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"HARD-WIRED" SMOKE DETECTOR INSTALLATION GUIDELINES

If you are selling your single-family house in the City of St. Paul, you **must** have a 120 volt "hard-wired" battery-backup smoke detector installed before the sale. The following guidelines are to assist if you, as the owner and homesteader, are applying for the permit to install the detector yourself. *If you are installing smoke detector(s) as part of a remodeling project, more than the 1 hard-wired detector may be required. Consult the Building Inspector (651-266-9002) for further information on these additional detectors.*

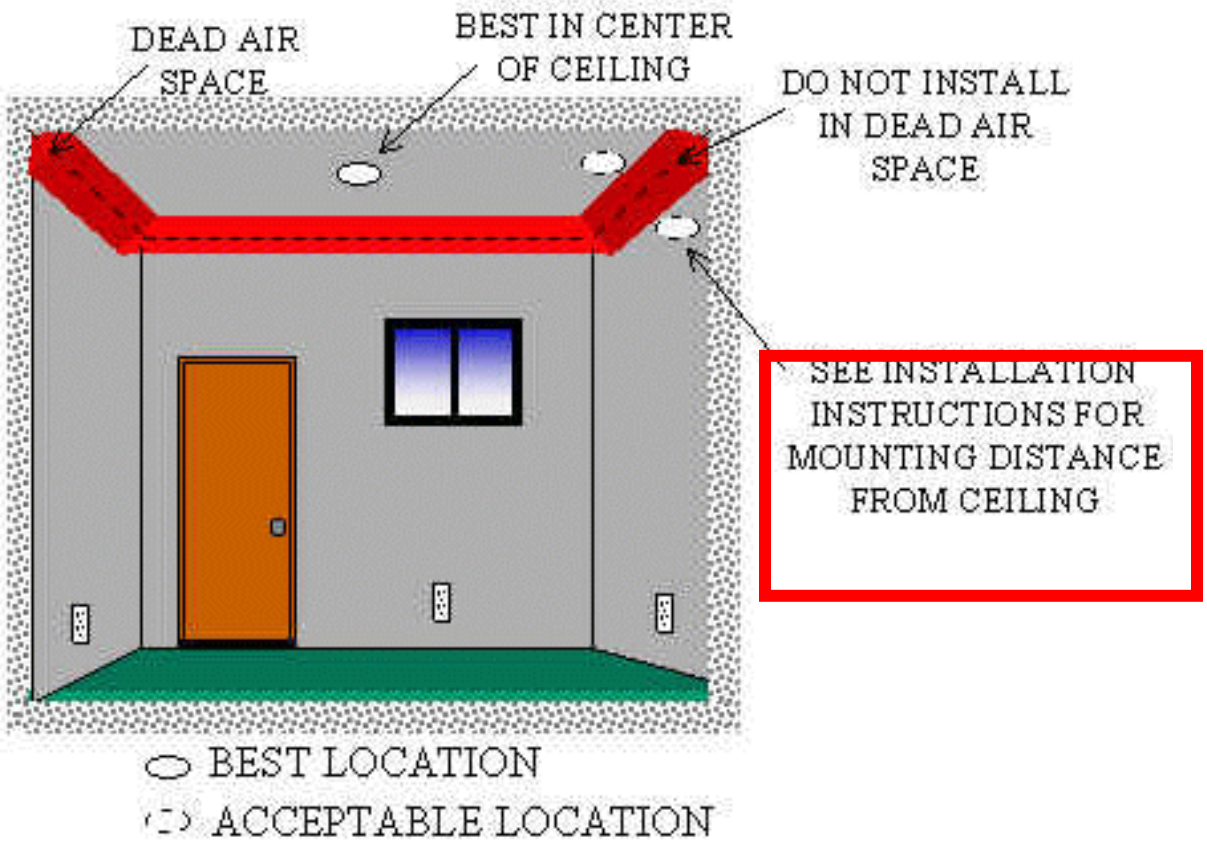
Only one detector mounted in the hallway outside the bedrooms is required to satisfy the ordinance. Additional detectors **do** increase your level of safety, but are not mandatory. If all the bedrooms in the house are on one level, the detector must be mounted in the hallway (not in a stairwell) outside of the bedrooms. If you have legal bedrooms on more than one level, the detector must be mounted as follows:

