

**4720.3935 SEDIMENTATION.**

Subpart 1. **General.** Sedimentation must follow flocculation. The detention time for effective water clarification shall depend on basin design and the nature of the raw water, such as turbidity, color, colloidal matter, taste, and odor causing compounds.

Subp. 2. **Detention time.** Facilities with a conventional sedimentation system must provide a minimum of four hours of settling time.

Subp. 3. **Inlet devices.** Inlets must be designed to distribute the water equally and at uniform velocities. A baffle must be constructed across the basin, close to the inlet end. The baffle must project far enough below the water surface to dissipate inlet velocities and provide uniform flow across the basin.

Subp. 4. **Outlet devices.** Outlet devices must maintain velocities suitable for settling in the basin and must minimize short circuiting.

Subp. 5. **Weir overflow rate.** The rate of flow over the outlet weir must not exceed 20,000 gallons a day per foot of weir length. If submerged ports are used as an alternate for overflow weirs, they must not be lower than three feet below the flow line.

Subp. 6. **Drainage.** Basins must be provided with a means for dewatering. Basin bottoms must slope toward the drain.

Subp. 7. **Covers.** Covers or superstructures are required at all facilities. Where covers are used, manholes must be provided, as well as drop light connections, so the flow can be observed at the inlet midpoint and outlet of the basin.

Subp. 8. **Velocity.** The velocity through settling basins must not exceed one foot a minute. The basins must be designed to minimize short circuiting. Baffles must be provided if the commissioner determines the flow through time cannot be met.

Subp. 9. **Overflow.** An overflow weir or pipe must be installed which establishes the maximum water level on top of the filters. The overflow weir must discharge with a free fall at a location where the discharge is visible.

Subp. 10. **Safety.** Guard rails must be installed around openings hazardous to maintenance personnel.

Subp. 11. **Sludge disposal.** A facility must provide for sludge disposal. Provisions must be made for the operator to observe and sample sludge being withdrawn from the unit.

Subp. 12. **Cross connection control.** Protection must be provided for all potable water lines used to backflush sludge lines and basins or for other purposes if potable water could become contaminated by nonpotable water.

**Statutory Authority:** *MS s 144.383*

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