



OHIO FACILITIES CONSTRUCTION COMMISSION

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23 October 2013

To: All Design and Construction Professionals

**Re: Addendum to Ohio School Design Manual  
2013 Regarding Sloped Shingle Roofing**

Dear Colleagues:

It has recently come to our attention that only one of the primary asphalt shingle manufacturers is willing to furnish the 40 year Material Warrantee that is required by Section 073113 ASPHALT SHINGLES of the OSDM when the shingles are installed over non-vented nail base. At issue is the elevated temperature to which the shingles are exposed when installed over non-vented sheathing. During the 2013 update process for the OSDM we removed the requirement for vented nail base sheathing. Recognizing that we require at least three sources for all materials, we are reinstating the requirement for vented nail base.

The Shingles and Sheathing Sections of the OSDM have been revised as indicated in the attached Addendum No. 1.

Thank you for your attention to this change.

Sincerely,

A handwritten signature in cursive script that reads "Franklin Brown".

Franklin Brown, AIA, CEFP, LEED AP  
Planning Administrator

Attachment: Addendum No. 1

## **ADDENDUM NO. 1**

ADDENDUM NO. 1 to the 2013 Ohio School Design Manual (OSDM) as prepared by the Ohio School Facilities Commission, 30 W. Spring St., 4<sup>th</sup> Floor, Columbus, Ohio 43215. This Addendum shall hereby be and become a part of the OSDM the same as it originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereafter indicated in this Addendum.

### **ITEM No. 1 OSDM, Chapter 8: SYSTEMS AND MATERIALS – Shingle Roofs, pg. 1637**

- A. The SYSTEMS AND MATERIALS Guideline for shingle roofs has been revised and is included with and hereby made a part of this Addendum. The attached Guideline supersede(s) the original document.

### **ITEM No. 2 OSDM, Chapter 9: SPECIFICATIONS – WOODS, PLASTICS, AND COMPOSITES, Section 061600 - Sheathing, pgs. 1851-1852**

- A. The SPECIFICATION Guideline for Section 061600 – Sheathing - has been revised and is included with and hereby made a part of this Addendum. The attached Guideline supersede(s) the original document.

### **ITEM No. 3 OSDM, Chapter 9: SPECIFICATIONS – THERMAL AND MOISTURE PROTECTION, Section 073113 – Asphalt Shingles, pgs. 1866-1867**

- A. The SPECIFICATION Guideline for Section 073113 – Asphalt Shingles - has been revised and is included with and hereby made a part of this Addendum. The attached Guideline supersede(s) the original document.

**A. APPLICATION**

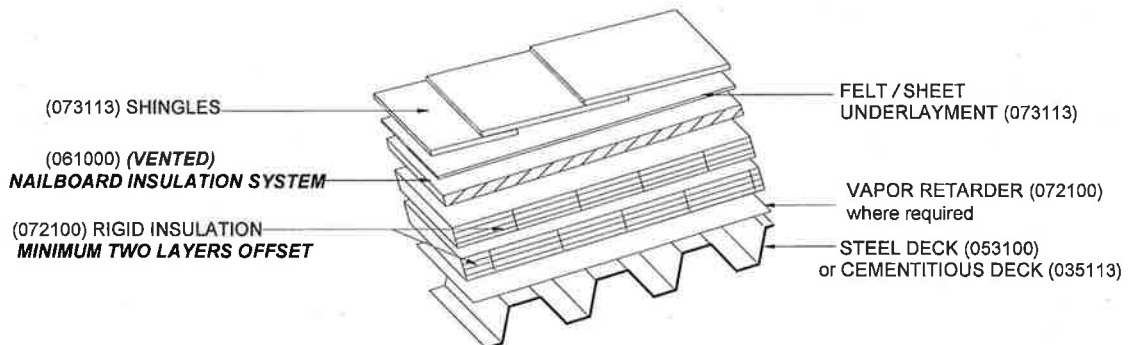
1. Steep Roofing
2. Slope - Minimum 4:12
3. Hip roofs require special consideration

