

## 2010 CPC – PLUMBING PLAN CHECK CORRECTION LIST

County of Orange

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- ocpCustomerCare@ocpw.ocgov.com www.ocplanning.net
- 1. All works shall comply with CPC 2010, Title 24, part 5 based on 2009 UPC.
- Show job address on plans, scope of works. [CPC 103.2.1.1 Chapter 1, Div. II]
- Show occupancy group and type of construction on the plans. [CPC 103.2.1.3, Chapter 1, Div II]
- The plans require the wet signature, stamp and expiration date of a California Registered Engineer or architect or the licensed contractor who is installing the plumbing system(s). [B&P Code 6735.7 & CPC 103.2.1.5]
- 5. Provide a plot plan showing the following information. [CPC 103.2.3 Chapter 1, Div II]
  - The location and direction of flow of the sewer main.
  - Manhole locations and rim elevations.
  - Finished floor elevations.
  - d. Backwater valve locations.
  - Plumbing fixtures in backwater valve system.
  - Water meter locations.
  - Gas meter locations.
- 6. Provide plumbing plans for: [CPC 103.2.3 Chapter 1 Div II]
  - a. Domestic water system
  - Waste vent systems
  - Gas systems if applicable
  - Condensate systems
- 7. Provide a schedule showing the type and quantity of plumbing fixtures on the plan. See CPC Table 1-1 for required breakdown for plumbing permit fee tabulation.
- Provide waste and vent isometric drawings. [CPC 103.2.3 Chapter 1] 8.
- 9. Provide hot and cold water isometric drawing. [CPC 103.2.3 Chapter 1]
- Provide gas system isometric drawing showing sizes and materials. [CPC 103.2.3 Chapter 1] Form No. G01-11

- 11. Indicate on plans materials for the proposed plumbing system. [CPC 103.2.1.6 & CPC 301]
- 12. Specify that all materials used in the new water supply system, except values and similar devices shall be of a like material used in the existing building piping. [CPC101.5.5 Chapter 1& 301.1.4]
- 13. Alternative engineered design method shall be comply with design review and design approval [ CPC 301.4.5 & 301.4.6]
- 14. Flashing is required around pipes, ducts, wall, and roof openings. [CPC 313.8]
- 15. Deposit by any means into drainage system or public sewer is prohibited. [CPC 306.1]
- 16. Provide details of piping that penetrates a fire rated wall, shaft enclosure, floor or ceiling shall be protected. [CPC 313.7]
- 17. Piping is not allowed to penetrate concrete or masonry wall is required to have protective sleeves. Provide details including size of the protective sleeve and method of sealing at exterior walls. [CPC 313.10.2]
- 18. Provide details to indicate how piping is supported and maximum spacing of supports for vertical and horizontal per CPC Tables 3-1& 3-2.
- 19. All fixtures shall conform in quality and design to nationally recognized applicable standards or to other approved standards acceptable to the Administrative Authority. [CPC 401.1 and table 14-1]
- 20. Drinking fountains shall not be installed in public toilet rooms. [CPC 405.1], Drinking fountain shall be installed a jet of water at least 2" in height from the water orifice. [CPC 406.5]
- 21. Floor drains are required as follows. Revise plans to show compliance. [CPC 411.2]
  - a. Restrooms containing two water closets or combination of water closets and urinals.
  - b. Commercial kitchens and in accordance with CPC 704.3
  - c. Laundry rooms in commercial building or laundry facility for multifamily building.
- 22. The quantity or type of fixtures shall comply with CPC Table 4-1. Occupant load factor to determinate required number of plumbing fixtures based on CPC table A, not CBC chapter 10.
- 23. Separate toilet facilities is not required [ CPC 412.3]
  - a. Residential installations
  - b. In occupancies serving 10 or fewer people
  - c. In business and mercantile occupancies with total floor area not more than 1500 sq ft.
- 24. For restaurants, the men's restroom shall have as a minimum of one water closet, one urinal and one lavatory. Women's restroom shall have a minimum of one water closet and one lavatory. [CPC Table 4-1, Foot note 11,12,14 & 15]
- 25. Facilities in mercantile and business serving customers: the required number of fixtures shall be the

