

SECTION 09 62 23  
BAMBOO FLOORING  
Rev. 11/14/2012

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. **Traditional Bamboo Flooring:**
  - 1. **Horizontal grain.**
  - 2. **Vertical grain.**
- B. **Strand/Woven Bamboo Flooring:**
  - 1. **Natural.**
  - 2. **Carbonized.**
  - 3. **Carbonized and braided.**
  - 4. **Carbonized/Natural mix.**
  - 5. **Stained. Distressed and stained.**
- C. **Bamboo Trim and Accessory Pieces.**
- D. **Bamboo Stair Treads and Risers**
- E. **Accessories**

1.2 RELATED REQUIREMENTS

- A. Section 01 35 63 – Sustainability Certification Project Requirements.
- B. **[Section 01 61 16 – Volatile Organic Compound (VOC) Content Restrictions.]**
- C. Section 03 30 00 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors.
- D. Section 06 10 00 - Rough Carpentry: New subfloor or underlayment.

1.3 PRICE AND PAYMENT PROCEDURES

- A. See Section 01 21 00 – Allowances: For **[cash] [testing] [quantity]** allowances affecting this section.
- B. See Section 01 23 00 – Alternates: For product alternates affecting this section.
  - 1. This section describes a base bid product; refer to Section [\_\_\_\_\_] for an alternative product.
  - 2. This section describes an alternative product; refer to Section [\_\_\_\_\_] for the base bid product.

1.4 SUBMITTALS Product Data: Manufacturer's data sheets on each product to be used, including:

- 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
  - 4. Specimen warranty and warranty conditions.
  - 5. Care and maintenance instructions and recommendations.
- B. Shop Drawings: Indicate layout and installation details including dimensional plans, bamboo grain direction, fastening method, and transition accessories and details.
  - C. Selection Samples:
    - 1. Submit samples showing manufacturer's full range of types, grains, colors and finishes.
  - D. Verification Samples:
    - 1. Submit samples at least 12 inches long, of bamboo flooring type indicated with **[field-applied top coating applied to ½ of each sample and]** supplier identified on each sample.
  - E. Test Reports: Showing compliance with specified characteristics.

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- F. Sustainability Report: For flooring, submit bamboo content by weight, VOC and urea-formaldehyde content, and location of harvesting and manufacture; for adhesives, submit VOC content.
- G. LEED Credit Reports: Submit information as indicated in Section 01 35 63 – Sustainability Certification Project Requirements.
  - 1. Credit MR 6 – Rapidly Renewable Materials.
  - 2. Credit IEQ 4.1 – Low-Emitting Materials – Adhesives and Sealants.
  - 3. Credit IEQ 4.4 – Low-Emitting Materials – Composite Wood and Agrifiber Products.
- H. Warranty: Submit manufacturer warranty and ensure that any required forms have been completed in Owner's name and registered with manufacturer.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing and distribution of bamboo flooring with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of this section with at least three years of documented experience.
- C. Source Limitations: Obtain each type bamboo flooring from single source and from single manufacturer.
- D. Mock-ups: Provide a mock-up of a typical flooring area for each type of specified flooring as shown on Drawings for Architect's approval to set installation quality standard. Include finish trim in mock-up.
  - 1. Approved mock-up may [**not**] remain in place as part of the Work after Substantial Completion.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project site in manufacturer's protective containers.
- B. Store products under cover and elevated in a warm, dry and conditioned space.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

#### 1.7 SITE CONDITIONS

- A. Environmental Requirements: Area to receive bamboo flooring material [**and adhesive**] shall be maintained at occupancy temperature and humidity levels for at least 10 days prior to, during and continuously following installation.
  - 1. Room Temperature: 65 to 75 degrees F.
  - 2. Relative Humidity: 40 to 60 percent.
- B. Acclimatize flooring material for at least 4 days prior to installation, by opening boxes and removing shrink wrap film to allow air to circulate around flooring in installation area.

#### 1.8 WARRANTY

- A. Lifetime Structural Warranty: Manufacturer warranty to supply replacement flooring planks for any boards with defective bonding or separation within laminated boards, at no cost to original end-consumer; actual flooring plank is only item covered under this warranty.
  - 1. Warranty does not cover accidental moisture problems or problems developing from improper humidity levels, maintain relative humidity levels after installation between 40 and 60 percent.
  - 2. Warranty does not cover costs related to removal or installation of warranted product.
- B. Pre-Finish Warranty: Manufacturer warranty on aluminum oxide finish on flooring planks against wearing through, cracking or separation from date of purchase in accordance with provisions of written warranty:
  - 1. Residential Applications: 25 years.
  - 2. Commercial Applications: 5 years.

