

Article 1008: FIRE PROTECTION REGULATIONS

(Adopted 03/27/2012)

1008.1 FIRE SUPPRESSION FOR RESIDENTIAL DEVELOPMENT

- A. Any new subdivision of three or more individual dwelling units and all existing subdivisions expanding to three or more individual dwelling units shall be provided a credible (not subject to drought or drainage) water source for fire protection. This water source shall be required if any of the dwelling units exceed 3,000 feet of travel distance or extend beyond 3,500 feet of travel distance from an existing credible water source. A credible water source will be determined by the Kingston Fire Department. The existence of a dry hydrant does not necessarily constitute a credible water supply. Due to drought conditions, many former water supplies have been deemed unreliable.
- B. Exception: All dwelling units are protected throughout by an approved automatic sprinkler system installed in accordance with N.F.P.A 13D.
- C. Water sources for fire protection shall be designed in accordance with the Kingston Fire Department water supply regulations for cisterns and dry hydrants. All designs shall be approved by the Kingston Fire Department.
- D. All residential plans relative to fire protection shall bear the stamp of a qualified licensed engineer or architect.

1008.2 FIRE SUPPRESSION FOR NON-RESIDENTIAL DEVELOPMENT

- A. Any new non-residential development and all existing developments that are expanding in size or creating a change in use may be required to provide a credible (not subject to drought or drainage) water source for fire protection commensurate with the proposed hazards associated with the development as determined by the Kingston Fire Department.
- B. Exception: All units are protected throughout by an approved automatic sprinkler system installed in accordance with N.F.P.A 13.
- C. Water sources for fire protection shall be designed in accordance with the Kingston Fire Department water supply regulations for cisterns and dry hydrants. All designs shall be approved by the Kingston Fire Department.

- D. All non-residential plans relative to fire protection shall bear the stamp of a qualified licensed engineer or architect.

1008.3 FIRE CISTERNS

A. General Requirements

1. The Kingston Fire department shall approve all cistern locations.
2. Sound engineering practices shall be used for cistern installations.
3. The design of the cistern shall be submitted to the Kingston Fire Department for approval prior to installation.
4. The installer is responsible for completely filling the cistern until accepted by the Kingston Fire Department.
5. Documented permission (easement) to use the water source if not on town property.
6. The Kingston Fire Department shall be notified of the date the site work will begin.

B. Cistern Specifications

1. The cistern shall be of sound engineering design to be trouble free and designed to last a minimum of 30 years.
2. The minimum capacity shall be 30,000 gallons. Depending on the development layout/configuration, additional gallon requirements may be imposed at the discretion of the Kingston Fire Department.
3. The suction piping system shall be capable of delivering 1,500 gallons per minute for 75% of the cisterns capacity.
4. Tank construction should be fiberglass or polypropylene and be rated for highway loading. The Kingston Fire Department on a case-by-case basis may approve other tank construction.
5. All piping shall be minimum 6" (ASTM) Schedule 40 PVC with glued joints.
6. Corrosion resistant tie downs attached to concrete dead men to prevent flotation when empty shall be used.
7. The final suction connection shall be six inch female National Standard Hose thread fitting with ears located 20" to 24" above the final level grade where vehicle wheels will be located. Static lift should not exceed 12 feet. Final suction connection shall be outfitted with a cap and cap tether.
8. The final fill connection shall be a 5" stortz fitting with cap and tether located 36" above finish grade.

9. The vent pipe shall be sized appropriately and be outfitted with a screen cover to prevent wildlife from entering the vent pipe.
10. Cistern shall be equipped with a water level indicator approved by the Kingston Fire Department.
11. All horizontal piping shall be adequately supported below frost line and slope slightly back towards tank to prevent freezing.
12. A 30" minimum man way shall be located on top of tank to allow for tank inspection.
13. After back filling cistern, all piping and cistern shall be protected by fencing, concrete bollards or large rocks to prevent damage by vehicular traffic.
14. Concrete bollards if used shall have a finished height of 48" above the finished grade.
15. The immediate area around hydrant shall be level to provide for fire fighter safety.
16. Access to hydrant shall be 20' minimum width, paved and located to be accessible under all weather conditions, and capable of supporting the heaviest vehicle. The vehicle pad shall be of sufficient size to accommodate the largest truck as determined by the Kingston Fire Department. All access to hydrant including vehicle pad shall be sloped to allow for proper water runoff. All pavement shall be approved by Town Engineer and Road Agent.
17. System and site accessibility criteria shall ensure that hydrant can be reached with one 10' length of suction hose.
18. Hydrant shall have a minimum clearance of 20' above and on each side and be located a minimum of 100' from any structure. Highway or road traffic shall not be impaired during the use of the hydrant.
19. All exterior piping, bollards and man ways shall be painted using commercial grade paint. Color to be high gloss red.
20. Cistern location shall be made visible from the roadway during an emergency by reflective markings and signage approved by the Kingston Fire Department.
21. Signs stating "No Parking" "Fire Department Use Only" shall be provided as approved by the Kingston Fire Department.
22. The Kingston Fire Department shall be notified by the contractor to observe the following points of installation:
 - a. Dead man in place.
 - b. Tank in place with hold down straps attached.
 - c. Shoulder and vehicle pad in place and graded.
 - d. Pavement, piping system, vehicular protection and signs complete.

1008.4 DRY FIRE HYDRANT

- A. General Requirements
- B. The Kingston Fire Department shall approve all dry hydrant locations.
- C. Sound engineering practices shall be used for dry hydrant design and installations.
- D. The design of the dry hydrant and water source shall be submitted to the Kingston Fire Department for approval prior to construction.
- E. The dry hydrant shall be flow tested by the Kingston Fire department prior to acceptance.
- F. Documented permission (easement) to use the water source if not on town property.
- G. The Kingston Fire Department shall be notified of the date the site work will begin.

1008.5 DRY HYDRANT SPECIFICATIONS

- A. The dry hydrant shall be designed and constructed to provide a minimum flow of 1,500 gpm at draft.
- B. Documentation that the water supply has a capacity to support a minimum draw of 250gpm for two hours (minimum 30,000 gallons).
- C. Documentation that the hydrant has the ability to draft water 365 days a year, to include during freezing weather.
- D. Documentation that the water supply can withstand a 50-year drought occurrence.
- E. All dry hydrant pipe, fittings and appendices shall be (ASTM) schedule 40 PVC 6" minimum diameter.
- F. Dry hydrant systems shall be designed and constructed so that slope and piping configuration does not impede drafting capability.
- G. Subject to alternative engineering practices, no more than the equivalent of two 90-degree elbows shall be used in the total system.
- H. The final suction connection shall be six inch 90-degree female National Standard Hose thread fitting with ears located 20" to 24" above the final grade where the vehicle wheels will be located when hydrant is in use. Suction connection shall be equipped with a cap and tether.
- I. Dry hydrant system piping and appendices shall be supported and/or stabilized using approved engineering design practices. Trust blocks, or equivalent protection, shall be employed at elbows and other system stress points.

- J. All connections shall be clean and the appropriate sealing materials used according to manufacturers specifications so as to ensure that all joints are airtight.
- K. System strainer shall be (ASTM) schedule 40 PVC equipped with a back flushing end cap. Strainer shall be 6" minimum in diameter.
- L. A minimum water level of two feet below and three feet above strainer shall be maintained.
- M. Static lift should not exceed 12'.
- N. Total head loss shall not exceed 20'.
- O. The immediate area around dry hydrant shall be level to provide for fire fighter safety.
- P. Access to dry hydrant shall be 20' minimum width, paved and located to be accessible under all weather conditions, and capable of supporting the heaviest vehicle. The vehicle pad shall be of sufficient size to accommodate the largest truck as determined by the Kingston Fire Department. All access to hydrant including vehicle pad shall be sloped to allow for proper water runoff. All pavement shall be approved by Town engineer and Road Agent.
- Q. System and site accessibility criteria shall ensure that hydrant can be reached with one 10' length of suction hose.
- R. Dry hydrants shall have a minimum clearance of 20' above and on each side and be located a minimum of 100' from any structure. Highway or road traffic shall not be impaired during the use of the dry hydrant.
- S. All piping shall be protected by fencing, concrete bollards or large rocks to prevent damage by vehicular traffic.
- T. Concrete bollards if used shall have a finished height of 48" above the finished grade.
- U. Dry hydrant locations shall be made visible from the roadway during an emergency by reflective markings and signage approved by the Kingston Fire Department.
- V. Signs stating "No Parking" "Fire Department Use Only" shall be provided as approved by the Kingston Fire Department.
- W. All exterior piping and bollards shall be painted using a commercial paint. Color shall be high gloss red.
- X. The Kingston Fire Department shall be notified by the contractor to observe the following points of installation:
 - 1. Piping, strainer, and trust blocks in place.
 - 2. Access road and vehicle pad in place and graded.
 - 3. All paving, piping system, vehicular protection and signs complete.