



CHURCH INSURANCE



Fire Safety for Churches

How to protect your ministry from fire hazards.

Your Safety is Our Priority

Thank you for taking the first step toward a safer place of worship. In this guide, you will find helpful tips, practical advice and real-world examples you can use to continue building your ministry's safety program.

At GuideOne Insurance, we have unparalleled first-hand experience in safeguarding faith-based organizations. The material you will find here is based on nearly 50 years of safety inspections and claims service for thousands of places of worship of all denominations across the country.

This guide represents just one area of a ministry's overall safety plan. Any reliable risk management program should also include a comprehensive insurance package based on specific coverage needs for common areas of risk. For more information on how you can protect your place of worship and the people you serve, please visit **GuideOne.com**.



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Arson & Fire Prevention

Arson Prevention

In a recent report from the U.S. Fire Administration, arson is the fourth most common cause of commercial building fires, with 8,800 fires set in 2014. The mental and emotional loss of a church building due to arson can be as great as the physical damage itself. For churches insured by GuideOne, the average damage incurred in arson incidents from 2013 to 2015 exceeded \$270,000.

Your facility can decrease the chances that an arsonist will strike by undertaking an arson and crime prevention program. This fact sheet provides information on why churches and religious organizations are vulnerable to arson and what they can do to protect themselves from this crime:

Why Churches and Religious Organizations Are Vulnerable

- ✓ Buildings are often unoccupied.
- ✓ Activity schedules are predictable.
- ✓ Security systems are often lacking.
- ✓ Arsonists, vandals and other criminals often target churches because of their beliefs.

Reducing the Risk of Arson

Building Exterior

- Illuminate exterior buildings, doors and parking lots from sunset to sunrise.
- Consider the installation of motion-activated lighting near doors and windows.
- Keep doors and windows locked when the building is unoccupied.

The 5 L's of Arson Prevention

- | | |
|-------------------|------------|
| 1 Lock Up | 4 Lighting |
| 2 Landscaping | 5 Lookout |
| 3 Law Enforcement | |



- Trim shrubs and trees around windows and doors to eliminate potential hiding places for arsonists and criminals.
- Keep track of and limit the disbursement of building keys.
- Make sure doors are of solid core (not hollow) construction and are outfitted with quality deadbolt locks and, if hinged on the outside, tamper-proof hinges.
- Use wire-mesh glass in windows for additional protection from break-ins.
- Do not store ladders and tools outside the building at the end of the day.
- Keep the property free from trash and other potentially combustible debris.
- Consider installing video security cameras at entrances and other key areas.
- Park church vehicles in differing locations on the property throughout the week to vary routine.

Building Interior

- Leave interior entry lights on overnight.
- Make sure that flammable liquids are stored in a locked closet or cabinet away from any heat sources, such as heating or air conditioning equipment.
- If possible, install a central-station-monitored security/fire detection system and sprinkler fire-suppression system.
- Consider the use of timers for lights and/or radios during evening hours.
- Look for items that appear out of place or out of the ordinary.

General Precautions

- Ask neighbors to alert police if anything suspicious is seen on church property.
- Develop positive relationships with local law enforcement and invite them to patrol the property during the overnight hours.
- Establish a “Church Watch” program in which members volunteer to drive through the property at various times throughout the week.

Other Ways to Reduce the Risk of Fire

Have the electrical and heating systems inspected by a qualified service person once a year.	<input type="checkbox"/>
Install a lightning protection system.	<input type="checkbox"/>
Keep extension cords, temporary wiring and combustible decorations to a minimum.	<input type="checkbox"/>
Examine electrical lighting sets and extension cords for defects before each use.	<input type="checkbox"/>
Never store gasoline-powered equipment or gasoline in an inhabited building.	<input type="checkbox"/>
Store flammables in a UL-listed cabinet, approved for storing flammables.	<input type="checkbox"/>
Remove trash daily; and keep outdoor trash containers a safe distance from the building.	<input type="checkbox"/>
Use a Fire Prevention Checklist.	<input type="checkbox"/>

Did You Know?

After Sunday, Saturday is the most common day for fire to occur at places of worship or funeral properties.

Checklists can be an effective tool to provide a safer environment. Answer the following questions relating to external, internal and awareness measures you can take to determine how well your facility is safeguarded to discourage unauthorized entry and encourage early fire detection. A “NO” answer indicates an area that may warrant further examination.