- greater of the required for employees or customers. The maximum travel distance shall not exceed 500 feet for customers and 300 feet for employees. [CPC 412.5, 412.5.2 & 412.5.3]
- 26. Restaurants with an occupant load of 100 or more are required to have separate restrooms and lavatory for employees. [CPC 412.6 & 412.10]
- 27. A removable panel shall be provided to access and remove pump shall be located not more than 20 feet from an access door, trap door or crawl hole for bath tubs and whirlpool bathtubs. [CPC 414.1]
- 28. Future fixtures shall be included in sizing of the systems and terminated with a plug fitting. [CPC 417.0]
- 29. Water closets and associated flushometer valves shall not use more than 1.6 gallon/flush. Urinals and associated flushometer valves shall not use more than 1.0 gal/flush. (State of California Regulations). [CPC 402.2 & 402.3]
- 30. Provide note on plans, Anti-scalding and thermal shock protection shower and tub-shower combination valves are required. [CPC Section 418.0]
- 31. Minimum capacity for water heater shall comply with the first hour rating per CPC Table 5-1.
- 32. Water heater shall be equipped with an approved mean of overpressure and over temperature protection relief valve [CPC 505.4 & 505.5]
- 33. Air for combustion, ventilation and dilution of flue gases shall comply with CPC 507.2.thru 507.7. Show method of providing combustion air (50 cubic feet/1000btu/h) within 12 inches of top and bottom of indoor compartment. [CPC 507.2.1 & 507.3]
- 34. Water heater, direct vented type, may be installed in a closet located in the bedroom or bathroom . Provide they show compliance with CPC 505.1.
- 35. Water heater, gas fired FAU and dryers shall be placed on an 18 inch high platform above the floor unless listed as flammable vapor ignition resistant when located in a garage. [CPC 508.14]
- 36. Water heaters, gas fired FAU and dryers shall be protected from damage. Revise plans to show compliance. [CPC 508]
- 37. Water heaters shall be strapped to the building at the 1/3 point top and bottom. [CPC 508.2]
- 38. Every water heater located in the attic, roof, mezzanine or platform more than 8 feet above floor level shall have a permanent stairway or ladder and with a corrosion resistant tight pan. [CPC 509.3.3]
- 39. A minimum access door to water heaters is 22x 30 inches for located in attic. [CPC 509.4.1]
- 40. Water heaters located in attics, roof or under floor shall have a 24 inch wide catwalk, walkway, and have a 30 x 30 inch work platform and be provided with an electric light switched by the access door. [CPC 509.4.4 & 509.4.5]
- 41. Provide detail(s) of multiple appliance venting system(s). [CPC 510.10.4.1 & Fig G.1 & G.2]
- 42. Dampers are not permitted in venting systems. Provide detail of fire resistive shaft where vent or combustion air ducts penetrate fire resistive construction. [CPC 510.13]

- 43. Water pressure relief valve shall be an approved automatic type drain and shall extend from the valve to outside of building, with the end of pipe not more than 2 feet nor less than 6 " above ground/ grade [CPC 608.5] Show the point of terminate discharge for relief valve.
- 44. No venting system shall terminate less than 3 feet above any forced air inlet located within 10 feet or less than 4 feet from any property line except a public way. [CPC 906.2]
- 45. Backflow prevention device is required; specify type on plans. [CPC 603.2]
- 46. Before any device is installed for the prevention of backflow or siphonage, it shall have first been approved by the Administrative Authority. Backflow preventer shall not be located in any area containing toxic flume, poisonous or corrosive.[CPC 603.1 & 603.4.14]
- 47. A full-way valve controlling all outlets shall be installed on the discharge side of each water meter and on each un-metered water supply. [CPC 605.2]
- 48. In multi dwelling units, one or more shutoff valves shall be provided in each dwelling, these valves shall be accessible in the dwelling unit that they control. [CPC 605.4]
- 49. Water hammer is required in building water supply system where quick acting valves are installed to absorb the high pressure resulting from the quick closing of these valves. [CPC 609.10]
- 50. Water Pipe sizing shall meet the minimum requirements of Table 6-5; using flow rates of Table 6-6. [CPC 610.8] Provide calculations to show method of compliance.
- 51. Provide water heater with an expansion tank or other device designed for intermittent operation for thermal expansion control or excessive water pressure more than 80 psi [CPC 608.2]
- 52. The building sewer shall be of materials approved by the Administrative Authority. [CPC 715.0] Material for drain, waste, vent pipe and fittings [CPC Table 7-1]
- 53. Two fixtures set back to back, side to side within the distance allowed between a trap and its vent shall permitted to be served by a single vertical drainage pipe provided that each fixture waste separately into an approved double fixture fitting having inlet opening at the same level. [CPC 704.2]
- 54. Minimum/maximum size of building sewer shall be determined by using CPC Table 7-8.
- 55. Maximum unit loading and maximum length of drainage and vent piping per CPC Table 7-5.
- 56. Each horizontal drainage pipe shall be provided a cleanout and maximum distance of 100 feet. [CPC 707.4 and Table 7-6]
- 57. Sewer or private sewage disposal system shall be located on the same lot or site of the building or structure. [CPC 721.1]
- 58. Every abandoned building sewer shall be capped within five feet of the property line. Every abandoned cesspool, septic tank and seepage pit shall have sewage removed and completely backfilled with approved materials. [CPC 722.0]
- 59. Cleanouts are required at intervals of 100 feet in straight runs, in branches exceeding 10 feet, and when the angle exceeds 135 degrees. [CPC 707 & 719]

