

Indiana Code History Regarding Secondary Roof Drainage

1. An independent overflow drainage system was originally required by Uniform Building Code Section 3207(c) "*Overflow drains shall be connected to drain lines independent from the roof drains*". Indiana began modifying this requirement in the 1989 Indiana Building Code (1988 UBC). With one exception (see note 4 below), it appears the requirement for an independent overflow system has been amended ever since.
2. During the 90's, Indiana adopted the BOCA National Plumbing Code and there is no mention of a secondary roof drainage system in that code. However, Indiana did amend the BOCA National Plumbing Code and referred to the Indiana Building Code for overflow drains.
3. Indiana then adopted a modified version of 1997 Uniform Plumbing Code (Indiana Plumbing Code 1999 edition). The first sentence of Section 1101.11.2.1 still includes "*independent secondary roof drainage system*" but it refers to "*scuppers, standpipes or roof drains*" and then deletes the second sentence on sizing. It then deletes from the model code 1101.11.2.2 that required secondary roof drains or standpipes to be separate from the primary and deletes 1101.11.2.3. However, it retained 1101.11.3, which appears to be design requirements for combining the primary and secondary drains into a single system.
4. The 1998 Indiana Building Code (1997 UBC), did not amend Section 1506.3 "*Overflow drains shall discharge to an approved location and shall not be connected to roof drain lines*" when it became effective on 4/30/1998 and independent overflow piping was required. However, the 1998 Indiana Building Code was amended 2/25/2000 and Section 1506 was revised to delete the requirement for separate overflow piping.
5. The International Plumbing Code 2012 edition Commentary for Secondary (Emergency) Roof Drains. "This section requires all buildings to have some method for preventing the accumulation of unplanned excessive rainwater. A secondary drainage system is required where the building has a parapet walls or other construction on the building that would cause ponding. The intent is to limit the amount of ponding water that will be placed on the roof by rainfall."

Based on the information above, it appears reverting to model code language requiring independent secondary drains will address the issue in question. Given the history of roof collapse of class 1 structures without secondary drains in accordance with the model code, I believe this issue does qualify as a public safety emergency.

675 IAC 13-2.1-90 Ventilation

Sec. 90. Change the first sentence of subsection 3205(c) to read as follows: Unless determined unnecessary by the building official, due to atmospheric or climatic conditions, enclosed attic and enclosed rafter spaces formed where ceilings are applied direct to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings and protected against the entrance of rain and snow.

675 IAC 13-2.1-91 Smoke and Heat Venting

Sec. 91. (a) Change the first sentence of subsection 3206(a) to read as follows: Smoke and heat vents complying with U.B.C. Standard No. 32-14 or fixed openings shall be installed in accordance with the provisions of this section.

(b) Add an Exception to the first sentence of subsection 3206(a) to read as follows: EXCEPTION: Buildings equipped with an approved, engineered mechanical smoke removal system.

675 IAC 13-2.1-91.1 Overflow drains and scuppers

SEC. 91.1. Delete the last sentence of subsection 3207(c) and substitute the following: Controlled flow roof drain systems designed and constructed in accordance with Section P-809.0 of 675 IAC 16, the Indiana Plumbing Code may be used. *Effective 9/13/89*

675 IAC 13-2.1-92 Materials

Sec. 92. Change subsection 3208(a)1 to read as follows: 1. Materials. The quality and design of roofing materials and their fastenings shall conform to the applicable Indiana Building Code Standards (675 IAC 13-3.1).

675 IAC 13-2.1-93 Table No. 32-B-1

Sec. 93. Add a new superscript 2 after UNDERLAYMENT in Table 32-B-1 and add a new footnote 2 to read as follows: ²Asphalt shingles when applied on a slope of more than four in twelve (4:12) and in accordance with the manufacturer's instructions do not require underlayment.

