

# **GLACIER MILLWORKS**

## **INSTALLATION AND GUIDELINES**

### **BEST PRACTICES FOR PREFINISHED NATURAL WOOD CLADDING**

**Effective September 2025 – Supersedes all previous versions**

These guidelines synthesize industry standards and proven field practices drawn from multiple sources, adapted for Glacier Millworks' prefinished cladding, trim, and timbers. Always follow local codes and manufacturer data sheets for specific accessories.

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Kalispell, Montana 59901  
GlacierMillworks.com

# 01 INTRODUCTION & SCOPE

Glacier Millworks (GM) supplies prefinished natural wood products for exterior and interior use—including cladding, trim, and timbers. This manual consolidates best practices for installing and maintaining GM products to promote long-term performance and appearance.

- GM does not provide installation services. Engage qualified contractors.
  - These guidelines complement, not replace, local/state/national building codes. The most stringent requirement governs.
  - When project specifications differ from this manual, obtain written direction from the design professional or building official.
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# 02 QUICK REFERENCE CHECKLIST

- **Store & acclimate** wood properly (see pg4–5).
  - **Install WRB & flashing** correctly before cladding (pg6, 10).
  - **Use a drainable rainscreen** with continuous ventilation cavity (pg7).
  - **Provide solid wood backing** for fasteners; 1-1/4" minimum penetration (pg8).
  - **Fasteners:** 304/305 or 316 stainless (ring-shank nails or trim-head screws).  
316 for coastal/high-corrosion. (pg8)
  - **Seal all field cuts** and penetrations before install (pg14).
  - **Maintain clearances** at grade, roofs, and decks (pg11).
  - **Do not rely on caulk** in lieu of flashing; preserve drainage paths (pg10).
  - **Document moisture content** prior to install (pg5).
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# 03 SAFETY & GENERAL NOTES

- Read this manual before starting. Use eye/ear/respiratory PPE when cutting/sanding.
  - Use dust collection when possible; follow finish manufacturers' SDS.
  - Confirm load paths, shear, fire, and energy code requirements with project engineer.
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# 04 DELIVERY, INSPECTION & STORAGE

## Delivery & Offloading

- Provide safe truck access/egress and a certified forklift or telehandler.  
Bundles may exceed **4,000 lb**; timbers may exceed **20'**.
- Inspect **before signing** the Bill of Lading. Note damage on the freight bill and photograph.



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### Inspection

- Report shipping damage or visible product defects **prior to installation**. Installing constitutes acceptance.

### On-Site Storage

- Keep **flat, stickered, and off-grade** on blocks/stringers. Place a vapor barrier or dunnage under the stack to avoid ground moisture.
- Cover **top only** with waterproof tarp/wrap; crown the cover to shed water. **Do not** tightly seal—allow airflow.
- Ideal storage: clean, dry, enclosed space (e.g., garage).

### Handling

- **Lift—don't drag.** Protect edges and factory finish. Use soft straps, not chains.
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## 05 ACCLIMATION & MOISTURE CONTENT

Proper acclimation reduces movement (shrink/swell), cupping, and finish stress.

- **On-site acclimation:** 7–10 days typical. Keep bundles off ground; stickered for airflow; protected from sun/rain.
- **Measure MC:** Use a calibrated moisture meter. Test  $\geq 10\%$  of pieces per product type to establish an average. Do not rely on time alone.
- **Recommended MC at Install (typical):** 9–14% in most U.S. regions; 7–12% in arid zones. Individual pieces may vary within these bands.

### Thermally Modified Wood (TMW)

- GM TMW typically ships  $\leq 9\%$  MC and is more dimensionally stable than non-modified wood.
- Expect readings toward the low end ( $\approx 6\text{--}9\%$ ). Install within ranges above.
- **Predrilling** is advised near ends/edges. Acclimate as with conventional wood.

**Note:** Cold/wet job sites extend acclimation. Hot/dry sites may require sun shielding and shorter, staged exposures to prevent surface checking.

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## 06 WALL PREPARATION

- Confirm substrate is **flat, plumb, dry, and structurally sound**.
  - Install a **code-compliant WRB** (self-adhered or fluid-applied, or well-lapped sheet WRB).
  - **Flash** all windows, doors, penetrations, transitions, and horizontal breaks to direct water outward.
  - Verify integration of WRB, flashings, and rainscreen components **before** cladding begins.
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## 07 RAINSCREEN SYSTEMS & FURRING

A ventilated, drainable cavity behind cladding is strongly recommended for durability.

### 7.1 Wood Furring (Best Practice)

#### Horizontal Siding

- Use **horizontal furring** strips only to create vertical air channels.  
Typical: 5/4 × 2-1/2" furring at 16–24" O.C.
- Fasten with #10–#12 stainless or epoxy-coated screws; **1-1/4" minimum embedment** into framing.

