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PROTECTING YOUR CHAPTER FACILITY FROM WINTER STORM DAMAGE



A resource for Fraternity and Sorority House Corporation Officers

Never Underestimate Mother Nature and the Extent of Property Damage that can be caused by Winter Storms

The fury of winter can suddenly, without much warning, cause significant damage to your chapter facility. Unexpected ice storms, freezing temperatures, heavy snow falls, and powerful wind gales can cause devastating damage including roof collapse, ice dams, frozen pipes, fires, electrical outages and flooding. Although great advances in weather forecasting generally give us some warning of winter weather watches and approaching polar vortexes, weather forecasts are not 100% accurate all the time.

Winter weather-related property claims do not only occur at chapter facilities located in the northern states, even properties in southern areas not accustomed to freezing temperatures or heavy snowfalls can be at risk. In fact, chapter facilities in areas normally unfamiliar with severe winter weather have had some of the worst claims from frozen pipes and roof damage from freezing temperatures and heavy snows.

Assessing Your Winter Risk

The best first-step to take in preventing winter storm damage to your chapter facility is to assess the exposure. Begin by asking these questions:

- 1.** Has the facility experienced any winter storm damage in previous years? If so, what precautions are needed to prevent a reoccurrence?
- 2.** What is the potential for heavy accumulations of drifting or mounding snow on the roof top?
- 3.** What is the primary exposed part of the chapter facility that normally faces prevailing winter winds?
- 4.** What interior or exterior water pipes or fire sprinkler pipes are most exposed to freezing temperatures?
- 5.** Is all recommended scheduled and preventative maintenance current on chapter facility heating systems, fire sprinkler systems, electrical systems, gutters, windows, doors, and roof?
- 6.** Is snow removal equipment operating and ready for winter use?
- 7.** Do you have a winter action plan in place should severe winter weather hit your area?

Once you have assessed your winter risk and vulnerability to potential winter storm damage, make sure your winter action plan is up to date and ready for implementation.



Why Frozen Pipes are a Problem

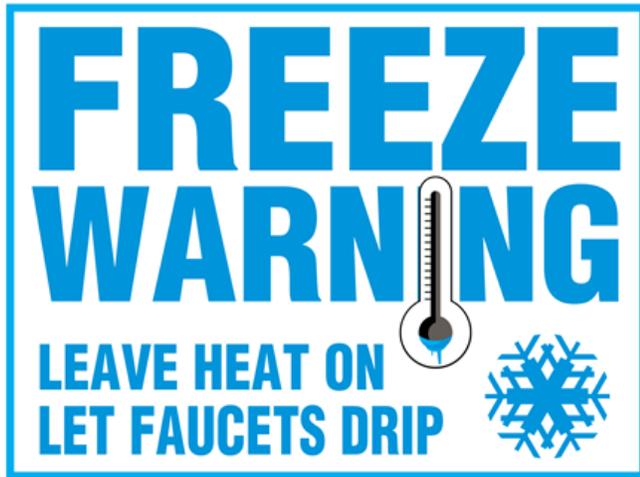
Water expands as it freezes. This expansion puts extreme pressure on whatever is containing it, including metal or plastic pipes. Pipes that freeze most frequently are those that are exposed to severe cold, like outdoor water faucets, swimming pool supply lines, water sprinkler lines, and water supply pipes in unheated interior areas like basements and crawl spaces, attics, garages, or kitchen cabinets. Also, pipes that run against exterior walls that have little, or no insulation, are also subject to freezing. A 1/8-inch crack in a pipe can leak up to 250 gallons of water a day, causing flooding, serious structural damage, and the immediate potential for mold.

In North America, frozen pipes cause significant damage every year, but they often can be prevented. Taking a few simple steps, even now, may save you the aggravation and expense.

