

GENERAL NOTES

1. This handout is not intended to replace the *National Electrical Code*® (N.E.C.) as adopted. It focuses only on the electrical requirements for single family dwellings. If more detailed information is needed the N.E.C. is available in many libraries and may be reviewed at your Building Department.

The N.E.C. 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 he or she may begin to gain access to the N.E.C. 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 N.E.C.**

|  | 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. N.E.C. 220-4(b) | 20A               |
| 2 One laundry circuit, N.E.C. 220-4(c)   | 20A               |
| 3 15 A lighting circuit, 1 per 600 square feet evenly proportioned; or   | 15A               |
| 4 20 A lighting circuit, 1 per 800 square feet evenly proportioned, N.E.C. 220-3 & 4   | 20A               |

**CHECKLIST OF OTHER DEDICATED CIRCUITS TO CONSIDER**

|   | Typical Ampacity |
|---|------------------|
| 1 Dish washer   | 15A              |
| 2 Garbage disposer  | 15A              |
| 3 Built in microwave  | 15A              |
| 4 Electric range (240V)   | 50A              |
| 5 Electric cooktop (240V)   | 30A              |
| 6 Electric oven (240V)  | 30A              |
| 7 Bathroom combination vent/heater/light  | 15A              |
| 8 Bathroom supplemental wall heater   | 20A              |
| 9 Forced air furnace  | 15A              |
| 10 Well pump  | 20A              |
| 11 Sump pump  | 15A              |
| 12 Electric water heater (240V)   | 40A              |
| 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 _____   |                  |
| 15 Other resistive heating element type appliances _____  |                  |

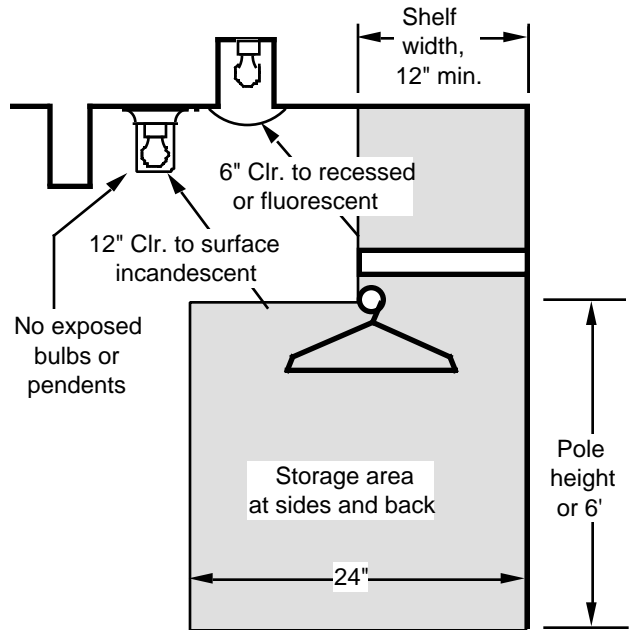
Note: These loads may sometimes be combined with each other or with general lighting but total loads must be calculated and appropriate deratings must be applied. See N.E.C. articles 220, 230, 424, 430, 440 and others for detailed requirements.

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

### CHECKLIST OF REQUIRED LIGHTING OUTLETS

Note: See N.E.C. article 210-70(a)

- 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 attached garage
- 6 Wall switched light at each outdoor entrance or exit
- 7 Wall switched light in detached garage wherever such garage has electrical power
- 8 Light near attic/underfloor furnaces/equipment switched near access
- 9 Light over stairway with switches at top and bottom



### CHECKLIST OF REQUIRED PLUG OUTLETS

Note: See N.E.C. articles 210-52 (a) through (h) and 210-50(c)

Note: Much sense can be made out of these requirements if you know that many fires are started by extension cords and the N.E.C. discourages their use. Attachment cords for most lamps etc. are 6' long and for kitchen appliances are 24" long.

- 1 Plugs within 6' of all points along the base of walls
- 2 Plug in any isolated 2' or wider wall section (where one might place a lamp etc.)
- 3 Outside plug accessible at grade (GFCI)
- 4 Plug in the laundry area
- 5 120v plug within 6' for washer/dryer
- 6 240v plug within 6' of electric clothes dryer
- 7 Plug within 6' of any other large appliances such as a freezer
- 8 Plug at each kitchen counter space 12" wide or wider (GFCI)
- 9 Plug within 24" of all points along the length of kitchen counters including islands and peninsulas, (Cords for counter top appliances are generally 24" long.) GFCI
- 10 Extra countertop 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 the attached garage (GFCI)
- 14 Plug in the detached garage if electrical power is provided (GFCI).
- 15 Plug in hallways more than 10 feet long.
- 16 Plug near furnace and air conditioning equipment for servicing

### CHECKLIST OF OTHER ITEMS TO CONSIDER

- 1 An outlet near the ironing board. (The one for the washer will not be reachable.)
- 2 Outside outlets at front, rear and sides of the house. (Avoid very long extension cords.) How about one at the patio or deck?
- 3 Lights in closets, but see the figure
- 4 The Building Code requires hard wired smoke detectors.
- 5 Multiple switches at walk-through rooms and halls
- 6 Use fluorescent fixtures for general lighting of kitchens and baths to save energy.
- 7 An outlet for a garage 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