675 IAC 13-2.1-94 Section 3303: Arrangement of Exits

Sec. 94. In subsection 3303(c) number the existing Exception 1 and add new Exceptions 2 and 3 to read as follows: 2. The distance between exits shall not be less than one-third (1/3) the maximum overall diagonal dimension of the area to be served where the building is equipped throughout with an automatic, supervised fire extinguishing system. *Effective 3/23/90*

1101.6 Building Subdrains. Building subdrains located below the public sewer level shall discharge into a sump or receiving tank, the contents of which shall be automatically lifted and discharged into the drainage system as required for building sumps.

1101.7 Areaway Drains. All open subsurface space adjacent to a building, serving as an entrance to the basement or cellar of a building, shall be provided with a drain or drains. Such areaway drains shall be two (2) inches (51 mm) minimum diameter for areaways not exceeding one hundred (100) square feet (9.3 m²) in area, and shall be discharged in the manner provided for subsoil drains not serving continuously flowing springs or ground water (see Section 1101.5.2). Areaways in excess of one hundred (100) square feet (9.3 m²) shall not drain into subsoil. Areaway drains for areaways exceeding one hundred (100) square feet (9.3 m²) shall be sized according to Table 11-2.

1101.8 Window Areaway Drains. Window areaways not exceeding ten (10) square feet (0.9 m²) in area may discharge to the subsoil drains through a two (2) inch (51 mm) pipe. However, window areaways exceeding ten (10) square feet (0.9 m²) in area shall be handled in the manner provided for entrance areaways (see Section 1101.7).

1101.9 Filling Stations and Motor Vehicle Washing Establishments. Public filling stations and motor vehicle washing establishments shall have the paved area sloped toward sumps or gratings within the property lines. Curbs not less than six (6) inches (152 mm) high shall be placed where required to direct water to gratings or sumps.

1101.10 Paved Areas. Where the occupant creates surface water drainage, the sumps, gratings or floor drains shall be piped to a storm drain or an approved water course.

1101.11 Roof Drainage

1101.11.1 Primary Roof Drainage. Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the Administrative Authority, roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm of sixty (60) minutes duration and 100-year return period (see Appendix D).

1101.11.2 Secondary Roof Drainage

1101.11.2.1 Where parapet walls or other construction extend above the roof and create areas where storm water would become trapped if the primary roof drainage system failed to provide sufficient drainage,

an independent secondary roof drainage system consisting of scuppers, standpipes, or roof drains shall be provided. Secondary roof drainage systems shall be sized in accordance with Section 1101.11.1 of this Code. Overflow drains shall be the same size as the roof drains with the inlet flow line two (2) inches (51 mm) above the low point of the roof and shall be installed independent from the roof drains.

1101.11.2.2 Where secondary roof drainage is provided by means of roof drains or standpipes, the secondary system shall be separate from the primary system and shall discharge independently at grade or other approved point of discharge.

1101.11.2.3 Where secondary roof drainage is provided, the overflow level(s) into the secondary system shall be determined by the structural design of the roof, including roof deflection, at a level not less than two (2) inches (51 mm) above the level of the primary drain. An allowance shall be made to account for the required overflow head of water above the secondary inlets. The elevation of the secondary inlet plus the required overflow head shall not exceed the maximum allowable water level on the roof.

1101.11.2.4 Scuppers shall be sized as rectangular weirs, using hydraulic principles to determine the required length and resulting overflow head (see Appendix D). Secondary roof drains and standpipes shall be sized according to Table 11-1. Where standpipes are used, the head allowance required under section 1101.11.2.3 shall be not less than one and one-half (1-1/2) inches (38 mm).

1101.11.3 Equivalent Systems. When approved by the Administrative Authority, the requirements of Sections 1101.11.1 and 1101.11.2 shall not preclude the installation of an engineered roof drainage system that has sufficient capacity to prevent water from ponding on the roof in excess of that allowed in the roof structural design with a rainfall rate of at least twice that for a 100-year, 60-minute storm and with a blockage in any single point in the storm drainage system.

