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Six NEC Articles a WLAN Installer Should Recognize

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Six code articles account for most of the NEC (National Electrical Code) trouble a WLAN installer walks into, and the skill you need is recognition, not compliance. Recognize each one on site, then hand it to the Authority Having Jurisdiction (the AHJ: the local building official or inspector whose word governs), or a licensed electrician.

Elevator hoistway you cannot use

Only wiring and equipment used directly for the elevator is permitted in the hoistway, machine room, or machinery space. A Wi-Fi AP serving building coverage is not elevator equipment, so it cannot live in the shaft. Cover the car from the adjacent hallway or lobby and let RF in through the doors, or use the elevator vendor's own in-car system, whose traveling cable is elevator equipment and is permitted. Do not sneak an AP into the hoistway.

Plenum that dictates your cable jacket

Where the space above a ceiling or below a raised floor moves HVAC air, the cable and equipment left there has to be rated for it.

- CMP (plenum, usable anywhere),
- CMR (riser, between floors)
- CM/CMG (general)
- CMX (dwelling)

PoE bundle that overheats

When a cable carries power and data together, the current heats the copper, and the conductors in the center of a fat bundle cannot shed that heat. This is a real concern with the 60-watt to 90-watt Access Points that are common now.

Antenna that needs grounding

Outdoor APs, sector and panel antennas, and masts have to be grounded and bonded, with a listed antenna discharge unit on each lead-in near the point of entry. The grounding conductor runs as straight as practical and is protected from damage. The point is to bleed off static and give a nearby lightning strike a low-impedance path to earth, so surge does not ride the coax into the building.

Fire wall you must not breach

When a cable passes through a fire-rated wall or floor, the opening around it has to be firestopped to restore the assembly's rating and stop smoke and flame spread. The approved firestop is a specific listed assembly, matched to the wall type, the penetrant, and the opening, and it is enforced by the building code and the AHJ.

Dead cable you own pulling

The accessible portion of communications cable that is not terminated at equipment and not tagged for future use has to be removed. Decades of dead cable is a fuel load sitting in the ceiling. On a refresh, removing the old runs is your job. Bid it that way, because the customer rarely expects the removal line and you rarely get to skip it.

The pattern under all six

Every one of these is the same skill: see it, name it, defer it. None of them asks you to become a code expert. Each one asks you to recognize a boundary and route it to the Authority Having Jurisdiction, or a licensed electrician, before it becomes a callback or a citation. Learn the six on sight.

This is a field reference, not code or design guidance. Confirm requirements with the AHJ, the architect of record, and a licensed electrician.

By Keith Parsons, CWNE #3, Wireless LAN Professionals. Free to read and share. Facts