



Knob-n-Tube Wiring By Greg Wayman, CRI

What is Knob-n-Tube?

Knob-n-tube wiring is commonly found in buildings built prior to 1950 dating all the way back to buildings in the late 1800's when electric wiring was first installed. The term "knob-n-tube" refers to the porcelain knobs that the old style wiring was wrapped around as it went around corners and the porcelain tubes the wires ran through as they penetrated wood beams, joists, floor boards, and walls. The wiring itself consists of one hot wire and one neutral wire and has a thin insulation coating around it that generally looks black or dark brown. Warning: the hot wire will electrify you if you touch it! Current testers are a great investment for under \$10 that you can place against the wire to see if it is live and still being used without getting that nasty shock.

Should Knob-n-Tube Wiring be Replaced?

The old knob-n-tube system was originally designed to carry very small currents. Back in the day, the most common need for electricity was for lighting. Today, the needs for the average family are considerably greater. More items will be plugged into the outlets drawing more electricity. Usually, the needed current is greater than what the knob-n-tube wiring was designed for. When you overload this old wiring, it becomes a very significant fire hazard and is one of the leading reasons that knob-n-tube wiring should be replaced in a lot of homes. However, not all homes need to be upgraded. If your home has this old system, you should hire a licensed electrician who has experience with knob-n-tube wiring to review it. Depending on the condition of the wiring, they may recommend removing all of the wiring, removing part of the system, or leaving it alone. One safety, non-expensive upgrade they may recommend is installing S-Type fuses to ensure that no one "accidentally" installs an oversized fuse in the main panel box or sub-panels. This helps prevent overloading of the wires.

Common Problems a Home Inspector Looks For

In addition to the problems mentioned above, a professionally trained home inspector looks for insulation damage from rodents, people stepping on the wiring, and storage crushing the wiring. We also look for rolled or loose-blown insulation and debris from previous roof replacements covering the wiring. There needs to be a 3" space between the live wire and any flammables. Homes that have had insulation added in the attic over the wiring are just waiting for a fire to happen. As there are many do-it-yourselfers out there, we constantly see Romex wiring spliced into knob-n-tube to feed newly installed light fixtures, ceiling fans, or additional outlets. Remember, these lines were not designed for system additions and all of these greatly increase the risk of causing a fire.

How Insurance Companies View Knob-n-Tube

Insurance companies are extremely leery of insuring buildings that have knob-n-tube systems. The top four reasons are they pose a significant fire hazard due to their outdated and usually damaged wiring, have outdated fuse boxes for main disconnects, do not have a ground wire to protect the home and its appliances during a lightning strike, and usually do not adequately supply electricity to the building. The general rule of thumb for the big insurance carriers is to have a licensed electrician review the system and submit a report. If the electrician's report indicates the knob-n-tube system is in good condition, then they MAY CONSIDER insuring the property. If the knob-n-tube system has a fuse box with a main disconnect of less than 100 amps, most insurance carriers as of January 1, 2004 (if not all now) will not insure the property until the main panel box is upgraded to what they consider to be an adequate system.

Many thanks to Clint Hoffmeister, Master Electrician from K-D Electric for sharing his in-depth knowledge on this old-style wiring for this article! Clint and his company specialize in repairing and updating older electrical systems throughout the Omaha Metro. Clint can be reached at 402-571-4160.

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