

# CAHI MONTHLY NEWS



## Presidents Corner

I had lunch with a colleague the other day. During our dining enjoyment the conversation turned to the good old days. He like me is a dinosaur who has roamed this earth for over 26 years inspecting homes. We talked about how pure and simple a home inspection was when we first hit the scene. Now you must remember that was in the eighties and the profession was about twenty years old at that point. But it WAS VERY SIMPLE AND VERY CURSORY even then, so imagine what it was initially!

Our reports were short and sweet and done on typewriters. The whole process was meant to be simple, cursory, non exhaustive and non invasive in nature. And when finished, defects were negotiated and for the most part no one felt violated. As any cottage industry does, our profession has developed over time in many different ways but one...our standards have essentially remained unchanged for over 40 years.

Travelling back to the present, it is clear to me that we have taken the inspection and reporting process to a whole different level. I am not sure if that is a good thing or a bad one. Are we fast approaching the "Mike Holms" technique? Will an inspection one day consist of an army of experts who come in with sophisticated tools and hardware and probes and scanners and dissect a house like the poor frog on the table of your sophomore biology class. Everything that is built or installed in less than "by the book" fashion will be considered defective. Keep in mind...antique car enthusiasts look at an old 1928 Ford as a model of purity and simplicity and appreciate it for what it is while many home inspectors rummage through a 1928 home discussing all the inadequacies of the older structure pointing out where it falls short of all of the current building department requirements, almost with a tone as if it should be torn down. Will we be filling reports with so much information that the real point of the process is difficult to extract? Are we on the verge of creating the SUPER HERO HOME INSPECTOR?

I for one see something like that coming.

So back to reality and February 2016. We have begun our membership drive. Please encourage inspectors you may know to join if they are not currently members of CAHI. The organization is very strong as indicated by the 52 members we had in attendance at our January meeting. We are looking forward to the same type of turn outs at our Law Seminar on the 19th, and part 2 of Dwight Uffer's presentation on chemical problems in concrete at our February meeting. Adding new members will make us stronger. This is especially helpful if new legislation and or regulations come down the pike...because there is strength in numbers.

As always, if you have anyone who may be interested in speaking to our group at a meeting, please pass on their info to Scott so we can contact him or her for future meeting presentations.

And remember; *"If you don't know where you are going, you might wind up someplace else."*  
Yogi Berra

Stan Bajerski

February 2016 Volume 9, Issue 2

## INSIDE THIS ISSUE

- Presidents Corner .....1
- When Visual Inspection Isn't Enough.....3
- Cold Weather Tips.....6
- Chimney Inspection .....7
- Navigator Ad.....9
- Snow Rake How -To (1).....10
- Snow Rake How -To (2).....11
- Be Safe While Powering Up.....13
- Portable Generator Safety.....15
- Winterizing Plumbing System.....17

## Meeting Dates!

### February 24th Meeting

### Degrading Foundations (Part 2) by Dwight Uffer

This is a continuation of Dwight's previous presentation

The main topic will be "Ettringite" the other major cause of concrete deterioration and Differentiating Delayed Ettringite Formation from Alkaline Silica Reactivity, Sulfate Attack and from Alkaline Aggregate Reactivity.

### Reminder

Friday, FEB. 19th

Law Seminar  
with Kent Mawhinney

See Page 2 for Information

## MONTHLY MEETINGS – Details & Info

CAHI's regular monthly meetings are held at the Best Western located at 201 Washington Ave (RT 5), North Haven. Meetings are free to members.

Most meetings are on the fourth Wednesday of the month from 7-9pm.

Guests are always welcome! Guests may attend 2 free monthly meetings to experience our presentations, meet our members, and receive a CE attendance certificate.

Joining CAHI may be done at anytime of the year through our Membership Page

# Home Inspection Law Seminar

**Fellow Member:**

The Connecticut Association of Home Inspectors (CAHI) invites you to attend an exciting and informative Home Inspection Law Seminar presented by Connecticut's premier home inspection law expert, Attorney Kent Mawhinney.

Attorney Mawhinney presents home inspection legal issues in an interesting and informative manner which includes tips and anecdotes that help keep the material fresh year after year.

In addition to enjoying the camaraderie of fellow inspectors, this is the only seminar that offers the following included in your fee:

Dinner

Certificate of Completion

New Location (Cromwell)

To register go to: [www.ctinspectors.com/special-events/](http://www.ctinspectors.com/special-events/)

*(Registration Ends February 18th 2016 - "Seating is Limited")*

*Here are the details:*

**Date:** Friday, February 19th, 2016

**Time:** Dinner 5:00pm – 6:00 pm; Seminar 6:00 pm to 9:00 pm

**Location:** Billy Tees – 150 Sebethe Dr, Cromwell, CT 06416

**Price:** \$99.00 – Pay online, by check

*Please mail payments to the following address:*

Stanley J. Bajerski

40 Victory Court

Milford, Ct 06460

## Special Offer:

Working RE is excited to announce the launch of a new print magazine exclusively for home inspectors. The premier issue has just mailed (January 2016). For a limited time, you can reserve a [free subscription here](#).

# When Visual Inspection Isn't Enough

By Isaac Peck, Editor

Many pre-inspection agreements used by home inspectors include clauses that either define the home inspection as a “visual inspection” or deliberately outline that the inspection is limited to what is readily visible by the inspector.