1101.12 Cleanouts

1101.12.1 Cleanouts for building storm drains shall comply with the requirements of Section 719.0 of this Code.

1101.12.2 Rain leaders and conductors

Sec. 135. Amend the first two sentences of section 1202.2.7 as follows: (a) Delete the period at the end of the first sentence and substitute a comma.

(b) Change the second sentence to read as follows: or a ventilation system designed to exhaust a minimum of 14,000 CFM (6,608 L/S) for each operating vehicle shall be provided. (675 IAC 13-2.3-135) Eff: April 30, 1998

Section 1203.3; ventilation

Sec. 136. Change in the Exception to the third paragraph of section 1203.3 "Group R, Division 3" to "Group R, Divisions 2 and 3". (675 IAC 13-2.3-136) Eff: April 30, 1998

Section 1205; alternative ventilation when applicable

Sec. 137. Delete the text of section 1205 without substitution. (675 IAC 13-2.3-137) Eff: April 30, 1998

Section 1402.4; dampproofing foundation walls

Sec. 138. Change section 1402.4 to read as follows: Foundation Dampproofing, Waterproofing and Drainage. Walls, or portions thereof, retaining earth and enclosing interior spaces and floors below grade shall be waterproofed or dampproofed, and drained as required in Appendix Chapter 18. (675 IAC 13-2.3-138) Eff: April 30, 1998

Section 1403.1.1; veneer, general

Sec. 139. Delete in section 1403.1.1 the second sentence. (675 IAC 13-2.3-139) Eff: April 30, 1998

Section 1403.1.2; limitations

Sec. 140. Change section 1403.1.2 to read as follows: Exterior veneer shall not be attached to wood-frame construction at a height more than thirty (30) feet (nine thousand one hundred forty-four millimeters (9,144 mm)) in height above the noncombustible foundation unless the connections are designed to provide for differential movement. (675 IAC 13-2.3-140) Eff: April 30, 1998

Section 1403.6.2; height and support limitations

Sec. 141. Delete in section 1403.6.2 the last sentence of the second paragraph. (675 IAC 13-2.3-141)

Eff: April 30, 1998

Section 1505.3; ventilation

Sec. 142. Change the first sentence of section 1505.3 to read as follows: Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain and snow. (675 IAC 13-2.3-142) Eff: April 30, 1998

Section 1506.5; public property

Sec. 143. Delete section 1506.5 in its entirety. (675 IAC 13-2.3-143) Eff: April 30, 1998

Section 1508.5; wood shingles and wood shakes

Sec. 144. Delete the exception to section 1508.5. (675 IAC 13-2.3-144) Eff: April 30, 1998

Table 15-D-1; roofing tile application for all tiles

Sec. 145. Change Footnote 2 to Table 15-D-1 by deleting the words "by the building official" and substituting "Table 16". (675 IAC 13-2.3-145) Eff: April 30, 1998

Table 15-D-2; clay or concrete roofing tile application interlocking tile with projecting anchor lugs

Sec. 146. Change Footnote 1 to Table 15-D-2 by deleting the words "by the building official" and substituting "Table 16-1". (675 IAC 13-2.3-146) Eff: April 30, 1998

Section 2501.2; inspection

Sec. 147. Delete the text of section 2501.2 without substitution. (675 IAC 13-2.3-147) Eff: April 30, 1998

Section 2501.3; tests

Sec. 148. Delete section 2501.3 and substitute to read as follows: May be enforced when required by local ordinance. (675 IAC 13-2.3-148) Eff: April 30, 1998

Section 2603.1.2; approval for use

Sec. 148.1. Change in section 2603.1.2

a minimum depth of 6 feet but need not extend closer than 8 feet to the floor. In Group H Occupancies, the minimum depth shall be 12 feet except that it need not be closer than 8 feet to the floor, provided the curtain is not less than 6 feet in depth.

4. **Spacing.** The distance between curtain boards shall not exceed 250 feet and the curtained area shall be limited to 50,000 square feet. In Group H Occupancies, the distance between curtain boards shall not exceed 100 feet and the curtained area shall be limited to 15,000 square feet.