Most Common Causes of Frozen Pipes

There are four common causes of frozen pipes in fraternity facilities:

- 1. Quick drops in temperature**
- 2. Poor insulation**
- 3. Thermostats set too low, or heating turned off**
- 4. Windows or doors left open in members rooms, bathrooms or common areas**



Prevention

There are a number of preventative steps fraternities can take to keep pipes from freezing:

- 1. Chapters and House Corporations should each appoint a Weather Monitor** that will coordinate and both check the weather forecasts daily and weekly and to be constantly on the lookout for freezing temperatures, especially temperatures that are forecasted to be at least 10 degrees colder than normal for the time of year in your area. This is especially true during any period that the chapter facility is closed for winter or spring breaks or when occupancy will be limited. Planning for unusually cold winter periods in advance and being prepared for them can prevent pipes and sprinkler systems from freezing beforehand.
- 2. Make sure all exterior windows and doors and vents are closed and leave interior doors open** in rooms, cabinets, or closets that contain plumbing appliances, faucets and valves so that warm air can circulate through these areas.
- 3. Check the insulation of pipes** in your chapter facility crawl spaces and attic. Exposed pipes are most susceptible to freezing.
- 4. Disconnect any outside garden water hoses** from external faucets.
- 5. Heat tape or thermostatically controlled heat cables can be used to wrap pipes.** Be sure to use products approved by an independent testing organization, such as Underwriters Laboratories Inc., and only for the use intended (exterior or interior). Closely follow all manufacturers' installation and operation instructions.
- 6. Seal gaps or leaks that allow cold air inside near where pipes are located.** Look for air leaks around electrical wiring, dryer vents, and pipes, and use caulk or insulation to keep the cold out. With severe cold, even a tiny opening can let in enough cold air to cause a pipe to freeze.
- 7. Use an indoor valve to shut off and drain water from pipes leading to outside faucets.** This reduces the chance of freezing in the short span of pipe just inside the facility.
- 8. During any subzero forecasts,** allowing 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.
- 9. Keep your thermostat set at the same temperature during both day and night.** Turning down the heat at night is common when brothers are sleeping, but further drops in the temperature more common overnight and is further problematic when the facility is unoccupied which could catch you off guard and freeze your pipes.

Prevention *(continued)*

10. **Open cabinet doors** to allow heat to get to un-insulated pipes under sinks and appliances near exterior walls.
11. **Install Pipe Burst Pro devices** in the chapter facility, which is a system that detects water leaks and shuts down the water supply to lessen the extent of water damage. 
12. **Install Salamander Solution** in the chapter facility, which is a system that monitors the temperature of the water in pipes and alerts your house corporation when it falls below 45 degrees providing time to address the cause before pipes actually freeze. 

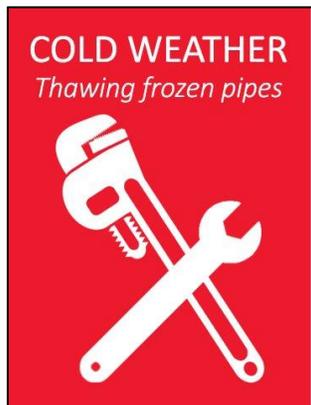


If Your Pipes Do Freeze...

Don't panic. Just because a water pipe is frozen doesn't mean it has already burst. Here's what you can do:

- If you turn on your faucets and nothing comes out, leave the faucets turned on and call a plumber.
- If your facility or basement is flooding, turn off the main water valve and immediately **call 911**.
- **NEVER touch or use electrical appliances** in areas of standing water due to electrocution concerns.
- **Try to identify where the frozen pipe is located.** Frozen pipes often have frost on them, a slight bulge or crack or ice if there is a crack and water is leaking. If the blockage is located in a part of the pipe that is easily accessible such as under a sink, it may be easier to thaw than if behind a wall or above a ceiling or under a floor.
- **NEVER try to thaw a frozen pipe with a torch or other open flame** because it could cause a fire hazard. Every year, many building fires are caused by people trying to thaw frozen pipes. All open flames in chapter facilities present a serious fire danger, as well as a severe risk of exposure to lethal carbon monoxide. **NEVER USE OPEN FLAMES TO THAW PIPES EVER!**

