

SPECIFICATION 3.0

HEMLOCK PRODUCTS – NATURAL FINISH

A - MATERIALS

MOISTURE CONTENT

End grain flooring products will be manufactured from stock that is kiln-dried to less than 8% moisture content (8%MC).

DIMENSIONS

Materials will be manufactured to within the following tolerances:

1. Length/width/thickness: plus/minus .020”.

Note: moisture variations and internal stresses may result in some distortion from manufactured specifications.

FINISH

Products will be pre-sealed, all surfaces, with penetrating urethane finish.

DEFECTS

Materials shall be structurally sound. Sound/tight knots, drying checks, grain swirl, mineral stain and discoloration are not defects. Maximum 5% defective material is allowed in any shipment.

B - DELIVERY and STORAGE

Materials shall not be delivered until:

1. All concrete in installation area has cured for 60 days.
2. All masonry, painting, plastering, tile/marble/terrazzo work is complete and materials are cured.
3. All overhead mechanical and HVAC work is complete.
4. HVAC systems have operated at least 48 hours prior to delivery and storage of products to stabilize ambient temperature and humidity conditions.

Storage conditions on site:

1. Flooring shall be unpacked from shipping cartons and allowed to acclimate for one to three weeks prior to installation.
2. Storage and installation conditions should reflect temperature and humidity conditions prevailing when the building is occupied.

C - JOBSITE CONDITIONS

Kennebec Wood end-grain flooring shall not be installed below grade unless above-grade conditions are assured.

INSTALLATION ON CONCRETE SLAB

Flooring shall not be installed until concrete slab has cured until maximum water emission from the slab is less than 3 pounds per 1000 square feet per 24 hours. Testing shall be with the calcium chloride, or RMA/ “dome” test outlined in National Wood Flooring Association’s Publication A-100. Other preliminary checks may be made with suitable electric resistance test

meters, polyfilm tests (ref: ASTM test method D4263), humidity meter or phenolphthalein tests (ref: NWFA Pub.A-100). Test results shall be documented.

Additional moisture protection from moisture conducted through concrete may be offered by the vapor retarder protection provided by urethane adhesives such as Bostik's Best or others approved by Kennebec Wood. Application procedures are available from the adhesive manufacturer.

INSTALLATION ON WOOD SUBFLOORS

Moisture content of wood subfloor materials shall not exceed 2 percentage points difference from the finished product. (Ref: moisture content specifications, Section A above.)

Wood subfloors shall have adequate vapor barrier protection to prevent moisture from migrating from basements and crawl spaces or other occupied areas below the installation. If moisture metering of subfloor materials shows greater than 2% differential from the flooring material, checks shall be made for abnormal humidity conditions in basements, crawl spaces, or other sources, and those conditions corrected. Suitable barriers will be installed prior to installation of flooring ensuring that subfloor MC is at or less than 2% differential from finished product.

Subfloors shall be at least:

- 1 layer of 3/4" plywood, or
- 2 layers of 3/8" plywood installed at 90 degree angles, with joints offset at least 6 inches.
- Joist spacing at a maximum of 16" on center.

Subflooring joints shall be level, sanded level if necessary.

SURFACE CONDITIONS - ALL SUBFLOORS

Installation surfaces on concrete or wood shall be free of dirt, mortar, debris, ridges, waves, or projections that prevent the flooring from resting flat on the subfloor.

JOBSITE SECURITY

The general contractor will provide jobsite security during the installation and finishing process to allow cleaning, preparation, application and curing time for finishes without damage or delays by others.

D - INSTALLATION

Installation will not begin until:

1. HVAC systems are fully and permanently operational, ensuring temperature and humidity conditions which will prevail during the occupation of the building. Temperature and humidity conditions should be stabilized at these levels for a minimum of 48 hours prior to installation.
2. All moisture tests on concrete or wood subfloors have been performed and documented.
3. Jobsite conditions described in Section C above are met.