#### 1.9 MAINTENANCE

- A. Extra Materials: Provide [**5**][**10**] percent [**or not less than 1 full box**] of additional material for maintenance purposes.

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## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Green Choice® Flooring International, Inc.: [www.greenchoiceflooring.com](http://www.greenchoiceflooring.com).
1. Location: 6227 136<sup>th</sup> Avenue, Holland, Michigan 49424
  2. Phone: (866) 915-1120.
  3. Email: [sales@greenchoiceflooring.com](mailto:sales@greenchoiceflooring.com).

### 2.2 BAMBOO FLOORING

- A. **Traditional Bamboo Flooring:** Tongue and groove plank flooring made of natural bamboo strips that are laminated under pressure with micro beveled edges and factory finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: **Vertical** grain, with narrow edges of bamboo strips on visible surface using single layer laminated construction, solid bamboo.
    - a. Colors: [**Caramel**] [**Chamois**].
  3. Style: **Horizontal** grain, with wide faces of bamboo strips on visible surface using three layer laminated construction, solid bamboo.
    - a. Colors: [**Caramel**] [**Chamois**].
  4. Thickness: 5/8 inch.
  5. Plank Width: 3 3/4 inches.
  6. Plank Length: 75 1/2 inches.
  7. Plank Edge Style: Standard Tongue and Groove.
  8. Binder Resin: Phenolic resin.
  9. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  10. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  11. Critical Radiant Flux: Within a range of 0.79 to 1.06 W/sq cm when tested in accordance with ASTM E 648-2006a.
  12. Coefficients of Friction: Average of .41 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394.
  13. Compressive Strength: Average of 1,948 psi with Ultimate Load of 18,267 lbf; ASTM D 3501.
  14. Hardness: Average of 1,867 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  15. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.06 percent
    - b. Thickness Swell: 2.7 percent
  16. Installation Method: Glue down.[**Nail down.**]
- B. **StrandWoven Natural Bamboo Flooring:** Natural bamboo strips are soaked in binder glue, woven together, compressed under pressure into a log, sliced into flooring planks, and milled into plank flooring with micro beveled edges and factory finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: StrandWoven, Natural.
  3. Color: **Cornsilk**; natural bamboo.
  4. Plank Width: [**3 3/4 inches**] [**5 1/4 inches**].
  5. Plank Edge Style: [**Standard Tongue and Groove.**][**Click-Lock.**]
  6. Plank Thickness: 9/16 inch.
  7. Plank Length: 72 inches.
  8. Binder Resin: Phenolic resin.
  9. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  10. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  11. Critical Radiant Flux: Average range of 0.87 to 1.05 W/sq cm when tested in accordance with ASTM E 648-2006a.

12. Coefficients of Friction: Average of .52 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394.
  13. Compressive Strength: Average of 12,718 psi with Ultimate Load of 21,651 lbf; ASTM D 3501.
  14. Hardness: Average range of 3,476 to 4,694 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  15. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.015 percent.
    - b. Thickness Swell: 3.3 percent.
  16. Installation Method: Glue-down. **[Float. ]**
- C. **StrandWoven Carbonized Bamboo Flooring:** Carbonized bamboo strips are soaked in binder glue, woven together, compressed under pressure into a log, sliced into flooring planks, and milled into plank flooring with micro beveled edges and factory finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: StrandWoven, Carbonized.
  3. Colors: **Nutmeg**; dark carbonized bamboo, **Cinnamon**; light carbonized bamboo.
  4. Plank Width: **[3 3/4 inches] [5 1/4 inches]**
  5. Plank Edge Style: **[Standard Tongue and Groove.][Click-Lock.]**
  6. Binder Resin: Phenolic resin.
  7. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  8. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  9. Critical Radiant Flux: Average range of 0.55 to 1.09 W/sq cm when tested in accordance with ASTM E 648-2006a.
  10. Coefficients of Friction: Average of .52 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394
  11. Compressive Strength: Average of 12,718 psi with Ultimate Load of 21,651 lbf; ASTM D 3501.
  12. Hardness: Average range of 3,476 to 4,694 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  13. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.015 percent.
    - b. Thickness Swell: 3.3 percent.
  14. Installation Method: Glue-down. **[Float. ]**
- D. **StrandWoven Carbonized Braided Bamboo Flooring:** Carbonized bamboo strips are twisted and braided and soaked in binder glue, woven together, compressed under pressure into a log, sliced into flooring planks, and milled into plank flooring with micro beveled edges and factory finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: Strandwoven, Carbonized and Braided.
  3. Color: **Burlwood**; carbonized twisted and braided bamboo.
  4. Plank Width: 4 7/8 inches.
  5. Plank Edge Style: Standard Tongue and Groove.
  6. Binder Resin: Phenolic resin.
  7. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  8. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  9. Critical Radiant Flux: Average range of 0.55 to 1.09 W/sq cm when tested in accordance with ASTM E 648-2006a.
  10. Coefficients of Friction: Average of .52 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394
  11. Compressive Strength: Average of 12,718 psi with Ultimate Load of 21,651 lbf; ASTM D 3501.
  12. Hardness: Average range of 3,476 to 4,694 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  13. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.015 percent.
    - b. Thickness Swell: 3.3 percent.
  14. Installation Method: Glue-down.