Roof Drainage

Sec. 3207. (a) General. Roof systems shall be sloped a minimum of $\frac{1}{4}$ inch in 12 inches for drainage. See Section 2305 (f).

(b) **Roof Drains.** Unless roofs are sloped to drain over roof edges, roof drains shall be installed at each low point of the roof.

Roof drains shall be sized and discharged in accordance with the Plumbing Code.

(c) **Overflow Drains and Scuppers.** Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches above the low point of the roof, or overflow scuppers having three times the size of the roof drains may be installed in adjacent parapet walls with the inlet flow line located 2 inches above the low point of the adjacent roof and having a minimum opening height of 4 inches.

Overflow drains shall be connected to drain lines independent from the roof drains.

(d) **Concealed Piping.** Roof drains and overflow drains, when concealed within the construction of the building, shall be installed in accordance with the Plumbing Code.

(e) **Over Public Property.** Roof drainage water from a building shall not be permitted to flow over public property.

EXCEPTION: Groups R, Division 3, and M Occupancies.

Roof Covering Materials and Application

Sec. 3208. (a) General. Roof coverings shall be as specified in this section, and shall be provided as follows:

1. **Materials.** The quality and design of roofing materials and their fastenings shall conform to the applicable standards listed in Chapter 60.

2. **Identification.** All material shall be delivered in packages bearing the manufacturer's label or identifying mark.

Each package of asphalt shingles, mineral surfaced roll roofing, fire-retardant-treated wood shingles and shakes, and built-up roofing ply materials shall bear the label of an approved agency having a service for the inspection of material and finished products during manufacture.

Each bundle of wood shingles, slate shingles and wood shakes shall comply with U.B.C. Standards Nos. 32-8, 32-10 and 32-11, respectively, and shall bear

ROOFING SQUARE is 100 square feet (9.3 m²) of roof surface.

SPOT CEMENTING is discontinuous application of asphalt, cold liquid asphalt compound, coal tar pitch or other approved cementing material.

THERMOPLASTIC MEMBRANE ROOF COVERING is a sheet membrane composed of polymers and other proprietary ingredients, in compliance with UBC Standard 15-6, whose chemical composition allows the sheet to be welded together by either heat or solvent throughout its service life.

THERMOSET MEMBRANE ROOF COVERING is a sheet membrane composed of polymers and other proprietary ingredients, in compliance with UBC Standard 15-6, whose chemical composition vulcanizes or cross-links during manufacture or during its service life.

TILES are roof covering units, typically clay, concrete or cement-based material, that comply with UBC Standard 15-5.

UNDERLAYMENT is one or more layers of felt, sheathing paper, nonbituminous saturated felt or other approved material over which a roofing system is applied.

VAPOR RETARDER is a layer of material or a laminate used to appreciably reduce the flow of water vapor into the roofing system.

WOOD SHAKES are split or sawn tapered or nontapered pieces of approved durable wood or taper-sawn pieces of approved preservative treated wood complying with UBC Standard 15-3.

WOOD SHAKES AND SHINGLES, FIRE-RETARDANT (treated), are wood shakes and shingles complying with UBC Standard 15-3 or 15-4 impregnated by the full-cell vacuum-pressure process with fire-retardant chemicals, complying with UBC Standard 15-2 for use on Class A, B or C roofs.

WOOD SHINGLES are tapered pieces of approved durable wood sawn both sides complying with UBC Standard 15-4.

SECTION 1503 — ROOFING REQUIREMENTS

The roof covering or roofing assembly on any structure regulated by this code shall be as specified in Table 15-A and as classified in Section 1504. Noncombustible roof covering as defined in Section 1504.2 may be applied in accordance with the manufacturer's requirements in lieu of a fire-retardant roofing assembly.

Roofing shall be secured or fastened to the supporting roof construction and shall provide weather protection for the building at the roof.

SECTION 1504 — ROOFING CLASSIFICATION

1504.1 Fire-retardant Roofing. Fire-retardant roofs are roofing assemblies complying with UBC Standard 15-2 and listed as Class A, B or C roofs.