- **Always try to begin the thawing process near the faucet then work your way down to the blockage**, this way melting ice or steam can escape from the faucet. If you try to melt the frozen pipe on the side away from the faucet, the melting ice or snow could increase pressure on the blockage and cause the pipe to burst.
- **You may be able to thaw a frozen pipe with the warm air from a hair dryer.** Start by warming the pipe as close to the faucet as possible, working toward the coldest section of pipe. Heat lamps or hot towels can also be used.
- If the frozen pipe is located in an enclosed area such as behind a wall, above a ceiling or under a floor and is not directly accessible you can try turning the heat-up in the chapter facility, cut an opening in the enclosed area to allow heat to penetrate. You can also try to use an infrared lamp. It is also preferred to call a professional plumber or sprinkler contractor if it is a sprinkler pipe that is frozen.
- Again, if your water pipes have already burst, turn off the water at the main shutoff valve in the facility; leave the water faucets turned on and **call 911**. Make sure members and live-in advisors know where the main water shutoff valve is located and how to open and close it. Likely places for the water turn-off valve include internal pipes running against exterior walls or where water service enters a chapter facility through the foundation.
- If you have standing water, please call a water damage remediation clean-up company immediately to prevent mold and further damage to your chapter facility.
- If the chapter facility will be closed for holiday winter or spring breaks during cold weather, **ALWAYS leave the heat set to a temperature no lower than 60°F.**



KEEP THE FAUCET OPEN while applying heat to pipes using an electric heating pad, hair dryer, hot towels or a portable heater (away from flammable materials).

Never use a blowtorch, heat gun, kerosene/propane heater or any open flame device to warm pipes.

For more cold weather tips, download the free Red Cross Emergency App or visit Redcross.org.



WHEN TEMPERATURES STAY BELOW FREEZING:

- Give pipes a helping hand**
If pipes run through cabinets or vanities, open the doors to let warmer room temperatures flow in.
- Keep water working**
Keep water moving through the pipes by allowing a small trickle of water to run. The cost of the extra water is typically lower than the cost of repairing a broken pipe.

BUT IF YOUR PIPES DO FREEZE:

- Shut off the water immediately**
Don't attempt to thaw pipes without turning off the main shut-off valve.
- Thaw pipes with warm air**
You can melt the frozen water in the pipe by warming the air around it with a hair dryer or space heater. Be sure not to leave space heaters unattended and avoid the use of kerosene heaters or open flames.
- Be careful turning water back on**
Once pipes are thawed, slowly turn the water back on and check pipes and joints for any cracks or leaks that might have been caused by freezing.

Graphic Credit: Pennsylvania American Water

Roof Collapse

Whether your chapter facility is hit by a single storm with major accumulations of wet heavy snow, or a series of smaller storms that add snow on top of existing amounts, the result is the same: deep accumulations of snow on your roof can lead to overloading and collapse.

Flat roofs are generally at greater risk of collapse than angled roofs, especially from overloading caused by snow and ice.

Blocked drains, an inadequate number of drains, or poorly located drains may prevent the runoff of melting snow, which can accumulate snow, ice and water and cause the roof to collapse from weight overloading.

Collapsed roofs can damage sprinkler and water piping, electrical and gas lines possibly resulting in fire or extensive water damage. In addition to flat roofs, wood truss, multi-gable, sawtooth, canopies, or steel decking roof systems can also be at risk of collapse from snow loads that exceed capacity.

The increased incidence of major winter storms has resulted in snow accumulations greater than normal in many areas. Many chapter facilities built before 2000 may have been built to codes that did not anticipate today's weather; especially facilities located in the southern states.

