Fire Code

1. Extension cords are not allowed except on a very temporary basis.
2. Power strips, plug strips (with built in circuit breaker) are allowed but one plug strip can not be plugged into another plug strip (piggybacking).
3. Microwave ovens and refrigerators must be plugged directly into the wall. They may not be plugged into plug strips or extension cords.
4. Plug expanders (those things that plug into the wall to give the user more receptacles) are not allowed.
5. Cords can not be spliced.
6. Frayed cords (especially with exposed conductors) are not allowed.
7. Electrical panels should have access. Fire code says 3’, I would suggest as long as the panel is easily accessed in case of emergency it should be fine.
8. Devices that get hot (like heating air fresheners) are not allowed
9. Similarly, candles are not allowed.
10. Space heaters must have tip over protection.

Electrical practices

1. Power cords [ black, white, green] [ brown, blue, green/yellow]; Black or brown are the hot conductors, white or blue are the neutral conductors and green or green/yellow are the grounded conductors.
2. When wiring a power cord to a device, it should be fused. The hot lead should go to the fuse first (end connection, not the side connection) then to the power switch.
3. Switches are always installed in the hot lead, not the neutral lead.
4. All metal parts should be grounded.
5. There should be no exposed high voltage connections.
6. Plugs with broken prongs should be replaced (the most common broken pin is the ground pin).
7. When unplugging, pull on the plug, not the cord. The cord is attached to the plug only by the copper conductors.
8. When wiring equipment, high voltage and low voltage (control) conductors should not be bundled together.

Effects of electricity on the body

Milliamperes Milliamperes

Body effect DC Voltage AC Voltage

No sensation on hand 0.6 – 1 0 0.3 – 0.4

Slight tingling 3.5 – 5.2 0.7 – 1.1

Non-painful shock 6 – 9 1.2 – 1.8

Painful shock 41 – 62 6 – 9

Muscle contraction (no-let go) 15

Severe shock 60 - 90 15 – 23

Possible death 50

Fibrillation (almost certain death) 500 100

The amount of current that flows through the body depends on the voltage in the circuit and the resistance of the body. If you are sweating (probably salty) you are a much better conductor and a lower voltage can have a dramatic effect. The effect on the body depends on the path the current takes. Hand to hand or hand to opposing foot (through the heart) usually is the worst. Indirect effects include all the violent motions involved with getting shocked (falling off ladders, falling into operation equipment, etc.

Voltages under 24 Volts are generally not considered dangerous although if there is the possibility of high currents (as in high energy batteries) a lot of care must be taken while handling, charging and using the batteries. These new battery technologies all have different characteristics and the manufacturer’s recommendations must be fully understood before we use them.

Voltages over 50 Volts are considered dangerous.