RESIDENTIAL ELECTRICAL REQUIREMENTS

GENERAL NOTES

1. This handout is not intended to replace the California Electrical Code as adopted. It focuses only on the electrical requirements for single family dwellings. If more detailed information is needed the CEC is available in many libraries and may be reviewed at your Building Department.
   The CEC is a very complex document with a multitude of exceptions making various practices allowable in specific circumstances. This handout ignores many of these exceptions and simplifies the requirements, though a certain degree of economy is sacrificed in the process. If the reader wishes to take advantage of such complexities they may gain access to the CEC through the references given.

2. Improper electrical installations can be hazardous. If in doubt, hire a licensed electrician to do the work.

CHECKLIST OF CIRCUITS SPECIFICALLY REQUIRED BY THE CEC	Required Ampacity
1. Two small appliance circuits to kitchen counter top. May also serve dining room and refrigerator but counter top plugs must be divided between at least two circuits. Do not connect other loads such as garbage disposer or lights. CEC 210.52	20A
2. One laundry circuit, CEC 210.52	20A
3. The minimum number of branch circuits shall be determined from the total calculated load and the size rating of the circuits used. CEC 210.11(A)	15A and 20A
4. In all installations, the number of circuits shall be sufficient to supply the load served. CEC 210.11(A)	15A and 20A

CHECKLIST OF OTHER DEDICATED CIRCUITS TO CONSIDER	Typical Ampacity
1. Dish washer	15A
2. Garbage disposer	15A
3. Built in Microwawe	15A
4. Electric range (240V)	50A
5. Electric cooktop (240V)	30A
6. Electric oven (240V)	30A
7. Bathroom combination vent heater light	20A
8. Bathroom supplemental wall heater	15A
9. Forced air furnace	20A
10. Well pump	40A
11. Sump pump	
12. Electric water heater (240)	
13. Where double sink vanities are installed and two hair dryers may be used consider placing them on different circuits (GFCI)	15A
14. Other motorized appliances	

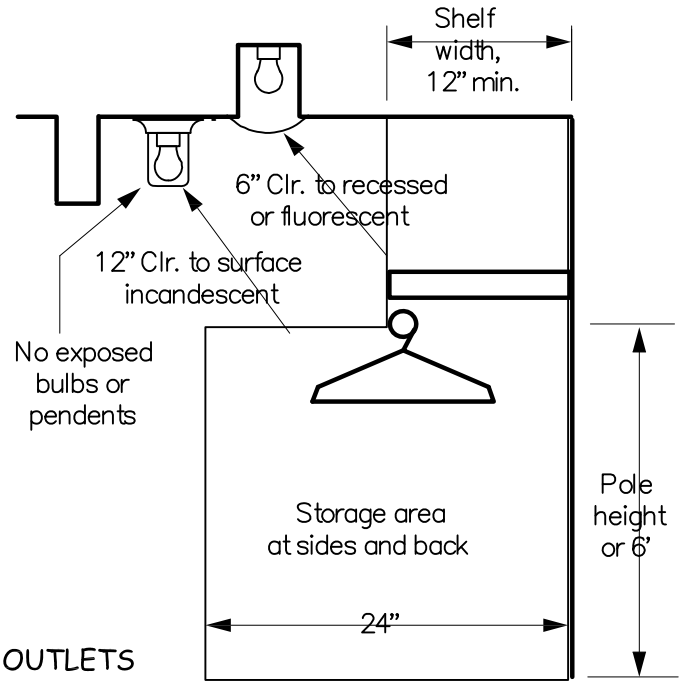
Note: These loads may sometimes be combined with each other or with general lighting but total loads must be calculated and appropriate de-ratings must be applied.

Note: Ampacities given are only typical. Always check the nameplate rating of the actual appliance.

CHECKLIST OF REQUIRED LIGHTING OUTLETS

See California Electrical Code article 210-70 and fig 410.2

1. Wall switched light or plug in each living room, bedroom etc.
2. Wall switched light in each kitchen, bathroom etc.
3. Wall switched light in each hallway.
4. Wall switched light in the basement.
5. Wall switched light in an attached garage.
6. Wall switched light at each outdoor entrance or exit.
7. Wall switched light in a detached garage wherever such garage has electrical power.
8. Light near attic furnace equipment switched near access.
9. Light over stairway with switches at top and bottom.



CHECKLIST OF REQUIRED PLUG OUTLETS

See California Electrical Code articles 210.50 and 210.52
In all areas specified in 250.52 all receptacles shall be **tamper-resistant**.
Attachment cords for most lamps etc. are 6 feet long and for kitchen appliances are 24 inches long.

1. Plugs within 6 feet of all points along the base of walls.
2. Plug in any isolated 2 feet or wider wall section one might place a lamp etc.
3. Outside plug accessible at grade at the front and back of dwelling.
4. Plug in the laundry area.
5. 120V plug within 6 feet for washer dryer.
6. 240V plug within 6 feet of electric clothes dryer.
7. Plug within 6 feet of any other large appliances such as a freezer.
8. Plug at each kitchen counter space 12 inches wide or wider.
9. Plug within 24 inches of all points along the length of kitchen counters including islands and peninsulas, all GFCI.
10. Extra counter top plug wherever a microwave or other large appliance blocks access to the regularly spaced plugs.
11. Plug adjacent to bathroom sink (GFCI).
12. Plug in the basement in addition to laundry plug if any (GFCI).
13. Plug in an attached garage (GFCI).
14. Plug in a detached garage if electrical power is provided (GFCI).
15. Plug in hallways more that 10 feet long.
16. Plug near furnace and air conditioning equipment for servicing.
17. Arc Fault protection for all 15 and 20 amp circuits in habitable rooms.

CHECKLIST OF OTHER ITEMS TO CONSIDER

1. An outlet near the ironing board.
2. Outside outlets at the sides of the house. And how about one at a patio or deck.
3. Lights in closets (see the figure at top of page).
4. The California Residential Code requires hard wired smoke detectors and carbon monoxide detectors.
5. Multiple switches at walk-through rooms and halls.
6. Fluorescent fixtures or dimmers, motion sensors and photocell motion sensors are now required for most lighting, please check the California Energy Code for specifics.
7. An outlet for the garage door opener.
8. An outlet for the door bell transformer.
9. An outlet for a kitchen exhaust fan or hood.
10. An outlet near a security system control station.