- E. **StrandWoven Carbonized Mix Bamboo Flooring:** Natural, carbonized, and variegated bamboo strips are soaked in binder glue, woven together, compressed under pressure into a log, sliced into flooring planks, and milled into plank flooring with micro beveled edges and factory finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: StrandWoven, Carbonized/Natural Mix
    - a. Color: **Marbled**; approximate ratio of 70 to 80 percent natural (Cornsilk) to 20 to 30 percent carbonized bamboo (Nutmeg).
      - 1) Plank Width: 5 1/4 inches.
      - 2) Plank Edge Style: Click-Lock.
  3. Binder Resin: Phenolic resin.
  4. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  5. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  6. Critical Radiant Flux: Average range of 0.55 to 1.09 W/sq cm when tested in accordance with ASTM E 648-2006a.
  7. Coefficients of Friction: Average of .52 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394
  8. Compressive Strength: Average of 12,718 psi with Ultimate Load of 21,651 lbf; ASTM D 3501.
  9. Hardness: Average range of 3,476 to 4,694 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  10. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.015 percent.
    - b. Thickness Swell: 3.3 percent.
  11. Installation Method: Glue-down. **[Float.]**
- F. **StrandWoven Stained Bamboo Flooring:** Natural, carbonized, and variegated bamboo strips are soaked in binder glue, woven together, compressed under pressure into a log, sliced into flooring planks, and milled into tongue and groove plank flooring with micro beveled edges and factory stained finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: StrandWoven and stained.
    - a. Color: **[Walnut] [Pecan]**.
  3. Plank Width: 5 1/4 inches.
  4. Plank Thickness: 9/16 inch.
  5. Plank Length: 72 1/2 inches.
  6. Plank Edge Style: Click-Lock.
  7. Binder Resin: Phenolic resin.
  8. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  9. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  10. Critical Radiant Flux: Average range of 0.55 to 1.09 W/sq cm when tested in accordance with ASTM E 648-2006a.
  11. Coefficients of Friction: Average of .52 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394
  12. Compressive Strength: Average of 12,718 psi with Ultimate Load of 21,651 lbf; ASTM D 3501.
  13. Hardness: Average range of 3,476 to 4,694 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  14. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.015 percent.
    - b. Thickness Swell: 3.3 percent.
  15. Installation Method: Glue-down. **[Float.]**
- G. **StrandWoven Stained and Distressed Bamboo Flooring:** Natural, or carbonized bamboo strips are soaked in binder glue, woven together, compressed under pressure into a log, sliced into flooring planks, and milled into tongue and groove plank flooring with micro beveled edges and factory stained and distressed finished.
1. Material: 100 percent mature Moso Bamboo; Bambusoideae.
  2. Style: StrandWoven, stained and distressed.
    - a. Color: **[Java] [Chestnut] [Oyster-grey]**.
  3. Plank Width: 5 1/4 inches.