1. The detector must go on the level with the MOST bedrooms. If, for example, you have three bedrooms on one level and one on the other, the detector goes on the level with the three bedrooms.
2. If you have an equal number of bedrooms on more than one floor, the detector must go on the upper level of bedrooms. For example, if your house has two bedrooms on the first floor and two on the second, the detector must go on the second floor.

The detector 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 DETECTOR- They give certain measurements that must be followed for the distance down from the ceiling for a wall-mounted detector.

The power for the detector may be tapped from any unswitched power source (be careful of getting power from a ceiling light!). This will mean taking power from an outlet, or from a lighting circuit ahead of any switches. This tap from the power 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 method of running power from the existing electrical box to the new box you install for the detector is NM-B cable, or Romex. Romex 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 detector must be mounted on an electrical box. **Do not use the round, shallow "pan" boxes.** 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 (see Fig. 2). You MUST use a plastic-insulated type wire connector (such as the 3M "Scotchlock") for any wire splices- twisting

Figure #1 Mounting Location of Smoke Detector



the wires together and taping the bare wires is not acceptable. Your finished installation prior to mounting the detector on the box should look like Figure 2.
Before the inspection, mount the detector on the box, in other words, finish the installation. The Inspector will disassemble anything he/she needs to look at, and reassemble it when finished. **Also, this paper is a general guideline, and there may be other requirements in the Electrical Code that must also be followed. This paper cannot cover every possible installation situation. Consult the current National Electrical Code for all Code requirements.**
Call your Inspector for the final inspection, his/her name and direct number is on your copy of the Electrical Permit <u>that is required</u>. If you cannot find your copy, call the Electrical Inspection general number, 651-266-9003 between 7:30 and 9am Monday through Friday and they will transfer you to the Inspector that covers your area.

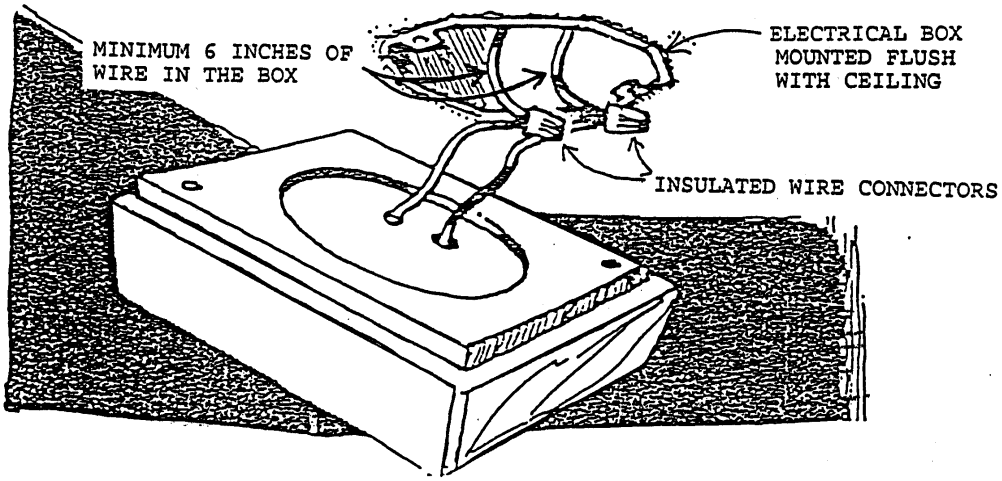



FIG. 2- TYPICAL INSTALLATION