Fire Prevention Checklist

External Measures	Yes	No
Does lighting sufficiently illuminate all sides of buildings and parking areas?	<input type="checkbox"/>	<input type="checkbox"/>
Do all exterior doors have non-removable hinge pins?	<input type="checkbox"/>	<input type="checkbox"/>
Are open crawl spaces protected?	<input type="checkbox"/>	<input type="checkbox"/>
Is access to roofs, fire escapes and outside stairways limited to authorized persons?	<input type="checkbox"/>	<input type="checkbox"/>
Is shrubbery trimmed to prevent it from being used for hiding?	<input type="checkbox"/>	<input type="checkbox"/>
Are loose materials and trash removed daily?	<input type="checkbox"/>	<input type="checkbox"/>
Are windows and glass entries protected with wire mesh, bars or Lexan?	<input type="checkbox"/>	<input type="checkbox"/>
Is there fencing or controlled access to property?	<input type="checkbox"/>	<input type="checkbox"/>

Internal Measures	Yes	No
Are foyer and hall lights left on at night?	<input type="checkbox"/>	<input type="checkbox"/>
Are windows and doors equipped with proper locks, jams and/or deadbolts?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a central-station alarm system for notification of fire, smoke or breach of security?	<input type="checkbox"/>	<input type="checkbox"/>
Are personnel assigned to secure the building daily (for example, locking doors and windows and activating security systems)?	<input type="checkbox"/>	<input type="checkbox"/>
Are personnel assigned to check for unauthorized occupants?	<input type="checkbox"/>	<input type="checkbox"/>
Are building keys controlled by a strict sign-out policy and marked “Do not duplicate”?	<input type="checkbox"/>	<input type="checkbox"/>
Are locks changed or re-keyed when keys cannot be retrieved?	<input type="checkbox"/>	<input type="checkbox"/>
Are valuable objects and combustible materials securely locked away from sight?	<input type="checkbox"/>	<input type="checkbox"/>

Awareness measures build teamwork and ownership attitudes among members	Yes	No
Do the police routinely check premises?	<input type="checkbox"/>	<input type="checkbox"/>
Is the house of worship or organizational facility involved in local “Neighborhood Watch” programs?	<input type="checkbox"/>	<input type="checkbox"/>
Are members and personnel made aware of building use, security and fire prevention measures?	<input type="checkbox"/>	<input type="checkbox"/>

Commercial Kitchen Fire Safety

Commercial-grade kitchens are a common feature found in many churches today, as religious institutions are providing meals for daycares, soup kitchens, meals on wheels and other similar operations. When a church chooses to add the responsibility of operating a commercial-grade kitchen, many safety considerations should be addressed, including food safety, employee and volunteer safety, and fire safety. This fact sheet addresses the particular issues associated with providing adequate fire safety for your church kitchen.

Commercial Kitchens

Commercial cooking operations are defined as kitchens that have cooking equipment that produces grease and grease-laden vapors. This includes flat grills, char broilers and deep fat fryers. The typical residential range (electric or gas) would not be considered a grease-producing appliance. Other equipment, such as ovens, microwaves and steam kettles, also fall into the non-grease-producing appliance category. The following is information regarding two of the most common types of equipment that produce grease and/or grease-laden vapors.

Deep Fat Fryers

Deep fat fryers are a major cause of kitchen fires. Oil can splash and easily come into contact with an open flame from an adjacent piece of cooking equipment, such as a gas-fired range top. A 16-inch clearance must be maintained between the deep fat fryer and the open flame cooking equipment. If a 16-inch clearance is not possible, a vertical steel barrier extending 12 inches above the top of the deep fat fryer or open-flame appliance(s) can be used as an alternative means of protection.

The normal temperature range for food-service frying is 325 to 375 degrees Fahrenheit. As the oil temperature increases, so does the risk of an accidental grease fire. All deep fat fryers



This photo illustrates the correct installation of a metal baffle plate between the open flames from the range and the deep fat fryer. Metal baffles should be used only when there is not sufficient space available to provide a 16-inch clearance between the deep fat fryer and any source of open flames.

should be equipped with a high-temperature limiting device, which will shut off the fuel or energy in the event the cooking oil exceeds a temperature of 475 degrees Fahrenheit.

Flat Grills/Griddles

Flat grills and griddles are typically used for frying hamburgers and bacon. When used for this type of cooking, grease and grease laden vapors will be produced. To adequately control the fire hazard associated with these types of cooking operations, two fire-protection components must be installed: a hood and ventilation system and an automatic extinguishing system.

Hood and Ventilation System

A kitchen hood and ventilation system will include an exhaust hood or canopy, ductwork, fan system and a means of providing adequate make-up air. This system will effectively remove the heat, grease and grease-laden vapors from the cooking area.

Installation

The hood and ventilation system should be professionally installed according to National Fire Protection Association Standard 96 (NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations).

Local fire officials also should be consulted, as additional requirements under county and/or municipal codes could apply.

The hood must be equipped with the appropriate grease-removal filters. Only baffle-style filters comply with NFPA 96 and should be used in cooking operations that produce a moderate to heavy amount of grease. Mesh filters are not appropriate for commercial cooking operations and do not comply with NFPA 96. Filters should be cleaned regularly to prevent the buildup of grease.

Lighting units should be equipped with tight-fitting protective globe lights with steel enclosures that are mounted on the outer surface of the hood. All electrical equipment should be installed in accordance with NFPA 70 National Electric Code by a licensed electrician.

Maintenance

Hoods, grease-removal devices, fans, ducts and other equipment should be serviced by a qualified contractor at intervals necessary to prevent the accumulation of grease. Frequency of cleaning will depend upon the amount of grease observed during an inspection. A six-month interval is standard, but unusually heavy grease accumulation may require more frequent cleaning.

