



RESIDENTIAL WATER/SEWER PIPES

THESE REQUIREMENTS ARE FOR PERMITS ISSUED ON OR AFTER JANUARY 1, 2008

BUILDING DIVISION 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 line. Replacing the main water line, sewer line, and re-piping within a structure. Permits shall be obtained prior to removal or installation of the piping.

Following is a listing of the general requirements for re-piping based on the 2007 California Plumbing Code and the 2007 California Electrical Code. For additional information, contact the Building Services Department.

Sewer Line Replacement

- Material for sewer lines outside of the building (minimum 2' outside) can be cast iron, clay, lead, or copper. ABS (schedule 40 DWV) and PVC (schedule 40 DWV) can be used in residential buildings not exceeding two stories in height. (CPC 701.1)
- Clean outs shall be installed at the exterior of the building, at each aggregate horizontal change in direction exceeding 135°, and at the property line. (CPC 719 and 707.5)
- Sewer line shall be a minimum of 12" below grade and have a minimum of ¼":1' slope. (CPC 708 and 718.3)

Main Water Line Replacement

- Water pipes and fitting outside of the building shall be PVC, brass, copper (type L or M), cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, or other approved material. (CPC 604)
- Underground water lines shall be buried a minimum of 12" below grade. (CPC 609)

Water Distribution Pipe Replacement

- Water distribution pipes inside of the building can be brass, copper (Type L or M), cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, PVC, or PEX. (CPC 604)
- All materials used in the water supply system within the building 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. (CPC 316.2)
 - Dielectric unions shall be used at all point of connection where dissimilar metals are used (CPC Section 316.2.4). 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. (CPC Section 316.2.3)
 - When dielectric fittings are used to join dissimilar metals, listed clamps and a bonding jumper shall be installed at such connections.
- 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.
- Non-removable backflow prevention devices are required on all hose bibs. (Section 603)

Grounding and Bonding Requirements

- 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. [Article 250.53 (d)]

For existing structures and additions not affecting the main electrical service panel location, the grounding electrode shall be nonferrous (copper), listed, and not be less than ½” in diameter. The electrode shall be installed such that at least 8’ of length is in contact with the soil. The upper end of the electrode shall be flush with or below ground level unless the above-ground end and the grounding electrode conductor attachment is protected against physical damage.

The required grounding electrode conductor (from electrode to panel) size is listed in the following table:

GROUNDING ELECTRODE CONDUCTOR SIZING (Table 250.66)		
Size of Main Panel	Copper Conductors	Aluminum or Copper-Clad Aluminum
100 Amps	#8 AWG	#6 AWG
125 Amps	#8 AWG	#6 AWG
150 Amps	#6 AWG	#4 AWG
200 Amps	#4 AWG	#2 AWG

- Bonding of the hot, cold, and gas lines is required with water service replacements (if using a less conductive material than is existing) 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. The bonding jumper shall be sized based on the following table:

BONDING JUMPER SIZING (Table 250.122)		
Size of Main Panel	Copper Conductors	Aluminum or Copper-Clad Aluminum
100 Amps	#8 AWG	#6 AWG
125 Amps	#6 AWG	#4 AWG
150 Amps	#6 AWG	#4 AWG
200 Amps	#6 AWG	#4 AWG

PERMIT PROCESS

Building Permit Review

1. Building permits for water or sewer pipe replacement are available at the Building Services Department between the hours of 9:00 a.m. to 12:00 noon and 1:00 p.m. to 4:00 p.m., Monday through Thursday, and 9:00 a.m. to 12:00 noon, Friday.

Inspections

2. Two inspections are required; a rough plumbing and a final. The rough plumbing inspection should be scheduled when the new plumbing 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 Worksheet application (available at the Building Services Department).
- Fee _____