1504.2 Noncombustible Roof Covering. Noncombustible roof covering shall be one of the following:

1. Cement shingles or sheets.
2. Exposed concrete slab roof.
3. Ferrous or copper shingles or sheets.
4. Slate shingles.
5. Clay or concrete roofing tile.

6. Approved roof covering of noncombustible material.

1504.3 Nonrated Roofing. Nonrated roofing is approved material that is not listed as a Class A, B or C roofing assembly.

SECTION 1505 — ATTICS: ACCESS, DRAFT STOPS AND VENTILATION

1505.1 Access. An attic access opening shall be provided to attics of buildings with combustible ceiling or roof construction.

EXCEPTION: Attics with a maximum vertical height of less than 30 inches (762 mm).

The opening shall not be less than 22 inches (559 mm) by 30 inches (762 mm) and shall be located in a corridor, hallway or other readily accessible location. Thirty-inch-minimum (762 mm) unobstructed headroom in the attic space shall be provided at or above the access opening.

1505.2 Draft Stops. Attics, mansards, overhangs and other concealed roof spaces formed of combustible construction shall be draft stopped as specified in Section 708.3.

1505.3 Ventilation. Where determined necessary by the building official due to atmospheric or climatic conditions, enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain and snow. Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of 1 inch (25 mm) of air space shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than $\frac{1}{150}$ of the area of the space ventilated.

EXCEPTIONS: 1. The opening area may be $\frac{1}{300}$ of the area of the space ventilated provided 50 percent of the required opening area is provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents.

2. The opening area may be $\frac{1}{300}$ of the area of the space ventilated provided a vapor barrier not exceeding 1 perm [5.7×10^{-11} kg/(Pa · s · m²)] is installed on the warm side of the attic insulation.

Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of 1 inch (25 mm) of air space shall be provided between the insulation and roof sheathing.

Openings for ventilation shall be covered with corrosion-resistant metal mesh with mesh openings of $\frac{1}{4}$ inch (6.4 mm) in dimension.

Smoke and heat venting shall be in accordance with Section 906.

SECTION 1506 — ROOF DRAINAGE

1506.1 General. Roofs shall be sloped a minimum of 1 unit vertical in 48 units horizontal (2% slope) for drainage unless designed for water accumulation in accordance with Section 1611 and approved by the building official.

1506.2 Roof Drains. Unless roofs are sloped to drain over roof edges, roof drains shall be installed at each low point of the roof.

Roof drains shall be sized and discharged in accordance with the Plumbing Code.

1506.3 Overflow Drains and Scuppers. Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains and having a minimum opening

height of 4 inches (102 mm) may be installed in the adjacent parapet walls with the inlet flow line located 2 inches (51 mm) above the low point of the adjacent roof.

Overflow drains shall discharge to an approved location and shall not be connected to roof drain lines.

1506.4 Concealed Piping. Roof drains and overflow drains, where concealed within the construction of the building, shall be installed in accordance with the Plumbing Code.

1506.5 Over Public Property. Roof drainage water from a building shall not be permitted to flow over public property.

EXCEPTION: Group R, Division 3 and Group U Occupancies.

SECTION 1507 — ROOF-COVERING MATERIALS AND APPLICATION

1507.1 Materials. The quality and design of roofing materials and their fastenings shall conform to the applicable standards listed in Chapter 35, Part II.

1507.2 Identification. All material shall be delivered in packages bearing the manufacturer's label or identifying mark.

Each package of asphalt shingles, mineral surfaced roll roofing, fire-retardant-treated wood shingles and shakes, modified bitumen, thermoplastic and thermoset membranes, and built-up roofing ply materials shall bear the label of an approved agency having a service for the inspection of material and finished products during manufacture.

Each bundle of wood shakes or shingles shall comply with UBC Standard 15-3 or 15-4, respectively. Each bundle of wood shakes or shingles and slate shingles shall bear the label or identification mark of an approved inspection bureau or agency showing the grade.

