



WATER DAMAGE LOSS PREVENTION TECHNIQUES

FOR

CALIFORNIA-PACIFIC ANNUAL CONFERENCE OF THE UNITED METHODIST CHURCH

As your partner in managing the risk of financial loss to your ministry, we are asking every church to focus on methods available to help prevent damage to church buildings and property. The reasons we place such a high importance on this focus are:

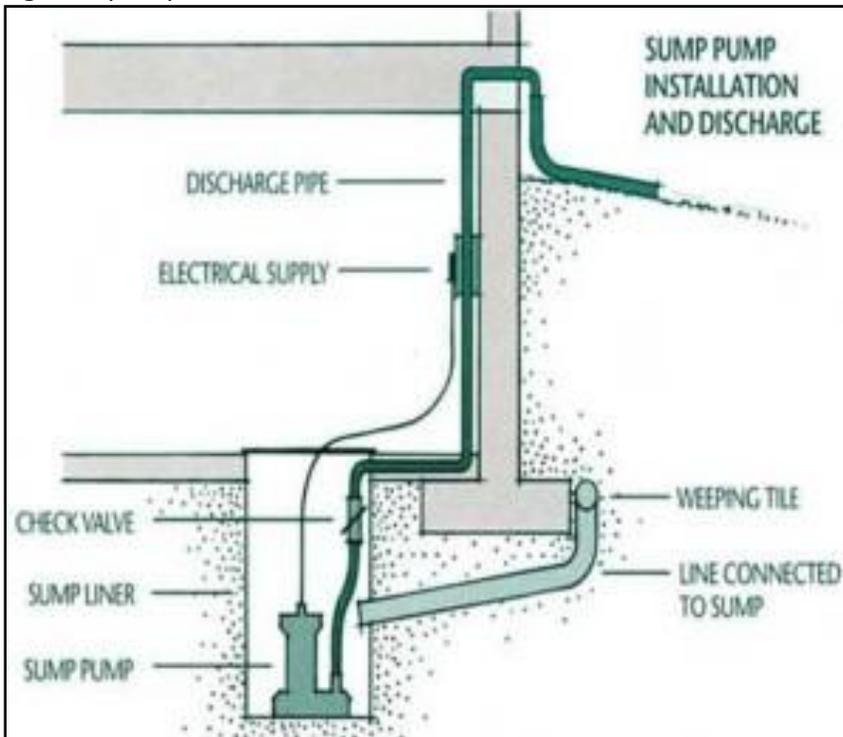
- 1. The increase in exposure to loss is often directly association with the age of the buildings and how well they are maintained.**
- 2. Within our Conference, loss due to water damage is the second highest risk in terms of property damage frequency, but the number one risk terms of severity and cost.**
 - a. More money was paid out for water damage claims than any other peril.**
 - b. There is a high deductible of \$10,000 for each and every water damage claim that must be paid be the church before the insurance policy will respond.**
- 3. Most water damage claims are preventable with proper inspections and maintenance of church facilities.**

Thank you for all of your efforts to help reduce all property claims and for your attendance at this loss control workshop. We trust the information provided in this document will help you manage the risk of loss at your house of worship.

**HUB International Insurance Services Inc.
United Methodist Service Team
House of Worship Division**

How your church can prevent water damage claims with pre-planning steps:

1. Establish, implement and provide training for written water damage prevention and control program with specific guidelines. Designate a member of your congregation to oversee the program.
2. Create a list of emergency contact information, including names and phone numbers of who to contact in the event a leak is discovered.
3. Clear drains, gutters and downspouts of debris and make sure water is directed away from your buildings. This will reduce the exposure of overflow.
4. If your church has a basement or floor below ground level, buy and install sump pumps with backup power where needed. Regularly check to make sure they are working and check for signs of pump float corrosion.



5. Identify the location of the main electrical breaker and gas shutoff valve. Make sure your maintenance team knows where they are and how to shut them off.
6. Identify the location of the main water shutoff valve and the sprinkler control valve. Make sure your maintenance team knows where they are and how to operate them.
7. Have the appropriate tools readily available in the event of an emergency.

Escaping Water

Plumbing Supply Lines

- Look for condensation around the pipes of an obvious leak.
- Watch for stains on walls or ceilings, or a musty smell.



- Pay attention to your water bill. A significant increase could mean there is a leak you don't know about.