Safeguarding Your Chapter Facility from Roof Collapse

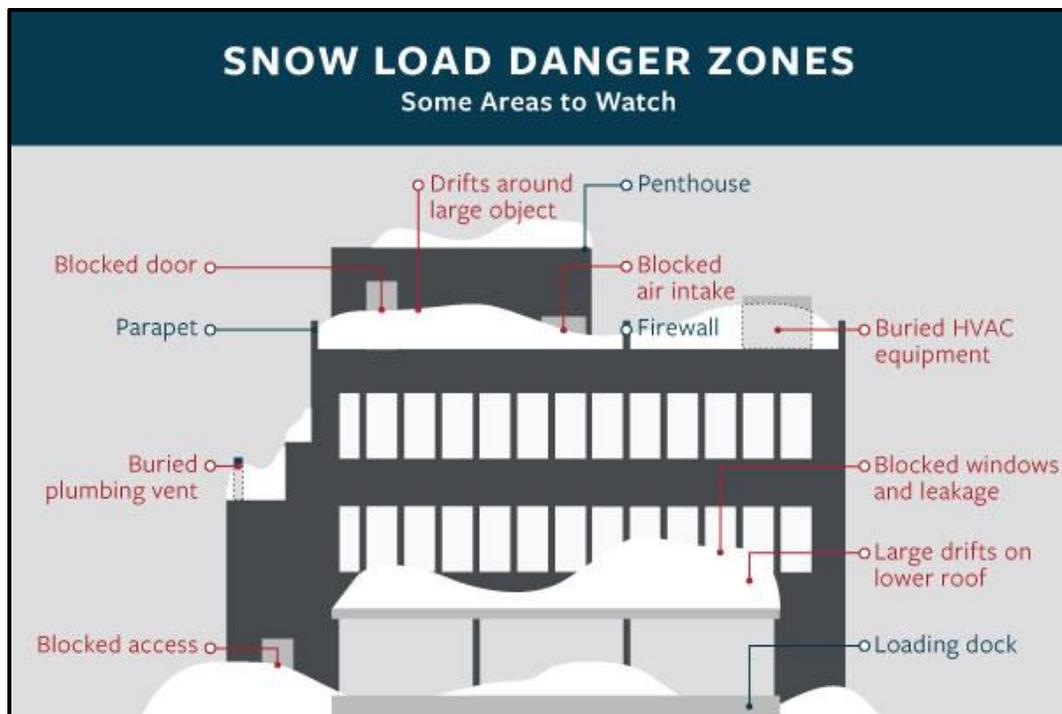
Always keep the roof well-maintained, free of excessive debris from falling branches and leaves, and ensure that all gutters and drains remain clear. If you have not had your roof inspected by a reputable roofing contractor in several years it is highly recommended that this be done every five (5)-years. The contractor should review original building design plans and confirm that the roof meets current code requirements and is designed to handle snow loads typical for your region.



Inspect the roof structure for vulnerable areas such as where drifting snow can accumulate such as areas of changing roof elevation (older building codes did not require heavier design loads for these areas).

Should you experience a severe snowstorm where heavy accumulations on your roof have occurred, **do not** allow undergraduate chapter members to go onto the roof to remove the snow. It is not worth the risk of injury to chapter members from falling, instead; hire a professional roofing contractor that is experienced and has the correct skills and equipment to remove the snow load.

NEVER ALLOW UNDERGRADUATE CHAPTER MEMBERS TO GO ONTO THE ROOF FOR ANY REASON.

