

UPC Chapter 15 Alternate Water Sources for Nonpotable Applications

RV 11.06.2021

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Quiz 1

1. Alternate water source systems are required to be designed in accordance with UPC Chapter 15 by a _____ or licensed person who demonstrates competency to design the alternate water source system as required by the Authority Having Jurisdiction.
 - registered design professional
 - highly trained plumber
 - licensed contractor
 - property owner
 - none of the answers provided
2. A registered design professional is not required to design gray water systems having a maximum discharge capacity of 250 gallons per day _____.
 - provided the AHJ offers an exception
 - for single-family and multi-family dwellings
 - unless the gray water system is readily accessible to the occupants
 - for commercial properties
 - provided the property owner resides on the property
3. Components, piping, and fittings used in an alternate water source system shall be _____.
 - DWV underground approved _____
 - made from ABS or PVC DWV
 - listed
 - made from cast iron or ferrous material
 - buried no less than 12 inches below ground level

UPC Chapter 15 Alternate Water Sources for Nonpotable Applications

RV 11.06.2021

4. It is not necessary to obtain a permit to install an alternate water source system on a premises provided _____.
 - the installation is simply an addition to an existing system
 - the system is for a single-family dwelling
 - the premises building permit is still applicable
 - a licensed installer is hired to do the work
 - none of the answers provided
5. The _____ of alternate water system components shall be properly identified.
 - installer
 - manufacturer
 - owner
 - contractor
 - overall dimensions

Quiz 2

1. Water treatment _____ for gray water used for subsurface irrigation.
 - is not required
 - is not permitted
 - may be allowed
 - is not recommended
 - must be performed
2. The materials used to construct an alternate water source system are NOT required to be compatible with the _____.
 - type of pipe in the system
 - installer's material preferences
 - system's water conditions
 - system's method of water treatment
 - type of fitting materials
3. Restrooms that use reclaimed water for flushing toilets are NOT required to post signs to that effect in which of the following locations?
 - hospitals
 - private residences
 - grocery stores
 - schools
 - manufacturing facilities
4. Institutional restrooms that use reclaimed water in toilets or urinals must post signs to that effect _____.
 - placed under sinks
 - behind the entrance door
 - where they don't detract from bathroom décor
 - where they are visible to users
 - at least every 3 feet along the walls

5. Equipment rooms containing on-site treated water equipment must have signs to that effect that include the phrase "_____".
 - DO NOT CONNECT TO DRINKING WATER SYSTEM
 - SUITABLE FOR HAND WASHING
 - DO NOT PERFORM MAINTENANCE ON THIS SYSTEM
 - THIS SYSTEM IS NOT SUITABLE FOR INSPECTION
 - A PERMIT IS REQUIRED TO PERFORM WORK ON THIS SYSTEM

Quiz 3

1. The annual cross-connection test of potable and alternate water supply systems requires that the potable water system be _____.
 - cut open and tested
 - drained of water
 - activated and pressurized
 - chlorinated
 - bypassed
2. The annual cross-connection test of potable and alternate water supply systems requires that the alternate water source system is depressurized for at least _____ while the potable water system is pressurized.
 - 10 minutes
 - 1 hour
 - 24 hours
 - 2 days
 - 30 minutes
3. During the annual cross-connection test of potable and alternate water source systems, when the potable water system is pressurized and the alternate water source is drained, empty, and depressurized, flow from the alternate water source system indicates _____.
 - a cross-connection
 - that there is no cross-connection
 - good water pressure
 - that the potable water pipe is working
 - that the system has been altered