- 60. The minimum slope for drainage systems is 2% for 4" φ or less and 1% for larger than 4"φ unless approved by the City building official. [CPC 708]
- 61. Indicate size and location of cleanouts on the plans. [CPC 707.1& 719.1]
- 62. Floor level drainage systems located below the elevation of the next upstream manhole are required to have an approved backflow value. Cleanouts for drain that pass thru a backwater valve shall be clearly identified with a permanent label stating "backwater valve downstream". [CPC 710.1]
- 63. Sewer ejector or sewage pump system shall be installed per Code. Provide details and calculations to justify size. [CPC 710.3 & 710.4]
- 64. Suds relief (laundry mart facility) shall comply with CPC 711.0
- 65. No evaporative cooler, air washer of similar air conditioning equipment shall have any drain pipe connected directly to any soil, waste or vent pipe without an air gap. See CPC Section 801.1.
- 66. No vent from indirect waste piping shall be combined with any sewer-connected vent but shall extend separately to the outside air. [CPC 803.0]
- 67. No cold storage room, refrigerator or receptacle used for the storage or holding of food or drink and no dishwashing or culinary sink shall be connected directly to any soil, waste or vent pipe. See CPC Section 801.2.2]
- 68. No indirect waste receptor shall be installed in any toilet room, cupboard, storeroom, or in any other portion of a building not in general use by the occupants thereof. [CPC 804.1]
- 69. Domestic dishwasher or foods waste disposer shall NOT be directly connected to a drainage system without use an approved/ listed air gap (FL). [CPC 807.4]
- 70. Steam and/or hot water drainage requires an indirect waste line. [CPC 810.1]
- 71. Pipes carrying waste water from swimming pool including pool drain and backwash from filter shall be installed as an indirect waste. [CPC 813.0]
- 72. All condensate from air cooling coil, evaporative cooler, and air conditioning equipment shall be collected and discharge to an approved plumbing fixture or disposal area or by means of an indirect waste pipe. The minimum condensate pipe size per CPC Table 8-2 [CPC 814.1]
- 73. Vent pipe and fittings shall be in accordance with CPC 7-1 standard, except that: galvanized and stainless steel shall not be installed underground and less than 6" above ground. ABS and PVC DWV is permitted with the applicable standard referenced in table 14-1. [CPC 903.1.1 & 903.1.2]
- 74. Each plumbing fixture trap shall be vented. Unless prohibited by structural conditions each vent shall vertically to a point not less than six (6) inches above the flood level rim of the fixture; or less than 12 inches from a vertical surface. [CPC 906.1]
- 75. See CPC Section 905.0 for vent pipe grades and connections.
- 76. Wet venting is limited to vertical drainage receiving the discharge from trap arm of one or two fixtures that serves as a vent not exceeding 4 fixtures, no wet vent shall exceed 6 feet in developed length. [CPC 908.1]. Minimum wet went size is 2'φ per CPC 908.1.2.