A written cleaning schedule should be established indicating the methods of cleaning and the time intervals.

Following the inspection or cleaning, a label indicating the date cleaned and the name of the servicing company should be prominently displayed. It is recommended that this label be attached to the exterior of the hood in a visible location.

Did You Know?

According to the U.S. Fire Administration, cooking was the leading cause of commercial fires (29 percent) in 2013.*

*Causes of nonresidential building fires are presented in more detail as part of USFA's Nonresidential Building Fires Estimate Summary Series (2005-2014), available at https://www.usfa.fema.gov/downloads/pdf/statistics/nonres_bldg_fire_estimates.pdf



Left: An example of kitchen appliances that are properly equipped with an appropriate hood and ventilation system.

Right: This photo shows ductwork from a cooking area that has a heavy accumulation of grease. Maintaining and cleaning the hood and ventilation system is crucial, as the buildup of grease can become a serious fire hazard. The hood and ventilation system should be inspected and cleaned by a certified contractor every six months.



These photos are examples of two different brands of automatic extinguishing systems that contain a liquid extinguishing agent. Ansul and Range Guard are two well known manufacturers. Also, note the inspection tag on the unit to the left. This is the inspection tag that the servicing company will leave after they service the system every six months.

Automatic Extinguishing System

All cooking equipment that produces grease or grease-laden vapors should be equipped with an approved automatic extinguishing system.

The automatic extinguishing system should meet the Underwriters Laboratory (UL) 300 standard. UL 300 went into effect in 1994 to deal with the high-temperature oils used in cooking today. Dry-chemical systems do not adequately extinguish grease fires associated with using these high-temperature cooking oils.

The automatic extinguishing system should be inspected and serviced every six months only by a qualified contractor.

A minimum of one manual activator should be installed. The activator is to be used if a fire occurs and the automatic extinguishing system fails to activate.

The manual activator must be accessible in the event of a fire and located along a route of egress from the kitchen area.

Kitchen staff must be thoroughly trained on the proper operation of the manual activator.

The automatic extinguishing system must be interconnected to an automatic fuel/power shutoff that cuts all fuel/power from the cooking equipment immediately after the automatic extinguishing system activates.

Prohibit the operation of cooking equipment when the extinguishing system or exhaust system is non-operational or otherwise impaired.

Did You Know?

One out of four fires start in the kitchen or cooking area.



These photos are examples of manual activators that should be used if the automatic extinguishing system fails to activate. Such devices should be installed away from the cooking surface, next to an entrance/exit for the kitchen. Kitchen staff should be aware of this manual activator and trained on its use. Also note the inspection tag. Many fire service companies place these tags on the manual activator to indicate current servicing.

Fire Extinguishers

Wet-chemical fire extinguishers are the best portable extinguisher available for kitchen operations. K-rated extinguishers are recommended for commercial kitchens. They operate in the same manner as a UL300 pre-engineered restaurant fire extinguishing system. The agent discharges as a fine mist, which helps prevent grease splash and fire re-flash, while cooling the appliance.

The fire extinguisher should be located no more than 30 feet from the cooking area.

Fire extinguishers should be maintained at regular intervals; at a minimum of once per year, or when specifically indicated by a manufacturer's recommendations. Maintenance should be conducted only by an approved/licensed contractor. Servicing is intended to give maximum assurance that an extinguisher will operate effectively and safely.



These pictures are of a portable K-rated fire extinguisher. A class K fire extinguisher is designed to better control grease and other kitchen-related fires. If a kitchen contains any grease-producing appliances, a portable Class K-rated fire extinguisher should be installed in the kitchen in a visible and easily accessible location.

General Housekeeping

The kitchen's floors and walls around cooking appliances should be periodically cleaned to prevent the accumulation of grease. Frequency of cleaning will depend upon the frequency and type of cooking being conducted; however, a minimum of once a week is recommended.

Floor and wall coverings surrounding the cooking equipment should be of an appropriate material that will prevent grease saturation and be easy to clean and maintain. Examples of appropriate material include ceramic tile on floors or stainless steel on walls.

Location, Location, Location

An approved fire extinguisher should be provided for every 3,000 square feet of space and the distance to any one extinguisher should be no more than 75 feet.

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 for your church and congregation. Following are 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 put undue stress on the electrical connections. These two conditions present the potential for an electrical short, which can produce sparks that can ignite combustibles.