#### Vertical Siding

- Use **vertical furring** at 16–24" O.C. aligned to studs. Optional intermittent horizontal furring for trim/transition support.

#### Shared Requirements

- Maintain **continuous intake/exhaust** at base/head with bug/insect screens and metal drip flashing.
- Keep rainscreen cavity **clear** at transitions; avoid blocked compartments.

### 7.2 Manufactured Rainscreens (Alternates)

#### Horizontal Siding

- Acceptable: entangled mesh mats, vented strips, drainable housewraps or clip systems that provide continuous drainage/ventilation.
- Regardless of system, cladding/trim fasteners must penetrate **≥1-1/4" into solid wood backing** (furring, blocking, or framing).

**Foam, SIP, ICF, or Masonry substrates:** Provide wood furring or nailers sufficient for fastening penetration and cavity ventilation.

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## 08

### FASTENING GUIDELINES

**Preferred:** 304/305 or 316 **stainless steel**. Use 316 in coastal/high-corrosion zones.

- **Nails:** Ring-shank stainless,  $\geq 2"$  length as needed.
- **Screws:** #8 (or larger) stainless trim-head, length as needed.
- **Color Coordinated Fasteners:** 15\* Wire Coil, Painted, Full Rounded Head, Ring-Shank Nail and Deck-Drive DSV Wood Screw.
- **Penetration:**  $\geq 1\text{-}1/4"$  into solid wood backing.
- Place **two fasteners** per board at each furring/backing; keep **~1" from edges** and **~1-1/2" from ends**. Predrill as needed to prevent splitting.
- **Blind fastening** is **not** recommended for exterior unless profile/system is specifically engineered for it (see T&G notes below).
- **Do not overdrive.** Set heads flush.
- **Avoid non-stainless** fasteners that can corrode/discolor wood.
- **Seal all field cuts** before installation.

**Alternate (good/better/best):** Hot-dip galvanized (ASTM A-153) may be acceptable in some inland applications, but stainless remains the recommended standard for appearance and longevity—especially with semi-transparent finishes.

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## 09

### SIDING INSTALLATION (BY PROFILE)

#### General

- Verify rainscreen and backing are installed and continuous.
- Start level at the base; keep first course supported and true.
- Maintain  $\geq 6"$  **clearance** above finished grade and  $\geq 2"$  above hardscape/roofs/decks (§11).
- **Stagger butt joints.** Leave up to  $1/8"$  expansion gap at butt joints and where cladding meets trim; back-seal ends.
- Allow for natural movement; do not nail through overlapping courses unless specifically indicated.

#### 9.1 Bevel / Clapboard (Horizontal)

- Lay out course spacing to maintain required overlap ( $\geq 1"$ ). Use starter/furring strip at base.
- **Face-nail** each board into solid backing at  $\leq 24"$  **O.C.** with a single fastener per bearing located just above the overlap; avoid nailing through two layers.
- Use larger overlaps for unseasoned stock; avoid over-driving fasteners with larger laps.



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## 9.2 Tongue & Groove (Horizontal or Vertical)

- **Horizontal:** Groove down. Boards  $\leq 6"$  may be **toe-nailed** (blind) through the tongue; wider boards should be **face-nailed** with two fasteners per bearing.
- **Vertical:** Start at a plumb corner with groove toward the adjacent wall. Provide horizontal nailers or blocking at  $\leq 24"$  O.C.

## 9.3 Lap Siding (Channel, Square-Edge, etc.)

- **Horizontal:** Start at base; channels oriented up. Leave  $\sim 1/8"$  expansion gap for dry stock. Boards  $\leq 6"$ —one nail  $\sim 1"$  above lap;  $\geq 8"$ —two nails per bearing 2-1/2"–3" apart.
- **Vertical:** Provide horizontal nailers/furring; follow fastener spacing above.

## 9.4 Board & Batten (Vertical)

- Common pairing: **1x10 boards** with **1x3 battens**. For 1x6 boards spaced 1/2", use battens that overlap  $\geq 1/2"$ .
- Boards  $\leq 6"$ —one fastener centered per bearing.
- Boards  $\geq 8"$ —two fasteners per bearing, **2-1/2"–3" apart**.
- Batten fastener passes **between** the board edges (do not pin both boards with one fastener).

## 9.5 Open-Joint (e.g., "Tex Gap") & Clip Systems

- Follow system engineering for joint width, UV-stable WRB, and clip spacing. Maintain full rainscreen ventilation and specified clearances.

