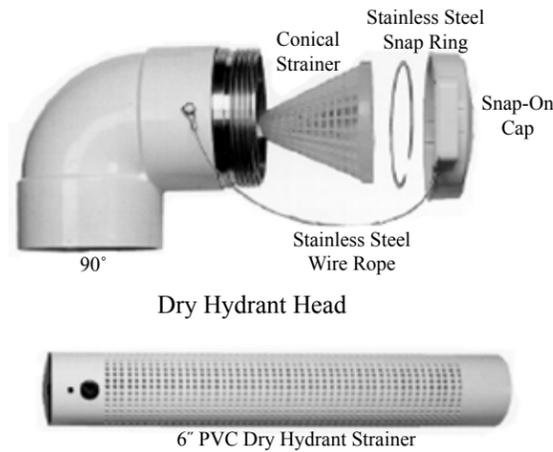


## DRY HYDRANT MATERIALS LIST

### Dry Hydrant Kit

(\*Cost: \$210  
approximately)

- **Dry hydrant head** (90 degree pipe, bronze insert with 6-inch NST male thread, rubber "O" ring, conical strainer, stainless steel snap ring, snap-on cap and stainless steel wire rope).



- **Six-inch PVC strainer** (stream and barrel-style strainers also available for special installations).
- **Stainless steel strainer support clamp.**
- **Aluminum reflective sign** (identifies each hydrant site).

### Other Necessary Equipment

- **Six-inch Schedule-40 PVC pipe**
- **Six-inch PVC pipe couplings**
- **Six-inch PVC elbow**

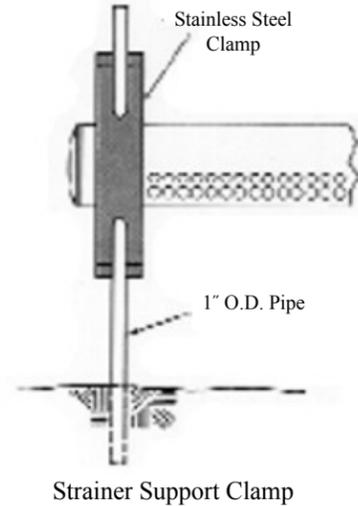
**Optional for 8-inch Installation:** 8-inch Schedule-40 PVC pipe, 8-inch PVC elbow, PVC reducer (to connect 6-inch strainer and 6-inch head with 8-inch pipe).

- **THF PVC primer.** Apply prior to cement.
- **PVC cement** (800-1,000 centipoise viscosity) to join PVC and fittings. Do not use all-purpose cement.
- **One-inch O.D. pipe or rebar post** to support strainer in water.
- **Grass seed, mulch** to improve the site after installation.

**Miscellaneous:** Hack or blade saw, knife or file, sledge hammer, waders.

**Optional:** Dry hydrant riser insulation sleeve (comes in 2-foot sections).

\* Prices are subject to change, do not include shipping, and may vary among suppliers.



Reflective Signs

# Installing Dry Hydrants

A how-to manual for municipalities and fire companies

Adams Electric Cooperative sponsors a dry hydrant program in its service territories to improve fire protection for members served by rural fire companies. The program includes government agencies, landowners and fire companies working together. This manual, compiled by Adams Electric, is designed to help municipalities and fire companies install more dry hydrants.



**Adams Electric  
Cooperative, Inc.**

A Touchstone Energy® Cooperative



**FIRST TEST --** In 1997, Hampton Fire Company, located in Adams County, was the first to test a new, dry hydrant, installed by the fire company and Reading Township.

For more information, contact Adams Electric at: 1338 Biglerville Road, P.O. Box 1055, Gettysburg, PA 17325-1055, phone 717-334-9211, toll-free 1-888-232-6732 or visit [www.adamsec.coop](http://www.adamsec.coop). This information provided by: Adams Electric Cooperative, Inc.; other Pennsylvania rural electric organizations; dry hydrant equipment manufacturers Schlumberger Industries Inc. and Kocheck Company; and the Natural Resource Conservation Service.

## Who does what?

**Adams Electric Cooperative** helps bring together those who want to install more dry hydrants. The cooperative is a source for information about how to install dry hydrants and serves as a link to equipment manufacturers. It also donates dry hydrant kits (head, strainer, strainer clamp and sign), as available, to non-profit organizations.

**Fire Companies** identify potential sites and agree to use and test the dry hydrant. They may help obtain landowner permission and provide labor on the installation.

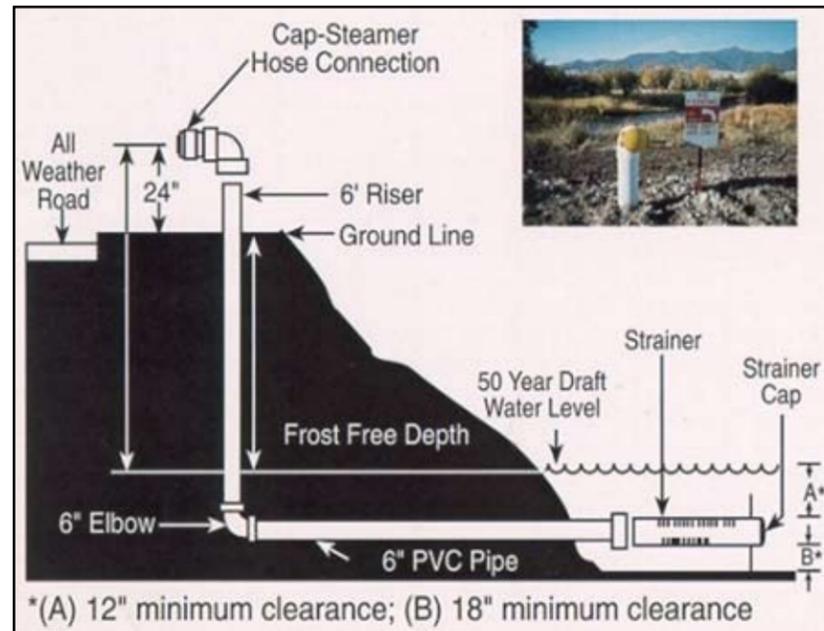
**Municipalities** provide the equipment, the labor and the materials needed for each installation. The municipality signs a construction agreement with the landowner.