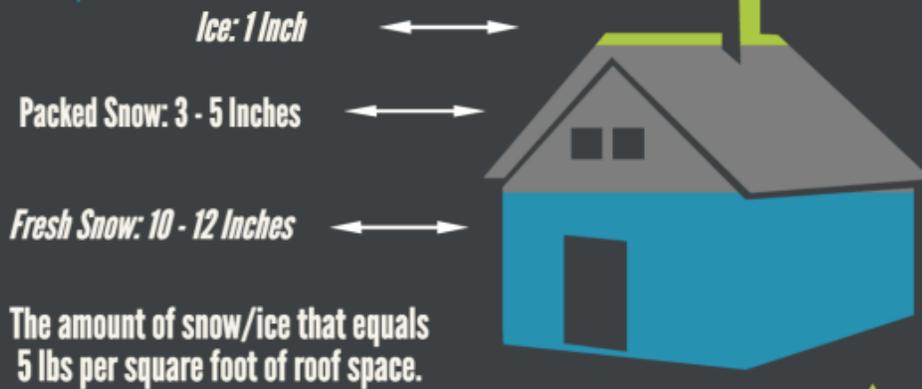


Snow Roof Risks

Severe
Winter
Weather

How much snow on your roof is too much?

Weight of Snow & Ice



A house should be able to support 20 lbs per square foot of roof space.



20 - 25 lbs

'Danger Zone'

When snow/ice on your roof exceeds this amount per square foot



Hire a Roof Contractor

Safely remove snow from your roof by hiring a professional roof contractor

Additional freezing weather guidance:
[DisasterSafety.org/freezing-weather](https://www.DisasterSafety.org/freezing-weather)





While snow-covered roofs can make for a picturesque winter scene, the combination of freshly fallen snow with the melting and refreezing of snow can place stress on the roof of your chapter facility. If more than a foot of heavy, wet snow and ice have accumulated on the roof, you should have it removed.

Snow Removal Tips

Clearing the snow off your roof from the gutters or eaves upwards of three to four feet after each winter storm can help prevent ice dams from forming. Remember, NEVER USE a ladder in snowy and icy conditions. This can be extremely dangerous and is best left to professionals.

For Flat Roofs:

Remember to put safety first, always leave flat roof snow removal to professionals.

For Sloped Roofs:

It may be possible to remove the snow and ice from your sloped roof using a **roof rake - a long-handled tool designed specifically for this purpose** (pictured above). Stand on the ground and pull as much of the snow off the eaves as you can safely reach.

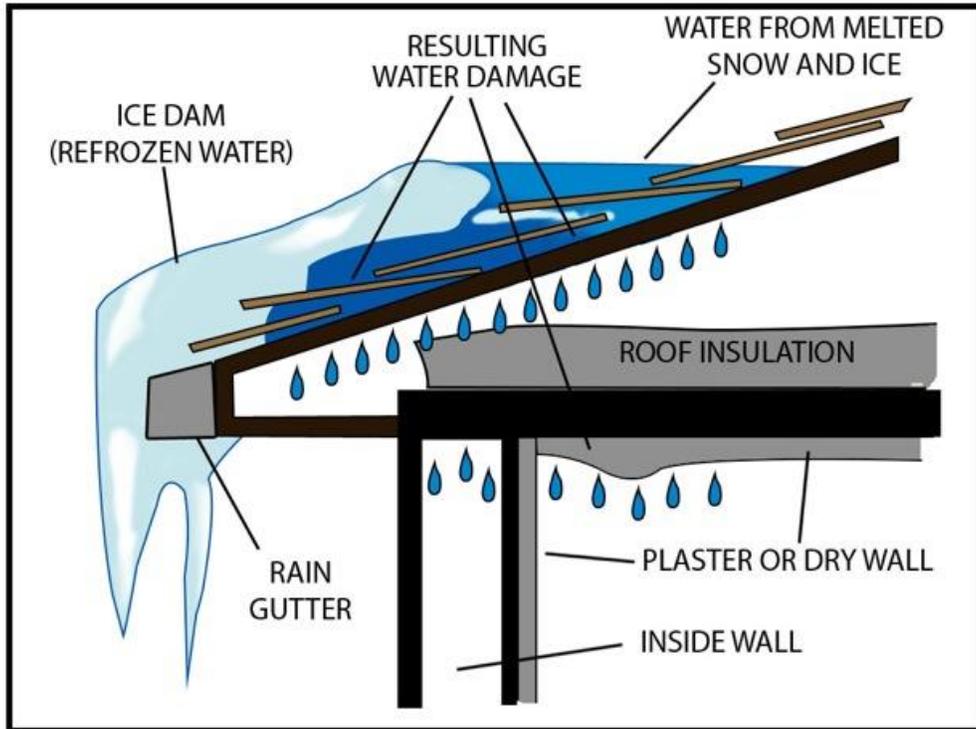
If you cannot safely reach the roof, contact a building contractor, landscaping and roofing contractor, or property maintenance company to remove the snow and ice. Before hiring a contractor, check their references. Always be sure any contractor you hire is qualified, insured and bonded.