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# 10 TRIM & ACCESSORIES

## Corner Boards (Outside/Inside)

- Use nominal 1" or 5/4" trim sized to siding thickness.
- Maintain **up to 1/8"** expansion gap at trim joints and between siding and trim; **back-seal** all end cuts.
- Fasten into **solid backing** (not sheathing only).
- Mitered corners are acceptable with tight, full-depth fits and skilled carpentry.

## Windows & Doors

- **Flash rough openings** with WRB and tapes per manufacturer instructions.
- Install **head flashing/drip caps** lapped behind WRB and over top trim.
- Leave **up to 1/8"** gap between siding and trim; back-seal cut ends.
- **Do not caulk** horizontal siding-to-trim laps; allow drainage. Use high-quality, paintable sealant only at vertical joints/penetrations.



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## Fascia

- Install **drip-edge flashing**.
- Use scarf joints for long runs; avoid exposed end-grain.
- Stainless fasteners set flush. Slight top-edge slope encourages drainage.

## Caulking—Use Sparingly

- Acceptable sealants: high-performance acrylic-latex, acrylic-silicone hybrids, polyurethane, polysulfide, or terpolymer rubber.
  - **Avoid** pure silicone/clear on bare cedar.
  - **Never** substitute caulk for flashing. Inspect and maintain sealants regularly.
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# 11 ROOF, GRADE & DECK CLEARANCES

- **Grade:** Keep siding and trim **≥6" above** finished grade; avoid contact with soil/mulch.
  - **Roof/Decks:** Maintain **≥2" gap** above shingles, roofs, or horizontal surfaces to avoid wicking.
  - **Hardscape:** Maintain **≥1/2"–1"** above walks/patios with proper flashing and drainage.
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# 12 TIMBERS (POSTS, BEAMS, BRACES)

- Typical species/grades: kiln-dried Douglas-fir (FOHC or boxed heart #1 or better), and cedar timbers.
  - Splits/checks are natural as timbers season; kiln drying reduces but does not eliminate.
  - **Installation:** Qualified contractors only. Use engineered connections and exterior-grade structural fasteners (stainless, hot-dip galvanized, or epoxy-coated). Predrill as needed. Avoid over-countersinking to protect factory finish.
  - **Seal** all cut ends and holes with two coats of the **GM-approved finish system** before installation.
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# 13 PREFABRICATED TRUSSES (IF SPECIFIED)

- Must be **engineered** by others.
  - GM provides finish on truss components as specified; contractor installs per approved shop drawings with appropriate rigging and protection.
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## 14 FIELD FINISHING & TOUCH-UP

- **Seal all field cuts** (crosscuts, rips, notches, drill holes) **immediately** with the **GM-approved stain/sealer** for color/chemistry match.
  - Apply two liberal coats to end grain prior to installation.
  - **Touch-ups:** Use GM-supplied touch-up stain for scratches/dings; feather lightly to blend with factory finish.
  - Follow finish manufacturer conditions (e.g., >45°F, no imminent rain). Agitate well before use.
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## 15 TROUBLESHOOTING & COMMON ISSUES

- **Warping/Cupping:** Verify acclimation, fastening pattern/penetration, and free airflow in rainscreen.
  - **Staining/Discoloration:** Use stainless fasteners; resolve water management (flashing/WRB).
  - **Loose Boards:** Confirm  $\geq 1\text{-}1/4"$  penetration into solid backing; correct spacing.
  - **Mold/Mildew:** Improve ventilation and cleanliness; clean per §15.
  - **Finish Wear:** Follow maintenance interval; avoid pressure washing at close range.
  - **Sap Bleed:** If present, remove when cold ( $\sim 32^\circ\text{F}$ ) by gentle scraping to avoid smearing; avoid solvents that can mar finish.
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## 16 LIMITED WARRANTY (FINISH & SUBSTRATE)

### Factory Finish

- Glacier's prefinish system is covered by the finish manufacturer's limited warranty when installed and maintained per this manual and the finish data sheet. Typical coverage includes water ingress/rot resistance on vertical surfaces; color change/fading is generally **not** covered. See project-specific warranty certificate.

### Thermally Modified Wood (TMW) Substrates

- TMW products carry a limited rot/decay warranty provided by the substrate manufacturer. See the applicable certificate for term and conditions. This warranty is independent of the factory finish warranty.

**Claims:** Retain records of MC measurements, acclimation dates, installation photos, and maintenance logs. Failure to follow these guidelines may void coverage.

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## APPENDIX A – BEST-PRACTICE NOTES (QUICK TIPS)

- Finish as soon as practical; factory finish preferred. Touch up end cuts.
- Use rainscreen construction—especially over rigid foam or in wet climates.
- Use light-colored topcoats where heat buildup is a concern.
- Never place siding in direct contact with concrete, masonry, soil, or roofing.
- Do not nail through two layers unless specified; do not pin movement.
- Plan for maintenance; south/west elevations age fastest.



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