Appliances

Refrigerator/Icemaker

- Inspect to verify installation of water supply lines is correct.
- Make sure the connect hose to the valve is tight but don't over-tighten.
- Inspect the hose every 6 months to ensure valve connection is secure and there is no sign of deterioration or damage.
- Leave a 3 to 4 inch space between the back of the refrigerator and the wall to prevent crimping.

Washing Machine (Yes, some churches have a washing machine!)

- Turn supply valves off when not in use.
- Leave 3 to 4 inch space between the back of the washing machine and the wall to prevent crimping the hose near valve connection.
- Check hoses for cracks, kinks, or blisters which are most commonly found near the hose connection.
- Replace the hoses every 5 years or less.

- Consider installing reinforced braided stainless steel hoses or hoses with automatic shut-off valves.

Water Heaters

- Schedule a professional plumbing inspection at least once a year.
- Flush the water tank every 6 months to remove sediment. If you are in an area with hard water, this should be done every 3-4 months.

Toilets

- Inspect flushing mechanism inside the toilet every 6 months. The fill valve should shut off when the float reaches a proper water level.
- Inspect the supply line every 6 months to ensure connection to the valve is secure.
- Consider installing hoses with automatic shut-off valves.

Sinks

- Inspect plumbing beneath sinks every six months. Ensure connections are secure and there are no signs of corrosion on the pipes.
- Look for kinks in copper piping which could lead to pinhole leaks over time.

Baptistry

Because baptisteries are used infrequently, problems may develop unnoticed.

- **Standard Baptisteries**
 - Before filling, check all water lines leading to it for hints of leaks and confirm the drain is closed.
 - If your baptistry has an overflow pipe, make sure nothing is covering or clogging it.
 - Stay near the baptistry while you fill it so you can turn off the water source immediately if you notice water leaking.
- **Portable Baptisteries**
 - Make sure to set the baptistry in a location that can support its weight – they can weigh up to 2 tons when full.
 - Use splash guards or place a remnant of indoor-outdoor carpeting beneath the baptistry to protect the floor.

- Do not overfill. Most portable baptisteries don't have an overflow drain to carry away excess water.
- After filling, check for leaks.

Sump Pump

- Following the manufacturer's recommended maintenance, run the sump pump every 2-3 months and clean annually prior to the rainy season.
- Open lid and remove debris that may be blocking the water inlet screen. Pour approximately 5 gallons of water into the pump and watch the float valve rise. As the float valve rises, the pump should turn on and discharge water.
- If the pump fails to operate during the inspection, contact a plumbing professional.
- Install a battery backup system in the event of power failure. Replace the batteries every 2-3 years.

Water in the building envelope

(Where the wall meets the ground – building components such as roof drains and landscape irrigation systems can put a lot of water in the wrong place at the wrong time. Every quarter, you should:

- Check all at-grade plumbing systems
- Check all at-grade drainage systems
- If you have a basement:
 - Test flood control and sump pump systems
 - Check floor drains and drainage systems
 - Check walls for signs of water staining and damage and if found, identify the source and repair it immediately
 - Check for signs of flaking concrete – this would mean moisture is seeping up through the surface of the concrete
 - Check for signs of mold
- Replace leaking fittings or drains immediately – even if they are small
- Make sure irrigation system does not spray against the foundation wall
- Clear roof drains of debris
- Make sure water elements are not at risk for vandalism
- Make sure downspouts direct water away from the foundation
- If you see any standing water on your property, investigate the source

Roof

Most church roofs have HVAC equipment, vent pipes, and even some have skylights. The following inspections should be made quarterly:

- Check all rooftop penetrations regularly from the inside and out.
- Verify the seals are good and intact around HVAC systems.
- Repair all loose or deteriorated shingles.
- Make sure flashings around skylights, vents and other rooftop elements are in good condition.
- When inspecting the roof from the underside, look for signs of daylight and/or water stains.
- Clear drains, gutters and downspouts of debris and make sure water is directed away from the building. This will reduce the exposure of overflow.
- Look for general wear and tear.



Wall Systems

The exterior walls of a building can be a significant source of unwanted water leakage. All wall penetrations provide access for water to enter. If a building is seriously damaged, a specialist may be needed to bring a wall system back up to its expected performance levels. On a quarterly basis, you should:

- Check all water penetrations for proper flashing and sealant integrity
- Check all major wall joints at windows, doors, electrical and plumbing penetrations.