**B. COMPONENTS**

1. Roof Membrane
  - a. Shingles
  - b. Underlayment
  - c. **Nailable sheathing**
2. **Roof Insulation**
  - a. **(Vented) nailboard/insulation (2" minimum air space)**
  - b. **Rigid insulation**
3. Vapor Retarder
  - a. Where required. Refer to Chapter 9.
4. Structural Support
  - a. Steel deck or cementitious deck
5. **Air Barrier System Required**

**C. PERFORMANCE**

1. Features
  - a. **Detail roof/wall and roof plane intersection and all openings and penetrations to provide a continuous air barrier system.**
  - b. **Refer to NRCA Roofing Manual: Chapter 3, "Condensation Control & Ventilation for Steep-Slope Roof Assemblies"**



Shingle Roof System  
Figure A-1

## SECTION 061600

## SHEATHING

GENERAL GUIDELINES

## 1.1 SECTION INCLUDES

- A. Qualitative requirements for wall sheathing, roof sheathing, **vented nailboard**, building wrap, sheathing joint and penetration treatment and flexible flashing at openings in sheathing.

## 1.2 WOOD PANEL PRODUCTS, GENERAL

- A. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.

## 1.3 PRESERVATIVE-TREATED PLYWOOD

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

## 1.4 FIRE-RETARDANT-TREATED PLYWOOD

- A. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
  - 1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  - 2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when testing according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

## 1.5 WALL SHEATHING

- A. Plywood Wall Sheathing
- B. Glass-Mat Gypsum Wall Sheathing
- C. Cellulose Fiber-Reinforced Gypsum Sheathing
- D. Extruded-Polystyrene-Foam Wall Sheathing
- E. Foil Faced Closed Cell Rigid Foam Wall Sheathing**

## 1.6 ROOF SHEATHING

- A. Plywood Roof Sheathing: Exterior, Structural I sheathing.
  - 1. Provide 5/8 inch nominal thickness for 24 inch rafter spacing.

**WOODS, PLASTICS, AND COMPOSITES**

## CHAPTER 9: SPECIFICATIONS

- B. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural 1 sheathing.
    - 1. Provide 5/8 inch nominal thickness for 24 inch rafter spacing.
  - C. **Composite Nail Base Insulated Roof Sheathing**
    - 1. **Type: Vented**
    - 2. **Board Insulation: Either polyisocyanurate or extruded polystyrene**
    - 3. **Oriented Strand Board: Board shall not exceed its APA span rating based on the spacing of the spacer blocks.**
      - a. **The spacer blocks within the ventilation space shall not exceed 10 percent of the panel area and will allow air to flow both up the slope and horizontally. The air space shall be 2 inches minimum.**
- 1.7 FASTENERS
- A. Fasteners: Hot-dip galvanized or stainless steel where exposed to weather, in ground contact, in contact with treated wood, or in area of high relative humidity.
- 1.8 WEATHER-RESISTANT SHEATHING PAPER
- A. Building Wrap: ASTM E 1677, Type I air retarder; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized.
  - B. Building-Wrap Tape: Pressure-sensitive plastic tape recommended for sealing joints and penetrations in building wrap.
- 1.9 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS
- A. Sealant for Glass-Mat Gypsum Sheathing Board: Silicone emulsion sealant, compatible with sheathing tape and sheathing, and recommended for use with glass-fiber sheathing tape and for covering exposed fasteners.
  - B. Sheathing Tape for Glass-Mat Gypsum Sheathing Board: Self-adhering glass-fiber tape, for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing board.
  - C. Sheathing Tape for Foam-Plastic Sheathing: Pressure-sensitive plastic tape for sealing joints and penetrations in sheathing.
- 1.10 MISCELLANEOUS MATERIALS
- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.025 inch.

