



Fire Chiefs Association of **Santa Cruz County**
FIRE PREVENTION OFFICERS SECTION

FIRE PREVENTION STANDARDS	DATE: 06/10/98	NUMBER: FP0-006
	APPROVED:	REVISED: 04/12/01
	TITLE: Private Water Systems for 13 -D	

**Guide to Private Water/Private Well Systems
for
Residential Sprinkler Systems
(One and Two Family Dwellings)**

These are the basic requirements for private water/private well systems for residential fire sprinkler systems compiled by the Fire Prevention Officers Section of the Santa Cruz County Fire Chief's Association.

The National Standard utilized for residential fire sprinklers is the latest edition on NFPA 13-D. In addition, all automatic residential fire sprinkler systems must also meet the modifications as outlined in "Guide to Sprinkler Requirements for One & Two Family Dwellings "(Public Water Supply), FPO Guide # FPO-005.

IF SPRINKLER SYSTEM UNDERGROUND PIPING IS INSTALLED BY SOMEONE OTHER THAN THE SPRINKLER CONTRACTOR, A SEPARATE PLAN CHECK, FEE, AND INSPECTION SHALL BE REQUIRED.

1. Plans shall be submitted 14 days prior to installation for approval. Approval shall be obtained from the Fire Prevention Office having jurisdiction.
2. The following information is required:
 - a. When field variations are made to the Fire Department approved plans, the installer may be required to provide "As Built Plans and Calculations" to prove the system meets design requirements to supply the fire sprinkler system.

System Design Requirements

A. Water supply

1. Minimum Storage

The minimum required amount of stored fire protection water for one and two family dwellings is 4,000 gallons.

Domestic water storage requirements shall be added to the minimum fire protection storage requirements (i.e. 1,000 gallons domestic water and 4,000 gallons fire protection water=5,000 gallon tank).

2. Domestic Water Storage

The water tank shall be used for domestic water storage in conjunction with fire protection water storage and designed to the following standard:

- a. The tank is equipped with a minimum 1 inch fill supply line.
- b. Provide an automatic filling device. Pump to automatically activate to maintain water storage tank at a minimum capacity of 4,000 gallons.
- c. If low water cut-off switch is installed, it shall be set to activate no higher than 6" above centerline of suction discharge pipe. ***See attachment A1.**

B. Pump System

1. Pump Requirements

- a. Minimum 2 inch pipe supply from tank to pump.
- b. The pump shall provide the required GPM (gallons per minute) and PSI (pounds per square inch) for both the fire sprinkler system and domestic water system.
- c. Appropriate size check valve.
- d. Pressure Gauge
- e. Pressure Relief Valve
- f. Pressure switch to be installed between check valve and valve
- g. Pump manufacturer to determine the number of pressure tanks required based on the GPM and PSI required.
- h. Provide full flow control valve after last pressure tank.
- i. Provide Contractor's Pump Acceptance Test Data Certificate at time of final inspection. ***See attachment B for copy of certificate**
- j. At plan submittal provide the pump manufacturer's data guide for flow characteristics.

C. Requirements for Underground Installer

1. Pipe

- a. Minimum 2" pipe or as approved by the authority having jurisdiction. Indicate on plans with a detail drawing.
- b. Minimum underground pipe depth is 18" to top of pipe below rough grade.
- c. Schedule 40 PVC is allowed for underground supply line from the water source to the transition fitting.
- d. Transition fitting to be installed a minimum of six inches below grade. No PVC is allowed above grade.
- e. All piping from the transition fitting to the base of the riser (minimum of six inches above grade) shall be approved metallic pipe. If copper pipe is used for extension, type "L" is required.

Note: This is the termination of the underground piping.

- f. All transition from metal to plastic will be through schedule 80 plastic fittings.
- g. Connection from underground piping to overhead piping to be made by the automatic fire sprinkler contractor. ***See attachment C for diagram**

2. Testing

- a. All residential sprinkler system underground piping systems shall be hydrostatically tested with water in accordance with the requirements of the Uniform Plumbing Code (not less than minimum design working pressure for 15 minutes) and shall be witnessed by the fire department prior to being covered.
- b. Underground pipe shall be flushed with water at the minimum design pressure until the water runs clear, insuring that the line is free of contamination before the underground pipe is connected to the riser.

- c. If the underground piping is not going to be connected to the riser immediately, the underground pipe is to be secured with a threaded cap.
- d. Provide Contractor's Material and Test Certificate for underground piping at time of test.
*See attachment D for copy of certificate.

The appropriate local agency should be contacted regarding local requirements and permit amounts. Refer to the table below to determine which fire agency will oversee plan review, installation activities, perform compliance inspections and collect permit fees, if any. For those agencies marked with an (*) on the following table, CDF/Santa Cruz County Fire Department is the agency responsible for all aspects of the automatic fire sprinkler installations.

Location	Fire Agency Name	Address	Telephone
Aptos	Aptos/La Selva FPD	6934 Soquel Drive Aptos, CA 95003	(831) 685-6690
*Ben Lomond	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	(831) 335-5353
*Bonny Doon	CDF Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	(831) 335-5353
Boulder Creek	Boulder Creek FPD	P.O. Box 175 Boulder Creek, CA 95006	(831) 338-7222
*Branciforte	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	831) 335-5353
Brookdale	Boulder Creek FDP	P.O. Box 175 Boulder Creek, CA 95006	(831) 338-7222
Capitola	Central FDP	930 17 th Ave. Santa Cruz, CA 95062	(831) 479-6843
*Corralitos	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	831) 335-5353
*Davenport	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	(831) 335-5353
Felton	Felton FPD	131 Kirby St. Felton, CA 95018	(831) 335-4422
*Freedom	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	(831) 335-5353
La Selva Beach	Aptos/La Selva FPD	6934 Soquel Drive Aptos, CA 95003	(831) 685-6690
Live Oak	Central FPD	930 17 th Ave. Santa Cruz, CA 95062	(831) 479-6843
Mount Herman	Felton FPD	131 Kirby St. Felton, CA 95018	(831) 335-4422
Rio Del Mar	Aptos/La Selva FPD	6934 Soquel Drive Aptos, CA 95003	(831) 685-6690
*Salispuedes	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	(831) 335-5353
Santa Cruz City	Santa Cruz FD	711 Center Street Santa Cruz, CA 95060	(831) 429-3600
Scotts Valley	Scotts Valley FPD	7 Erba lane Scotts Valley, CA 95066	(831) 438-0211
Soquel	Central FPD	930 17 th Ave. Santa Cruz, CA 95062	(831) 479-6843
Watsonville	Watsonville FD	374 Airport Blvd. Watsonville, CA 95076	(831) 728-6060
*Zayante	CDF/Santa Cruz County Fire Dept.	P.O. Drawer F-2 Felton, CA 95018	(831) 335-5353

