

# PROCEDURES FOR OBTAINING A TANK AND HYDRANT PERMIT

## **Background:**

A tank and hydrant permit is required anytime a homeowner or builder needs to install a private tank and/or a hydrant as part of a larger building project. The tank and hydrant permit is referred to as a “deferred submittal.” This means that the applicant is required to submit a separate set of plans to the fire marshal’s office for approval, prior to doing the work.

If a homeowner or builder would like to install a private tank and/or hydrant that is not part of a larger building project, it is recommended that the installer go through the normal permitting process with inspections. This will help alleviate any issues if they are considering a building project on the site in the future.

The current fire code requires a minimum of 10,000 gallons of water storage for all new residential construction. All new commercial construction that does not have access to a public hydrant system will be required to install water tanks and hydrants based on the 2007 California Fire Code. The water storage requirements for new commercial buildings will be based on the requirements of the 2007 California Fire Code table B105.1 or on NFPA 1142 Water Supplies for Suburban and Rural Fire Fighting at the fire chief’s discretion.

Installation of a private tank and hydrant system may be done by the following licensed underground contractors: Type A (general engineering contractor), C-16 (fire protection contractor), C-34 (pipeline contractor) or a Type B (general building contractor that also possesses a C-16 or C-34 license). An owner/builder of an owner-occupied single family dwelling may also install a private tank and hydrant system.

## **Requirements:**

view **FPO Standard 007** for full requirements

### **Water Storage Tank** (*permit required*)

- There is a minimum 1” supply line to tank from reliable private water source (well, spring, etc.)
- There is an automatic filling device w/ control valve/shut-off
- The tank vent is at least 1.5 x diameter of outlet (6” vent for 4” pipe and one vent for each tank)
- There is a 4” full-flow control valve near bottom of tank
- The low-water cut-off does not activate 6” above suction discharge pipe centerline

- The pipe for all fire supply lines is metal above ground (no exposed PVC pipe allowed)

**Private Hydrant** (*permit required*)

Underground:

- The supply line from the tank is large enough to meet the required fire flow (4" or greater)
- The supply line is at least 30" below grade (36" if pipe passes under road or is subject to heavy loads) and Schedule 40 pipe or better
- The transition fittings are a minimum of 6" below grade and are schedule 80 or better
- The piping from the transition to the riser is metal & the below grade pipe is wrapped
- There are concrete thrust blocks at all directional changes
- The piping passes a hydrostatic test at working pressure for 15 min.
- The piping is flushed before backfill and then capped or attached to riser after the flush
- A copy of underground test certificate is provided at the inspection

Above ground:

- The concrete pad is 24" x 24" x 4"
- The riser is 4" galvanized steel w/ a pentagonal nut valve stem
- 2-1/2" for pressure/gravity flow systems
- 4-1/2" for draft systems
- There is a male NST thread outlet with a cap
- The hydrant has proper markings:
  - It is painted red for a non pressurized system
  - If it is a draft hydrant, there is a visible sign on the hydrant indicating "draft"
- The center of the outlet is 30-36" above grade and 6'-8' from the edge of the road
- The hydrant is located a minimum of 3' from any obstructions (retaining walls, tanks, trees, brush)
- The hydrant is at an approved location not less than 50' and not more than 150' from all structures on the property
- The hydrant is protected from vehicles (not subject to damage or guard posts must be installed)
- The location of the fire hydrant cannot make the driveway or roadway impassible to other traffic by the parking of fire apparatus using the hydrant

## Permit Procedures:

- Plans shall be submitted and approved prior to installation by the Santa Cruz County Fire Marshal's Office
- Allow a minimum of 14 days for plan check and approval

### Plans:

- Three identical sheets are required for submittal (job copy, owners copy, file copy)
- The sheets must be full sized plans (30" x 42" recommended)
- Do not submit plans on 8 ½ " x 11" paper, they will not be accepted
- It is best to use the site/plot plan from your set of building plans
- Show on the plans the location of the water storage tanks
  - They need to be located higher in elevation than the hydrant for gravity feed to the hydrant
  - They need to be located outside of the setbacks (contact the county building department for setback requirements)
  - They need to be located on the parcel
- Show on the plans the location of the fire hydrant
  - No less than 50' and no more than 150' from all structures on the parcel
  - 6' to 8' from the edge of the roadway/driveway
  - The location of the fire hydrant cannot make the driveway or roadway impassible to other traffic by the parking of fire apparatus using the hydrant
- Show on the plans the location of the underground pipe
  - Draw in the route of the underground pipe from the tanks to the hydrant
  - Do not show the location of the underground pipe for the sprinkler system. That is a separate permit that the sprinkler contractor must obtain when they submit their sprinkler plans
- Show on the plans a scale
- Show on the plans the APN (assessor's parcel number), address and project name
- Show or note on the plans the details of the tank and hydrant installation
  - You can use "the guide to water storage" drawing attachment G-1 or G-2 found in FPO-007
    - Attachment G-1 is for structures that have or will have a fire sprinkler system
    - Attachment G-2 is for structures that do not or will not have a fire sprinkler system
  - The guide to water storage must be photocopied onto all three sheets (do not tape, staple or glue the guide onto your plans it will not be accepted)