**LEED SUGGESTIONS**

- 2.1 Emissions: Products shall meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- 2.2 **Vented Roof Assemblies: Proper ventilation is critical to the longevity and effectiveness of the roof assembly. While 2 inches is the recommended air space, for runs over 60 feet and complex roof designs, including hips, the Design Team should consult vented nailboard manufacturer and verify design using a "Vented Roof System Calculator" available from most manufacturers.**

END OF SECTION

## SECTION 073113

## ASPHALT SHINGLES

GENERAL GUIDELINES

## 1.1 SECTION INCLUDES

- A. Qualitative requirements for roof shingles, underlayment, and fastening products and methods.

## 1.2 QUALITY ASSURANCE

- A. All products used must be approved by shingle manufacturer prior to use.
- B. Exterior Fire-Text Exposure: Class A; ASTM E108 or UL 790, for application and roof slopes indicated.

## 1.3 WARRANTY

- A. Special Warranty
  - 1. Material Warranty Period: 40 years from date of contract completion, prorated, with first 5 years nonprorated.
  - 2. Wind-Speed Warranty Period: Resist blow-off or damage caused by wind speeds up to 80 m.p.h. for a minimum 5 years from date of contract completion.

## 1.4 SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
- B. Hip roofs require special consideration.

## 1.5 ROOFING ACCESSORIES

- A. Felt Underlayment.
- B. Self-Adhering Sheet Underlayment.

## 1.6 METAL TRIM AND FLASHING

- A. Perimeter Edge Metal: Provide one of the following metal types and thickness:
  - 1. 26 gauge (0.019 inch thick), prefinished galvanized steel
  - 2. 0.032 inch thick, prefinished aluminum
- B. Penetration Flashings: Provide one of the following metal types and thickness:
  - 1. 26 gauge (0.019 inch thick), prefinished galvanized steel or stainless steel.
  - 2. 0.032 inch thick, prefinished aluminum.
  - 3. 16 ounce (0.022 inch thick), copper.
- C. Valley Construction (Open Valleys): Provide one of the following metal types and thickness:
  - 1. 26 gauge (0.019 inch thick), prefinished galvanized steel or stainless steel.
  - 2. 0.032 inch thick, prefinished aluminum.
  - 3. 16 ounce (0.022 inch thick), copper.
- D. Apron, Step, Cricket, or Backer Flashings: Provide one of the following:
  - 1. 26 gauge (0.019 inch thick), prefinished galvanized steel or stainless steel.
  - 2. 0.032 inch thick, prefinished aluminum.
  - 3. 16 ounce (0.022 inch thick), copper

## 1.7 INSTALLATION

- A. General: Comply with manufacturer's instructions and recommendations but not less than those recommended by ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."
  - 1. Fasten asphalt shingles to roof sheathing with **galvanized roofing** nails.

**THERMAL AND MOISTURE PROTECTION****LESSONS LEARNED**

- 3.1** *The emergence of structural insulated roofing panels and the use of rigid insulation laminated to wood-based sheathing panels as structural roof deck have highlighted ventilation needs. For maintaining warranties, asphalt shingle manufacturers require an unobstructed air space immediately below the roof-deck sheathing. To permit air movement under the roof-deck sheathing, a number of proprietary products have been developed that use battens as spacers and an added sheathing layer as the asphalt shingle substrate. This air space can be vented with continuous soffit or eave intake vents combined with continuous ridge exhaust vents.*
- A.** *Proper ventilation extends the life of shingled roofs by minimizing the temperature differential between the attic air and outside air. It keeps the roof system cool during the hot summer months, preventing premature deterioration and less shingle replacement.*
  - B.** *Proper ventilation prevents ice damming caused when the heat from inside the building and the sun melts the snow at the ridge. This causes water to run to the eaves and refreeze and the repetition of this process causes ice dams.*
  - C.** *Proper ventilation provides energy savings in the summertime by cooling the roof sheathing, preventing premature roof deterioration, premature roof replacement, and increased servicing of cooling units due to their excessive use. It prevents heat build-up in unvented systems which radiates downward and increased the demand on cooling systems.*
  - D.** *Proper ventilation provides energy savings in the wintertime by preventing hot and cold air to interact and cause moisture from condensation that causes soaked insulation, corrosion, and water infiltration.*

**END OF SECTION**