**Section 905.95 Illinois Raised Filter Beds**

a) Illinois raised filter bed disposal systems shall have a filter loading rate of 4 gallons per square foot per day for residential systems of up to 1,500 GPD flows. Non-residential systems of any size or residential systems in excess of 1,500 GPD shall use a filter loading rate of 2.5 gallons per square foot per day. The system shall be designed in accordance with Appendix A, Illustration X, Exhibits A through E.

b) An aeration batch treatment system that has been approved by NSF in accordance with NSF Standard 40 shall be used. The aeration tank volume shall hold at least 2 times the average daily wastewater flow for residential use (including the use of a garbage disposal). Non-residential systems shall have a tank volume size of 3 times the daily wastewater flow. Multiple tanks shall be used to achieve the volume required. Multiple tanks require connection at the bottom of each tank for flow equalization.

c) Filter beds shall not exceed 600 square feet. If a larger area is needed, multiple beds shall be used, separated by a minimum distance of 15 feet, using a common mantle. The filter beds can be placed at any point on the mantle to accommodate existing ground contours.

d) The filter length shall not exceed 3 times the width.

e) The sand filter media shall have an effective size of 0.5 to 2.0 millimeters, a uniformity coefficient of less than 3.5, and a 30-inch depth.

f) The mantle shall be sized in accordance with the formula A = QT/25, where A = Mantle Area, Q = Quantity of wastewater per day, and T = Percolation time of the original soil in minutes per inch. (See Appendix A, Illustration X, Exhibit E to convert soil investigation information to T (percolation time).)

g) The mantle shall be at least equal to the area of the filter bed. The mantle shall not be designed for percolation rates that exceed 120 minutes per inch.

h) The mantle area is to be cut into original soil to a depth of 6 inches and back-filled with 12 inches of torpedo sand that is graded as FA1-FA8 in accordance with Standard Specifications for Road and Bridge Construction (Illinois Department of Transportation).

i) The slope of the bottom of the mantle shall be level, plus or minus one inch. The slope of the earth sidewalls of the filter shall be a maximum of 3 feet horizontal to one foot vertical.

j) The mantle area shall be at least 12 inches deep. If the maximum high groundwater table is less than 6 inches from the bottom of the filter bed, additional torpedo sand shall be used to increase the isolation distance between the bottom of the filter bed and the high groundwater table to at least 6 inches. Other separation distances (e.g., well, property line) shall be measured from the toe of the filter bed.

k) The distribution piping (4-inch perforated pipe) shall be placed level to 15-inch centers in 12 inches of ¾-inch stone.

l) Sod shall be placed over the filter beds and mantle.

(Source: Amended at 37 Ill. Reg. 14994, effective August 28, 2013)