4714.1110 SIPHONIC ROOF DRAINAGE SYSTEM.

UPC chapter 11 is amended by adding a new section and subsections as follows:

1110.0 Siphonic Roof Drainage System.

1110.1 General Requirements. Siphonic roof drainage systems shall be designed as an engineered siphonic roof drainage system when allowed by the administrative authority. The engineered siphonic roof drainage system shall meet the requirements of sections 1110.2 and 1110.3.

1110.2 Design Criteria. The siphonic roof drainage system shall be designed and certified by a registered professional engineer.

1110.2.1 Sizing. The system shall be sized on the basis of a minimum rate of rainfall of 4 inches per hour.

1110.2.2 Design. The drainage system shall be designed according to ASPE Standard 45, Siphonic Roof Drainage, and according to the manufacturer's recommendations and requirements. Manufacturer design software shall be in accordance with ASPE Standard 45.

1110.2.3 Roof Drain Bodies. Roof drains shall meet ASME A112.6.9, Siphonic Roof Drains.

1110.2.4 Water Accumulation. When designed for water accumulation, the roof shall be designed for the maximum possible water accumulation according to section 1108.1 (7), as amended in this code, and Minnesota Rules, chapter 1305.

1110.2.5 Pipe Size and Cleanouts. Minimum pipe size shall be 1-1/2 inches. All pipe sizes and cleanouts in the drainage system shall be designed and installed according to ASPE Standard 45.

1110.2.6 Horizontal Pipes. Horizontal pipe size shall not reduce in the direction of flow.

1110.2.7 Plans and Specifications. The plans and specifications for the drainage system shall indicate the siphonic roof drainage system as an engineered method used for the design.

1110.2.8 Markings. The installed drainage system shall be permanently and continuously marked as a siphonic roof drainage system at approved intervals and clearly at points where piping passes through walls and floors. Roof drains shall be marked in accordance with ASME A112.6.9.

1110.2.9 Transition Locations. The transition locations from the siphonic roof drainage system to a gravity system shall be determined by the registered professional engineer at a location approved by the administrative authority. The design, sizing,

and venting of the transition location shall be in accordance with ASPE Standard 45. The gravity portion of the building storm sewer system receiving the siphonic roof drainage system shall be sized for the design rate but not less than a rainfall rate of 4 inches per hour and in accordance with section 1106.0.

1110.2.10 Required Submissions. All plans, specifications, and calculations shall be signed and sealed by the registered professional engineer and submitted to the administrative authority. The submitted calculations shall include performance data for the drainage system for the required rainfall rate, including the minimum and maximum calculated operating pressures and velocities verifying that the design solution is within the operating parameters required by the design standard. All performance data shall be reported as the extreme maximum and minimum calculations and shall not be presented as averaged data.

1110.3 Proof of Suitability. Upon completion of the project: proper tests, inspections, and certification of the siphonic roof drainage system shall be performed according to items 1110.3.1 and 1110.3.2:

1110.3.1 Testing. Testing shall be performed according to ASPE Standard 45.

1110.3.2 Written Certification. Prior to the final plumbing inspection, the registered professional engineer shall provide written certification to the administrative authority that the system has been visually inspected by the registered professional engineer or the registered professional engineer's designee and the installation has been properly implemented according to the certified design, plans, calculations, and specifications. The submitted written certification shall include any field modification from the initial design involving dimensions, location, or routing of the siphonic roof drainage system that shall be reapproved and recertified by the registered professional engineer and be accompanied by a final as-built design of the altered system and supported by calculated data to show that the overall system remains in accordance with ASPE Standard 45.

Statutory Authority: *MS s 326B.43; 326B.435*

History: *40 SR 71*

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