4. Plank Thickness: 9/16 inches.
  5. Plank Length: 72 1/2 inches.
  6. Plank Edge Style: Click-Lock.
  7. Binder Resin: Phenolic resin.
  8. Finish: Exposed side contains nine to thirteen coats and underside contains one coat of acrylic aluminum oxide, cured with ultraviolet light.
  9. Formaldehyde Emissions: Less than 0.02 part per million, tested in accordance with ASTM E 1333-1996 (2002).
  10. Critical Radiant Flux: Average range of 0.55 to 1.09 W/sq cm when tested in accordance with ASTM E 648-2006a.
  11. Coefficients of Friction: Average of .52 for static friction between flooring and prime grade shoe leather sole when tested in accordance with ASTM D 2394
  12. Compressive Strength: Average of 12,718 psi with Ultimate Load of 21,651 lbf; ASTM D 3501.
  13. Hardness: Average range of 3,476 to 4,694 lbf, Janka Ball hardness test; ASTM D 1037-2006.
  14. Dimensional Stability: At 90 percent relative humidity; ASTM D 1037-2006.
    - a. Linear Expansion: 0.015 percent.
    - b. Thickness Swell: 3.3 percent.
  15. Installation Method: Glue-down. **[Float. ]**
- H. Bamboo Trim and Accessory Pieces: Matching construction, color, and finish; piece length of at least 72 inches unless noted otherwise.
1. Baseboards: Radiused top.
    - a. Height: 3 1/2 inches.
    - b. Thickness: 7/16 inch.
  2. Quarter round: 3/4 inch radius.
  3. Reducer: 2 inches wide, same thickness as floor.
  4. Transition Strip: T-molding to cover edge of bamboo floor adjacent to other floor of same thickness; 1-1/2 inches wide.
- I. Bamboo Stair Treads and Risers:
1. Stair Treads: Radiused nosing.
    - a. Thickness: At least 1 inch.
    - b. Length and Width: As indicated on Drawings.
    - c. **[Provide treads in one piece.]**
    - d. **[Provide treads from glued up tongue and groove bamboo planks, with nosing piece at least 2 1/2 inches wide and planks run full width of stair.]**
  2. Stair Risers: Glued up from matching planks.
    - a. Thickness, Length and Width: As indicated on Drawings.

### 2.3 ACCESSORIES

- A. Adhesives: One-part, trowel applied, moisture-cure, 100 percent urethane adhesive specifically recommended by flooring manufacturer for type of flooring installed.
1. Acceptable Manufacturers:
    - a. Bostik; Product TKO.
    - b. Bostik; Product BEST.
    - c. Manufacturer approved equivalent.
- B. Subfloor/Underlayment:
1. At least 5/8 inch CDX plywood with supports at 12 to 16 inch on center.
  2. At least 3/4 inch CDX plywood with supports at 24 inch on center.
- C. Leveling Compound/Substrate Filler: Provide filler compatible with adhesive used for wood flooring and as recommended by flooring manufacturer.
- D. **[Vapor Barrier: 6 mil polyethylene film as recommended by flooring manufacturer.]**
- E. **[Fasteners for Nail-Down Installation: Use pneumatic tongue and groove flooring stapler or nailer as recommended by flooring manufacturer with adapter pad as necessary.]**
1. **Power Cleat Staples/Nails: 2 inches long.**
  2. **Pneumatic Cleat Nail: 1 1/2 inches long, 18 gage.]**

- F. **[Field-Applied Top Coating (for High Traffic and Moisture Related Spill Areas): As recommended by certified floor refinisher.]**

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify that flooring has been stored unwrapped at ambient temperature and humidity of the space that it is being installed for at least 4 days prior to installation.
- B. Verify that flooring materials are in satisfactory condition for installation. Do not install scratched or otherwise damaged materials.
- C. Verify that substrate is clean, smooth, level, and dry.
1. Remove debris from flooring substrate including wax, oil, or solvents.
  2. Ensure flatness to within 3/16 inch over 8 foot radius.
    - a. Provide substrate filler to fill low spots as necessary.
- D. Perform moisture tests:
1. Do not install if moisture content of the subfloor is more than 10 percent.
  2. Do not install if difference between subfloor and flooring moisture content exceeds 2 percent.
  3. Confirm substrate will remain dry throughout the year.
- E. Concrete Sub-Floor : Fully cured for at least 45 days, and calcium chloride test results showing moisture content less than 3 lbs per 1,000 sq ft in accordance with ASTM F 1869.
1. Verify that concrete sub-floor surfaces are dry enough and ready for flooring installation by testing for alkalinity in accordance with ASTM F 710 and moisture emission rate in accordance with ASTM F 2170.
    - a. Obtain additional instructions if test results are not within limits recommended by flooring manufacturer and adhesive materials manufacturer.
    - b. Confirm type and requirements for vapor barrier as necessary for application indicated and as recommended by installer.
  2. For Adhesive Installations:
    - a. Perform a bond test using actual adhesive to be employed.
    - b. Do not install unless satisfactory bond is obtained.
    - c. Verify compatibility of adhesive with other products used in installation.
- F. Nailable Wood Subfloor: Using a moisture meter, check moisture content of wood substrate.
1. Crawl Space: Verify that crawl space under subfloor has at least 24 inches clearance from dirt floor to bottom of floor joists.
    - a. Verify that floor of crawl space has adequate vapor barrier to minimize moisture transfer to sub-flooring.
    - b. Verify that crawl space is adequately ventilated.
  2. To minimize potential for floor squeaks, ensure that wood sub-floor is nail or screw attached to joists at 6 inches on center.

