ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION - WATER SUPPLY PROGRAM
ADMINISTRATIVE CODE

CHAPTER 335-7-7
DISTRIBUTION OF DRINKING WATER

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335-7-7-.01 Applicability.

This chapter applies to all community and NTNC water systems distributing drinking water for consumption by the public.
Author: Joe Alan Power, Edgar K. Hughes, Dennis D. Harrison
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335-7-7-.02 Permit Requirements.

(1) A public water system shall be designed and operated such that a minimum of 20 pounds per square inch (psi) of water pressure is supplied at the water system meter under all normal operating conditions.

(2) Any projects involving water system storage, new sources, pumping stations, or water main additions which will significantly affect system hydraulics must be permitted by the Department prior to construction.
Author: Joe Alan Power, Edgar K. Hughes, Dennis D. Harrison
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335-7-7-.03 Distribution Facilities Design And Construction Requirements.

To prevent contamination of the drinking water, the following are required in the design and construction of drinking water facilities:

(a) Water Main Facility Requirements:

1. Water mains shall be constructed of materials which will neither contaminate nor allow deterioration of the water quality.

2. Gaskets, O-rings, and other products used for joining pipe, setting meters or valves, or other appurtenances shall not be made nor coated with materials which will support microbiological growth and shall be certified as meeting the specifications of the National Sanitation Foundation (NSF)/American National Standard Institute (ANSI) Standard 61.

3. Water mains permitted by the Department shall be properly pressure tested and disinfected after installation. Copies of the pressure test and bacteriological results showing absence of coliform shall be provided to the Department along with a request for a final inspection prior to the setting of meters to serve customers on these lines.

4. Unless otherwise approved by the Department, the following applies when installing water mains after January 1, 2013;

(i) A minimum horizontal separation of five feet shall be maintained between water mains and sanitary sewer mains.

(ii) When water and sewer main crossings are necessary, place a continuous casing around one of the mains to allow a minimum five-foot separation between each end of the cased and uncased main.

(iii) Where possible, install the water main such that the top elevation of the sewer main is a minimum of 18 inches below the bottom elevation of the water main.

(iv) Unless adequately cased to protect against cross contamination, do not install any water main such that it comes in contact with any part of a sewer

manhole, septic tank field lines, or soil saturated with organic solvents or gasoline.

(b) Pumping stations shall be located or constructed so that the pumps and piping will be protected from flooding and shall be designed and operated in such a manner as to allow satisfactory pressure and service to customers on the suction and discharge side of the station.

(c) Finished Water Storage Requirements:

1. An uncovered finished water storage reservoir used to store water that will undergo no further treatment except residual disinfection and is open to the atmosphere is prohibited.

2. All finished water storage structures shall have suitable water tight roofs, hatches, and covers to exclude outside contamination.

3. Access manholes shall be provided with a locking mechanism.

4. Clearwells and pumping sumps associated with surface treatment plants may not be constructed adjacent to unfinished water units when the compartments are separated by a single wall.

5. All metal water storage facilities shall be protected by paints or other protective coatings. Inside paint systems shall not use lead primer but shall otherwise conform to AWWA D102 or latest revision Coating Steel Water-Storage Tanks or other standards accepted by the Department.

6. Protective coatings shall be used and applied in such a manner as to prevent contamination of the water in contact with these coatings.

7. Storage tanks permitted after December 31, 2006 shall meet the following requirements:

(i) Shall provide for a minimum fluctuation of 50% in water height during all normal operating conditions. Deviations must have prior written approval from the Department. Deviations from this requirement must be requested in writing. The request must include reasons the deviation should be granted and the deviation cannot be made until written approval is received by the Department.

(ii) Shall minimize water age and shall provide adequate mixing of water. Inlet pipe diameters or wet

risers greater than 36 inches are not allowed unless approved by the Department. The request must be in writing and include reasons for the larger diameter and include design calculations showing that the tank will mix properly and water age will be minimized.