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

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

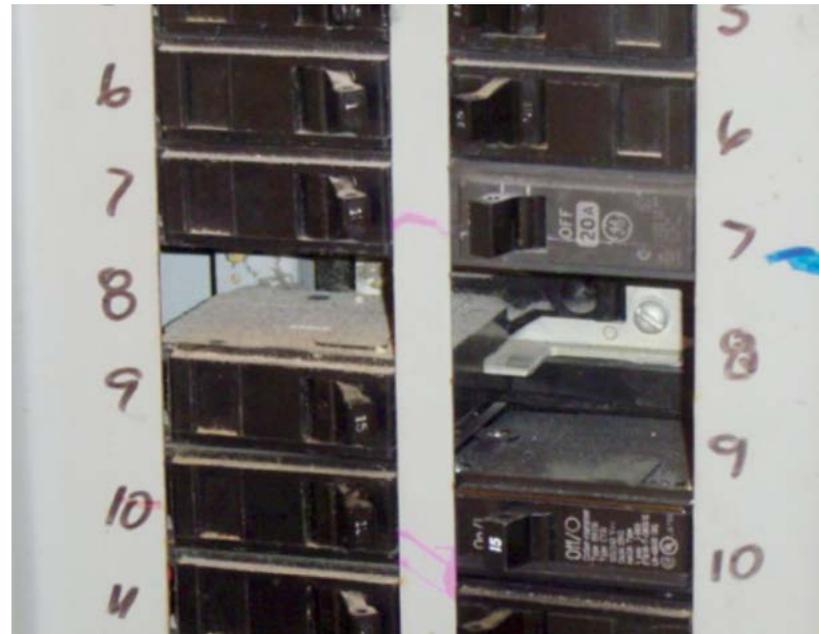
Circuit Breakers

A circuit breaker is a protective device designed to protect the circuit and equipment when they become 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. Indexing enables quick de-energizing of a circuit under emergency situations.



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



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

Maintenance Matters

Inspect smoke detectors, fire extinguishers and sprinkler systems regularly – at least once a year and according to manufacturer instructions.

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 who understand the importance of maintaining a clean, well-ventilated electrical area.
- Electrical equipment areas should be kept dry and equipment 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 should 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 from 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 of combustible materials next to this electrical panel greatly increase the chances for a severe electrical fire.

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 problem are greatly reduced.

Electrical: Fuses

A fuse is a device designed to stop the flow of electrical current to protect the circuit and equipment when they are overloaded as a result of too many appliances and/or equipment on the circuit. It also provides protection when a short circuit develops in a wire or a ground fault.

Fuses are common in church buildings primarily due to the fact that they are older and were built with electrical services protected with fuses. Even if the main electrical service has been updated to circuit breakers, the use of fuse-protected sub-panels is fairly common.

Fuses can be safe; however, it is recommended that fuses be replaced and updated to circuit breakers. If this is not feasible, the following safety precautions should be followed.

Electrical Inspection

The presence of fuses indicates that the electrical service was installed before 1970 and is over 30 years old. This wiring was installed to meet electrical needs. With the added power demands in today's world, such as appliances, and office and audio visual equipment, this older wiring may not be adequate. A certified electrician or licensed electrical contractor should be hired to inspect the electrical system. This inspection will identify the electrical demands needed and any corrections that are necessary. This should be completed, at a minimum, once every three years.



Typical screw-in fuse panel.

Tamper-Proof Fuses

More often than not, a blown fuse is the result of an overloaded circuit. This means that there is too much electrical demand on the circuit. If the fuse is continually blowing, there is a much more serious problem, and a certified electrician or licensed electrical contractor should be hired to correct the problem.

However, an all too common practice to stop a fuse from continually blowing is to install a higher-rated fuse, for example, a 15-amp fuse with a 20-amp fuse. This is

a recipe for disaster, as this allows more current into the circuit than it was designed to handle, which can lead to overheating of the wire and probable fire.

To prevent mismatching or over-fusing of the circuit, Fustat® fuses – also called type “S” tamper-proof fuses – should be installed for all screw-in fuse panels. These come in different amperage sizes, and each tamper-proof fuse will only screw into the correct tamper-proof base. This will prevent installing a higher-rated amp fuse into a lower-rated amp circuit.



Fustat® fuses, (also called type S) as shown in the image on the left, are not interchangeable, meaning you cannot install a 20-amp fuse into a 15-amp base. The base adapter on the right screws into any fuse socket.

Screw the Fustat® into the base adapter (as shown on the right), and then screw the combined assembly into the socket on your electrical panel. The next time you unscrew this fuse, its base adapter will stay in place and will only accept the Fustat® fuse in the correct amp rating.



This image shows a piece of metal tube that was inserted in the middle circuit. This is being used as a conductor and was most likely installed because the existing fuse kept blowing. This practice should never be done.

Fake Fuses

Inserting cartridge-style fuses into copper/metal tubes (to create fake fuses) is an extremely dangerous situation, since this does not provide over-current protection. If the circuit is not protected, you increase the potential for a fire to occur, arcing and electrical shock. If a fuse has to be replaced, always install properly matched fuses. If the fuse is continually blowing, as earlier discussed, this is an indication of a serious problem and should be corrected by a certified electrician or licensed electrical contractor.