#### 3.2 FLOORING INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Obtain manufacturer's instruction sheets and warranty limitations and maintain copies on site during installation.
- C. Install in accordance with manufacturer's instructions and warranty limitations.
- D. Grind down any high spots and fill low spots with leveling compound.
- E. Monitor moisture content of substrate and flooring for acceptable moisture range throughout installation process.
- F. Install vapor retarder where required.
1. Overlap edges a minimum of 4 inches.
  2. Continue vapor retarder application at walls, up 2 inches.
- G. Layout flooring prior to installation to make adjustments for aesthetics.

- H. Install flooring panels perpendicular to flooring joists, beginning with grooved edge towards wall.
- I. **[At existing sub-floor condition: Install panels perpendicular to the existing sub-floor.]**
- J. Expansion Gaps:
  - 1. Provide 1/2 inch expansion gap at perimeter edges of floor to allow for expansion and contraction at walls, pipes, and cabinets.
  - 2. For floors wider than 20 feet: Consult National Wood Flooring Association's technical manual for additional spacing and transition piece requirements.
- K. Stagger end joints of boards at least 4 inches from each other.
- L. Glue-Down Installation:
  - 1. Install using adhesive, with planks tightly butted.
  - 2. Spread adhesive in accordance with adhesive manufacturer's written instructions.
  - 3. Fit tongue side into the groove side until they are flush against each other.
  - 4. Tape rows together after they have been laid with wide removeable painter's tape.
  - 5. Weight down areas if boards are slightly bowed or floor is uneven to ensure good contact with adhesive.
  - 6. Verify that good contact is made between flooring and adhesive throughout entire floor.
  - 7. Immediately wipe off any excessive adhesive from flooring as work progresses.
    - a. Use light application of mineral spirits or adhesive remover and rub lightly so as not to damage factory finish on flooring.
- M. Floating (Click-Lock) Installation:
  - 1. Install using the manufacturer's click and lock method, with planks tightly fit together.
  - 2. Click-Lock flooring can be installed with or without using glue.
  - 3. Method A (Angle – In):
    - a. Position panel at a 20-30 degree angle to the panel already installed.
    - b. Move panel gently up and down while exerting forward pressure. Panels will automatically click into place. Insert tongue into groove or groove into tongue.
  - 4. Method B (Flat):
    - a. Using special tapping block sitting flat on floor, tap panels into each other without lifting.
    - b. To avoid damaging panels, tap panels together gradually. Do not use just one tap.
- N. Nail-Down Installation:
  - 1. Verify nailer or stapler gun air pressure on test piece prior to fastening actual flooring.
  - 2. Install using nails or staples concealed within tongue-and-groove joint, with planks tightly butted and fasteners spaced as recommended by manufacturer.
    - a. Ensure that fasteners are fully seated.
  - 3. Face nailing: Pre-drill holes to prevent surface damage to flooring.
  - 4. Provide fastener to within at least 3 inches from each end of row.
  - 5. Space fasteners at 6 to 8 inches on center with at least 2 fasteners per board.
  - 6. Install flooring perpendicular to floor joists beginning with grooved edge against the wall, unless noted otherwise.
- O. Use pull-straps at 3 foot intervals to ensure boards are held firmly together during glue down installation.
- P. Maintain at least 1/2 inch space between ends of planks and vertical walls; cover with trim fastened to allow expansion of planks.

### 3.3 TRIM INSTALLATION

- A. Remove spacers.
- B. Install wall base covering expansion space; miter inside and outside corners.
- C. Fasten molding and trim accessories to wall surface and not to flooring.
- D. In doorways where adjacent floor finish is different, terminate flooring under centerline of door; provide divider strip.
- E. At open or exposed edges and where flooring terminates, provide tapered edge strip.

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3.4 STAIR TREADS AND RISERS INSTALLATION

- A. Install stair treads and risers as indicated on Drawings.

3.5 **[FIELD-APPLIED TOP COATING APPLICATION**

- A. **Apply top coating according to top coating manufacturer's recommendations and instructions.]**

3.6 CLEANING

- A. Clean flooring[,**molding and trim**] [,**stair treads and risers**]to like-new condition using methods recommended by manufacturer.

3.7 PROTECTION

- A. Prohibit traffic on floor for at least 48 hours after installation.
- B. Protect installed products until completion of project.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION