



**FIRE PROTECTION  
REGULATIONS  
OF THE TOWN OF  
MILTON  
NEW HAMPSHIRE**

**ADOPTED: 8/02/05**

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## **TOWN OF MILTON FIRE PROTECTION REGULATION**

### **I. PREAMBLE:**

A. Purpose: Due to the rural nature of the Town of Milton and the lack of a community wide municipal water system, it has been necessary to require the provision of fire protection for newly developed areas within the community.

B. Scope: Sufficient water is of vital importance in order for the Milton Fire-Rescue Department to provide effective fire protection services to the Town. The fire protection requirements set forth by Milton Planning Board shall allow developers/agents some options in providing the necessary fire protection and ensuring that there shall be an adequate fire cistern/water supply available to support fire protection operations.

### **II. DEFINITIONS:**

A. Approved: Acceptable to the authority having jurisdiction.

B. Dry Hydrant: A permanent piping system, normally a drafting source, that provides access to a water source other than a municipal-type water system.

C. Municipal-Type Water System: A system having water pipes serving hydrants and designed to furnish, over and above domestic consumption, a minimum flow of 250-gallons per minute and 20-pounds per square inch residual pressure for a 2-hour duration.

D. Protected Property/Easement: Property protected by a fire cistern/water supply that is minimally adequate in volume and duration and by a fire department capable of using this fire cistern/water supply to suppress a possible fire within the property.

E. Shall: Indicates a mandatory requirement.

F. Vehicle Pad: A level, hard surfaced area adjacent to a dry hydrant that is 12-feet wide and 60-feet in length as to allow a fire truck to be connected to the dry hydrant with a 10-foot length of suction hose and that shall not block the nearest travel lane of the roadway or other access. This pad shall be built to the Town of Milton Roadway Related Subdivision

G. Water Supply: A water supply shall mean a body of water that is a manmade or a natural pond that has sufficient water.

### **III. AUTHORITY:**

A. Ordinances: The Town of Milton Zoning Ordinance adopted December 20th 1989, as amended.

**B. Regulations:** Subdivision Regulations adopted December 29th 1970, as amended; Site Plan Review Regulations adopted February 21st 1995, as amended; and the Roadway-Related Subdivision Regulations adopted in 1989, as amended.

**C. Policy:** The standards contained within this document shall be the criteria for the design, construction and location of fire cistern/water supply.

**D. Enforcement Authority:** The enforcement of this standard shall be the Planning Board and/or its designee.

#### **IV. ADMINISTRATION:**

**A.** Any subdivision, which creates 5-lots or more, shall be required to construct/install a minimum sized fire cistern/water supply of 10,000-gallons or be required to have a third party selected by the Planning Board to determine the size necessary.

**B.** The development of any fire cistern/water supply for the purpose of fire protection shall follow all procedures.

**C.** The developer shall supply design documentation for review as part of the regular site plan/subdivision plan approval process by the Planning Board:

**D. Design Documentation and Review:**

**1.** A site plan/subdivision plan shall be provided for review that includes all of the information required by the Planning Board and the information listed below:

(a). A plan, which shows the location of the water source and delineates the protected property or properties within the specified travel distance of 1,000-feet. The distance from the fire cistern/water supply to the furthestmost driveway shall not be more than 1,000-feet; however, the Planning Board shall have the authority to waive the distance. This refers to properties under development and if the Planning Board determines necessary.

(b). The location of the proposed hydrant(s) shall be shown.

(c). A vehicle pad shall be shown if a dry hydrant is being proposed.

**2.** A design package for the type of fire cistern/water supply to be used shall be submitted for review to the Planning Board for approval, and to the Fire Rescue Department for review, prior to any construction. All designs and calculations shall be stamped by a New Hampshire Licensed Engineer.

(a). The design package shall include the following information:

- (1). The design and construction methods to be employed in creating the fire cistern/water supply.
- (2). The calculations used to determine the capacity of the water source.
- (3). The design calculations used to determine the size of the dry hydrant.
- (4). The location of the separate well, pump and meter for the fire cistern/water supply.
- (5). If a water supply is used, data establishing the normal water level and the low level on a 50-year drought shall be supplied.

3. The Planning Board shall review the data submitted along with recommendations and comments from the Fire Department, and shall do an on site review.

**E. Construction Timetables:**

1. Water supplies that are required by this regulation shall be constructed according to the following timetable.

- (a). Subdivisions - Fire cisterns/water supplies shall be constructed at the beginning phase of the project. No buildings shall be constructed until the fire cistern/water supply is completed.
- (b). Subdivisions - Municipal or community type water system shall be installed at the time the roadways are constructed.
- (c). Commercial - The required fire cistern/water supply of any type shall be completed and operational prior to any occupancy of the building.

