

COLUMN FOR MARCH 19, 2005.
HEADLINE; ALUMINIUM WIRING

Q: We bought a home a few years ago that has aluminium wiring in it and now we want to sell and move to a bigger home. A friend told me that this type of wiring might make our home hard to sell. What can you tell us about this type of wiring?

A: In the early 70's there was a problem with copper, both in supply and price. It was at this point that copper drains for plumbing were abandoned for plastic or ABS as it is known. At the same time the electrical industry switched from copper to aluminium wire for household use. It is still approved for use today as an entrance cable to the main supply for a home provided the correct size is used. I did some research on this for our reader and the most recent safety notice I found on this subject was issued by Ontario Hydro in 1997. It states "Aluminium Wiring in residential installations will operate as safely as any other type of wiring if the proper materials are used and it is installed as per manufacturers instructions and the Ontario Hydro Electrical Safety Code."

What is the issue, mainly the connections. Aluminium will contract and expand more than copper. It has a tendency to change its shape at the terminal screws and become loose or creep off. It also has a tendency to oxidize and that can increase its resistance, which can result in overheating at the receptacle. It is softer than copper and more prone to nicks and cuts. It has a certain incompatibility with some fittings designed for electrical systems. At the outset, the electrical industry recognized that aluminium was not as good a conductor of electricity and wire sizes were suitably increased for this. Where a 14 gauge copper wire was used, it was increased in size to 12 gauge. Understand that in household wiring the smaller the number the thicker the wire.

What are the warning signs of problems with aluminium wiring? Unusually warm or warped outlets and switches. An odour or a spark coming from one of these is also a sure sign of problems. Untraceable problems with plugs and lights and a periodic flickering of lights should be investigated. What can you do about this? The most important thing is to make sure your electrical panel not over-fused. The majority of this wiring was installed with a fuse panel rather than a breaker panel. I often see 20 and 30 amp fuses where 15 amp should be installed. Where there are copper and aluminium connections, there are specific marrets for these connections. Use of an anti-tox paste at the point of connections is also recommended. Plugs and switches should be the design recommended for use with aluminium. They are identified by a marking like CO/ALR or CU-AL. Do not use a receptacle that is stamped with AL and a line through it; these are not compatible with aluminium wiring.

My suggestion is to have a licensed electrician go over the branch circuits in the home. He will open all of the plugs and switches to visually inspect the wires for any signs of scorching, looseness, heat or odour. If he finds the insulation on the wire has melted back he will make the necessary changes. In some cases he may cut the wires back, use an approved connector and join this to a short piece of copper that is then connected to the switch or duplex plug. He will review any junction boxes and the panel and make any corrections if needed. If the electrician documents his work, does it by the Electrical Code and accepted manufacturers standards as based upon the 1997 Ontario Hydro Notice, this should be acceptable. This is usually not an expensive task, one electrician I spoke to said an average home, provided it was accessible, was no more than a day or two's worth of work to complete the inspection and make any corrections if needed. I have yet to hear where a home was refused home insurance because of this wiring, this is important when a mortgage is needed to purchase a home. All wiring, copper or aluminium can have safety related problems if improperly fused or poorly installed and if you see or smell any heat related conditions in your home wiring, an immediate call to your electrician is a wise decision.

Now the answer to last week question, what is matched lumber? The answer was B) lumber that was edge dressed to make a tongue and groove joint. Now this week's question. What are lookout rafters? Are they A) short rafters projecting over a wall to support and overhang. B) a decorative rafter used in a Georgian Roof C) a

type of rafter used on a roof when an addition is added to a hip roof. The answer in next week's column.

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