Windows and Doors

Penetrations through window and door areas are common. On a quarterly basis:

- Inspect window joints and flashings on the exterior for continuous seal integrity. If the windows are part of a drainable wall system, check to ensure that flashing openings and weep holes are not clogged.

- Inspect windows on the inside for glass and air seal integrity.
- Manually test all locks, cranks and other mechanical elements.
- Check interior walls around windows for water damage.
- Inspect the caulking on the exterior of windows and doors and replace if deteriorated.



If You Discover Water in the Building

- Shut off the water supply immediately if water is flowing into the church from a burst pipe of an appliance.



- Cut off electrical service at the main breaker if the electrical system and outlets will be under water.
- Immediately remove standing water and all moist materials.
- Consult with a licensed building professional who can determine the extent of the repairs necessary. Water damage left unattended can result in structural failure and the potential growth of mold. **Call HUB International for advice and direction. 1-310-568-5986.**

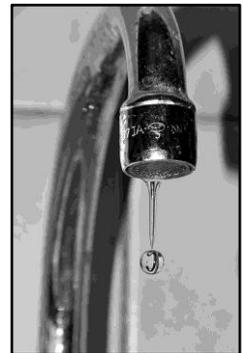
Freezing

Please don't make the mistake of thinking that since your church is located in California, the risk of freezing is minimal – it's not. Millions of dollars in damage have resulted from bursting frozen pipes that result in a flood of water. Most claims occur when the outside pipes are not properly insulated or when the thermostat inside the building is set too low. Schedule your inspection and review of church facilities at least 6 – 10 weeks prior to the cold season. The following is a list of suggestions that can be used when the weather forecast calls for an extended period of temperatures 32°F or lower. The extent of what you do will depend on the duration of cold



temperatures and how low the temperature drops. Some suggestions are permanent solutions and others are temporary, to be done only during the period of freezing temperatures.

- Provide additional insulation within outside walls at the point where piping and sprinkler heads are located and in unheated areas such as the attic.
- Inspect and confirm that church building is closed to cold air infiltration.
- Keep exterior entry and exit doors closed as much as possible during winter months.
- Create better air circulation between the warmer areas and the colder areas by removing suspended ceiling tiles or opening interior doors throughout the facility, especially in rooms that may be unoccupied or unheated.
- Have your maintenance team monitor cooler areas of the church facilities. This person should record the temperature in these areas and inspect sprinkler systems frequently for broken or cracked piping and fittings. Look for distorted or leaking sprinklers.
- Install low temperature alarms in all unheated attics and above suspended ceilings set to send a signal to your alarm panel if the temperature drops below 50°F.
- Use portable heaters in remote areas but only if monitored by a live person.
- A trickle of hot and cold water might be all it takes to keep your pipes from freezing. Let warm water drip overnight, preferably from a faucet on an outside wall.
- Check heating equipment to make sure it will still be able to maintain building temperatures above 50°F at the coldest points in the building (eaves, corners, spaces with no direct heat, etc.)



Equipment

- Provide heat tracing and insulation on water filled instrumentation and control lines.
- For air conditioning, remove water from water jackets and drain condensers of chilling agents.
- Test the heating system for proper function quarterly.

- If your church has a boiler, completely drain idle equipment and remove low points and dead ends.

Fire Protection Equipment

- Place thermometers inside buildings near sprinkler systems
- Know the location of underground fire mains. Ensure adequate depth of ground coverage is maintained, especially where construction, excavation or erosion has occurred.
- For dry sprinkler systems:
 - Low points in dry sprinkler systems should be drained after each operation and before the onset of freezing weather conditions.
 - As part of the weekly inspection, low points should be drained.
 - The dry pipe valve room should be maintained at 50°F or higher.
- Pipes for wet sprinkler systems should be protected from freezing with the use of antifreeze loops or proper heating. Insulation and caulking must be adequate to prevent cold drafts from affecting the system.
- *Automatic Sprinkler systems should not be drained except as a last resort.*
- For fire pumps:
 - Maintain pump room at 50°F or higher.
 - For diesel engine drives, the temperature should be at least 70°F.
 - If pump suction is from an open reservoir, the intake and pipe should be below the frost level underground and deep enough to prevent ice obstructions.
- Flush circulating heaters and piping for gravity and suction tanks.
- Check hydrants for tightness and repair any leaks.



