

# City of Zion



2828 Sheridan Road  
Zion, Illinois 60099

(847) 746-4000  
(847) 746-7167 FAX

"Historic Past - Dynamic Future"

Lane Harrison  
MAYOR

Commissioners

Jim E. Taylor J. Delaine Rogers  
L. Howard Bennett Lloyd E. DeTienne

April 9, 2002

RE: Ice Protection

Dear Roofing Specialist:

We are writing to clarify and inform you of the requirements for ice protection. The City of Zion adopted the 2000 International Building Code in September 2001 and code requires ice protection.

Self adhering polymer modified bitumen sheet (ice & water shield) complying to ASTM D 1970 shall be used at all eaves edge and "closed valleys" (covered with shingles).

A copy of the code and a sketch of the eave installation are enclosed.

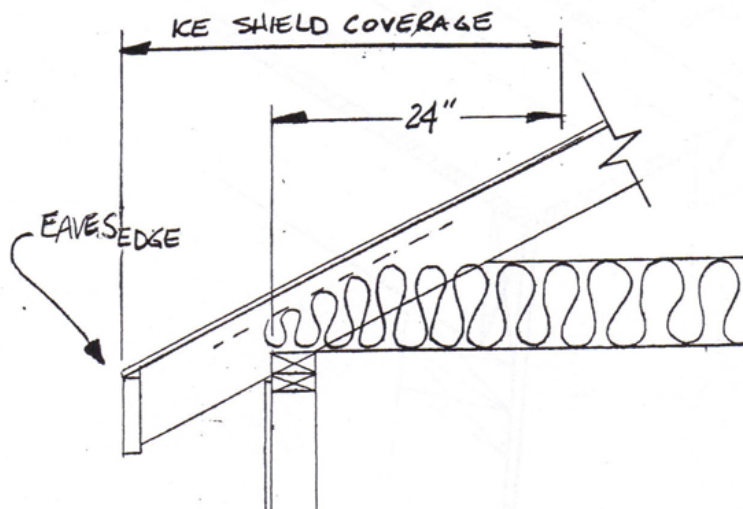
If you have any questions please call or stop by the Building Department.

Sincerely,

Bruce Naden  
Building Inspector

BN:dm

Encl: - 2000 International Property Maintenance Code R905.2.3, R905.2.7.1; Sketch



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April 18, 2002

RE: Low Slope & Flat Roof Installations

Dear Roofing Specialists:

We have reviewed several manufacturers and the National Roofing Contractors Associations recommended installation for modified bitumen roofing.

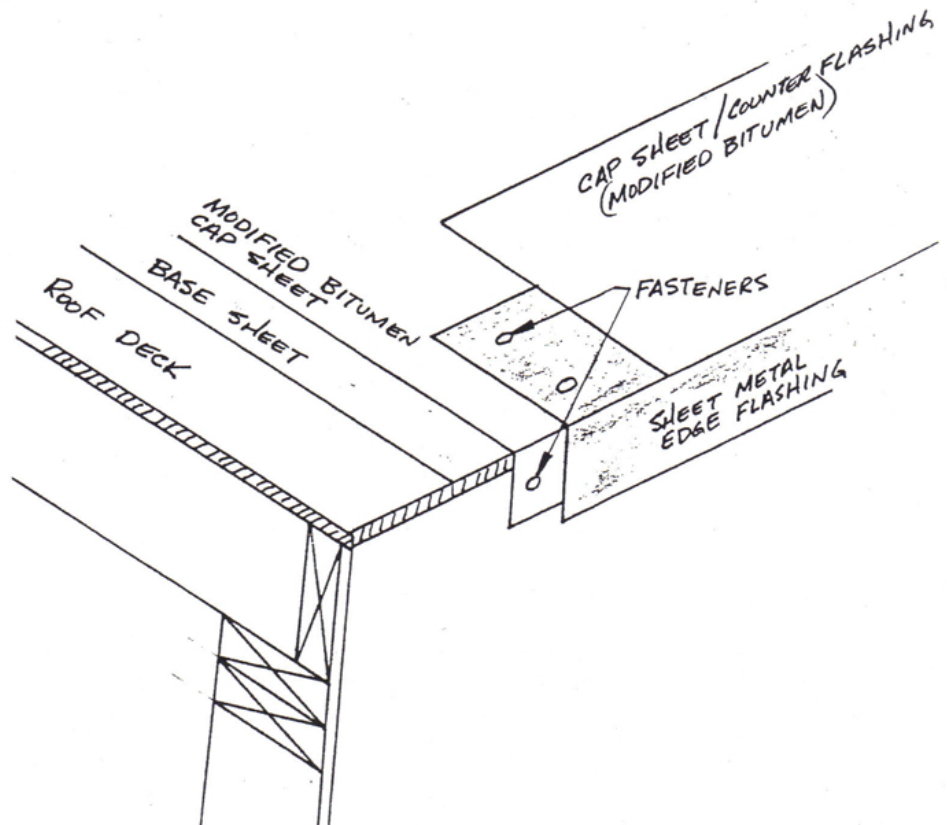
The illustrated method on this page will be the minimum accepted method for installation within the City of Zion. This is a sample, which is typical of all the complied information for termination at roof edges.

Any other method will require you to provide the manufacturers written approved installation method.

