



Zinsco Circuit Breakers: Take Action Now

RISK ALERT

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Circuit breakers are designed to break, or interrupt, an electrical current when there is too much current for the electrical line to carry safely, or when other unsafe conditions exist. When the circuit breaker fails to trip, uncontrolled current may flow through the system, causing overheating and increasing the risk of fire. Published reports indicate that one line of circuit breakers and electrical panels known as Zinsco™ (also known as GTE-Sylvania™-Zinsco or Kearney, referred to hereafter simply as “Zinsco”) do not provide adequate protection against over-currents or short-circuits, thus creating hazardous conditions in the buildings where they are installed.

What is the Problem with Zinsco?

According to published technical reports, the critical problem with Zinsco breakers is a failure at the point where the circuit breaker contacts clip to the electrical panel bus. Zinsco breakers and panels seem more vulnerable both to corrosion and to loosening over time, making the connections unreliable and dangerously unpredictable. These conditions can cause arcing and overheating even during normal use.

The circuit may carry an overload for a long time without tripping as it should. During the prolonged overload that occurs after a failure to trip, the circuit breaker will overheat. The heat can cause the breaker to melt, sometimes fusing to the bus bar at the contact point, and in extreme cases, fusing the breakers together. When this happens, the circuit breakers cannot function to break the current, and the overheating may cause a fire in the panel box and beyond.

This scenario is most likely to occur on breakers for circuits that power major appliances (such as clothes dryers, electric ranges, etc.), or rooms where circuits are often overloaded (kitchen or bathroom). The problem is also more likely in panels where the bus bars are made of aluminum, though problems have also occurred in panels with copper bus bars.

Most Zinsco breakers and panels in active use today are obsolete. The technical standards that were in place in the 1960s and 1970s have long since been updated to strengthen requirements for safety and quality, and the Zinsco products do not meet these upgraded standards.

The defects in Zinsco circuit breakers are not visually apparent, and one cannot tell by visual inspection whether the breaker is working correctly or not. Scorch marks, burns, darkened or discolored areas, and melted parts or insulation may indicate that the breakers are not functioning properly and that the situation is imminently hazardous. However, the absence of these signs *does not imply* that the circuit breakers are free from defect and functioning properly.

Zinsco circuit breakers and panels were also marketed as Sylvania, GTE-Sylvania, and Kearney. Most have a silver or silver and blue foil label. The words “Zinsco” or “Magnetrip” may be stamped or embossed on the panel. Inside the panel box, the circuit breakers often have bright blue, red, and green tabs.

What Action Should Property Owners Take?

Property owners are advised to replace all Zinsco breakers and panels immediately with all-new equipment, even if they have previously functioned without incident.

Quick Tests Will Not Identify Defective Breakers. Toggling the ON-OFF switch does not test the ability of the breaker to function in overload or short-circuit conditions and cannot identify which units are functional and which are not. Field testing cannot determine which breakers are defective. This can be done only through live functional testing, which is costly and must be done by a qualified professional. In many cases, it is more cost effective to replace the entire panel.

Removal Recommended. Neither visual inspection or field testing can identify which Zinsco breakers are nonfunctional; thus, leaving them in place is latently hazardous condition they cannot be relied on to function when needed. Therefore, *the only safe course of action is to replace all Zinsco circuit breakers, bus assemblies, and panels immediately with new equipment from a reliable manufacturer.*

All-New Replacements Recommended. Though it is tempting to replace individual Zinsco breakers with “replacement” or “compatible” Zinsco breakers, this is *not advised*. Do not use “refurbished” or “replacement” Zinsco breakers; many of these are salvaged and not safe to use. Do not use “new old stock,” which is the same as the product that needs to be replaced.

CAUTION: *Only a qualified, licensed electrician should attempt to move or remove the circuit breakers, open the panel cover, or move other components inside the box.*

Property owners will need to cover the replacement costs (typically \$750 to \$3000). This may include coordinating with local utility company to ensure suspension of service to the building during replacement. Property insurers that are focused on good risk management practices have recognized this hazard and will require that property owners replace the entire panel before an insurance policy can be issued or renewed.

The information in this *Risk Alert* was adapted from published, publicly-available sources. Readers are advised to consult a licensed professional electrician or engineer in matters relating to the topics described herein. For more information on Zinsco circuit breakers, including the references for this *Risk Alert*, request Sequoia Risk Management Guide SRMG-022, *Zinsco Circuit Breakers: What's the Risk?*