



Town of Paradise

DEVELOPMENT SERVICES

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Electrical Codes for Residential Electrical Service Panels

Excerpts from the 2013 CALIFORNIA ELECTRICAL CODE (CEC)

CEC §110-3 and §110-14 Anti-oxidant compound shall be used on all aluminum conductor terminations.

CEC §110-26 The depth of working space in the direction of access to live parts, when the voltage to ground does not exceed 150 volts, shall be a minimum of 3 feet. The minimum width of working space in front of electrical equipment shall be the width of the equipment or 30 inches, whichever is greater. This workspace shall be clear and extend from the floor to a height of 6 1/2 feet, and shall not be used for storage. All workspaces shall be provided with illumination.

CEC § 230-8 and §230-54 Service entrance conduits shall be rain tight, arranged to drain, and sealed to prevent moisture condensation.

Conductor Sizes for 120/240 Volt Single-Phase Dwelling Services

CEC §310-15

Copper	Aluminum	Service Rating
..4 AWG.....	2 AWG	100 amps
..1 AWG.....	2/0.....	150 amps
.....2/0.....	4/0.....	200 amps
..400 kcmil.....	600 kcmil.....	400 amps

Consult the conductor insulation type to determine the exact service rating.

CEC §230.54 Electrical Services - Service entrance raceways shall be rain-tight and arranged to drain.

CEC §230.70 Electrical Services - The service disconnecting means shall be installed at a readily accessible location either outside a building or structure or inside nearest the point of entrance of the service entrance conductors.

CEC §240-3 The rating of the fuse or circuit breaker generally determines the minimum size of the circuit conductor, per the following table:

Minimum Wire Size Fuse or Circuit
Breaker Size Copper / Aluminum

15 amp	.....14...	n/a
20 amp	.....12...	n/a
30 amp	.....10....	8
40 amp	.....8....	6
50 amp	.....6....	4

Note: Conductors that supply motors, air conditioning units, and other special equipment may have overcurrent protection that exceeds the general limitations in the above chart.

CEC §240-24 Electrical panels shall be readily accessible and shall not be located in bathrooms or in the vicinity of easily ignitable materials such as in clothes closets.

CEC §250.94 An Intersystem bonding termination for connecting intersystem bonding and grounding conductors required for other systems shall be provided external to enclosures.

CEC §300.4 Electrical Services conduit raceways "Where raceways containing ungrounded conductors No. 4 or larger enter a cabinet, box, or enclosure, the conductors shall be protected by a bushing providing a smoothly rounded insulating surface.

CEC 300-5 §Underground service laterals shall have their location identified by a warning ribbon that is placed in the trench at least 12 inches above the underground installation.

CEC §300.5 Underground Wiring conduits and raceways "Direct buried cable or conduit or other raceways shall meet the following minimum cover requirements: Direct Burial Cable - 30" Rigid Nonmetallic Conduit Schedule 80 - 18" Rigid Metal Conduit and Intermediate Metal Conduit – 6"

Residential branch circuits rated 20 amps or less at 120 volts or less and with GFCI protection at their source are allowed a minimum cover of 12".

NOTE: This table does not apply to underground wiring for outdoor pools, spas, or hot tubs - see NEC Article 680.

CEC §300.7 Electrical Services wire conductors portions of raceways or sleeves subject to different temperatures (i.e. passing from the interior to the exterior of a building) shall be sealed with an approved material to prevent condensation from entering equipment.

CEC §300.9 Electrical Services conduit raceways The interior of raceways installed in wet locations above grade shall be considered wet locations.

CEC §384-13 All circuit overcurrent devices shall be legibly identified as to purpose or use on a directory located on the face or inside of the electrical panel doors.

CEC §370-17 Raceways containing ungrounded conductors No. 4 or larger enter a cabinet, box, or enclosure, the conductors shall be protected by a conduit bushing providing a smoothly rounded insulating surface.