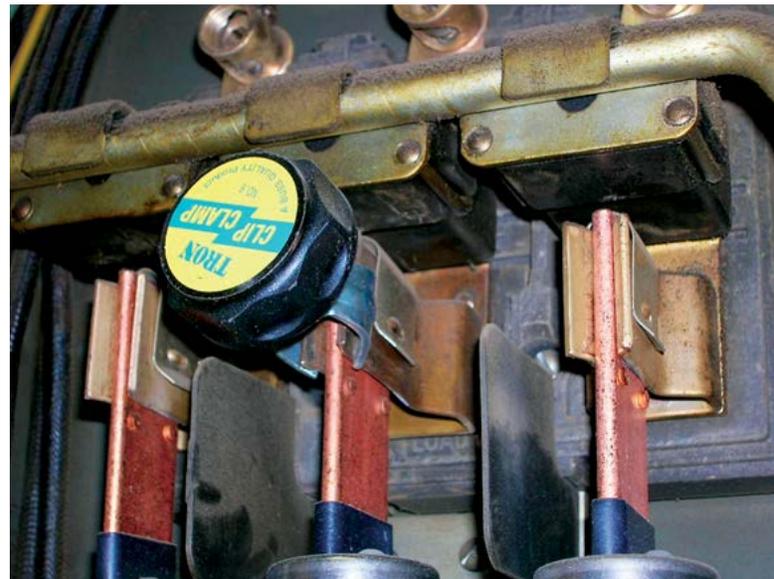
Renewable Fuses

A renewable fuse is a cartridge-style fuse. If the fuse is blown, the cap is unscrewed and the link can be replaced, allowing the fuse to be reused. Once the link has been replaced, the mechanical connection between the link and the fuse cap can become loose, dirty, corroded or otherwise faulty, resulting in a connection that can generate heat in the hundreds of degrees and cause the insulation on the conductor to deteriorate. Once the conductor makes contact with the metal of the panel or the conduit, a short circuit occurs, which can result in arcing and fire. Renewable fuses should not be used and should be replaced with one-time use standard fuses.

Fuse Clip Clamps

Fuse clip clamps – also known as torpedo or depth charge clamps – were originally used on submarines and some warships in World War II. Their purpose was to prevent fuses from coming out of the clips during depth charges or other explosions. Today, they are used in some older buildings in an attempt to press the clip to the fuse blade. This is an indication that the clamp does not have enough compression to make solid contact with the fuse cartridge blade, which can lead to resistance to current flow. This makes the clamp and blade elevate in temperature, and can lead to fire. Clip clamps should not be used and a certified electrician or licensed electrical contractor should be hired to replace the clips.

The presence of fuses in the electrical system indicates older wiring, and every attempt should be made to replace fuses with circuit breakers. If this is not financially feasible, and the above-mentioned guidelines are followed, your chances of an electrical loss from fuses will be reduced.



Top: This image shows a renewable fuse and its components. The element is inserted into slots on the top and bottom of the fuse, and the threaded caps screw on and apply pressure to the element. (Photo courtesy of Hartford Steam Boiler)

Middle: A renewable fuse is a cartridge-style fuse that can be identified by labeling (image on left) and/or by the end caps that can be unscrewed (image on right).

Bottom: This image shows a clip clamp being used to eliminate the heating that was being caused by high-resistance connections inside the fuse. The problem is the clips do not have enough compression and should be replaced. (Photo courtesy of Hartford Steam Boiler)