2. The fire cistern/water supply shall be fully completed and tested prior to being accepted by the Planning Board. The Fire Department shall do the inspection and testing of the system (see Section IV G).

**F. Bonds:**

1. Completion of all required fire cistern/water supplies in a development shall be secured by a bond (letter of credit or escrow account), which shall be approved by Planning Board and accepted by the Milton Board of Selectmen.

2. Maintenance bonds shall be posted for cisterns and buried tanks and shall be held for a period of 2-years. The bond will be released by the Board of Selectmen upon approval from the Planning Board. The developer shall own and maintain the cistern/water supply for the first 2-years.

3. After the 2-years and the bond has been released, the Town will be responsible for filling and maintaining the fire cistern/water supply, unless there is a homeowners association, in which case, the association shall become responsible for the filling and maintaining.

#### **G. Inspection and Testing:**

1. The fire cistern/water supply shall be inspected by the Town during its construction/installation. An inspection schedule shall be established for each specific project.

2. A successful flow test shall be conducted by the Town prior to acceptance of the system.

3. A NH Licensed Engineer shall sign off that the cistern was built to specifications.

#### **V. STANDARDS:**

##### **A. General Requirements:**

1. Fire cisterns/water supplies shall be located no more than 1,000-feet roadway/driveway travel distance from any access driveway on the furthestmost lot within a development.

2. The design of the fire cistern/water supply shall be trouble-free for a design life expectation of 20-years.

3. The entire fire cistern/water supply shall be rated for highway loading unless specifically exempted by the Planning Board at the recommendation of the Fire Chief or his/her designee.

(a). Each cistern shall be sited to the particular location by a NH Licensed Engineer and approved by the Planning Board after review and comment by the Fire Chief. All appropriate easements to the Town shall be in place prior to construction.

4. All suction, fill and vent piping shall be American Society for Testing and Material (ASTM) International steel pipe or schedule 40 PVC

5. All connections shall be clean and the appropriate sealing material used according to manufacturer's specifications so as to ensure all joints are airtight.
6. All connections shall be anchored to the cistern to resist movement. Steel piping shall be screwed at the joints. Steel pipe or schedule 40 PVC piping shall be glued at the joints.
7. A separate well, pump, float device and meter shall be connected to said cistern to maintain a full level of water at all times
8. All hydrant pipe and protective bollards shall be primed with rust inhibiting primer and painted bright red.

**B. Storage Vessels:**

1. Cisterns/buried tanks are a vital means of providing a water source in areas where natural or manmade ponds are not available. Cisterns are generally site built units, however, manufactured tanks may be used provided the general construction concepts of this section are met.
2. The property owner/developer shall provide the Town of Milton with a written easement that allows for the use of the cistern at any fire emergency within a reasonable distance as determined by the Planning Board at the recommendation of the Fire Chief or his/her designee.
3. If the cistern is located within a development that has a condominium form of ownership, the responsibility for maintenance of the cistern shall remain with the Condominium/Homeowners Association
4. If the cistern is located within a development where lots are individually owned, the developer shall place a maintenance bond for the cistern for a period of 2-years after construction. It shall be the responsibility of and will be maintained by the developer for 2-years, then deeded to Town. After a 2-year period of operation and after a final inspection by the Town, if the cistern has been found to be acceptable to the Town, the Board of Selectmen shall release the bond upon written order from the Planning Board
5. A cistern shall be designed specifically for the site and soil conditions where it is to be constructed. The plans for the design shall be stamped by a NH Licensed Engineer. The engineer shall sign off that the cistern was built to specifications.
6. Cisterns shall be designed using the information found in National Fire Protection Association (NFPA) standard #1231, Appendix B, Section B-4.6, as the basic design criteria.

7. The design of the dry hydrant in the cistern shall comply with Section V of this Regulation.

8. The dry hydrant shall have a minimum delivery capacity of 1,000-gallons per minute (GPM) for 3/4 of the capacity of the cistern.

9. The dry hydrant shall be located so as to use a single 10-foot length of suction hose to connect to the fire pump when the apparatus is parked on the vehicle pad.

10. The vehicle pad shall be so located and of sufficient size so as to allow the apparatus to connect to the dry hydrant without blocking a travel lane of the roadway.

11. The dry hydrant suction connection shall be a maximum height of 15-feet above the bottom of the cistern.

**C. Ponds/Lakes:**

A pond or lake whether it is man made or natural, shall meet the specification as set by the US Department of Agriculture, Soil Conservation Service and those specification found in Section V of this Regulation. A dry hydrant shall be installed that meets the design standard of this Regulation. All work shall be inspected.