GLUE-DOWN PROCEDURE – FAN & BRICK PATTERNS

1. Patterns are pre-formatted on mats with a mesh scrim backing. Determine pattern orientation and centering. Snap lines or tack down straightedges for starting points. Draw lines with indelible markers to use as reference points during installation. Leave a 1/2-3/4" expansion gap at room perimeter. This gap may be left open or filled with a cork expansion strip. The mopboard and/or shoe molding will hide the gap or expansion strip.
2. Start in the center or far point of the room, working backward toward exit point(s). Do not work or walk on the wood after it is placed in glue until the glue has cured 12-24 hours.
3. Apply Bostik's Best Urethane Adhesive or approved equivalent using trowel sized to provide a minimum of 80% adhesive coverage. A 1/8 x 1/8 x 1/8" square notched trowel is recommended as a minimum applicator. Apply adhesive at an angle to reference lines so the lines are not obscured by adhesive.
4. Apply adhesive in areas that allow adequate working time for placement of product. Urethane adhesive working time varies with temperature and humidity levels. Start with small areas (<10 sq.ft.) and work up until optimum application area is learned for temperature and humidity conditions and available labor. Hold adhesives back from trim areas until trim pieces are ready to install.
5. Place mats carefully and press firmly into glue. Avoid "plowing up" glue in groutlines by sliding flooring sideways after placement.
6. Product that has warped out of flat may be held out to cut as trim pieces, or may be held into the glue using sheetrock screws and fender washers driven into groutlines between pieces (on wood subfloors) or with weights (on concrete subfloors).
7. Check pattern alignment periodically to ensure that patterns are not "running out" with reference to alignment lines.
8. Press flooring firmly into glue. Avoid "plowing up" glue in groutlines by sliding flooring sideways after placement.
9. Peel back pieces periodically to check that adhesive coverage is 80% or better.
10. Trimming can be done with jig saws or band saws or portable table saws. Best results are achieved by using a cardboard backer sheet to support the mats or individual pieces while cuts are made.
11. Use caution to clean up any urethane adhesive spillage on finished surfaces immediately. Use cleaning solvents approved by Bostik (or those of approved alternative adhesives.)
12. Allow installation to dry overnight – 16 hours minimum –before proceeding with grouting or sanding.

GROUTING PROCEDURE

Kennebec Wood cork grout may be applied with rubber grout floats or powered grouting machinery. *It is important to follow installation guidelines for best results and minimum effort.*

See notes below regarding installing in extreme humidity conditions. Do not apply grout before target MC has been reached in such conditions.

Important procedures to follow:

- Thin grout product cautiously. Use no more than 1oz. water per 1 quart grout to thin grout. Grout should have the consistency of thick oatmeal for best results. Use of drill-powered mixers is recommended. Note: Large, drywall-type mixers require heavy duty, low-speed drills.

- Apply grout using grout float or powered applicator. Work in small areas at a time. The acrylic grout binder tends to leave a skim on the wood that sets up quickly. Grout and binder are easy to remove before curing, but can be removed only by sanding once dried.
 - ✓ Remove all excess grout from wood surface with edge of grout float, putty knife, or plastic scraper.
 - ✓ Clean grout residue by scrubbing with a damp - not wet Scotch-Brite™ type abrasive pad. Use caution not to pull grout material out of the groutlines. Floor buffers with coarse pads may be used as scrubbers, but tend to pull grout from groutlines. Clean pads often in warm water and wring or shake dry.
 - ✓ Sponge off the residue left by the scrubbing process using a damp, not wet sponge, rinsing sponge frequently.
- Leave the grout surface level with the floor surface or to the bottom of the radiused edges (if product has “eased” edges). The grout will shrink and “sag” when dried, leaving the desired slightly depressed groutline. Thicker floors (3/4”+) may require two applications of grout for complete filling of groutlines. Allow grout to dry for a minimum of 24 hours before finishing.
- Clean tools thoroughly after use with soap and water.
- Allow grout to dry for a minimum of 24 hours before final finishing.
- Check groutlines for complete fill. Re-grout as necessary before finishing, repeating steps above.

