

U.S. Fire Administration / National Fire Academy

Coffee Break Training

Topic: Electrical Wiring Supports

Learning objective: The student shall be able to explain the requirements for supporting fire alarm system wiring to the building's structural components.

An often-overlooked detail in fire alarm system installations is how initiating device, indicating appliance, and signaling line wiring circuits are distributed throughout the structure. An inspector often only has to lift a tile from a drop-in grid ceiling to find fire alarm cable strung across the top.

Fire alarm circuitry is an essential fire and life safety feature, and must be protected from physical damage. All electrical wiring, including low voltage fire alarm systems, must be installed in a "neat and workmanlike" manner, not casually draped across ceilings, run through walls, or stuffed into concealed spaces.

All exposed cables and wiring conductors that are installed on the surface of walls or ceilings must be supported by structural components so they will not be damaged by normal activities within the occupancy. Cables and conductors must be attached by straps, staples, hangers, or similar devices designed and installed to protect the cable.

If not installed in conduit, cables run through holes bored in joists, rather than wood members must be at least 1-1/4 inch from the nearest edge of

the wood or protected by a steel plate or bushing at least 1/16-inch thick. National standards do not require that fire alarm cable be installed in conduit, but State or local regulations might.

For additional information, refer to NFPA 72, *National Fire Alarm Code*[®]; and NFPA 70, *National Electrical Code*[®], Article 760. Also, refer to your local electrical inspector for any additional State or local requirements.