UPC Chapter 15 Alternate Water Sources for Nonpotable Applications

RV 11.06.2021

4. The minimum period of time for the potable water system to remain depressurized during the annual test for cross-connection with an alternate water source system is _____.
 - 2 hours
 - 1 hour
 - 1 day
 - 4 hours
 - 30 minutes
5. During the annual cross-connection test of potable and alternate water source systems, the alternate water source system shall remain pressurized for a minimum period of time specified by the AHJ while _____.
 - the potable water system is full and pressurized
 - an assistant turns all the valves on and off repeatedly
 - the potable water system is empty and depressurized
 - new fixtures are installed on the potable water system
 - none of the answers provided
3. Alternate water source systems that are no longer in use or fail to be maintained in accordance with Section 1501.5 _____.
 - are permitted to be returned to use once they've been cleaned
 - require a permit before they can be dealt with
 - shall be abandoned
 - are exempt from UPC requirements
 - none of the answers provided
4. An abandoned alternate water source system, or part thereof, covered under the scope of UPC Chapter 15 is NOT required to be _____ in an approved manner.
 - disconnected from remaining systems
 - drained
 - plugged
 - polished
 - capped
5. According to the UPC, which of the following is NOT an acceptable way to deal with an abandoned underground water storage tank from an alternate water source system?
 - Completely drained and filled with concrete.
 - Drained and covered with backfill.
 - Removed in a manner satisfactory to the AHJ.
 - Completely drained and filled with sand or gravel.
 - Completely drained and filled with approved material.

Quiz 4

1. Treated nonpotable water pipes are permitted to be run in the same trench as potable water pipes with a _____-inch minimum vertical and horizontal separation where both pipe materials are approved for use within a building.
 - 6
 - 12
 - 18
 - 24
 - 60
2. Where treated nonpotable water pipes are run in the same trench as potable water pipes, the potable water piping shall be _____ the nonpotable piping in the trench.
 - bonded to
 - installed at an elevation above
 - laid at the same level as
 - installed no further than 12 inches from
 - mechanically fastened to

Quiz 5

1. When submitting a plot plan to the AHJ for the approval of a gray water system, which of the following is NOT required to be included?
 - paved areas and structures on the plot
 - location of water supply lines
 - lot lines
 - location of proposed gray water system
 - location of proposed or existing gray water systems on adjacent lots
2. A plot plan submitted to the AHJ for permitting a gray water system must include a full description of the complete installation, including installation methods, _____.
 - construction and materials
 - installer name and contact information
 - contractor credentials and availability
 - material and component sources
 - none of the answers provided

UPC Chapter 15 Alternate Water Sources for Nonpotable Applications

RV 11.06.2021

3. A plot plan submitted to the AHJ for permitting a gray water system must include details for _____ such as dimensions, structural calculations, bracings, and such other pertinent data as required.

- landscape water features
- elevators and escalators
- holding tanks
- additions to the building structure
- roofing

4. In order to obtain a permit for a gray water system, it is necessary to submit a plot plan that includes a statement of water absorption characteristics of the soil at the proposed site as determined by _____.

- the system designer
- measuring the annual rainfall
- Table 604.6
- approved percolation tests
- the local health authority

5. According to Table 1504.2, which type of soil has the greatest maximum absorption capacity?

- clay with considerable sand or gravel
- sandy loam
- fine sand
- sandy clay
- coarse sand or gravel

Quiz 6

1. Which of the following is NOT a requirement for steel surge tanks?

- They must be approved by the AHJ.
- They must be non-corrosive.
- They must be airtight.
- They must be solid and durable.
- They must be watertight.

2. Surge tank vent size is determined based on the _____.

- AHJ's requirements
- total gray water fixture units
- total volume of the tank
- estimated daily gray water discharge
- maximum estimated flow rate of water entering the tank

3. A gray water surge tank is required to be permanently marked with a warning sign that states "_____".

- CAUTION – CONFINED SPACE
- WARNING: GRAY WATER
- UNSAFE AREA – KEEP OUT
- DANGER: AUTHORIZED PERSONS ONLY
- none of the answers provided

4. Surge tank overflow drains shall have permanent connections to the building drain or building sewer _____ septic tanks.

- adjacent to
- downstream of
- upstream of
- except with
- none of the answers provided

5. Underground surge tank covers shall be capable of supporting an earth load of not less than _____ pounds per square foot.

- 300
- 400
- 1500
- 3000
- 250

Quiz 7

1. The area of a subsoil irrigation field that is 50 feet wide and contains 600 feet of perforated pipe is _____ square feet.

- 600
- 30000
- 500
- 20,000
- 1000

2. A gray water system shall not be permitted where _____ that the absorption capacity of the soil is unable to accommodate the maximum discharge of the proposed gray water irrigation system.