E - FINAL FINISHING

After 24 hours drying time, the haze and grout residue can be removed by screening with a 100-150 screen, or with a coarse buffing pad. Kennebec Wood recommends application of one or more coats of Kennebec Wood Penetrating Urethane Finish to hemlock floors to seal the wood and grout before final finishing, followed by buffing. Final coats of finish may then be applied. End-user requirements for sheen and film thickness determine choice of finishes. Gloss or satin polyurethane finishes are recommended as topcoats. Wax finishes are not recommended on softwood floors.

SPECIAL NOTE: INSTALLATION IN EXTREME HUMIDITY CONDITIONS

Installation in extreme humidity conditions, i.e. desert (low humidity) or tropical (high humidity) climates requires extra acclimation for successful installations.

Some important suggestions:

1. Let materials acclimate before installation by un-packaging and spreading the flooring out for a period of time sufficient that the moisture content (MC) reaches the desired levels: 3-4% for desert; 12-14% for tropical climates.
2. If the flooring has not reached desired levels before glue-down, it should be sanded with 80-100 grit paper and/or screens after the glue has set. This will expose wood fibers to the atmosphere and accelerate acclimation. Let acclimate until target MC is reached.
3. After the wood has reached target MC, re-seal with Kennebec Wood penetrating urethane finish, taking care not to allow excess urethane to “flood” into groutlines. Then, standard final grouting and finishing techniques may be used.
4. Kennebec Wood recommends against the use of quick-drying solvent-based finishes in high humidity environments. These finishes are prone to “blushing” in these conditions.

F- MAINTENANCE

Care and maintenance of Kennebec Wood floors is identical to that of any wood floor. Proper care depends on the final finish applied to the floor.

On all Kennebec Wood floors:

- Clean regularly by sweeping, dust mopping or vacuuming to remove as much dirt and grit as possible.
 - DO NOT use wet mops.
 - DO NOT use ammonia or cleaners containing ammonia.
 - DO NOT use commercial dust cleaners.
- Oil soaps are not recommended for wood floors. Use cleaners specifically formulated for wood floors.
- Use floor protectors on furniture legs.
- Use throw rugs in traffic areas.
- Remove wet spills immediately. Protect floors from repeated wet spills, i.e. dishwashers, stoves, sink areas, icemakers, plant pots, and Christmas tree stands.
- Re-application of grout may be necessary after a year or two to accommodate final stress relief of new wood.
- Damaged sections of floors may be removed, replaced, and re-grouted.
- Softwood floors require more careful maintenance than hardwood. They will acquire character – dents and dings- over time, and surface finishes tend to wear off more quickly. These floors should be renewed frequently by topcoating or screening/sanding followed by topcoating.

FOR SURFACE FINISHED FLOORS

- Clean spills and stains immediately.
- Stubborn stains may require that cleaners be applied directly with a soft cloth.
- Avoid soap-type cleaners.
- DO NOT use a wax finish or wax polishing products on top of a surface finish. This will make conventional re-finishing impossible without completely stripping the floor. Even after stripping, a previously waxed floor may prove difficult to coat successfully with a surface finish.
- When the floor loses its luster, apply a topcoat dressing or screen and re-coat if necessary. Re-coating in a timely manner is the most cost-effective long-term maintenance treatment.

FOR WAX FINISHED FLOORS

- Wipe up spills immediately with a soft, dry cloth or paper towel. Buff as necessary to restore shine.
- White spots from water spills may be removed with fine steel wool dipped in mineral spirits. Rub gently with a circular motion until spot is gone, then re-wax and buff the affected area.
- Heavy traffic areas may be re-buffed. If buffing doesn't restore shine, it will be necessary to re-wax and re-buff traffic areas only. Re-apply wax only to the traffic area. Too much wax will cause the floor to scuff easily.
- Waxed floors may only be re-waxed. It is unlikely that they can be stripped and a conventional surface finish applied successfully at a later date.