### Submittal:

- Submit all three sheets along with a completed permit application form to the Santa Cruz County Fire Marshal's Office in person (do not mail or fax in plans they will not be accepted)
  - If the installation is to be done by a contractor then they must submit the plans, application form and proof of license in person.
  - If the installation is to be done by an owner/builder then they are required to submit the plans and application form in person
- Allow a minimum of 14 days for plan check and approval
- The Santa Cruz County Fire Marshal's Office will review the plans and then approve the plans if they meet all of the above criteria
  - The plans will be stamped and signed
  - A paper permit will be issued
  - The applicant will be contacted and then come in to the office to pick up and pay for the approved plans and permit (the approved plans and permit will not be returned via mail or fax)
    - For projects located in Santa Cruz County Fire jurisdiction please make checks payable to "Santa Cruz County Fire"
    - For projects located in Pajaro Valley Fire Protection District please make check payable to "Pajaro Valley Fire Protection District"
- Once a permit is obtained the applicant can then proceed with installation of the project
- If at any time during the installation there is a change to the plans, that change must be approved by the Santa Cruz County Fire Marshal's Office (please call (831) 335-6748)
- The permit and accompanied plans shall become null and void if authorized work is not started within 180 days of issuance of the permit, or if work is suspended or abandon for a period of 180 days at anytime after work is commenced

### **Inspections:**

- Request for inspection shall be made 72 hours in advance of the working day of the inspection
- Additional inspections, missed or deficient inspections are subject to additional fees
- The tank and hydrant permit is require to be on the job site at all times
- There are three required inspections for the tank and hydrant permit

### Hydrant Underground Inspection:

- The hydrant underground inspection consists of one initial inspection and one reinspection (if deficiencies are found during the initial inspection)
- Provide the tank and hydrant permit to the inspector at the time of inspection (if you can not provide the permit the inspection is over)

- Provide a completed underground test certificate during the underground inspection
- If the applicant needs to bury portions of the trench because of driveway/roadway access issues you must contact the Santa Cruz County Fire Marshal's Office (831) 335-6748 for approval. Without approval the installer will be required to expose the buried pipe for inspection
- The inspector will inspect the following:
  - Hydrant pipe in the open trench
  - Proper depth of trench
  - Thrust blocks at all changes of direction
  - Water in the pipe at working pressure
  - Proper schedule pipe used and no PVC above ground
  - Metal pipe below grade is wrapped
  - Schedule 80 fitting located between schedule 40 and metal pipe
  - Check for leaks
  - Height of hydrant orifice above grade (30" to 36") and the orifice is located, in elevation, below the bottom of the tanks
  - Hydrant is in the correct location per the approved plans
  - Hydrant is 6' to 8' from the edge of roadway
- If all items meet the code requirements the inspector will sign and date the tank and hydrant permit in the section for hydrant underground

#### Hydrant Final Inspection:

- The hydrant final inspection consists of one initial inspection and one reinspection (if deficiencies are found during the initial inspection)
- Provide the tank and hydrant permit to the inspector at the time of inspection (if you can not provide the permit the inspection is over)
- The inspector will inspect the following:
  - The connection of the hydrant line at the tank
  - That there is only metal pipe above ground
  - The 4" control valve is open
  - The hydrant is painted
  - The concrete pad is in place
  - The driveway/roadway extends within 6' to 8' of the hydrant
  - Bollards are in place if the hydrant is in a location that it might be damaged by a vehicle
  - The driveway/roadway is wide enough at the hydrant location to provide room for two vehicles
  - Flush the hydrant
- If all items meet the code requirements the inspector will sign and date the tank and hydrant permit in the section for hydrant final

#### Water Tank Inspection:

- The water tank inspection consists of one initial inspection and one reinspection (if deficiencies are found during the initial inspection)

- The water tank inspection will be conducted in conjunction with either the hydrant underground inspection or hydrant final (separate trips to the job site for only the water tank inspection are not allowed)
- Provide the tank and hydrant permit to the inspector at the time of inspection (if you can not provide the permit the inspection is over)
- The inspector will inspect the following:
  - The tanks are located according to the approved plans
  - There are 6" vents located on both tanks
  - The tank is connected to a reliable water source with a minimum of 1" supply line
  - The float valve is in place and working
  - The tanks are full of water
  - There are no other lines connected to the tanks
  - The tanks are interconnected with a minimum of 4" diameter pipe
- If all items meet the code requirements the inspector will sign and date the tank and hydrant permit in the section for water tank inspection

**Final:**

- If your tank and hydrant permit was a condition of a larger building project then during the fire departments building final the inspector will again flush the hydrant and make sure water is available for the fire engine.