If you should have any comments or questions, please contact me at (847) 746-4016.

Sincerely,

Bruce Naden  
Building Inspector





## SECTION R905 REQUIREMENTS FOR ROOF COVERINGS

**R905.1 Roof covering application.** Roof coverings shall be applied in accordance with the applicable provisions of this section and the manufacturer's installation instructions.

**R905.2 Asphalt shingles.** The installation of asphalt shingles shall comply with the provisions of this section.

**R905.2.1 Sheathing requirements.** Asphalt shingles shall be fastened to solidly sheathed decks.

**R905.2.2 Slope.** Asphalt shingles shall only be used on roof slopes of two units vertical in 12 units horizontal (2:12) or greater. For roof slopes from two units vertical in 12 units horizontal (2:12) up to four units vertical in 12 units horizontal (4:12), double underlayment application is required in accordance with Section R905.2.7.

**R905.2.3 Underlayment.** Unless otherwise noted, required underlayment shall conform with ASTM D 226, Type I, or ASTM D 4869, Type I.

\* Self-adhering polymer modified bitumen sheet shall comply with ASTM D 1970.

**R905.2.4 Asphalt shingles.** Asphalt shingles shall have self-seal strips or be interlocking, and comply with ASTM D 225 or D 3462.

**R905.2.5 Fasteners.** Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12 gage [0.105 inch (2.67 mm)] shank with a minimum  $\frac{3}{8}$ -inch (9.5 mm) diameter head, ASTM F 1667, of a length to penetrate through the roofing materials and a minimum of  $\frac{3}{4}$  inch (19.1 mm) into the roof sheathing. Where the roof sheathing is less than  $\frac{3}{4}$  inch (19.1 mm) thick, the fasteners shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667.

**R905.2.6 Attachment.** Asphalt shingles shall have the minimum number of fasteners required by the manufacturer. For normal application, asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 20 units vertical in 12 units horizontal (20:12), special methods of fastening are required.

**Exception:** Asphalt strip shingles shall have a minimum of six fasteners per shingle where the roof is in one of the following categories:

1. The basic wind speed per Figure R301.2(4) is 110 miles per hour (177 km/h) or greater and the eave is 20 feet (6096 mm) or higher above grade.
2. The basic wind speed per Figure R301.2(4) is 120 miles per hour (193 km/h) or greater.
3. Special wind zones per Figure R301.2(4).

**R905.2.7 Underlayment application.** For roof slopes from two units vertical in 12 units horizontal (17-percent slope), up to four units vertical in 12 units horizontal (33-percent slope), underlayment shall be two layers applied in the following manner. Apply a 19-inch (483 mm) strip of

underlayment felt parallel with and starting at the eaves, fastened sufficiently to hold in place. Starting at the eave, apply 36-inch-wide (914 mm) sheets of underlayment, overlapping successive sheets 19 inches (483 mm), and fastened sufficiently to hold in place. For roof slopes of four units vertical in 12 units horizontal (33-percent slope) or greater, underlayment shall be one layer applied in the following manner. Underlayment shall be applied shingle fashion, parallel to and starting from the eave and lapped 2 inches (51 mm), fastened sufficiently to hold in place. End laps shall be offset by 6 feet (1829 mm).

\* **R905.2.7.1 Ice protection.** In areas where the average daily temperature in January is 25°F (-4°C) or less, an ice barrier that consists of a least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall be used in lieu of normal underlayment and extend from the eave's edge to a point at least 24 inches (610 mm) inside the exterior wall line of the building.

**R905.2.7.2 Underlayment and high wind.** Underlayment applied in areas subject to high winds [greater than 110 mph (177 km/h) per Figure R301.2(4)] shall be applied with corrosion-resistant fasteners in accordance with manufacturer's installation instructions. Fasteners are to be applied along the overlap not farther apart than 36 inches (914 mm) on center.

**R905.2.8 Flashing.** Flashing for asphalt shingles shall comply with this section.

**R905.2.8.1 Base and cap flashing.** Base and cap flashing shall be installed in accordance with manufacturer's installation instructions. Base flashing shall be of either corrosion-resistant metal of minimum nominal 0.019-inch (0.483 mm) thickness or mineral surface roll roofing weighing a minimum of 77 pounds per 100 square feet (3.76 kg/m<sup>2</sup>). Cap flashing shall be corrosion-resistant metal of minimum nominal 0.019-inch (0.483 mm) thickness.

**R905.2.8.2 Valleys.** Valley linings shall be installed in accordance with manufacturer's installation instructions before applying shingles. Valley linings of the following types shall be permitted:

1. For open valley (valley lining exposed) lined with metal, the valley lining shall be at least 24 inches (610 mm) wide and of any of the corrosion-resistant metals in Table R905.2.8.2.
2. For open valleys, valley lining of two plies of mineral surface roll roofing, complying with ASTM D 249, shall be permitted. The bottom layer shall be 18 inches (457 mm) and the top layer a minimum of 36 inches (914 mm) wide.
- \* 3. For closed valleys (valley covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D 224 Type II or Type III and at least 36 inches (914 mm) wide or valley lining as described in Items 1 and 2 above shall be permitted. Specialty underlayment complying with ASTM D 1970 may be used in lieu of the lining material.