The amount of snow and ice your roof can support will depend on several factors, including the roof type as well as the age and condition of the structure. But a good rule to keep in mind is if more than a foot of heavy, wet snow and ice has accumulated on your roof, you should have it removed.

Ice Dams

What Is an Ice Dam?

Ice dams may form when water from melting snow freezes into ice at the edge of your roofline. Without proper roof snow removal, the ice that develops may grow large enough to prevent water from melting snow from properly draining off the roof. When the water is unable to drain from the roof, it may then back up underneath roof shingles and make its way into your chapter facility.



Do You Have an Ice Dam?

Most ice dams develop on the edge of your roof, but they may also form in other locations, depending on the slope, orientation and style of your roof. Be sure to monitor the weather and your roof for signs of ice dam formations.

- **Look closely at the icicles around the exterior of your facility.**
If the icicles are confined to the gutters and there is no water trapped behind them, then an ice dam has likely not formed. Nonetheless, icicles can be a precursor to ice dams. Depending on their location and size, icicles may also pose a danger if they fall off. Whenever possible, and if safe to do so, remove icicles from the exterior of your chapter facility, making sure not to stand directly beneath them. If you cannot safely reach the icicles from the ground, consider hiring a contractor to assist in their removal.
- **Check for water stains or moisture in your attic or along the ceiling of exterior walls of your facility.** Water stains or moisture may be an indication that an ice dam has formed, and water has penetrated the roof membrane.

Taking precautions to prevent ice dams is an important part of preparing your chapter facility for winter weather. Knowing what an ice dam is, minimizing the conditions that allow one to form and removing an ice dam as soon as you spot one can help prevent serious damage to both the roof and the inside of your chapter facility.

Take Action Before Snow Starts Falling

An ice dam may develop during the cold winter months if warm air from your chapter facility or attic melts snow on your roof. In freezing temperatures, the melted snow may refreeze once it reaches the colder edge of the roof. Keeping the temperature of your attic at 32°F or below can help prevent snow from melting and ice dams from developing. The following are some steps you can take to help prevent the snow melting-and-freezing cycle that often causes ice dams:

- **Insulate your attic.** Be sure your attic is properly insulated to help prevent warmth from escaping through ceilings. Whenever possible, an insulation value of R-40 is recommended.
- **Prevent air leaks.** Check and seal any openings where warm air or heat could escape into the attic, such as insulating or caulking around vent pipes, exhaust fans, chimneys, attic hatches and/or light fixtures.
- **Improve ventilation.** Increase the number or size of attic, roof or soffit vents that allow cold air to circulate and flush warmer air out during the winter.
- **Install a water-repellent membrane.** When replacing the roof covering, install a water-repellent membrane underneath the shingles. This acts as an extra barrier that helps prevent water from seeping inside the building should an ice dam form.

Tips to Help Prevent Ice Dams through the Winter

Ice dams can sometimes form despite your best efforts to keep your roof at the proper temperature. Be sure to monitor the weather and maintain your roof throughout the colder, winter months for additional protection against ice dams, such as:

- **Clear gutters and downspouts.** Prevent water from accumulating and possibly freezing in your gutters by cleaning leaves, debris and snow accumulation from in and around gutters and downspouts. Making sure that your gutters are properly pitched can also help prevent the collection of water in low spots and help reduce the potential for ice buildup in gutters.
- **Remove snow accumulation from your roof after every storm.** Whenever possible, use a roof rake to clear snow about three to four feet from the edge of your roof soon after each storm. Snow accumulation along the edge of your roof increases the likelihood of an ice dam developing, which prevents water from draining off the roof. This water can then back up underneath roof shingles and make its way into your chapter facility.
- **Remove ice dams as soon as you spot them.** Check your roof often and know how to help identify and remove an ice dam.

