.
- Natural Weathering: Unfinished Stillwood will gradually develop a silver-gray patina when exposed to the elements. To help preserve the wood's original color, a UV-resistant finish should be applied after the required 30-day acclimation period, preferably before installation and before significant UV exposure or weathering occurs. Follow the finish manufacturer's application and maintenance recommendations.
- Surface Protection: When a finish is applied to closed-joint profiles, coating all faces, including the back and ends, is recommended.
- Maintenance: Inspect annually for finish deterioration, blocked ventilation, flashing failures, and localized damage. Maintain and reapply finishes according to the finish manufacturer's instructions.

09 LIMITATIONS

- Nonstructural use only.
- Not for ground contact, submerged conditions, or continuously wet service.
- Not a substitute for flashing, WRB, drainage, ventilation, or code-required fire protection.