



SafeChurch® Electrical: Common Hazards

Some of the most common electrical hazards are often the easiest to identify and control, and are not cost prohibitive to correct. However, if left unchecked, they can lead to a major fire event for your church and congregation. The following will show the most common electrical hazards found in churches today and how to control them.

Missing Covers

Missing covers on junction boxes, switches and outlets expose energized circuits, creating arc flash, shock, and electrocution hazards. In addition, missing covers provide a path of entry into the interior of the enclosure, allowing dust, dirt, and debris to accumulate. Missing covers could allow metallic objects to fall into the circuits that could arc or lodge in a way that presents a hazard when the enclosure is opened. Covers should be provided for all these items.



Broken/Unsupported Light Fixtures

Light fixtures should be permanently mounted to the base and show no signs of damage. Light fixtures that are hanging unsupported by wiring, puts undue stress on the electrical connections. These two conditions present the potential for an electrical short, which can produce sparks that can ignite combustibles.



This image shows a broken light fixture. This exposes the wiring to physical damage, dust, dirt and moisture accumulation.



This image shows a light fixture that is unsupported, which puts undue stress on the electrical connections.

Circuit Breakers

A circuit breaker is a protective device designed to protect the circuit and equipment when it becomes overloaded as a result of too many appliances or equipment on the circuit, as well as when a short develops in a wire. The following safety precautions should be taken to prevent an electrical fire or damage associated with circuit breakers:

- All electrical breaker panels should be equipped with an appropriate cover and remain closed. Missing covers expose the circuits to dust and physical damage. If an arc or short circuit would occur, the cover will contain the sparks from igniting surrounding combustibles.
- There should not be any missing breakers or other openings between breakers. These openings allow for the potential for electrocution, physical damage, and dust and dirt to accumulate in the circuits. Spare clips should be installed in any openings in the breaker panel.
- Breakers must never be taped or physically secured in the “ON” position. If the breaker is not allowed to trip, or cannot be manually tripped, the wiring could overheat, increasing the chances of a fire.
- The electrical panel should be indexed, identifying each individual circuit breaker. The directory must identify the various receptacles, general area, or equipment serviced by each circuit breaker. This will allow for quick de-energizing of a circuit under emergency situations.



Image above shows breakers taped in the ON position. This practice should never be done.

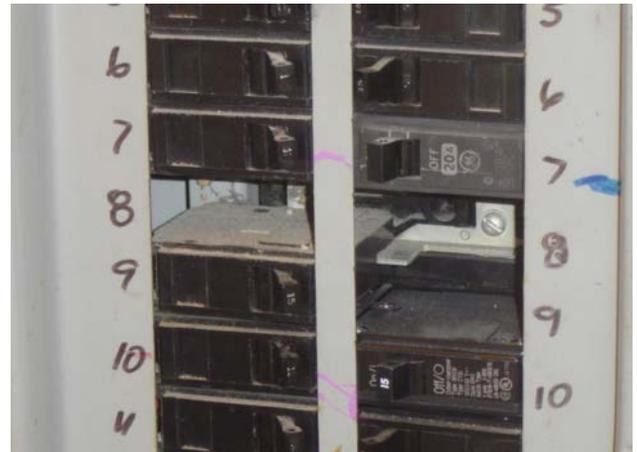


Image above shows open spaces in the electrical panel. Spare clips should be installed in these spaces.

Housekeeping

Electrical equipment can and does fail, often catastrophically, with arcing that produces large amounts of heat. Any combustible material in the vicinity of the arc flash can be ignited. The following housekeeping rules should be followed in electrical equipment areas:

- Access to electrical rooms should be limited to authorized maintenance or operations personnel that understand the importance of maintaining a clean, well-ventilated electrical area.
- Electrical equipment areas should be kept dry and equipment needs to be protected from moisture. When evidence of moisture contamination is noted, equipment should be examined for damage and necessary repairs made. The source of the moisture needs to be identified and eliminated.
- Electrical equipment areas should be clean and protected from dust and dirt. When evidence of dust and dirt is noted, equipment should be examined for damage, cleaned and any necessary repairs made.
- Placing storage items too close to electrical panels or near electrical equipment will restrict air circulation and impede proper cooling. Excessive heat buildup will result in premature failure and shortened service life. Storage must be no closer than 36 inches to the electrical panels, electrical equipment, ventilation vents and openings. A concerted effort should be made to reduce the number of unused items and to store items in a neat and orderly fashion.



Storage and housekeeping practices next to this electrical panel greatly increase the chances for a severe electrical fire. Note the heavy fire load associated with all of the combustible materials present.

As you can see, some of the most common electrical hazards found require only a small amount of time and effort to control. By following the safety precautions outlined above, your chances of having a fire resulting from an electrical issue are greatly reduced.

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