Asphalt shall be delivered in cartons indicating the name of the manufacturer, the flash point and the type of product. Bulk shipments shall be accompanied with the same information issued in the form of a certification or on the bill of lading by the manufacturer. Coal tar pitch shall bear the manufacturer's name and type. Additional information such as equiviscous temperature (EVT) may be furnished.

1507.3 Asbestos-cement Roofing. Corrugated asbestos-cement roofing shall be applied in an approved manner.

1507.4 Asbestos-cement Shingles. Asbestos-cement shingles shall be installed in an approved manner.

1507.5 Asphalt Shingles. Asphalt shingles shall be fastened according to the manufacturer's instructions and Table 15-B-1.

1507.6 Built-up Roofs. Built-up roofing shall be applied in accordance with the manufacturer's instructions and Tables 15-E through 15-G.

1507.7 Clay or Concrete Tile. Tile of clay or concrete shall comply with UBC Standard 15-5 and shall be installed in accordance with the manufacturer's instructions and Tables 15-D-1 and 15-D-2.

1507.8 Metal Roof Covering. Metal roof covering exposed to the weather shall be corrosion resistant.

Corrugated or ribbed steel shall not be less than 0.013 inch (0.33 mm) (No. 30 galvanized sheet gage).

Flat steel sheets shall not be less than 0.013 inch (0.33 mm) (No. 30 galvanized sheet gage). Other ferrous sections or shapes shall not be less than No. 26 galvanized sheet gage.

Flat nonferrous sheets shall not be less than 0.0159 inch (0.40 mm) (No. 28 B.&S. gage). Other nonferrous sections or shapes shall not be less than 0.0179 inch (0.45 mm) (No. 25 B.&S. gage).

Corrugated or otherwise shaped sheets or sections shall be designed to support the loads required by Chapter 16.

Ferrous sheets or sections shall comply with Chapter 22, Division V.

1507.9 Metal Shingles. Metal shingles shall be applied in an approved manner. Nonferrous shingles shall not be less than 0.0159 inch (0.40 mm) (No. 28 B.&S. gage).

1507.10 Sheet Roof Covering. Sheet roof covering shall be installed in an approved manner.

1507.11 Slate Shingles. Slate shingles shall be installed in an approved manner.

1507.12 Wood Shakes. Shakes shall comply with UBC Standard 15-3 and shall be installed in accordance with Table 15-B-2.

1507.13 Wood Shingles. Shingles shall comply with UBC Standard 15-4 and shall be installed in accordance with Table 15-B-2.

1507.14 Modified Bitumen, Thermoplastic and Thermoset Membranes. Modified bitumen, thermoplastic and thermoset roof membranes shall be applied in accordance with the manufacturer's instructions.

SECTION 1508 — VALLEY FLASHING

1508.1 Valleys. Roof valley flashings shall be as noted in this section. Shingle application shall be consistent with applicable Table 15-B-1, 15-B-2, 15-D-1 or 15-D-2.

1508.2 Asphalt Shingles. The roof valley flashing shall not be provided of less than 0.016-inch (0.41 mm) (No. 28 galvanized sheet gage) corrosion-resistant metal, and shall extend at least 8 inches (203 mm) from the center line each way. Sections of flashing shall have an end lap of not less than 4 inches (102 mm). Alternatively, the valley shall consist of woven asphalt shingles applied in accordance with the manufacturer's printed instructions.

In each case, the roof valley flashing shall have a 36-inch-wide (914 mm) underlayment directly under it consisting of one layer of Type 15 felt running the full length of the valley, in addition to the underlayment specified in Table 15-B-1. In severe climates, the metal valley flashing underlayment shall be solid cemented to the roof underlayment for slopes under 7 units vertical in 12 units horizontal (58.3% slope).

