

7080.2230 AT-GRADE SYSTEMS.

Subpart 1. **At-grade system.** To qualify as an at-grade system, the system must meet or exceed the following requirements:

- A. employ flow values in parts 7080.1850 to 7080.1885;
- B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;
- C. meet or exceed the requirements of part 7080.2150, subparts 2 and 3;
- D. employ flow measurement; and
- E. meet the requirements of subparts 2 and 3.

Subp. 2. **Location of at-grade systems.**

A. The upper 12 inches of the absorption area must be original soil with a loading rate of 0.45 gallons per day per square foot or greater as shown in Table IX or IXa in part 7080.2150, subpart 3, item E.

B. At-grade systems must not be installed in areas with slopes greater than 25 percent.

C. Setbacks must be according to part 7080.2150, subpart 2, item F. Setbacks must be measured from the absorption area.

Subp. 3. **Design and construction of at-grade systems.**

A. The at-grade bed absorption width must be determined according to part 7080.2150, subpart 3, item M, and must not exceed a width of 15 feet. The at-grade bed absorption width for slopes of one percent or greater does not include any width of the media necessary to support the upslope side of the pipe.

B. The at-grade absorption length must be calculated by dividing the design flow by the soil loading rate found in Table IX or IXa in part 7080.2150, subpart 3, item E, for the upper 12 inches of soil and dividing by the absorption bed width.

C. At-grade systems must employ pressurized distribution by meeting or exceeding the applicable requirements of parts 7080.2050 and 7080.2100. At-grade systems located on slopes of one percent or greater require only one distribution pipe located on the upslope edge of the distribution media, with the absorption bed width being measured from the distribution pipe to the downslope edge of the media. Multiple distribution pipes are allowed to be used to provide even distribution, if necessary, based on site conditions.

D. The upslope edge of an at-grade absorption bed must be installed along the natural contour.

E. At-grade materials must be placed by using construction techniques that minimize compaction.

F. Six inches of loamy or sandy cover material must be installed over the distribution media. Cover must extend at least five feet from the ends of the media bed and be sloped to divert surface water. Side slopes must not be steeper than four horizontal units to one vertical unit. Six inches of topsoil borrow must be placed on the cover material.

G. One vertical inspection pipe of at least four inches in diameter must be installed along the downslope portion of the absorption bed. The inspection pipes must have three-eighths inch or larger perforations spaced vertically no more than six inches apart. Perforations must not exist above the distribution medium. The inspection pipes must extend to the absorption bed/soil interface and must be secured and capped flush with or above finished grade.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347; 35 SR 1353*

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