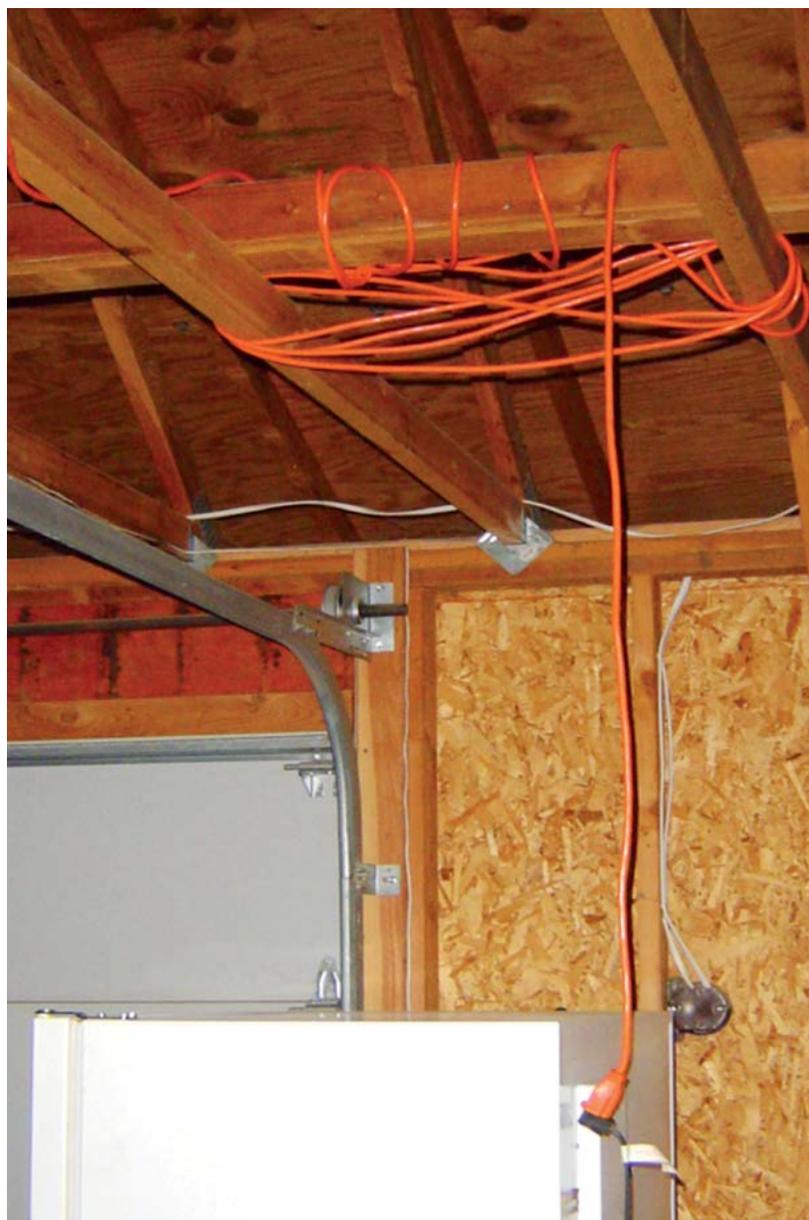
Electrical: Temporary Wiring

The use of temporary wiring can most likely be found in every religious organization due to increased electrical demands and lack of available electrical outlets, especially in older buildings. Temporary wiring includes extension cords, power strips, multiple outlet adapters and inadequate wiring. Temporary wiring is an easier and less expensive solution than having additional electrical services installed; however, “temporary” usually becomes the permanent solution, and can lead to electrocution, short circuit, overloading and fire. Take this recent loss for example:

During a funeral service, the church’s electronic carillon system was not tolling properly. The pastor returned to the church later that afternoon only to find the driveway blocked by fire trucks and a fire burning in the sanctuary. Investigation found that a lightweight extension cord was run under the carpet of a doorway and was supplying power to the carillon control box for the past 20 years. Years of foot traffic slowly broke down the insulation on the cord, allowing the wires to come in contact with each other. This caused a short circuit and arc, which started the carpet on fire and spread quickly to the sanctuary. Estimated dollar loss was \$1.4 million.

Extension Cords

- Never cut off the ground pin to connect a three-prong appliance cord to a two-wire extension cord or receptacle. Use only three-wire extension cords for appliances with three-prong plugs.
- If an extension cord’s insulation has been damaged, stop using the cord. Never try to repair a damaged extension cord with electrical tape.
- Never plug multiple extension cords into each other.



- If a cord feels hot or if there is a softening of the plastic, the cord is drawing too much power and the plug wires or connections are failing, which could present a fire or shock hazard. The extension cord should be discarded and replaced.
- Extension cords should never be nailed down, stapled, run through walls, under rugs or across doorways.
- Avoid placing cords where someone could accidentally trip over them.
- Never use an extension cord while it is coiled, looped or tied in a knot.
- Never place an extension cord where it is likely to be damaged by heavy furniture or foot traffic.
- Use special, heavy-duty extension cords that are designed for high wattage appliances, such as air conditioners and freezers.
- Purchase extension cords from reputable distributors and retailers, and check products to ensure that a nationally recognized testing laboratory, such as Underwriters Laboratories (UL) or Canadian Standards Association (CSA), has certified the product.
- Outside, use extension cords rated for outdoor use.

Power Strips

Power strips are extension cords with multiple receptacles. These are most commonly used where multiple outlets are needed, such as for office and audio/visual equipment. The safety precautions outlined for extension cords also apply to power strips. Additional precautions for power strips include:

- Only use power strips that have built-in circuit breakers that will trip if overloaded or shorted.
- Do not plug high-power-demand appliances, such as refrigerators, microwave ovens or wall air conditioning units, into power strips. These types of appliances should each have a separate electrical outlet.
- If the power strip feels hot, it should be discarded and replaced. This is a good indication that the electrical load is too high and should be evaluated.
- Do not locate a power strip in any area where the unit would be covered with a rug, furniture or any other item that would inhibit air circulation.
- Under no circumstances should one power strip be plugged into another power strip, also known as daisy chaining. If the electrical demand gets to that point, it is definitely time to call an electrician.



This image shows two power strips that have been plugged into each other, also called daisy chaining. This practice should not be permitted.

Watch Your Wires

Electrical problems accounted for \$3.6 million in GuideOne property claims in 2011.

Multiple Adapters

Multiple adapters enable plugging in several appliances at once and more often than not are not protected with a built-in breaker. This can cause overloading and overheating of the circuit. Multiple adapters are not recommended for use.

