

## RISK CONTROL SERVICES

DEFECTIVE ELECTRIC PANELS  
AND CIRCUIT BREAKERS



---

# Defective Electric Panels and Circuit Breakers

## Here's what you need to know

### FPE Stab-Lok Breaker Panels

From the 1950s until the 1980s, Federal Pacific Electric Company (now defunct) marketed and distributed millions of its FPE Stab-Lok® residential circuit breaker panels in the U.S. The problem? These units often fail to trip during overcurrent and short circuit situations, which can lead to electrical fires. A lawsuit in early 2002 ruled that FPE knowingly distributed these circuit breakers, which did not meet UL standards, even though the units carried UL-approved labels. (FPE was found to have falsified its UL testing.)

### Why Are These Panels So Dangerous?

In a standard operational circuit breaker, when an overload or short circuit occurs, the electrical power is automatically cut off; restoring power requires a manual reset. FPE's Stab-Lok breakers often fail to trip—up to 80 percent of the time, according to independent testing—resulting in long-term overloads, which can lead to an increased risk of fire and injury. Many of these systems can work fine for years and then simply stop working.

In a class action lawsuit, a New Jersey state court ruled that the company “violated the Consumer Fraud Act because FPE knowingly and purposefully distributed circuit breakers which were not tested to meet UL standards...” An expert who investigated the potential hazards of Federal Pacific Electric panels stated that under UL 489 test conditions, FPE panels fail to trip at a much higher rate than standard panels.

### How to Determine If Your Circuit Breakers Are FPE Stab-Lok Breakers

FPE Stab-Lok breakers often contain a solid orange bar on the breaker switch (see picture, next page). The system's label will also say “Federal Pacific.” Look for these labels on the outside of the breaker panel box or inside the cover with any combination of the words FPE, Federal Electric, Federal Pacific Electric, Federal NOARC, NOARK, or Stab-Lok.

# RISK CONTROL SERVICES

## DEFECTIVE ELECTRIC PANELS AND CIRCUIT BREAKERS



*Stab-Lok circuit  
breaker panels*

The Consumer Product Safety Commission closed its two-year investigation into FPE Stab-Lok residential circuit breakers around 1983 (revised 2011) because it had insufficient data to establish that the circuit breakers posed a threat. (Reliance Electric Company acquired Federal Pacific Electric Company in 1979). However, the commission advised consumers to take certain safety precautions with all circuit breakers and fuses. Here are answers to some commonly asked questions.

### **We haven't had any issues with FPE panels, so do we still need to replace them?**

Yes. Neither visual inspection nor field test can identify whether breakers are functional, which means the breakers may fail during a "safety-critical" situation. Overheating, corrosion, oxidation, strange sounds, and odors are all warning signs that the breakers are not functioning correctly. However, the absence of these signs does not mean the circuit breakers are free from defect and are working correctly.

### **Can I conduct a live-current functional test as an alternative to replacement?**

It's not a good idea. While live-current functional tests are the only test that can determine the operating status of each breaker, these tests can be hazardous even for licensed, trained electricians. That's because the test creates dangerous current overload conditions and can intensify hazards since the overload can cause the breaker to jam and increase its failure to trip in the future. The cost of testing could also exceed the cost of replacing the panel with safer equipment.

### **What should I do if I have one of these panels?**

Contact a qualified, licensed electrician to replace the panel. You should also consider ordering a full electrical inspection of your electrical system.

# RISK CONTROL SERVICES

## DEFECTIVE ELECTRIC PANELS AND CIRCUIT BREAKERS



### Square-D Circuit Breakers and GFCI Breakers

Another electrical exposure seen in residential buildings involves products from a company called Square-D. Counterfeit Square-D circuit breakers were manufactured in China and sold through Scott Electric Co. from May 2005 through May 2006; the CPSC issued a recall in June 2006. Like the Stab-Lok breakers, the recalled breakers labeled “Square D” may not trip when overloaded, posing a fire hazard.