- the AHJ decides
- Table 1502.10 shows
- it is apparent
- the percolation test shows
- the building permit indicates

3. No excavation for an irrigation field, disposal field, or mulch basin shall extend within _____ vertical of the highest known seasonal groundwater level.

- 20 feet
- 18 inches
- 2 feet
- 30 inches
- 3 feet

UPC Chapter 15 Alternate Water Sources for Nonpotable Applications

RV 11.06.2021

4. Gray water subsurface irrigation drip feeders must be _____ finished grade and covered with mulch or soil.
- at least 2 inches below
 - no more than 2 inches above
 - approximately 4 inches below
 - at or below
 - no more than 6 inches below

5. A gray water subsurface irrigation system is required to include a filter with a minimum capacity of _____ gallons.
- 40
 - 5
 - 50
 - 25
 - 10

Quiz 8

1. Gray water subsoil irrigation field distribution piping shall be not less than _____ inches in diameter.
- 1.5
 - 3
 - 4
 - 2
 - 6
2. A subsoil irrigation field trench is required to have at least _____ inches of filter material beneath the piping.
- 18
 - 4
 - 3
 - 12
 - 100
3. A subsoil irrigation field trench is required to have at least _____ inches of filter material to cover the piping.
- 2
 - 10
 - 14
 - 3
 - 6
4. Earth backfill must be placed on top of the porous filter material in an irrigation pipe trench _____.
- after 5PM
 - before the first rainfall
 - once the system is fully tested
 - before the AHJ provides a permit
 - after inspection and acceptance

5. It may be necessary to step subsoil irrigation lines that are installed on sloping ground in order to prevent _____.
- ponding
 - excessive evaporation
 - washout
 - excessive line slopes
 - injury to the installer

Quiz 9

1. Before a building is occupied or the reclaimed water system is activated, the installer shall _____.
- Inform the owner of system activation
 - contact the manufacturer for activation requirements
 - perform the initial cross-connection test in the presence of the AHJ
 - pressurize the potable system and depressurize the reclaimed system
 - open all valves for both potable and nonpotable systems
2. It is possible that the initial cross-connection test performed on a new reclaimed water system could be witnessed by multiple authorities having jurisdiction.
- True
 - False
3. Reclaimed (recycled) water supply and distribution system materials shall comply with the requirements of the Uniform Plumbing Code for _____.
- general requirements
 - vents
 - potable water supply and distribution systems
 - fixtures
 - storm drainage
4. The signs marking a recycled water system must have _____.
- a green background
 - large white letters
 - internal lighting
 - purple lettering at least 1 inch high
 - none of the answers provided
5. Reclaimed or recycled water system valves, must be equipped with locking features.
- Yes, this is correct.
 - Yes, provided the property owner has keys to the locks.
 - Yes, except for fixture supply control valves.
 - Yes, unless the AHJ has approved an exception.
 - No, this is not required.

UPC Chapter 15 Alternate Water Sources for Nonpotable Applications

RV 11.06.2021

Quiz 10

1. On-site treated nonpotable water systems shall have no connection to a potable water supply or _____.
 - a reclaimed (recycled) water source system
 - a water storage tank
 - any plastic piping
 - floor drains
 - none of the answers provided
2. On-site treated nonpotable water system materials must comply with the UPC requirements for _____ unless otherwise specified in UPC Chapter 15.
 - water heaters
 - potable water supply and distribution systems
 - hazardous locations
 - vents
 - storm drainage
3. Equipment used to treat nonpotable water for on-site use in order to maintain the minimum water quality requirements as determined by the AHJ must be listed or labeled or _____.
 - approved for the intended application
 - suitable for use
 - inspected by the AHJ or their agent
 - approved by a journeyman plumber
 - refurbished
4. Which of the following is NOT an acceptable disinfection method for on-site treated nonpotable water supplied toilets?
 - freezing
 - chlorination
 - ultraviolet sterilization
 - an AHJ-approved method
 - ozone
5. An on-site treated nonpotable water system and a potable water system within a building shall be provided with the required appurtenances to _____.
 - view the water as it is disinfected
 - allow for deactivation or drainage
 - cross-connect the systems as required
 - take water samples in every piping section longer than 5 feet
 - none of the answers provided