Inadequate Wiring

Do-it-yourself temporary wiring is never recommended. Consider these reasons:

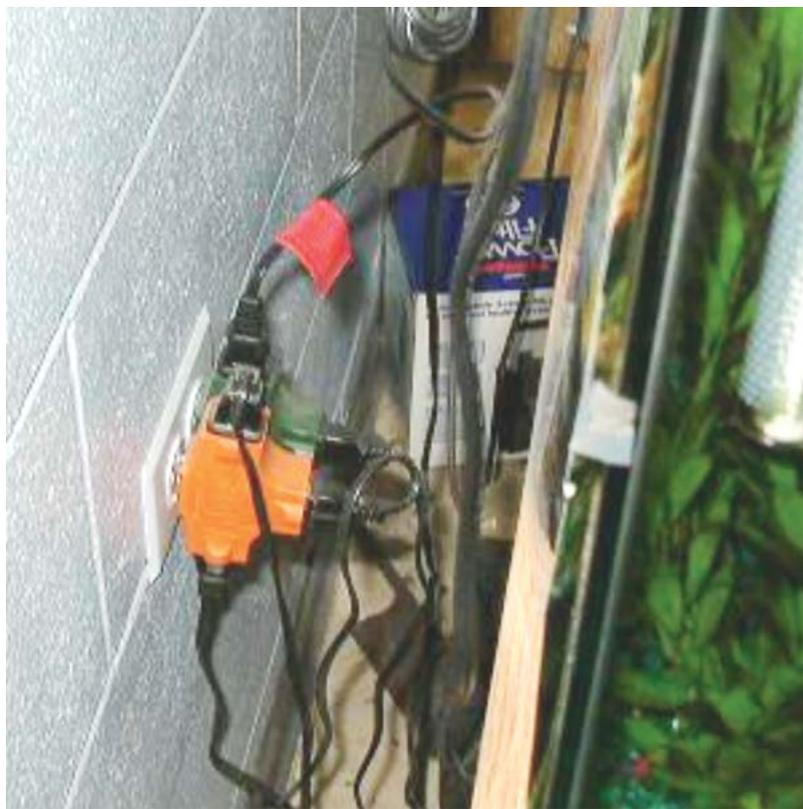
- Wiring extension cords directly into electrical panels is in violation of national and local electrical codes.
- Making your own extension cords or power strips has no testing conducted by nationally recognized testing laboratories and may not be properly sized for the voltage and current.
- Improperly installed electrical equipment or spliced wiring also should be identified as temporary.
- Any condition that involved creating your own temporary wiring solutions should be immediately removed from use.

Temporary wiring should be just that, temporary. The use of extension cords, power strips, multiple adapters and homemade variations of such indicates that additional electrical services are needed. They are not designed to be installed in a permanent manner, and if this becomes the case, a licensed electrical contractor should be hired to install additional electrical services.

Did You Know?

Only 31% of fires occur between 9 p.m. and 9 a.m., but these accounted for 65% of property damage.*

*<http://www.nfpa.org/news-and-research/fire-statistics-and-reports/fire-statistics/fires-by-property-type/assemblies/religious-and-funeral-properties>



Bottom: This image shows several wiring hazards: a "homemade" extension cord on the floor runs under a doorway, which has an outlet installed at the end that has a power strip plugged into it that is supplying power to a window air conditioning unit. This is a fire just waiting to occur.

Sprinkler Systems

In the United States, a fire occurs in a home or building every 80 seconds; and arson is the leading cause of all commercial building fires. The thought of a fire is especially terrifying for a church. Even a small fire can cause smoke and water damage that shuts down the church for weeks. And, if the church is severely damaged or destroyed, its ministry could be disrupted indefinitely.

An automatic fire sprinkler system is one of the most effective methods of controlling or suppressing a fire. When sprinklers are present, the average property loss per fire is cut by one-half to two-thirds, compared with fires where sprinklers are not present. Sprinklers are generally highly reliable; and when present in the fire area, they operate in all but seven percent of fires large enough to activate the system. Human error was a factor in almost all of the failures.

This fact sheet will cover items that should be addressed to help ensure your sprinkler system will properly function if a fire would occur.

Inspection and Servicing

Have an annual inspection and service performed by a fire protection contractor.

- Service should include an annual flow test.
- Keep records of these tests on file.

Train the church custodian, maintenance personnel or members of the Church Safety and Security Team to visually inspect the sprinkler system each month.

- Training to make the monthly inspection can be obtained from the sprinkler service company.



This photo shows an example of a sprinkler system main valve. Note the inspection report attached to the sprinkler main. The report contains information on the sprinkler system, when it was last inspected and details regarding the inspection.

- The monthly inspection should at a minimum include the following:
 - The area around the sprinkler system shut-off valve is clear of obstacles.
 - The sprinkler main control valve should be in the open position.
 - Sprinkler heads should be inspected for deficiencies.
 - The fire department connection on the exterior of the building should be unobstructed and have appropriate caps covering the connection.
 - If the sprinkler system is monitored with a central station fire alarm, test the station alarm.
 - Protect the sprinkler system pipes from freezing during cold weather.
 - Wet-pipe sprinkler systems are at the greatest risk of freezing during extreme cold temperatures. If the system may be exposed to temperatures below 40 degrees Fahrenheit, provide heat to prevent the system from freezing. The use of temporary heating units, such as space heaters or salamanders, is not recommended.
 - Monitor the air temperature at all times by placing thermometers in the coldest areas of the buildings. These should be checked frequently.
 - Adding anti-freeze solution to the system can be done as long as the proper ratio of water to anti-freeze is maintained. Contact your sprinkler service contractor for specifics.
 - If a dry-pipe system is installed, make sure the dry-pipe valve control room is provided with heat.