CAUTION: Avoid using a ladder in snowy and icy conditions. This can be extremely dangerous and is best left to the professionals.

How to Remove an Ice Dam

Removing an ice dam from your roof immediately after spotting the signs can be critical to helping prevent damage to your chapter facility. One way to remove an ice dam is to melt it using calcium chloride ice melt.

- Step 1.** Using a roof rake, remove snow 3-4 feet from the edge of your roof, being careful not to damage the roof covering or to allow snow to build up around walking paths or to block emergency exits.
- Step 2.** Use a calcium chloride ice melt product, which you can generally purchase from your local hardware store. Be sure not to use rock salt or sodium chloride, which can damage your roof.
- Step 3.** Fill a nylon stocking with calcium chloride ice melt.
- Step 4.** Safely place and position the calcium chloride-filled nylon stocking vertically across the ice dam so that it can melt a channel through the ice.
- Step 5.** Cover and protect any shrubbery and plants with lightweight tarps near the gutters or downspouts for the duration that the calcium chloride stockings remain in place. This is important because the calcium chloride-saturated water dripping from the roof may damage the shrubbery and plants.

REMEMBER: Using a ladder in snowy and icy conditions may be dangerous. If you cannot safely reach the roof, consider hiring a contractor.



ALWAYS MAKE SURE THAT SNOW AND ICE ACCUMULATIONS AROUND FIRE ESCAPE AREAS ARE KEPT CLEAR SO AS TO NOT HINDER ANY EMERGENCY EVACUATION.

Flooding

Deep snow cover, frozen terrain and heavy rains can create the worst-case flood scenario. During times of extreme cold weather, nearly all rainfall and snowmelt becomes runoff because the ground is frozen and cannot absorb water. The outcome can cause unexpected flash flooding that can get into basements, or low ground areas not normally vulnerable to floods.

To Avoid Winter Flood Damage:

1. Identify any below grade areas on the property that might be exposed to winter flooding, attempt to keep these areas clear of snow and ice.
2. Check to make sure all street and sidewalk sewer drains are clear of debris, ice and snow.
3. Make sure your sump pump is operational and not frozen, and that dispersed water can be discharged outside the building and escape the external piping.
4. Check to make sure and below grade exterior drains on the premises, especially in basement exterior staircases are clear of debris, snow and ice.
5. Make sure any lower ground level windows and doors are clear of accumulated snow and ice and that water from melting will not drain into the chapter facility.



Tips for Hiring a Contractor

Hiring a contractor to repair the damage to your chapter facility can be one of the most important decisions you make as a house corporation volunteer. While most contractors are honest and reputable, a few may not have your best interest in mind. Below is a list of tips you may want to consider before hiring a contractor.

Top 10 Tips for Hiring a Contractor:

