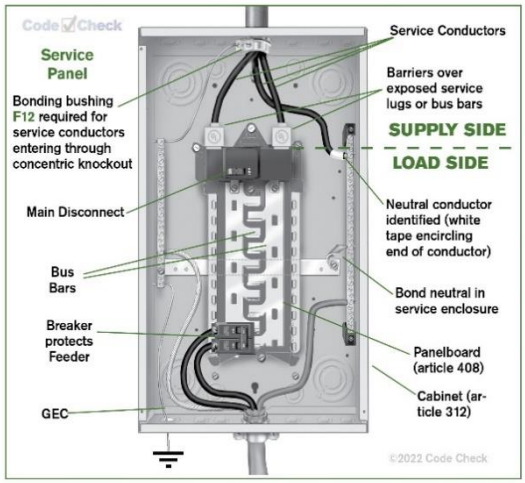
Community Development Department
Building & Safety Division
1st Floor Downey City Hall
11111 Brookshire Avenue
Downey, CA 90241

Residential Service Panel Upgrade

1. So. Cal Edison (SCE) must provide a utility meter spot prior to pulling an electrical permit from the City.
2. Overhead service entrance conductors shall be equipped with a rain tight service head or gooseneck.
3. The service head shall be listed for use in wet locations. [CEC 230.54B]
4. Service entrance conductor vertical clearance above grade or a walking surface is required to be minimum 10ft. [CEC 230.24 (B) 1]
5. The service entrance conductor vertical clearance above driveways is required to be a minimum 12 ft. [CEC 230.24 (B) 2]
6. The service drop conductor's vertical clearance above pool water is 22 ½ feet. [CEC T-680.8A]
7. Where the roof slope is less than 4 in 12, the service drop conductor's vertical clearance above the roof surface is required to be a minimum 8ft. This shall be maintained for a distance of 3 feet in all directions from the edge of the roof. [CEC 230.24 (A); Exc; 2]
8. When roof slope is greater than 4 in 12, a min. 3 feet is required from the service drop conductors to the roof surface. This shall be maintained for a distance of 3 feet in all directions from the edge of the roof. [CEC 230.24 (A); EXC. 2]
9. Provide exterior emergency disconnect at a readily accessible location. A service disconnect or main circuit breaker located outside of the home can serve this purpose. [CEC 230.85]
10. All services supplying dwelling units shall be provided with a surge-protective device (SPD).
    1. The SPD shall be an integral part of the service equipment or shall be located immediately adjacent thereto.
    2. Exception: The SPD shall not be required to be located in the service equipment if located at each next level distribution equipment downstream toward the load.
    3. The SPD shall be a Type 1 or Type 2 SPD. [CEC 230.67]
11. AFCI required on all new 120-volt, single phase, 15 and 20-amp circuits (except circuits serving bathrooms and garages) [CEC 210.12(A)]
12. AFCI protection shall not be required when the extension of the existing branch circuit conductors is not more than 6 feet (not including the conductors inside the enclosure) and does not include any additional outlets or devices. [CEC 210.12]
13. All electrical equipment shall be listed.
14. Circuit breakers shall be listed to be used with panel per the manufacturer.
15. Single wire shall be landed on each breaker. Double lugging is not allowed, unless the breaker is listed and labeled for such. [CEC 110.14(A)]
16. Anti-oxidant on all aluminum conductors.
17. Clear working space of 36" required in front and 30" in width.
18. Unused knock outs and openings shall be sealed with listed plugs. [CEC 110.12 (A)]
19. All unused circuit breaker opening shall be closed. [CEC 408.7]
20. Barriers shall be placed in service equipment to ensure that no uninsulated, ungrounded service busbar or service terminal is exposed to inadvertent contact. [CEC 230.62(C)]
21. A torque wrench shall be provided by the contractor to verify lug / terminal connections. [CEC 110.3(B)]



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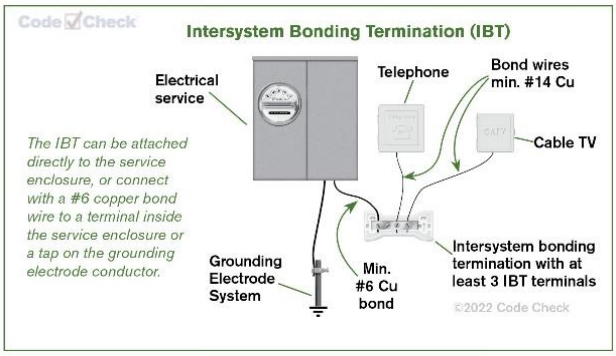
Grounding & Bonding

1. Ground rod connection to grounding electrode conductor shall be accessible. [250.68(A)]
2. The grounding electrode conductor shall be sized per table-CEC 250.66.
3. Protect grounding electrode conductor in accordance with (CEC 250.64 (B)]
4. Metal raceways used to protect the GEC shall be properly bonded at each end. [250.64 (E) (1)]
5. Both metallic water piping and gas piping inside the building are required to be bonded. [CEC 250.104]
6. An intersystem bonding termination is required. Provide a listed terminal at the meter enclosure or a bonding bar near the service equipment enclosure or near the GEC. Bonding bar connection is a minimum 6 AWG. Termination is required to have a minimum of three positions and shall remain accessible. [CEC 250. 94]



7. A metal underground water pipe used as a ground shall be supplemented by an additional electrode as listed below:
   a) Steel reinforcing bars (#4 or larger) for structural foundation, or
   b) Two ground rods not less than 8 feet in length (each), minimum 6 feet apart. Ground rods shall be installed such that at least 8 feet of length is in contact with the soil. It will be the responsibility of the homeowner/contractor to provide a test for verification of 25 ohms or less resistance to ground to support justification for single ground rod installation.
8. Grounding connection to the interior metal water pipe shall be made within the first five feet of the main water pipe entrance to the building.
9. Listed and accessible grounding clamp. If buried in the earth, the clamp shall be approved for direct burial.
10. Ground rod clamp shall be secure and accessible. Exposed clamps to be acorn type.

The above list is not an all-inclusive list of requirements. It is the responsibility of the permitee to be familiar with all the code requirements, state laws and local ordinances