Dangers of Aluminum Wiring

Sharrod Parker, Risk Services Leader

Why Aluminum Wiring?

Aluminum building **wiring** is a type of electrical **wiring** for residential construction or houses that use **aluminum** electrical conductors.

In North American residential construction, **aluminum** wire was used for **wiring** entire houses for a short time from the 1960s to the mid-1970s during a period of high copper prices.

The Result

Aluminum becomes defective and degrades faster than copper due to certain qualities in the metal. Outlets, switches and light fixtures containing aluminum wiring can become potentially dangerous over time.

The degraded and poor connections cause aluminum wiring to overheat, creating a potential fire hazard.

Timeline

date	event	remarks
1950	Aluminum wiring for feeders is common	Aluminum conductors in larger sizes were in common use by 1950. This use is still acceptable and commonplace today. The problems of aluminum wiring are associated mainly with small sizes for branch circuits and appliances.
1965	Aluminum wiring becomes common for branch circuits	Aluminum wiring for branch circuits was rare before about 1965. Homes built between 1965 and 1972 stand a good chance of having aluminum wiring.
1971	“New Technology” wiring and new CO/ALR marking degreed by UL	In September, 1971, UL required a new design and material for 15- and 20-amp receptacles and switches, which were marked **“CO/ALR”.** New alloys were also specified for aluminum wire. Reliability improved with these “new technology” materials. Distributors were, however, allowed to continue to sell existing stock.
1972	aluminum wiring becomes rare again	By 1972, aluminum wiring had earned a poor reputation. It became rare once more and has remained that way.

What is CO/ALR ?

CO/ALR stands for 'Copper Aluminum Revised' to differentiate these devices from earlier models.

Devices marked CO/ALR are specifically designed and approved to ensure a good connection through the use of a larger contact area and compatible materials.

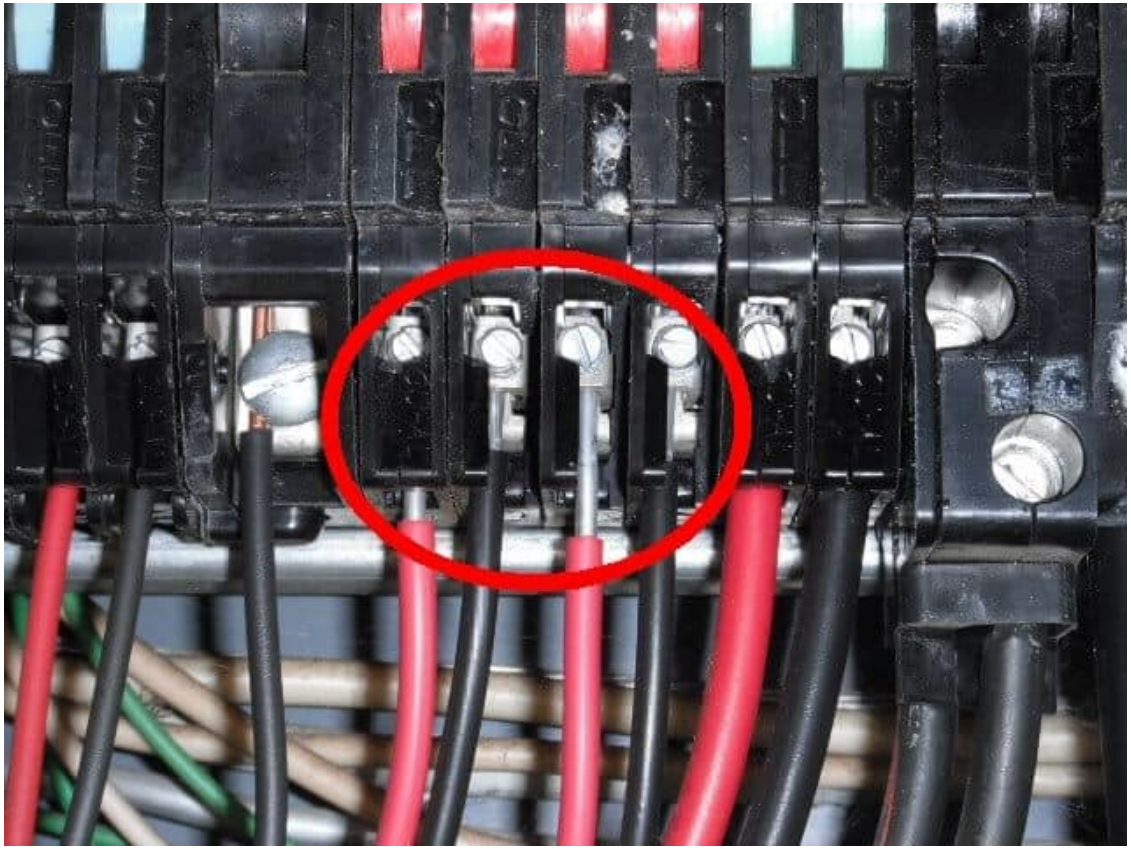
All receptacles connected to aluminum wiring MUST be marked CO/AL.

What are our options with Millers?

- Copalum
  - The Copalum crimp method is the process of attaching a short section of copper wire to the ends of existing aluminum wiring using a metal Copalum connector. The Copalum connector is crimped using a special crimping tool that cold-welds the connector shut. The Consumer Product Safety Commission (CPSC) has found that Copalum is a safe and permanent fix to common aluminum wiring problems, and for more than thirty years electricians have been using Copalum because it's an affordable and permanent solution.

- AlumiCom
  - Aluminum to Copper Lug is approved by the Consumer Product Safety Commission (CPSC) and numerous insurance companies as a safe method for aluminum wiring repair. AlumiConn is a lug style connector with three separate ports to eliminate intermixing of conductors. It coats aluminum wires with a thin layer of silicone sealant to provide resistance from oxidation and uses set screws to break up surface oxides and provide a secure mechanical connection.

Example of Aluminum Connected



AlumiCom

Copalum

Millers Mutual

There's more for you at Millers.SM

Thank You !

Sharrod Parker
sparker@millersinsurance.com

Resources:

https://www.nachi.org/aluminum-wiring.htm#:~:text=Aluminum%20will%20become%20defective%20faster,creating%20a%20potential%20fire%20hazard.

http://completeelectrical.biz/can-copalum-crimping-fix-aluminum-wiring-in-homes/

https://inspectapedia.com/aluminum/Aluminum_Wire_Identification.php

http://www.eureka4you.com/home/COALR.htm
https://www.alwirerepair.com/aluminum-wiring-whats-the-problem#:~:text=Timeline%20%20%20date%20%20%20event%20,aluminum%20wiring%20had%20earned%20a%20po%20...%20