(iii) Shall be designed to allow the water storage tank to be removed from service for cleaning and repair as required by the Water Storage Tank Maintenance section of this chapter.

(iv) Shall be properly disinfected and upon refilling, two bacteriological samples must be collected showing absence of coliform prior to use. Documentation of the disinfection and bacteriological analyses information must be provided to the Department along with a request to place the tank into service.

Author: Joe Alan Power, Edgar K. Hughes, Dennis D. Harrison
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335-7-7-.04 Water Storage Tank Maintenance.

(1) For the purposes of this rule, "water storage tank" or "storage tank" shall mean any vessel designed to store finished drinking water that is owned or operated by the public water system. This includes clearwells, hydropneumatic tanks with hatches or manholes for access to its interior, and storage tanks that are out of service but still connected to the distribution system.

(2) Public water systems shall develop and implement a written maintenance plan for all water storage tanks. The plan at a minimum shall include the following:

(a) Schedule for the inspection/ cleaning of each water storage tank, not to exceed 5-year intervals.

(b) The current coating type for each water storage tank, with particular emphasis placed on coatings which contain lead, coal tar, other coatings no longer NSF approved for use in a water storage tank.

(c) Separate specifications for the inside and outside coatings describing when the coating has failed and must be repaired.

(d) The method that will be used to disinfect the water storage tank after each inspection/cleaning. The disinfection method selected shall comply with AWWA C652 (latest edition) for Disinfection of Water-Storage Facilities. After the storage tank has been properly disinfected and refilled to an acceptable disinfectant residual in accordance with ADEM Admin. Code r. 335-7-10-.04, two consecutive bacteriological samples shall be collected not less than 30 minutes apart and analyzed to be absent of total coliform before the storage tank may be returned to service.

(e) Schematics (as-built drawing if available) depicting the water storage tank's dimensions and configuration for all major components. If a mixer is present, the plan shall include the operational parameters for the mixing system if applicable.

(3) Inspection/Cleaning Requirements.

(a) All storage tanks constructed prior to January 1, 2022, shall have an initial inspection/ cleaning under this regulation completed by December 31, 2027.

(b) All storage tanks constructed on or after January 1, 2022, shall have an initial inspection/ cleaning under this regulation completed no later than five years from the date of construction.

(c) All storage tanks shall be inspected/cleaned at least once every five years following the date of the initial inspection/ cleaning under this regulation.

(4) No storage facility may be returned to service until all significant deficiencies have been repaired. A significant deficiency is any deficiency where there is a potential for the water to become contaminated. This includes, but is not limited to, the following:

(a) Missing roof hatches;

(b) Missing or incorrectly sized screens on vent pipes. The proper size screen is #20 mesh or smaller made from a non-corroding material;

(c) Holes in the roof or walls;

(d) Roof joints that are no longer properly sealed;

(e) Overflow lines without proper protection which includes a screen and flap valve or another acceptable configuration (e.g., duckbill valve);

(f) Improper air gap for an overflow line;

(g) Connection to a sanitary sewer system; or

(h) Missing or cracked rubber gaskets (if required) around hatches.

(5) If any tank has a significant deficiency identified, a summary report shall be written and submitted to the Department within 14 days of the inspection. This report should also include the corrective action and the timeframe for repair.

(6) A final inspection report shall be written separate from a summary report and shall be maintained on file at the water system for public review and review during inspections. The report shall be maintained for a minimum of 10 years.

(7) The final report shall include a description of any objects or contaminants found in the water storage tank and the most likely entry point.

(8) The final report shall be detailed, including pictures and/ or videos, describing all conditions discovered during the inspection, not just a list of deficiencies.

(9) All inspection and summary reports shall be signed by a qualified tank inspection professional. This individual shall possess experience inspecting storage tanks of similar design and size, according to generally recognized standards of the water utility industry.

Author: Edgar K. Hughes, Dennis D. Harrison, Ross Caton
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