



“Hard-Wired” Smoke Alarm Installation Guidelines

If you are selling your single-family house in the City of Saint Paul, a 120 volt “hard-wired” battery-backup smoke alarm must be installed before the sale of the property. The following guidelines are to assist if you, as the owner and homesteader, are applying for the electrical permit to install, repair, or replace the smoke alarm yourself. If you are installing smoke alarms as part of a remodeling project, more than one hard-wired smoke alarm may be required. Consult the Building Inspector (651-266-9002) for further information on these additional smoke alarms.

An Electrical Permit must be purchased prior to the start of any electrical work (including replacing or reinstalling the smoke alarm only). The only people who can purchase an Electrical Permit are a Licensed Minnesota Electrical Contractor, or the “homesteaded homeowner” that will be installing, repairing, or replacing the smoke alarm and/or wiring. The homeowner cannot purchase an Electrical Permit and have someone else install it for them (**MN Stat 326B.31**). An electrical inspection is required when the installation is completed, by the assigned electrical inspector.

Only one 120 volt “hard-wired” battery backup smoke alarm mounted in the hallway outside the bedrooms is required to satisfy the ordinance. Additional smoke alarms increase your level of safety but are not mandatory. The alarm may be mounted on the wall or ceiling (see figure 1 on the next page). The best place is in the center of the ceiling, but if the construction of the house prohibits ceiling mount, it may be wall mounted. **Read the directions that come with the smoke alarm**, they give certain measurements that must be followed for the distance down from the ceiling for a wall-mounted detector. Please note that **SPLC 58.03** requires the location of a wall mounted smoke alarm to be between 6 inches and 12 inches from the ceiling.

The power wiring for a newly wired smoke alarm **is required to be “AFCI” protected. This requirement can be accomplished by installing a combination AFCI breaker on the circuit feeding the detector in the electrical panel; or on the load side of a branch-circuit type AFCI receptacle installed at the first outlet on the circuit.** All electrical splices must be done in an electrical box (the box that a device such as a switch, outlet or light fixture is mounted on). **Do not connect to any open wiring outside of these boxes!**

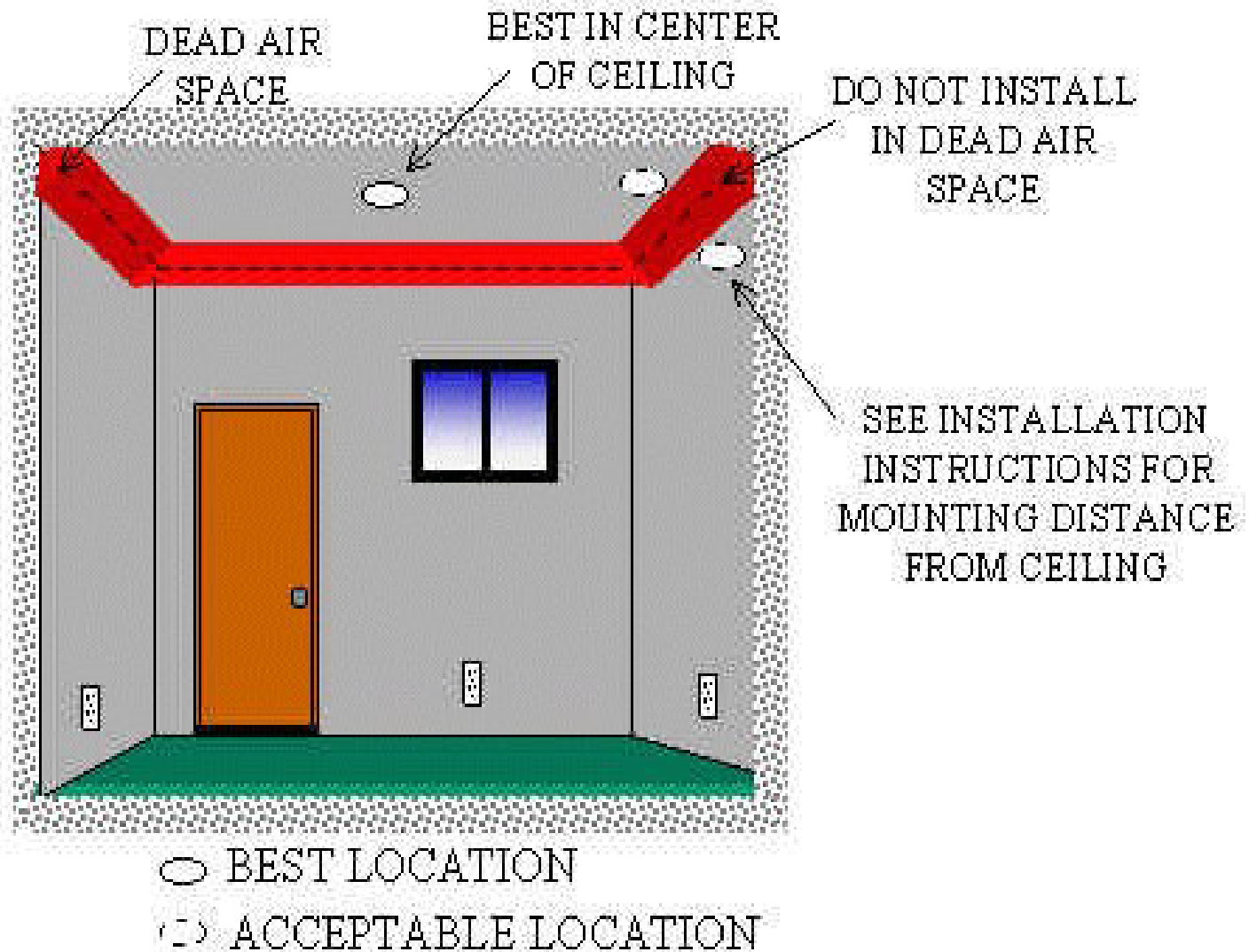
The most popular wiring method used for running power from an existing electrical box to the new box you install for the detector is NM Cable. NM Cable must be fished inside of a wall or ceiling — it **cannot** be run on the outside of a wall, floor, or ceiling without mechanical protection. This cable is run through a “knockout” or opening in the side or back of the electrical boxes. Some type of cable clamp or bushing is required where the cable goes through the knockout. There are several brands of plastic boxes available for remodeling work that have “ears” to hold the box in place in the wall and have integral cable clamps to hold the Romex.

The smoke alarm must be mounted on an electrical box. When the box is cut into the ceiling or wall, the opening must be flush with the ceiling or wall surface. You should be able to see the electrical box opening when the detector is detached from the box. You must use listed wire nuts for any wire splices — twisting the wires together and taping the bare wires is not acceptable!

Call your inspector for the final inspection. Your inspector's name and direct number is on your copy of the permit. If you cannot find your copy, call the Electrical Inspection general number, 651-266-9003 between 7:30 and 9 a.m. Monday through Friday and they will transfer you to the inspector that covers your area.

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Figure #1 Mounting Location of Smoke Detector



DSI's Mission

To preserve and improve the quality of life in Saint Paul by protecting and promoting public health and safety for all.