1508.3 Metal Shingles. The roof valley flashing shall not be provided of less than 0.016-inch (0.41 mm) (No. 28 galvanized sheet gage) corrosion-resistant metal, which shall extend at least 8 inches (203 mm) from the center line each way and shall have a splash diverter rib not less than $\frac{3}{4}$ inch (19 mm) high at the flow line formed as part of the flashing. Sections of flashing shall have an end lap of not less than 4 inches (102 mm). The metal valley flashing shall have a 36-inch-wide (914 mm) underlayment directly under it consisting of one layer of Type 15 felt running the full length of the valley, in addition to underlayment required for metal shingles. In severe climates, the metal valley flashing underlayment shall be solid cemented to the roofing underlayment for roof slopes under 7 units vertical in 12 units horizontal (58.3% slope).

1508.4 Asbestos-cement Shingles, Slate Shingles, and Clay and Concrete Tile. The roof valley flashing shall not be provided of less than 0.016-inch (0.41 mm) (No. 28 galvanized sheet

Sec. 135. Amend the first two (2) sentences of section 1202.2.7 as follows: (a) Delete the period at the end of the first sentence and substitute a comma.

(b) Change the second sentence to read as follows: or a ventilation system designed to exhaust a minimum of 14,000 CFM (6,608 L/S) for each operating vehicle shall be provided. (675 IAC 13-2.3-135) Eff: April 30, 1998

Section 1203.3; ventilation

Sec. 136. Change, in the exception to the third paragraph of section 1203.3, "Group R, Division 3" to "Group R, Divisions 2 and 3". (675 IAC 13-2.3-136) Eff: April 30, 1998

Section 1205; alternative ventilation when applicable

Sec. 137. Delete the text of section 1205 without substitution. (675 IAC 13-2.3-137) Eff: April 30, 1998

Section 1402.4; dampproofing foundation walls

Sec. 138. Change section 1402.4 to read as follows: Foundation Dampproofing, Waterproofing and Drainage. Walls, or portions thereof, retaining earth and enclosing interior spaces and floors below grade shall be waterproofed or dampproofed, and drained as required in Appendix Chapter 18. (675 IAC 13-2.3-138) Eff: April 30, 1998

Section 1403.1.1; veneer, general

Sec. 139. Delete, in section 1403.1.1, the second sentence. (675 IAC 13-2.3-139) Eff: April 30, 1998

Section 1403.1.2; limitations

Sec. 140. Change section 1403.1.2 to read as follows: Exterior veneer shall not be attached to wood-frame construction at a height more than thirty (30) feet (nine thousand one hundred forty-four millimeters (9,144 mm)) in height above the noncombustible foundation unless the connections are designed to provide for differential movement. (675 IAC 13-2.3-140) Eff: April 30, 1998

Section 1403.6.2; height and support limitations

Sec. 141. Delete, in section 1403.6.2, the last sentence of the second paragraph. (675 IAC 13-2.3-141)

Eff: April 30, 1998

Section 1505.3; ventilation

Sec. 142. Change the first sentence of section 1505.3 to read as follows: Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain and snow. (675 IAC 13-2.3-142) Eff: April 30, 1998

Section 1506.5; public property

Sec. 143. Sec. 143. Change section 1506 to read as follows: General. Roofs shall be sloped a minimum of one (1) unit vertical in forty-eight (48) units horizontal (two percent (2%) slope) for drainage unless designed for water accumulation in accordance with section 1611 and the plumbing code. For roof drainage, see the Plumbing Code, 675 IAC 16. (675 IAC 13-2.3-143) Eff: February 25, 2000

Section 1508.5; wood shingles and wood shakes

Sec. 144. Delete the exception to section 1508.5. (675 IAC 13-2.3-144) Eff: April 30, 1998

Table 15-D-1; roofing tile application for all tiles

Sec. 145. Change Footnote 2 to Table 15-D-1 by deleting the words "by the building official" and substituting "Table 16". (675 IAC 13-2.3-145) Eff: April 30, 1998

Table 15-D-2; clay or concrete roofing tile application interlocking tile with projecting anchor lugs

