

**SECTION 07 31 29.13
WOOD SHINGLES**

SPEC WRITER NOTES:

1. Delete text between // _____ // not applicable to project. Edit remaining text to suit project.
2. This guide specification does not include requirements for deck treatment for re-roofing work.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fire-retardant-treated wood cedar shingles over underlayment nailed to roof sheathing.
2. Fire-retardant-treated wood cedar shingle panels over underlayment nailed to mansard roof sheathing.

1.2 RELATED REQUIREMENTS

SPEC WRITER NOTE: Update and retain references only when specified elsewhere in this section.

- A. Counterflashing and Flashing of Roof Projections: Section 07 60 00, FLASHING AND SHEET METAL.
- B. Roof Hatches (Scuttles) and Roof Vents: Section 07 71 00, ROOF SPECIALTIES.
- C. Shingle Color: Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. ASTM International (ASTM):
 1. A480/A480M-15 - General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
 2. D226/D226M-09 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 3. D1970/D1970M-15a - Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 4. E108-11 - Fire Tests of Roof Coverings.
 5. F1667-15 - Driven Fasteners: Nails, Spikes, and Staples.
- C. American Wood Protection Association(AWPA):
 1. U1-15 - Use Category System: User Specification for Treated Wood.

- D. Cedar Shake and Shingle Bureau (CSSB):
 - 1. New Roof Construction Manual-2010.
- E. UL LLC (UL):
 - 1. 790-04 - Fire Tests of Roof Coverings.

1.4 PREINSTALLATION MEETINGS

- A. Conduct preinstallation meeting // at project site // minimum 30 days before beginning Work of this section.

SPEC WRITER NOTE: Edit participant list to ensure entities influencing outcome attend.

- 1. Required Participants:
 - a. Contracting Officer's Representative.
 - b. // Architect/Engineer. //
 - c. Contractor.
 - d. Installer.
 - e. // Manufacturer's field representative. //
 - f. Other installers responsible for adjacent and intersecting work, including flashing and sheet metal.

SPEC WRITER NOTE: Edit meeting agenda to incorporate project specific topics.

- 2. Meeting Agenda: Distribute agenda to participants minimum 3 days before meeting.
 - a. Installation schedule.
 - b. Installation sequence.
 - c. Preparatory work.
 - d. Protection before, during, and after installation.
 - e. Installation.
 - f. Terminations.
 - g. Transitions and connections to other work.
 - h. Other items affecting successful completion.
- 3. Document and distribute meeting minutes to participants to record decisions affecting installation.

1.5 SUBMITTALS

- A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:

1. Description of each product.
2. Installation instructions.
3. Warranty.

C. Samples:

1. Shingles: Full sized, each type and color.
2. Shingle Panel: 380 mm (15 inches) high by 460 mm (18 inches) wide, minimum, each type and color.

D. Sustainable Construction Submittals:

SPEC WRITER NOTE: Retain sustainable construction submittals appropriate to product.

1. Low Pollutant-Emitting Materials:

- a. Certify each // composite wood // and agrifiber // product contain no added urea formaldehyde.

E. Certificates: Certify each shingle and shingle panel product complies with specifications.

F. Operation and Maintenance Data:

1. Care instructions for wood shingles and shingle panels.

1.6 DELIVERY

- A. Deliver products in manufacturer's original sealed packaging.
- B. Mark packaging, legibly. Indicate manufacturer's name or brand, type, color, production run number, manufacture date, and UL or ASTM E108 fire test label.
- C. Before installation, return or dispose of products within distorted, damaged, or opened packaging.

1.7 STORAGE AND HANDLING

- A. Store shingles according to manufacturer's instructions. Store roll goods on end in upright position.
- B. Protect products from damage during handling and construction operations.
- C. Keep materials dry, covered completely and protected from weather.

1.8 WARRANTY

SPEC WRITER NOTE: Always retain construction warranty. FAR includes Contractor's one year labor and material warranty.

- A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

SPEC WRITER NOTE: Specify extended manufacturer's warranties for materials only.

- B. Manufacturer's Warranty:

- 1. Warrant // wood shingles // wood shingle panels // against material and manufacturing defects.

SPEC WRITER NOTE: Specify customarily available warranty period for specified products.

- a. Warranty Period: // _____ // years.

SPEC WRITER NOTE: Verify with treatment supplier for treatment warranty.

- 2. Warrant fire-retardant treatment to meet the specified fire-retardant standard.

- a. Warranty Period: // _____ // years.

