



City of Santa Monica Building and Safety Division

Underground Plumbing Guide

This list is to be used as a general guide.

It is not inclusive of all code requirements and inspection criteria.

According to the California Plumbing Code (CPC)

California Codes available at www.bsc.ca.gov

BACKWATER VALVE:

- Required when drainage piping has the flood level rim located below the elevation of the next upstream manhole cover [CPC 710.1]
- Backwater valve shall be accessible for repair and service [CPC 710.6]
- Fixtures above upstream manhole cover shall not discharge through the backwater valve [CPC 710.1]
- Discharge piping from ejector or pump shall have backwater and gate valve, be a minimum of 2" in diameter and be copper DWV or PVC (no ABS or cast) [CPC 710.4]

DRAIN GRADE:

- Horizontal drainage piping shall be run in practical alignment and of a slope not less than ¼ " per foot or 2% [CPC 708]
- Piping 4" and larger in diameter may have a slope of 1/8 inch per foot or 1%, when **pre**-approved by Administrative Authority [CPC 708]
- Horizontal drainage lines connecting with other horizontal drainage lines shall enter through 45-degree wye branches or other approved fitting of equivalent sweep [CPC 706.3]
- Vertical drainage lines connecting to horizontal drainage lines shall enter through 45 degree wye branch or other approved fitting of equivalent sweep [CPC 706.4]
- Sleeves shall be provided to protect piping through concrete and masonry walls and concrete floors per CPC 312.10. Trenches shall be backfilled with clean earth per CPC sec. 314.4. All plastic pipe requires 4" granular fill under pipe per CPC 314.4.1

CLEAN-OUTS:

- Required at upper terminal and each run of piping over 100 feet [CPC 707.4]
- Additional cleanouts required for each aggregate horizontal change of direction exceeding 135 degrees [CPC 707.4]
- No under floor cleanouts shall be located more than five (5) feet from an access door, trap door or crawl space access [CPC 707.9]
- Piping 2" or less shall be so installed that there is a clearance of not less than 18" in front of the clean out [CPC 707.9]
- Piping larger than 2" shall have not less than 24" in front of the clean-out [CPC 707.9]
- Required above fixture connection of urinal(s) (CPC 707.4)

DRAIN & VENT TEST:

- No section shall be tested with less than a ten (10) foot head of water for 15 minutes. [CPC 712.2] Test on prior to inspector's arrival
- Air test the system under a gauge pressure of five (5) psi for fifteen (15) minutes. (not allowed for plastic pipe) [CPC 712.3] Test on prior to inspector's arrival.
- Drain and vents may be tested in its entirety, or in sections [CPC 712.2]



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WATER SERVICE:

- Copper tube for water piping shall be not less than Type L [CPC 604.3]
 - Exception: Type M copper tubing may be used for water piping aboveground in or on a structure or underground outside of structures
- Water piping shall be at least twelve (12) inches below grade [CPC 609.1]
- The bottom of the water pipe, at all points, shall be at least twelve (12) above the sewer or drain line (if clay pipe) [CPC 609.2]
- Tested and proved tight under a water pressure not less than the working pressure which is to be used. A fifty (50) pound per square inch air pressure test may be substituted for the water test [CPC 609.4]
- In either method of test, the piping shall withstand without leaking for a period of not less than fifteen (15) minutes (prior to inspector's arrival) [CPC 609.4]

GAS LINES:

- Where in contact with materials or atmosphere exerting a corrosive action, metallic piping and fittings coated with a corrosion-resistant material shall be used per CPC 1208.5.6
- Underground gas piping shall be installed with approved clearances from other underground structures per CPC 314
- Plastic gas piping shall have at least eighteen (18) inches of earth cover [CPC 1210.1.1]
- Plastic gas piping approved for exterior underground only [CPC1210.1.7]
- An electrically continuous corrosion-resistant 14AWG tracer wire shall be buried with the plastic pipe to facilitate locating. One end shall be brought above ground at building wall or riser [CPC 1210.1.7.2]
- Where gas piping is installed underground, beneath buildings, install per CPC 1210.1.6
 1. The conduit shall be of material approved for underground and not less than Schedule 40 pipe
 2. The interior diameter of the conduit shall be not less than ½ inch larger than the outside diameter of the gas piping.
 3. The conduit shall extend at least (4) inches outside of the building [CPC 1210.1.6.1]
 4. The outer end shall be vented above grade to the outside and be installed so as to prevent the entrance of water and insects [CPC 1210.1.6.1]
 5. Where the conduit terminates within the building, it shall be readily accessible [CPC 1210.1.6.1]
 6. Within the building the space between the conduit and the gas piping shall be sealed to prevent leakage of gas into the building [CPC 1210.1.6.1]