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Dangers of Aluminum Wiring

Primarily in the 1960s and 1970s, many electrical contractors used aluminum wiring instead of copper wiring as a way to save money and lower construction costs. However, a number of electrical fires have been attributed to aluminum wiring. Many building codes have been rewritten to not allow the use of aluminum wire for branch circuit wiring in houses.

Copper vs. Aluminum -- The Test Results are in!

Tests have demonstrated aluminum wiring has inherent properties that make it more susceptible to fires when it was not installed correctly. Here are some of the problems with using aluminum wiring to conduct electricity.

- Aluminum does not conduct electricity as well as copper. An aluminum wire generates more heat.
- Aluminum is more brittle than copper. Wire is more likely to break or crimp if it is brittle. Arcing can occur if a wire breaks or crimps. This can cause very high temperatures inside the wall or ceiling
- Aluminum is more likely to corrode than copper.
- Aluminum will oxidize if it comes in contact with moisture. This oxidation removes the pure aluminum and makes the wire thinner. A thinner wire creates more heat when electrical current is running through it.
- Oxidation also causes the wire to expand, puts pressure on the protective plastic coating on the wire, and can cause the plastic to split. If any of these occur, arcing may result which can cause fires.
- Aluminum expands and contracts more than copper. This puts additional stress at all connections such as outlets and switches. If these become loose, arcing can occur at these points.

If contemplating buying an older home with aluminum wiring or updating a home with aluminum wiring, contact a certified electrician to gain their expertise and opinion regarding the dangers of aluminum wiring.

State Farm® believes the information contained in the Disaster Survival House is reliable and accurate. We cannot, however, guarantee the performance of all items demonstrated or described in all situations. Always consult an experienced contractor or other expert to determine the best application of these ideas or products in your home.

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