



Stafford County Fire and Rescue Department Office of the Fire Marshal

1225 Courthouse Road, PO BOX 339, Stafford, VA 22555
(540) 658-8648 · www.staffordfireandrescue.com/fm



Guidelines and Specifications For: Dry Hydrants and Rural Water Supply

Applicable Codes and Standards:

- VSFPC - Virginia Statewide Fire Prevention Code (2018)
- NFPA 1142 - National Fire Protection Association Standard on Water Supplies for Suburban and Rural Fire Fighting (2017)
- SCC – Stafford County Code
- IWUIC – International Wildland-Urban Interface Code (2018)
- FPH – National Fire Protection Association Fire Protection Handbook (20th edition)

When Required	Code Section
Where approved on-site or public water is not available, a dry hydrant or other approved water supply for fire protection should be identified or provided within at least 3 road miles of any new facilities, buildings and developments (including subdivisions of 5 or more lots).	VSFPC 507.1 FPH 13-Ch.4
Where a development includes a water source of at least 3,000 cubic feet (22,442 gallons), a dry hydrant shall be provided and where the surface area is more than 3 acres in size, at least two dry hydrants shall be provided in approved locations.	SCC 22-118(6)

Design and Installation Criteria	Code Section
<p>Dry hydrants shall be designed and installed accordance with NFPA 1142 and include calculations per Appendix I. A sample detail from A.8.3.2(b) is provided below for reference.</p> <p style="text-align: center;">FIGURE A.8.3.2(b)</p>	VSFPC B103.3 NFPA 1142, Ch.8
<p>Minimum usable* capacity of the water source (pond, stream, cistern) should be at least 30,000 gallons for buildings over 3,600 square feet in fire area or a building separation distance of less than 30 feet but in no case less than 15,000 gallons. <i>*for ponds or sources subject to drought and freezing, usable water is generally that which is above the strainer and below the frost line (24" in Stafford County)</i></p>	NFPA 1142, 8.3.3 IWUIC 404.5
Water depth must be maintained 2 feet above the strainer level at the 50-year drought level with a clearance of at least 1 foot of water below the strainer.	NFPA 1142, 8.5
Maximum lift (riser connection to strainer) should generally not exceed 15 feet in elevation change.	NFPA 1142, 8.3.5 FPH 13-Ch.4
Piping should be 6" ductile iron or PVC (minimum schedule 40 for DIP or schedule 80 for PVC) and in all cases any exposed piping shall be primed and painted yellow.	NFPA 1142, 8.3.6



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Fire Department Access	Code Section
An approved, paved, fire department apparatus access road (at least 20 feet in width) shall be provided to the dry hydrant. Where a fire department apparatus turn-around is required, it shall be provided such that the pumper apparatus operating at the dry hydrant does not obstruct a vehicle turning around.	NFPA 1142, 7.5 SCC 22-118(6) VSFPC 503
The dry hydrant, water source and access road must be provided in an easement dedicated to public use (Stafford County) in fee simple ownership.	SCC 22-118(6) NFPA 1142, 7.2
Stafford County approved fire lane signs and pavement markings shall be provided 10 feet on each side of the dry hydrant and a reflective dry hydrant sign provided behind and above the hydrant as illustrated below:	NFPA 1142, 8.4.5 and 8.4.7



Alternative Water Sources	Code Section
Design and installation of alternative water sources (including wells, cisterns, pools, rivers, streams, etc) should specifically comply with Appendix B of NFPA 1142 for the particular arrangement/source to ensure adequacy and reliability. A sample detail of an underground storage tank is provided for reference below:	NFPA 1142, Ap.B VSFPC 507.2

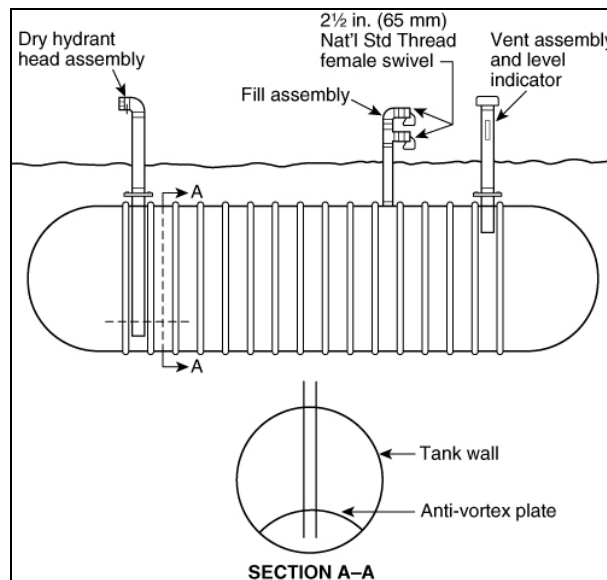


FIGURE B.5

Example of Construction of Water Cisterns Using an Underground Fiberglass Storage Tank.