- 77. Special venting for island fixtures shall comply with CPC 909.0.
- 78. For combination waste and vent systems, see CPC Section 910.3 and Appendix B.
- 79. Each plumbing fixture shall be separately trapped by an approved type water seal trap. [CPC 1001.1]
- 80. Each trap shall have a vent pipe installed in accordance with the code and the distance between trap and vent shall be as shown in Table 10-1, but no case less than 2 times the diameter of trap arm. [CPC 1002.2]
- 81. Trap sizes shall be sufficient to drain the fixture rapidly, but no case more than one pipe size as given in Table 7-3. [CPC 1003.1]
- 82. Full "S", bell, crown-vented and double traps are prohibited. [CPC 1004.0]
- 83. Trap water seal shall be not less than 2 inches and not more than 4 inches. [CPC 1005.0]
- 84. Show trap seal protection and/or source of water. [CPC 1007.0]
- 85. An industrial interceptor and/or separator shall be installed. Size, type and location shall be shown on the plans. Each interceptor shall be properly vented. [CPC 1009.0]
- 86. Sanitation district and/or health department approval is required for a grease interceptor. See Table 10-2 for size. [CPC 1014.1.
- 87. Hydro mechanical grease interceptor shall be discharge thru an approved type of vent flow control installed in accessible and visible location. [CPC 1014.2.1] the total capacity in gallons shall not exceed 2.5 the certified GPM flow rated per table 10-2. [CPC 1014.2.2]
- 88. Sizing of gravity grease interceptor shall be determined by CPC Table 10-3.
- 89. Fats, oils and grease (FOG) disposal system as discharging a maximum 100mg/L FOG. [CPC 1015.5]
- 90. Car wash racks are required to have an interceptor. [CPC 1011.0 & NPDES]
- 91. The following locations are required to drain to an approved grease, oil-sand interceptor. Revise plans to show compliance for construction and size. [CPC 1016.0] & [NPDES]
  - a. Parking Lots
  - b. Gas Stations and auto repair shop
  - c. Roof top parking areas.
- 92. Commercial kitchens are required to have a grease interceptor located outside of the kitchen and food preparation areas and located in an area affording ease of maintenance and serving. [CPC 1014.3.4.4]
- 93. Rain water drains shall not be connected to sanitary drainage system. [CPC 1101.2]
- 94. Roof drainage to be designed for 4 inches per hour of rainfall. [CPC 1101.11& Appendix D]
- 95. Roof drains/overflow shall be installed at low points of the roof. [CBC 1101.11.1]

- 96. Sizing roof drain, leaders and vertical rainwater piping per CPC table 11-1
- 97. Roof overflow drains shall be installed with the inlet 2 inches above the low point of the roof surface. [CBC 1101.11.2.2]
- 98. Roof overflow drains shall be connected to drain lines independent from the roof drains. [CBC 1101.11.2.2.1]
- 99. Size of horizontal storm drain and sewer to be comply with CPC table 11-2
- 100. All gas meter locations shall be approved by the Administrative Authority and the gas supplier. [CPC 1203.8] And comply with CPC 1209.6.2 for location.
- 101. Where the input rating is not indicated, the supplier, manufacturer based on the approximate gas input shall comply with CPC table 12-1 for all appliances are listed.
- 102. All materials used for the installation, alteration or repair of any gas piping shall be approved by the Administrative Authority. [CPC 1209]
- 103. Gas piping shall be protection against damage, corrosion, freezing, and is not permitted to be installed under a building or structure. [CPC 1211.1.1 thru 1211.1.6]
- 104. Metallic gas piping shall have 12 inches of earth cover. [CPC 1211.1.2 (A)]
- 105. Plastic gas piping shall be installed outside, underground have 18 inches of earth cover. [CPC 1211.1.7]
- 106. All gas piping shall be supported by straps per Table 12-3. [CPC 1211.2.6]
- 107. Concealed gas piping in partition, in floor shall comply with CPC 1211.3.3 & 1211.3.5.
- 108. Number 18 insulated copper tracer wire is to be installed with and attached to buried nonmetallic gas piping, and it shall be terminated above grade at each end. [CPC 1211.16]
- 109. An earthquake actuated gas shutoff valve is required per CPC 1211.18. An emergency shutoff valve is required per CPC 1211.11.3.
- 110. Ferrous gas piping installed underground in exterior locations shall be protected from corrosion by approved coatings or wrapping materials. [CPC 1211.1.3]
- 111. Piping sizing method: Low pressure gas (less than 1.5 psi) & high pressure gas (1.5 psi and above) shall comply with equation per CPC 1217.3 and Table 12-8 & 12-9.
- 112. See CPC Section 1211.5.2 for liquefied petroleum gas system & NFPA 58.
- 113. Provide gas piping sizes and materials. Show demand in BTU/HR at each outlet. [CPC 1209.1.1]
- 114. When piping penetrates a rated assembly, combustible piping shall not connect to non combustible piping unless it can be provide fire stop materials or sleeves are used. [CPC 1505.4]
- 115. Provide complete details for piping and vents that penetrate fire rated walls, floor or ceilings. Details to list the ICC or UL approval numbers. [CPC 1506.2 & 1506.3]

- 116. Recommended rules for sizing of water supply system per CPC appendix A.
- 117. For combination of waste and vent sizing and explanatory per CPC appendix B.
- 118. Sizing storm water drainage system and capacity of rectangular scupper per CPC appendix D.
- 119. Gray water system and design requirements per CPC appendix G & table G-1, G-2 & G-3.
- 120. Building sewer shall be tested to comply with CPC 723.0.
- 121. In buildings where potable water and non- potable water systems are installed, each system shall be clearly identified in accordance with CPC 601.2.1 through 601.2.4.