Protect Your Pipes

Guard against freezing sprinkler system pipes by keeping rooms above 40 degrees at all times.

Sprinkler Heads

Sprinkler systems are designed to strategically locate sprinkler heads throughout the building to provide full protection by overlapping the sprinkler heads' coverage areas.

The sprinkler heads are set to operate as soon as the air temperature surrounding the heads reaches a factory-set temperature, which is generally 160 to 165 degrees Fahrenheit. Many fires will generate this temperature in as little as 45 seconds.

Factors Affecting Sprinkler Heads

Many circumstances can affect sprinkler head effectiveness, including the following:

- Corroded or painted sprinkler heads cannot respond efficiently or quickly (or may not operate at all) because corrosion or paint acts as a heat insulator preventing the fusible link from separating.
- Old-style sprinkler heads (not the modern, spray sprinkler head), which are still found in service today, are not capable of providing the fine spray required for an effective system. Many types of sprinkler heads have been recalled manufacturers. Therefore, your system should be inspected to ensure that the sprinkler heads are not a brand that has been recalled. For more information on recalled sprinkler heads, visit the Consumer Product Safety Commission Web site at www.cpsc.gov/Recalls and search for *Sprinklers (Fire)*.



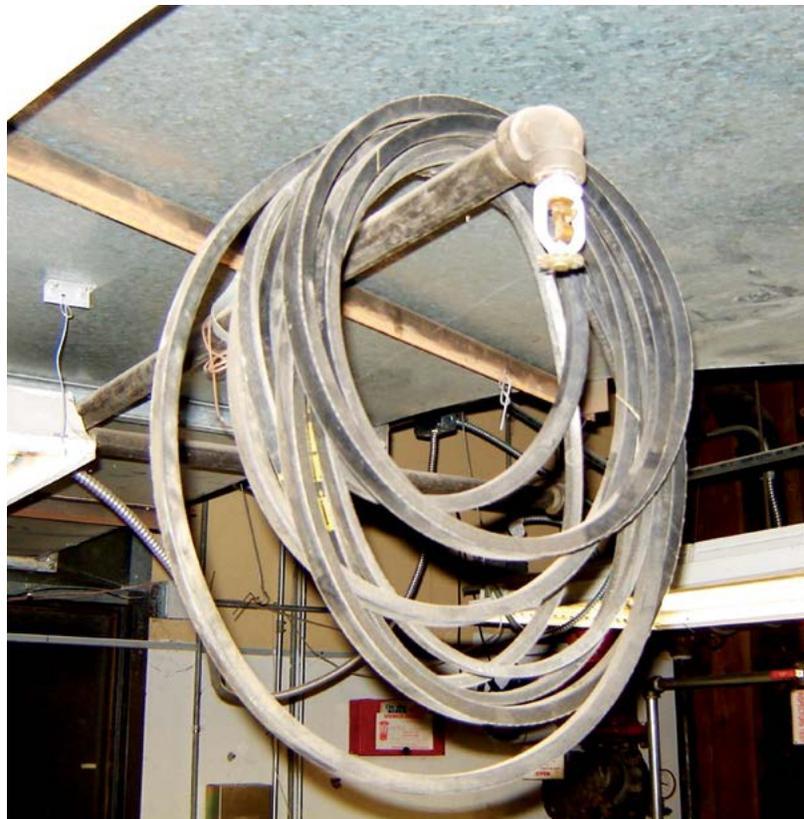
This photo is an example of a sprinkler head that was installed too close to the wall and would not have an adequate spray pattern.

- Clearance. To ensure a sprinkler head will disperse a proper spray pattern, maintain an 18-inch vertical clearance between items being stored and any sprinkler heads.
 - To help keep items from being stored within 18 inches of the sprinkler heads, a good practice is to draw a horizontal line around the entire closet, 18 inches vertically below the sprinkler heads. This eliminates any question as to how high items can be stacked.
- Items being hung from sprinkler heads.
 - Remove all items hanging from sprinkler heads.
 - Hanging holiday or other decorations from sprinkler heads could result in damaging the sprinkler head, leaving it inoperable or even changing the spray pattern, making the sprinkler head less effective.

Maintain Spare Sprinkler Heads

- Maintain no fewer than six spare sprinkler heads on the premises so that damaged sprinklers can be promptly replaced.
- These sprinklers should correspond to the types and temperature ratings of the sprinklers on the property.
- Keep the sprinklers in a cabinet located where the temperature to which they are subjected will at no time exceed 100 degrees Fahrenheit.
 - Keep a wrench in the cabinet to be used for sprinkler removal and installation.

To better protect your church against fires and to reduce the possibility of a disruption to your ministry from fire or smoke damage, sprinkler systems are a “must have.” By following the tips and recommendations on this fact sheet, your church will be better prepared to reduce damage from a fire.



Top: This photo shows an example of items being hung from the sprinkler piping. This practice would change the spray pattern and possibly cause damage to the sprinkler head.

Bottom: This photo shows a cabinet for the storage of spare sprinkler heads and a wrench for sprinkler removal and installation.

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