

## Alterations and Additions - Electric Requirements and Common Field Encountered Violations

This informational sheet is provided in order to help homeowners with some common questions and field-encountered violations. This list is not totally inclusive and is not intended for design purposes. The National Electrical Code is made up of approximately 1000 pages and it is nearly impossible to cover all code issues. When in doubt, obtain the services of a N.J. Licensed Electrical Contractor.

1. Bare bulbs and partially covered fixtures are prohibited in closets. When 12 inches from shelves cannot be maintained the fixture will be required to be of the fluorescent type, or recessed with a continuous cover.
2. All Junction boxes new or old must be accessible and brought to surface of sheet rock for future required service and/or accessible in attics, crawl spaces, basements or other unfinished areas.
3. The minimum size device box for receptacles, switches and the like is 18 cubic inches when more than one wire is encountered (i.e. 14-2/ 12-2) Plastic boxes are generally identified how many conductors are permitted. The device counts as two, all the grounds count as one and the hots and neutrals count as one each. Generally speaking an 18 cu boxes is limited to: (3) 14-2 or (2) 12-2 wire cubic fill. Design accordingly and/or use larger boxes.
4. Receptacles are not permitted over electric heat. Please space outlets accordingly.
5. Each room is required to have one switched lighting outlet (receptacle and/or light)
6. Fans are required to have a Listed fan box. This is a special box that usually utilizes a small screw with nut and/or is designed to carry 45 lbs.
7. Smoke detectors are required to be interconnected with battery backup. For 120 volts this will require 14-3 romex between rooms and/or listed wire for hardwired low voltage systems. (generally FPLP, FPLR, and FPL). Low voltage systems are only approved as supplemental systems only.
8. Wires are required to have a minimum set back from the face of studs of 1 1/4 inches. When encountering more than two wire Listed stackers help with this requirement. In addition 1/8 thick nailer plates are required where wires are drill through holes and run perpendicular to studs and cannot maintain 1 1/4 setback.
9. Wires are required to be stapled every 4 1/2 feet and within 12 inches of every box.
10. **For rough wire inspections** wires in boxes are required to be made up. This requires sheathing to be removed (outer jacket) and **minimum of 6 inches of free wire** out of box, the ground wires are to be pigtailed with wire nuts or other approved connectors and one ground wire is to be left for device connection at a later time. (Steel boxes require the ground pigtail to be connected to steel box via green screw 10/32 and/or approved ground clip.) **Only one wire permitted under ground screw.**
11. Electrical switches are required to be grounded. One wire only underground screw.
12. Bathroom receptacles are required to be Ground fault protected. In addition all new work are required to be a dedicated 20 amp circuit.
13. Fire stopping is required on all electrical penetrations at floor and ceiling levels in order to avoid communications between different levels of house. This should be done with UL listed approved fire stopping material and or Mineral Wool. **Spray foams are not acceptable for this purpose, unless approved.**
14. The following items are required to have ground fault protection: All garage receptacles, bathroom, basement, crawl spaces, kitchen counters, outside receptacles and all hydro massage tubs.
15. All appliances and motors generally require unit switch within sight of motor.

Electric Subcode Official: 609-737-0612 extension 6580