

**7080.2100 DOSING OF EFFLUENT.**

Subpart 1. **General.** When pumping or dosing is necessary, it must comply with this part.

**Subp. 2. Pump tanks.**

A. Pump tanks shall meet or exceed the requirements of parts 7080.1910, 7080.1970, and 7080.1980 to 7080.2020. All dosing chambers must be vented.

B. The pump, pump controls, and pump discharge line must be installed to allow access for servicing or replacement without entering the pump tank.

C. The pump tank must either include an alternating two-pump system or have a minimum total capacity of 500 gallons for design flow values of 600 gallons per day or less or 100 percent of the design flow for design flow values of greater than 600 gallons per day.

D. An ISTS with a pump must employ an alarm device to warn of failure.

E. The inlet of pumps must be elevated at least four inches from the bottom of the pump tank or protected in some other manner to prevent the pump from drawing excessive settled solids.

F. Electrical installations must comply with applicable laws and ordinances including the most current codes, rules, and regulations of public authorities having jurisdiction and with part 1315.0200, which incorporates the National Electrical Code.

Subp. 3. **Pumps for gravity distribution.** If a pump is used to lift effluent into a gravity distribution system, items A to C apply.

A. The pump must discharge at least ten gallons per minute but no more than 45 gallons per minute.

B. The pump must be constructed and fitted with sound, durable, and corrosion-resistant materials.

C. The pump must have sufficient dynamic head for both the elevation difference and friction loss.

Subp. 4. **Pumps for pressure distribution.** Pumps for pressure distribution must meet the requirements in items A to D.

A. Pumps must be constructed and fitted with sound, durable, and corrosion-resistant materials.

B. The pump discharge capacity must be based on the perforation discharges for a minimum average head of 1.0 foot for 3/16-inch to 1/4-inch perforations and 2.0 feet for 1/8-inch perforations for dwellings. The minimum average head must be 2.0 feet for

other establishments with 3/16- to 1/4-inch perforations and 5.0 feet of head for 1/8-inch perforations. Perforation discharge is determined by the following formula:

$$Q = 19.65 cd^2h^{1/2}$$

where: Q = discharge in gallons per minute

c = 0.60 = coefficient of discharge

d = perforation diameter in inches

h = head in feet.

C. The pump discharge head must be at least five feet greater than the head required to overcome pipe friction losses and the elevation difference between the pump and the distribution device.

D. The quantity of effluent delivered for each pump cycle must be no greater than 25 percent of the design flow and at least four times the volume of the distribution pipes plus the volume of the supply pipe.

**Statutory Authority:** *MS s 115.03; 115.55*

**History:** *32 SR 1347; 35 SR 1353*

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