Before You Leave a Building Unoccupied

- If your church is unoccupied for more than 24 hours at a time, it is imperative that you have a plan to inspect the building(s) once a day for freezing pipes during the winter months.
- **Never turn off the heat during winter months and set the thermostat no lower than 50°F.**
- If the building will be unoccupied for an extended duration, shut off the main water supply and drain the water before leaving.



- **DO NOT SHUT OFF SPRINKLER PROTECTION.** This is your only means of automatic fire control protection.

What to do if your pipes freeze

- If freezing does occur, relieve pressure buildup in the pipes between the ice blockage and the faucet. The pressure buildup is the actual cause of bursting pipes.
- If you turn on your faucets and nothing comes out, leave the faucets turned on and call a plumber.
- If you detect that your water pipes have frozen and burst, turn off the water at the main shutoff valve in the facility. Leave the water faucets turned on.
- Waterproof the area with plastic drop clothes or containers.



- Use a blow dryer to thaw the frozen pipe. **DO NOT** use any it or any electrical appliance in areas of standing water. You could get electrocuted.
- Wipe the pipe with hot cloths, starting from the area closest to the faucet and work your way backward.
- **DO NOT** try to thaw a pipe with a torch of open flame.

Other Low Cost Solutions



Water Cop - The WaterCop automatic shutoff valve installs on the main water line near the existing manual shut-off valve. WaterCop flood sensors install near water using appliances and in rooms where running water is present. When leaking water comes in contact with any of the sensors, a wireless signal is immediately broadcast to the WaterCop main valve causing the valve to close. Water flow is quickly cutoff to all areas of the home and any continuous flooding is stopped. WaterCop offers additional options including:

- A wall switch for convenient push-button main water control
- Freeze sensors to help stop damage caused by frozen pipes
- Easy integration with home security systems
- Range extending wireless repeaters

For more information: www.watercop.com or call DynaQuick Controls for dealer information: 800-545-3636

FloodSafe® Connectors

Watts has introduced a new line of FloodSafe® Auto-Shutoff Connectors. The FloodSafe's patented design protects against catastrophic water damage caused by burst, broken or ruptured water supply hoses and fittings. FloodSafe® connectors include a standard braided stainless steel flexible hose and a FloodSafe® shutoff device located on the inlet.



Problem

In recent years, losses due to water and mold damage to residential and commercial buildings have been steadily on the rise. Water supply hoses are vulnerable to a number of potential problems. Over time, hoses can become brittle and burst. Poorly manufactured hoses can break under normal pressure conditions and hoses used in public venues are highly vulnerable to tampering by vandals. All of these conditions can lead to a flood of problems for homeowners, property managers and maintenance personnel.

Solution

Watts FloodSafe® auto-shutoff connectors protect against catastrophic water damage by automatically shutting off the water supply to plumbing fixtures/appliances if excess water flow is sensed. Water flow through the FloodSafe® device is limited to a factory preset flow rate, any flow over the preset rate will automatically shutoff all flow of water through the device.

How it Works

FloodSafe® is actuated by flow of cold or hot water in excess of the design flow rate indicated on the label. Once a downstream flow of water in excess of the flow required by any standard fixture/appliance is detected, FloodSafe® assumes a burst and the flow of water is shutoff. FloodSafe® remains in the closed position until it is reset. To help illustrate this, check out the video at:

<http://www.youtube.com/watch?v=zmfDITN8Qmg&feature=share&list=UUvstduAjL4peDJar-U-8UIg>

You can find these hoses at Home Depot, Lowes and from local plumbing supply companies.

WATER DAMAGE PREVENTION INSPECTION SCHEDULE

CHURCH FACILITIES

TYPE	Weekly	Monthly	Quarterly	6 mo.	1 yr.	5 yrs.
Fire Protection						
All Water Supply Lines						
Roof (HVAC, Vents, Material)						
Wall Systems						
Windows/Doors						
Equipment (Heaters/Boilers)						
Baptisteries						
Appliances						
Water Heater Flush						
Toilets						
Sinks						
Water Heater Inspection						
Inspection by Professional Plumber						
Replace All Hoses						