PART 2 - PRODUCTS

2.1 PRODUCTS - GENERAL

- A. Basis of Design: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Provide each product from one manufacturer.
- C. Sustainable Construction Requirements:

SPEC WRITER NOTE:
1. Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS includes comprehensive product list setting VOC limits for low-emitting materials.
2. Retain subparagraphs applicable to products specified in this section.

- 1. Low Pollutant-Emitting Materials: Maximum VOC content by weight.
 - a. Composite Wood and Agrifiber: No added urea formaldehyde.

SPEC WRITER NOTE:

1. Verify with Fire and Safety Division that use of Class C shingle is acceptable.
2. Make material requirements agree with applicable requirements specified in the referenced Applicable Publications. Update and specify only that which applies to the project.

2.2 WOOD SHINGLES

- A. Wood Shingles: Fire-retardant-treated cedar, smooth, square butt.
 1. Grade: CSSB No. 1.
 2. UL 790 or ASTM E108 Class C fire resistance.
 3. Length: 460 mm (18 inches).
 4. Exposure:
 - a. Roof Slopes 3/12 to 4/12: 110 mm (4-1/4 inches) maximum.
 - b. Roof Slopes 4/12 and Steeper: 140 mm (5-1/2 inches) maximum.
 5. Width: Random, 100 mm (4 inches) minimum.
 6. Weight: Approximately 9.3 kg/sq. m (1.9 lb./sq. ft.).
- B. Hip and Ridge Shingles: Prefabricated units.
- C. Wood Shingle Panels, for 20/12 and Steeper Slopes:

Fire-retardant-treated cedar, smooth, square butt shingles, with even butt line, laminated to plywood panel backing.

 1. Panel Backing: 8 mm (5/16 inch) exterior grade C-C plywood.
 2. Shingle Grade: CSSB No. 1.
 3. Shingle Fire Resistance: UL 790 or ASTM E108 Class C.
 4. Shingle Exposure: 175 mm (7 inches) maximum.
 5. Shingle Width: Random, 75 mm (3 inches) minimum.
 6. Panel Length: 2,440 mm (96 inches).

SPEC WRITER NOTE: Verify panel height with manufacturer.

7. Panel Height: // 380 mm (15 inches) // _____ //.
8. Panel Weight: 10 kg/sq. m (2 lbs./sq. ft.) minimum.
9. Adhesive: Exterior, waterproof.

2.3 ROOFING NAILS

- A. Nails for Shingles: ASTM F1667, Type I, Style 21, galvanized steel, 6d size.
- B. Nails for Felt: ASTM F1667, Type I, Style 20, galvanized steel, smooth shanks.

1. Heads: 10 mm to 11 mm (3/8 inch to 7/16 inch) diameter.
2. Length: 19 mm (3/4 inch).

2.4 ROOFING UNDERLAYMENT

- A. Organic Felt: ASTM D226/D226M, Type II, No. 30.
- B. Self-Adhering Modified Bituminous Underlayment: ASTM D1970/D1970M.

2.5 METAL FLASHING

- A. Provide required metal roof flashings specified in Section 07 60 00, FLASHING AND SHEET METAL.
 1. Stainless Steel: ASTM A480/A480M, dead soft temper, 0.38 mm (0.015 inch) thick.

SPEC WRITER NOTE: Retain article below if ridge vents are required.

2.6 RIDGE VENTS

- A. Ridge Vents: Manufacturer's standard ridge vent for use under wood shingles.
 1. Provide ridge vents with internal filters, internal baffles, or external baffles, for weather protection.
 2. Free Area: Minimum 25400 square mm net free area per meter length (12 square inches per foot).

SPEC WRITER NOTE: Retain article below if snow guards are required.

2.7 SNOW GUARDS

- A. Snow Guards: Stainless steel individual snow guards designed for use with wood shingles.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine and verify substrate suitability for roofing installation.
 1. Verify roof substrates are sound, within manufacturer's tolerances, and free from defects which would interfere with roofing installation.
 2. Verify roof accessories, vent pipes and other projections through roof are in place and roof flashing is installed, or ready for installation, before installing shingles.
- B. Protect existing construction and completed work from damage.

3.2 INSTALLATION - GENERAL

- A. Install products according to manufacturer's instructions // and approved submittal drawings //.
 - 1. When manufacturer's instructions deviate from specifications, submit proposed resolution for Contracting Officer's Representative consideration.

3.3 METAL DRIP EDGE INSTALLATION

- A. At eaves and rakes, install stainless steel drip edges.
 - 1. Eaves: Install metal drip edge before underlayment.
 - 2. Rakes: Install metal drip edge after underlayment.
- B. Secure metal drip edges with compatible nails spaced maximum 250 mm (10 inches) on center along inner edges.