A qualified, licensed electrician can identify this product in your building by examining the circuit breaker in the electrical panel. The counterfeit circuit breakers include Square D QO-series models 115, 120, 130, 160, 215, 230, 260, 1515, and 1520. If your building has the counterfeit breakers, contact Scott Electric Co. to arrange for a free inspection and, if necessary, a replacement refund.

In a separate notice involving Square-D products, **Square-D GFCI breakers** were recalled in June 2006 after it was discovered that early failure of an electronic component may disable the product’s electric shock protection. The recalled GFCI circuit breakers have a yellow “Push-To-Test” button and are two-pole units, which are twice the size of most branch circuit breakers. Property owners who believe they have the recalled GFCI circuit breakers should contact Square D. Replacements for the recalled units are available at no charge.



*Counterfeit Square-D Circuit Breaker*

Square-D GFCI circuit breakers that display the Square-D trademark near the circuit breaker handle are not subject to this exposure. Circuit breakers without the yellow “Push-To-Test” button are not subject to this recall.

### ZINSCO & GTE-Sylvania Circuit Breaker Panels

ZINSCO or GTE-Sylvania circuit breaker panels were popular electrical panels installed during the 1970s. In the mid-1970s, the ZINSCO company was sold to GTE-Sylvania, which continued to manufacture the product under the name ZINSCO until the product was discontinued due to safety hazards. (Design flaws were discovered in the circuit breakers—there was not an adequate connection between the circuit breaker and the electrical bus bar, so over time, as the connection loosened, the potential for overheating increased, and the breakers failed to properly trip.

# RISK CONTROL SERVICES

## DEFECTIVE ELECTRIC PANELS AND CIRCUIT BREAKERS



These defective panels may have a ZINSCO label, or possibly a Sylvania or a GTE-Sylvania label on the interior of the panel (see photos). If your building contains these panels, hire a qualified, licensed electrician to inspect the electrical system and take corrective action as necessary.



*Defective Sylvania Panels*

# RISK CONTROL SERVICES

DEFECTIVE ELECTRIC PANELS  
AND CIRCUIT BREAKERS



## Sources:

- <http://structuretech1.com/fpestab-lok-panels-are-hazardous/>
- <http://www.ismypanelsafe.com/fpe.aspx>
- [https://www.nolansinspections.com/pdfs/White-Paper\\_FPE-Stab-lok-Circuit-Breakers.pdf](https://www.nolansinspections.com/pdfs/White-Paper_FPE-Stab-lok-Circuit-Breakers.pdf)
- <https://www.cpsc.gov/content/commission-closes-investigation-of-fpe-circuit-breakers-and-provides-safety-information-for>
- [https://inspectapedia.com/electric/SquareD\\_Circuit\\_Breaker\\_Recalls.php](https://inspectapedia.com/electric/SquareD_Circuit_Breaker_Recalls.php)
- [https://inspectapedia.com/electric/Zinsco\\_Panel\\_Warnings.php](https://inspectapedia.com/electric/Zinsco_Panel_Warnings.php)

## Photo Sources:

- <http://cooper-electric.net/residential/federal-pacific-circuit-breaker-panels/>
- [https://www.google.com/search?q=federal+pacifc+circuit+breakers&safe=active&source=lnms&tbnisch&sa=X&ved=0ahUKEwih9cKKn4zYAhXpSN8KHT1yBCAQ\\_AUICygC&biw=1438&bih=939#imgsrc=diXnNJDtwsnCNM:&spf=1513348663189](https://www.google.com/search?q=federal+pacifc+circuit+breakers&safe=active&source=lnms&tbnisch&sa=X&ved=0ahUKEwih9cKKn4zYAhXpSN8KHT1yBCAQ_AUICygC&biw=1438&bih=939#imgsrc=diXnNJDtwsnCNM:&spf=1513348663189)
- <http://homeinspectionmassachusetts.com/know-your-home/federal-pacific-breakers/>
- <https://forum.nachi.org/t/gte-sylvania-or-zinsco-panel/71536>
- [https://inspectapedia.com/electric/GTE\\_Sylvania\\_Zinsco\\_Identification.php](https://inspectapedia.com/electric/GTE_Sylvania_Zinsco_Identification.php)