**D. Municipal/Public Water Supplies:**

Extensions of the municipal water service from the Town of Milton shall be allowed and shall fully meet the design and installation requirements of the Milton Water Department.

**E. Community Water Systems:**

If a community water system is used within a subdivision to provide the fire suppression water requirement, the system shall be designed and constructed to meet NFPA standard #24-Standard for the Installation of Private Fire Service Mains. The design and flow capacities of the complete system shall also meet the criteria of the American Water Works Association for the size subdivision being supplied.

**F. Suction Connections:**

1. The suction connection shall be a steel, threaded female connection 4.50-inch diameter, with National Standard Thread (NST) and provided with a suitable cap.

2. The suction piping system shall be 6-inches in diameter and capable of delivering 1,000-GPM, for 3/4 of the cisterns rated capacity. Any suction piping that is underground may be steel pipe or schedule 40 PVC.
3. The suction pipe connection shall be between 24-inches and 30-inches above the level of the grade where the vehicles wheels shall be located when the cistern is in use.
4. Suction piping shall be supported on the top of the tank and to the bottom of the cistern with a space of 8-inches from the floor of the tank.
5. The bottom of the suction pipe to the pumper connection shall not exceed 14-feet vertical distance.
6. The shoulder and vehicle pad shall be 12-feet wide and 60-feet in length. This pad shall be built to the Town of Milton Roadway Related Subdivision Regulations.
7. The pitch of shoulder and vehicle pad from the edge of pavement to the pumper suction connection shall be 1% to 6% downgrade.
8. All above the tank suction piping shall be pitched slightly back towards the tank for proper drainage.

**G. Filler Connection:**

1. The filler pipe shall be 4-inches in diameter steel pipe or schedule 40 PVC.
2. The filler connection shall have one 4-inch Stortz connector with suitable cover attached to a 45-degree downward sweep elbow. The filler connection shall be supported vertically to the cistern.
3. The filler pipe connection shall be 36-inches above the final grade.

**H. Vent Pipe:**

1. The vent pipe shall be 6-inches in diameter.
2. The vent pipe shall terminate not less than 36-inches above the final grade, with the opening to the pipe facing downward.
3. Vent piping shall have screen covers installed to prevent access by wildlife.

**I. Backfilling:**

1. The entire cistern shall be completely piped and inspected prior to any backfilling being accomplished.
2. All backfill materials shall be screened gravel with no stone larger than 1.50-inches and shall be compacted to 95% ASTM 1557.
3. Bedding the cistern shall consist of a minimum of 12-inches of .75-inch to 1.50-inch, crushed washed stone, and compacted. No fill shall be used under the stone.
4. The cistern shall be designed and installed so it will not float when empty.
5. The entire tank shall be guaranteed to be watertight and leak proof by the developer/agent for 2-years. The developer/agent shall be required to post a 2-year bond for maintenance and repair.
6. After backfilling, the cistern shall be protected by steel, concrete filled, pipe bollards no less than 8-inches in diameter set in the ground below the frost line, protecting all exposed piping from potential vehicular damage.
7. Backfilling over the cistern shall be:
  - (a). 4-feet of fill; or
  - (b). The top and highest 2-feet of the cistern shall be insulated with vermin resistant foam insulation, and 2-feet of fill.
  - (c). Backfill shall extend 10-feet beyond the edge of the cistern then have a maximum of a 3:1 slope, loamed and seeded.
8. Cisterns shall be equipped with a 32-inch watertight manhole with a blank cover that will accept a Knox Padlock as specified by the Fire Chief or his/her designee. Access shall be provided to all sections of the tank.
9. The developer/agent is responsible for completely filling the cistern until accepted by the town. The water level shall not drop more than 1-inch in 24-hours initially and not more than 1-inch additionally in 30-days.
10. The developer/agent is responsible to supply and install identification signs as directed by the Planning Board at the recommendation of the Fire Chief or his/her designee. This shall include "No Parking" signs according to Town specification.

11. No Certificate of Occupancy shall be issued until the fire cistern/water supply has been certified by a NH Licensed Engineer, approved by the Planning Board, and accepted by the town.

12. The area surrounding the cistern, during construction, shall be protected in such a manner that any person or child will not enter the construction area. The liability of the construction area is the responsibility of the developer/agent, not the Town. The Town is not responsible for any injuries relating to the construction of the cistern.

**Note:** These specifications and accompanying drawings are subject to change. Be sure to check for revisions of the specifications prior to designing any new cistern. The specification that shall be adhered to are those that are in place at the time the subdivision or site plan is approved.