**Benefits to the landowner:** With a dry hydrant in place, a fire company is less likely to damage property in order to get water to fight a fire. The hydrant will protect the landowner's property and neighboring properties. Depending upon the company, the landowner may receive a reduction in fire insurance premiums.

## A. Identify a dry hydrant site

There are a few minimum standards established by the National Fire Protection Association (NFPA 1231 specifications) that can help to identify a good dry hydrant site.

1. The water source should be deep enough to maintain a minimum of 18 inches of water under the strainer and 12 inches over the strainer.
2. Avoid lifting the water in the pipe in excess of 15 feet. Maintain a maximum lift of 10 feet for pumps other than Class A. Lift is the vertical distance from the water's surface to the hydrant head.
3. The size of the water source should sustain a minimum of 30,000 gallons pumped per hour — even in a dry season.
4. The landowner must allow access to the site at all times.
5. The access road should be at least 12 feet wide and should be accessible in all types of weather.



*Illustration courtesy of Schlumberger Industries, Inc.*

*This drawing shows a typical dry hydrant installation and lists some of the minimum standards used to determine if a site is suitable for a dry hydrant station.*

6. The site should be properly drained.

## B. Purchase materials

Adams Electric may have a limited number of dry hydrant kits to donate. If a kit is not available, the cooperative can help a township or municipality find a supplier of kits and materials. Consult the Dry Hydrant Materials List (page 4) for more information.

## C. Obtain landowner permission

It is strongly suggested that a construction agreement be signed between the municipality or the fire company and the landowner. (A sample construction agreement is provided with this manual. The agreement should be reviewed by the municipality's solicitor prior to signing.)

## D. Do survey and design work

After a site is identified, a representative from the local NRCS office may be asked to survey the site and complete a design. Municipalities and fire companies may assist in this effort by placing a stake at the site where they would like the hydrant head placed.

As part of the design phase, Pennsylvania One Call must be notified (811) so that underground utility equipment can be located and marked at the site.

## E. Set hydrant installation date

After the design work is completed and a signed construction agreement is in hand by the municipality or fire company, a date can be set to install the hydrant.

## F. Install hydrant

Sections of Schedule 40 PVC pipe (available in 10- and 20-foot lengths) are glued together with the dry hydrant head glued to one end and the strainer glued to the other.

1. Dig a trench at the predetermined depth listed on the design from the edge of the pond to where the hydrant head will be positioned. The trench is usually dug wet, and measurements can be taken at different intervals to make sure the proper depth has been achieved. The trench should be backfilled starting at the head and finishing at the water source.

2. Prepare the strainer. Bend the stainless steel support clamp around the end of the strainer and hold it in place with a knotted rope. The rope will be pulled loose when the strainer has been positioned in the pond on its support pipe. Run the strainer support pipe through both the support clamp and the strainer. Cement a PVC pipe coupling to the other end of the strainer. (*See Cementing Instructions.*)

3. Assemble the rest of the pipe from the strainer back to the riser, gluing together the couplings and pipe. Use a hack saw or portable blade saw to cut PVC to length. Use a file to remove any burrs before applying the primer and cement.

4. After the entire assembly has had at least 15-20 minutes to set up, lower the assembly into the trench using at least one person at each cemented joint to prevent a break. On a 100-foot installation, 8 to 10 people may be needed — one at each joint.

5. Cut the riser leaving about two feet of pipe above ground. Deburr the pipe and cement the dry hydrant head into place.

## G. Test and maintain hydrant site

Once the hydrant is installed, the fire department can connect to the hydrant head and test the hydrant. The first test can help to identify any leaks or other problems with the installation and will clear away silt and

debris from around the strainer.

After the initial test, the fire department must commit to backflush and test the hydrant on at least an annual basis.

Unless otherwise specified, the dry hydrant heads donated by or purchased through Adams Electric are equipped with 6-inch male heads (NST thread). This was done to create a standard for dry hydrants across the cooperative's service territory and to remain consistent with most of the dry hydrants already installed.

The fire company may need to equip each of its pumpers with double-female adapters. These adapters cost around \$200 each, depending upon size, and are available from any local fire equipment dealer.



*Lake Meade fire fighters test a dry hydrant.*

## Cementing Instructions

- A. Wipe the surfaces to be glued with a clean cloth.
- B. Apply THF primer to the outside and the inside surfaces of the coupling or elbow. The primer will soften the pipe.
- C. Apply PVC cement (800-1,000 centipoise viscosity) and quickly assemble the pipe, couplings or elbow with a twisting motion. Allow the glued pieces to dry for 15-20 minutes.
- D. Make sure on the final assembly that the strainer holes are pointed down and the vertical riser section, which will hold the head, is pointed up. The head will be attached last, after the assembly has been dropped in the trench.