- 1. Use your Insurance Company Claim professional's estimate as a benchmark.** Make sure the work outlined in your adjuster's estimate is compatible with the work described in the contractor's estimate. Do both estimates outline the same scope of repairs? If you are unsure, contact your Claim professional. Be cautious of estimates that seem too high or too low. If your Claim professional has not yet completed an estimate, ask him or her if the amounts in the contractor's estimate seem reasonable. Beware of contractors who encourage you to spend a lot of money on temporary repairs. If you feel the estimate for temporary repairs is excessive, contact your Claim professional.
- 2. Consider hiring local, licensed contractors whenever possible.** It is easier to deal with a local contractor if problems develop. However, since it may not always be possible to work with a local contractor, make sure to thoroughly check references. Be especially suspicious of door-to-door salespeople who make unrealistically low estimates, refuse to leave a contract overnight, or try to sell their services by playing on your emotions.
- 3. Consider the contractor's service record.** Inquire about the contractor's professional reputation by checking with their previous customers and the Better Business Bureau. Consider the quality of the contractor's products, their workmanship, and the customer service he or she will provide. Ask how long they've been in business (preferably 5-10 years). Find out if the contractor specializes in the work you need done.
- 4. Don't be pressured into making an immediate decision, particularly with regard to signing a contract.** It is a good practice to collect many business cards, interview several contractors, and request multiple bids for comparison. Make sure to read the fine print on all estimates and contracts. If you're having emergency repairs done and don't have time to thoroughly research a contractor, ask around. Neighbors, family or friends may have used an emergency services contractor with whom they had a good experience. If you're asked to pay a large sum of money up front, check with your Claim professional before services are initiated to ensure the amount is appropriate and to determine how much of it will be covered.
- 5. Make sure the contractor is properly insured and bonded.** Ask the contractor for a certificate of insurance (COI), which should provide the name of the insurance company, policy number and policy limits the contractor carries. You could contact the insurance company directly to verify information on the COI. Do not do business with a contractor who does not carry the appropriate insurance coverage. If the contractor is not insured, you may be liable for accidents that occur on your property.
 - **Also require the Contractor to name your House Corporation, the Chapter and the General Fraternity as an additional insured on the COI.**
 - **Require the Contractor to provide a Waiver of Subrogation for General Liability and Workers Compensation in writing on the COI.**

6. Secure a comprehensive contract before work begins. Get everything in writing, and make sure the contract is clear and well written. The contract should include:

- A detailed description of the work to be completed and the price of each item.
- A payment schedule - for example: 1/2 down, 1/3 when work is partially completed, and the balance due upon completion of repairs.
- The estimated start date and completion date on larger projects.
- Any applicable guarantees should be written into the contract and clearly state what is guaranteed, who is responsible for the guarantee, and how long the guarantee is valid.
- Signatures from both parties. You should never sign a contract containing blank sections.

Also, changes to the contract should be acknowledged by all parties in writing. Consider having a lawyer review the proposed contract for your protection before you sign it if the project involves substantial costs. Ask the contractor for confirmation that he or she has obtained all applicable building permits. If you decide to cancel a signed contract, you should follow the contract's cancellation clause. Written notification of the cancellation should be sent by registered mail to ensure you have proof of the cancellation.

A chapter member or chapter officer is not allowed to sign a contract in the name of or on behalf of the house corporation or inter/national fraternity.

7. Federal law requires a three-day "cooling off" period. If you decide you want to cancel your contract without penalty, check your rights under the Federal Trade Commission's rule and the laws of your state. You will need to follow any applicable rules for sending notice of your intent to cancel and do so within the specified "cooling off" period. Consider sending the notice of cancellation by registered mail to ensure you have proof of the cancellation. For more information, see <http://www.ftc.gov/bcp/edu/pubs/consumer/products/pro03.shtm>.

8. Don't pay for the entire project before completion. Some states prohibit a contractor from collecting more than a certain percentage of a job's cost as an initial payment. For larger projects, it is standard practice to pay 1/3 of the estimated costs as an initial payment. It is always a good idea to pay by check instead of cash because you can retain your cashed check as a receipt.

9. Delays happen, be realistic. In spite of the timeline outlined in your contract, circumstances such as weather may prevent the work from remaining on schedule. Be realistic and prepare to adjust your plans accordingly.

10. Keep a job file. This file should contain all papers related to the project, including the signed contract and any change orders; plans and specifications; bills and invoices; canceled checks; certificates of insurance; lien releases from subcontractors and material suppliers; a record sheet on each contractor listing the work performed; the estimated length of the job; and any letters, notes, or correspondence with the contractor.