



## RESIDENTIAL WATER & SEWER PIPES

These requirements apply to building permits submitted on or after January 1, 2017.

### BUILDING INSPECTION REQUIREMENTS

A plumbing permit is required to replace residential water supply piping (main water line from meter to the house), distribution pipes (plumbing within the building), and the sewer system within the building. Permits shall be obtained prior to removal or installation of the plumbing system.

Following is a listing of the general requirements for replacing water and sewer lines based on the 2016 California Plumbing Code, 2016 California Electrical Code, and 2016 California Energy Efficiency Standards. This brochure is intended to provide general information, contact the Building Inspection Division for additional information.

#### Sewer Line Replacement

- Material for sewer lines outside of the building (minimum 2' outside) can be cast iron, copper type DWV, or schedule 40 DWV ABS/PVC (when used in residential buildings, ABS/PVC is limited to two-story buildings; there is no limit on the number of stories for non-residential buildings). (CPC 701.1, CPC 701.2)
- Clean outs shall be installed at the exterior of the building, within 5' of an underfloor access, at the end of each branch over 5', at the upper terminal, at each aggregate horizontal change in direction exceeding 135°, and may be required at the property line by your sanitary district. (CPC 719, 707.4)
- Sewer line shall be 12" below grade minimum and have a minimum of 1/4" per one foot slope. (CPC 708)

#### Main Water Supply Line Replacement (Outside the footprint of the building)

- Water supply pipes and fittings shall be PVC, copper (type L or M), malleable iron, galvanized steel, CPVC, or other approved material and shall be in accordance with NSF 61. (CPC 604)
- Underground water lines shall be buried a minimum of 12" below grade. (CPC 609)
- Non-metallic piping shall have a blue insulated 18-gauge copper tracer wire adjacent to the piping. The tracer wire shall terminate above ground at each end of the non-metallic pipe. (CPC 604.10.1)

#### Water Distribution Pipe Replacement (Within and underneath of the building)

- Water distribution pipes shall be copper (Type L or M), malleable iron, galvanized steel, CPVC, PEX, or other approved material and shall be in accordance with NSF 61. (CPC 604)
- All domestic water piping in the following conditions/locations shall be insulated (CEES 150.0(j)2A, CPC 609.11):
  - ✓ The first 5' of cold water pipes from the storage tank (i.e. water heater tank).
  - ✓ All domestic hot water piping.
- All materials used in the water distribution system shall be of like materials, except valves and similar devices, unless otherwise approved by the Chief Building Official (CPC 604.1). Following are acceptable methods of joining dissimilar materials:
  - ✓ Joints from copper tubing to threaded pipe shall be made by the use of brass adapter fittings.
  - ✓ Dielectric unions shall be used at all point of connection where dissimilar metals are used. Listed clamps and bonding jumpers shall be installed at all such connections (CEC 250.68(B) and 250.104).

- ✓ When connecting plastic pipe to other types of piping, approved types of fittings and adapters designed for the specific transition shall be used.
- Non-removable backflow preventer, vacuum breaker or atmospheric breaker devices are required on all hose bibs. (CPC 603.5.7)
- If shear walls, braced wall panels, or firewalls are compromised or altered during the re-pipe, these areas are required to be inspected prior to covering.

### **Grounding and Bonding Requirements**

If the existing main water service pipe was used as a grounding electrode, the grounding electrode conductor must be re-established to the replacing pipe. Grounding shall consist of a continuous grounding electrode conductor run from the panel to a ground rod (grounding electrode) and to the cold water pipe. Grounding of the electrical service at the main water line must be within the first 5' of water piping into the building. The underground water service shall not be used as the grounding electrode without supplemental electrode. [CEC 250.52 (A)(1) and 250.53 (D)(2), 250.68(C)]

Bonding of all metal piping within the building is required with water service replacements and for all re-pipes. Bonding shall consist of a continuous bond jumper installed at the water heater between the hot, cold, and gas lines, and continued to the main electrical service. (CEC250.4(A)(4))

### **PERMIT PROCESS**

#### **Building Permit Review**

1. Building permits for water or sewer pipe replacements are available on-line at [www.cccounty.us/apc](http://www.cccounty.us/apc) or at the Application and Permit Center.

#### **Inspections**

2. Two inspections are required; a rough plumbing and a final.
  - The rough plumbing inspection should be scheduled when the new pipes are installed before they are covered.
  - The final inspection should be scheduled after all the work has been completed.

#### **Building Permit Application Requirements**

- A completed Building Permit Application