Sec. 146. Change Footnote 1 to Table 15-D-2 by deleting the words "by the building official" and substituting "Table 16-1". (675 IAC 13-2.3-146) Eff: April 30, 1998

Section 2501.2; inspection

Sec. 147. Delete the text of section 2501.2 without substitution. (675 IAC 13-2.3-147) Eff: April 30, 1998

Section 2501.3; tests

Sec. 148. Delete section 2501.3 and substitute to read as follows: May be enforced when required by local

in the second paragraph. (675 IAC 16-1.3-178) EFF: July 30, 1999

Section 1017.2.1; design of interceptors

Sec. 179. Add section 1017.2.1 after section 1017.2 to read as follows: Alternate design. Alternate design for construction of oil and flammable liquids interceptors complying with the intent of this code shall be submitted to the Office of the State Building Commissioner in accordance with the General Administrative Rules (675 IAC 12-6-11). (675 IAC 16-1.3-179) EFF: July 30, 1999

Section 1017.3; combination oil and sand interceptor

Sec. 180. Delete, at the end of section 1017.3, "See also Appendix H, Procedures for Sizing Commercial Kitchen Grease Interceptors". (675 IAC 16-1.3-180) EFF: July 30, 1999

Section 1101.1; where required

Sec. 181. Delete section 1101.1. The locations to where storm drainage must be directed may be regulated by local ordinance. Storm drainage systems is the remaining subject matter of this chapter. (675 IAC 16-1.3-181) EFF: July 30, 1999

Section 1101.2; storm water drainage to sanitary sewer prohibited

Sec. 182. Delete section 1101.2. The locations to where storm drainage must be directed may be regulated by local ordinance. Storm drainage is the remaining subject matter of this chapter. (675 IAC 16-1.3-182) EFF: July 30, 1999

**SECTION 1101.5*

**SECTION 1101.8*

**SECTION 1101.9*

Section 1101.10; paved areas

Sec. 183. Delete section 1101.10. (675 IAC 16-1.3-183) EFF: July 30, 1999

Section 1101.11.1; primary roof drainage

Sec. 184. Change the third sentence of section 1101.11.1 to read as follows: Roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage within or on the structure shall be sized based on a

storm of sixty (60) minutes duration and one hundred (100) year return period (See Appendix D). (675 IAC 16-1.3-184) EFF: July 30, 1999

Section 1101.11.2.1; secondary roof drainage

Sec. 185. Delete the second sentence of section 1101.11.2.1. (675 IAC 16-1.3-185) EFF: July 30, 1999

Sections 1101.11.2.2, and 1101.11.2.3; secondary roof drainage

Sec. 186. Delete sections 1101.11.2.2 and 1101.11.2.3. (675 IAC 16-1.3-186) EFF: July 30, 1999

Section 1101.11.2.4; secondary roof drainage

Sec. 187. Delete the second sentence of section 1101.11.2.4. (675 IAC 16-1.3-187) EFF: July 30, 1999

**SECTION 1102.4*

**SECTION 1102.5*

Section 1106.2; size of horizontal storm drains and sewers

**SECTION 1106.2*

Sec. 188. Change section 1106.2 to read as follows: The size of building storm drains or building storm sewers or any of their horizontal branches shall be based upon the maximum projected roof area to be handled and TABLE 11-2. (675 IAC 16-1.3-188) EFF: July 30, 1999

Section 1106.4; side walls draining into a roof

Sec. 189. Change, in item 1 of section 1106.4, "fifty (5)" to "fifty (50)". (675 IAC 16-1.3-189) EFF: July 30, 1999

**SECTION 1107.0*

Section 1108.1; application

Sec. 190. Change section 1108.1 by adding item 14 to the end of the section to read as follows: (14) Compliance with the building code. (675 IAC 16-1.3-190) EFF: July 30, 1999

Section 1109.2.3; exceptions

Sec. 191. Delete section 1109.2.3 and substitute to read as follows: Alternative methods of testing storm drainage systems complying with the intent of this code shall be submitted to the Office of the State Building Commissioner in