3.4 FLASHING INSTALLATION

- A. Install metal flashings at intersections of roofs, adjoining walls, roof slope changes, under ridges, hips, and valleys, and at projections through deck such as chimneys and vent stacks. Install metal flashings to comply with requirements in Section 07 60 00, FLASHING AND SHEET METAL.
- B. Install step flashing at intersections with vertical surfaces.
 - 1. Length: Length of shingle plus 50 mm (2 inches).
 - 2. Vertical Leg Height: 200 mm (8 inches) minimum.
 - 3. Horizontal Leg Width: 150 mm (6 inches) minimum.
- C. Valley Flashing: Shingle type, as shown and as specified in Section 07 60 00, FLASHING AND SHEET METAL.
 - 1. Secure valley flashing according to shingle manufacturer's instructions.
 - 2. Width: 300 mm (12 inches) minimum, both sides of valley.
 - 3. Length: Length of shingle plus 50 mm (2 inches).
- D. Hip and Ridge Flashing: Shingle type.
 - 1. Length: Length of shingle plus 2 inches.
 - 2. Width: 13 mm (1/2 inch) less than shingle on both sides of hip or ridge.
- E. Install step flashing as each course of wood shingles is installed. Extend upper edge of flashing 2 inches minimum above each course of shingles. Extend lower edge 13 mm (1/2 inch) above butt of shingle forming neat course.

3.5 UNDERLAYMENT INSTALLATION

- A. Install self-adhering sheet underlayment, working from low point to high point. Lap sides 90 mm (3-1/2 inches) minimum, and lap ends 150 mm (6 inches) minimum. Install at the following locations:
 - 1. Eaves and Rakes: From edge of eave and rake to 600 mm (24 inches) minimum beyond inside face of exterior wall.
 - a. Lap underlayment over eave metal drip edge.
 - 2. Valleys, Hips and Roof Slope Transitions: Centered over change in slope, and extended 450 mm (18 inches) minimum on both sides.
 - 3. Ridges: Centered on ridge, and extended 900 mm (36 inches) minimum on both sides. // Do not cover ridge vent opening. //
 - 4. Sidewalls and Projections through Roof: Extended 450 mm (18 inches) from projection, and extended up projection 100 mm (4 inches) minimum.
 - 5. Firmly roll underlayment to ensure adhesion to roof deck and metal flashings.
- B. Install organic felt underlayment on roof deck not covered by self-adhering sheet underlayment, with 100 mm (4 inches) minimum end laps, 50 mm (2 inches) minimum head laps, and 300 mm (12 inches) minimum ridge laps. Nail felt 125 mm (five inches) on centers along laps.

3.6 ROOF ACCESSORY INSTALLATION

- A. Install // roof hatches (scuttles), // and roof vents, // specified in Section 07 71 00, ROOF SPECIALTIES before installing shingles.
- B. Lap underlayment and wood shingles over upslope base flanges of roof accessory flashings.
- C. Install underlayment and wood shingles over sideslope base flanges of roof accessory flashings.
- D. Install downslope base flanges of roof accessories over wood shingles.

3.7 WOOD SHINGLE INSTALLATION

- A. Install starter course of roof shingles with 13 mm (1/2 inch) overhang at eaves. Install first course over starter course.
- B. At rake, overhang roof edge 6 mm (1/4 inch).
- C. Install shingles with maximum specified exposure.
- D. Nail shingles according to manufacturer's instructions.
- E. Corners, Interior and Exterior: Woven.
- F. Valleys: Closed.

3.8 RIDGE VENT INSTALLATION

- A. Install ridge vents over shingles.

SPEC WRITER NOTE: Coordinate ridge vent location and extent with drawings.

- 1. Extent: Continuous along ridges extending to within <distance> of rakes.

3.9 // HIP AND // RIDGE SHINGLE INSTALLATION

- A. Install prefabricated // hip and // ridge shingles according to manufacturer's instructions.
 - 1. Begin ridge shingle installation at leeward end of ridge. Cover ridge vents with shingles. // Do not cover ridge vent openings with ridge shingles. //
 - 2. // Begin hip shingle installation at bottom. //

SPEC WRITER NOTE: Retain article below if snow guards are required.

3.10 SNOW GUARD INSTALLATION

- A. Install snow guards in layout recommended by manufacturer.
 - 1. Fasten snow guards with fasteners concealed by shingles.

SPEC WRITER NOTE: Include shingle panel installation if required for mansard roofs.

3.11 WOOD SHINGLE PANEL INSTALLATION

- A. Install wood shingle panels according to manufacturer's instructions.
 - 1. Double shingles at starting course. Space minimum 1/16 inch apart.

- - E N D - -