The following are excerpts from several home inspector agreements/Standards of Practice:

- The inspector shall inspect readily accessible, visually observable installed systems and components. (ASHI)
- Inspector agrees to perform a visual inspection of the home/building. (InterNACHI)
- The inspection and report are opinions only, based upon visual observation of existing conditions. (NAHI)
- The inspection is limited to visual observation of apparent conditions at the time of the inspection and is not technically exhaustive. (HomeGauge)

However, the notion that a home inspection is strictly “visual” has long sparked debate among inspectors regarding just how far an inspector should go to discover hazards and defects in the property. After all, testing the GFCI outlet, opening the electrical panel with a screwdriver, or the use of any tools beyond a flashlight, could technically be classified as going beyond a “visual inspection.”

Jerry Peck, a retired home inspector who now works as a litigation consultant and hosts InspectorAdvisor.com, says that even when an inspection is referred to as a visual inspection, if tools of any type are used, whether the tool is as simple as a screwdriver, or more complex such as a moisture meter or receptacle outlet tester, or if appliances are operated, then the inspector has raised the bar beyond a “visual inspection.”

“Any home inspector using any reasonable ‘standard of care’ is not doing a strictly ‘visual’ inspection, regardless of how many times the inspector may state in the report or contract that their inspection is just a ‘visual’ inspection,” says Peck.

The practice of labeling an inspection as strictly a visual inspection dates back to the 1970s when the profession was just getting started, according to Peck. “I suspect the last ‘visual’ home inspection was in the 1970s or early 1980s by one of the ‘old guys’ who helped start this profession. I know the pioneers in Florida did not really do a ‘visual’ inspection even back then. When they suspected a moisture problem, they would take tissue paper and press it against the wall, if the tissue stuck to the wall, the wall was ‘wet’, if the tissue did not stick to the wall but fell off and felt moist, the wall was ‘damp’, which indicated a potential moisture problem. As soon as they pulled out a tissue and used it to determine if the wall had moisture, the inspection was no longer just visual,” says Peck. “A truly ‘visual’ inspection could basically be done by just walking around and looking, with the inspector’s hands kept in his or her pockets,” Peck insists.

Bruce Ramsey, an inspector from Georgia with 15 years’ experience, supports Peck’s conclusion, pointing out that inspections that adhere to the Standards of Practice of many associations are not simply visual, despite what many inspectors put in their contracts. “Testing receptacles, operating faucets, flushing toilets, operating windows and doors, probing for moisture, operating HVAC, are just some of the non-visual activities that are part of a home inspection. When you add in tools like moisture meters, infrared cameras, thermometers and receptacle testers, inspections move farther away from purely visual,” says Ramsey.

Ramsey says that a more accurate contract wording would be to say that the inspection is “primarily visual, but not technically exhaustive.” That’s because the phrasing “not technically exhaustive” is more in line with what most home inspectors actually perform. “The receptacle tester is a tool that indicates wiring problems but does not definitively identify the exact cause of the problem. The actual cause ranges from faulty wiring to damaged equipment. In such a case, the inspector is able to identify a problem, but the inspection is not technically exhaustive enough to determine the root cause,” says Ramsey.

### **Legal Ruling**

One legal ruling that relates to this topic is the case of *Nauman vs. Real Estate Support Services (RESS)*, wherein Paul and Nora Nauman (the Naumans) sued RESS for failure to discover defects in a property they purchased. While the ruling is dated, having been issued in 1994, it nevertheless sheds light on how the courts interpret “visual inspection” wording in a contract. In the case, RESS had a contract with Coldwell Banker Relocation Services to provide home inspection services where the objective of the relocation home inspection report was to “provide the client with a report of the relocating employee’s home, consisting of a series of visual inspections.” While Coldwell Banker was listed as the client, the inspection agreement stated that “the client may at its discretion disclose [the report] to other interested parties.”

The Naumans made an offer on a property listed by Coldwell Banker that had been inspected by RESS six months earlier. During the purchase transaction, the Naumans were told that their offer would be accepted only if they accepted the home inspection report by RESS, which they did.

Shortly thereafter, the Naumans discovered a defect in the chimney not mentioned in the inspection report. The report had merely indicated the flue was “acceptable.” The Naumans then sued RESS for damages.

While much of the case rested on the question of whether the Naumans were legally entitled to rely on the inspection report, given that RESS’s inspection contract was with Coldwell Banker, the Appeals Court of Indiana addressed directly RESS’s argument that, per their contract, the inspection was limited to “visual” elements only: “The inspection conducted in this case was demonstrably not limited to a ‘visual’ examination of various items. The inspector had not limited the inspection of the garage door opener to a visual examination of it and had not limited the inspection of the electrical system to a visual examination of the electrical panel. He had engaged the garage door opener to determine whether it was operable and had removed the front cover from the electrical panel to fully examine it. Further, the inspection report itself shows the inspector inserted dye into the private sewage system, and such conduct is not merely a visual examination even though the inspector also examined the grounds for the dye as a sign of seepage. The Naumans’ claim the inspection of the chimney likewise should not have been limited to a visual examination. The trial court determined that to have marked the chimney flues as ‘adequate,’ without first having removed the cap and looking down the chimney, was negligent. The evidence supports this conclusion.”

The Naumans ultimately won the claim with the appeals court rejecting the defense of a “visual only” inspection, and holding that the Naumans were a “third party beneficiary” of the contract between RESS and Coldwell Banker, and were consequently entitled to bring suit over the inspection’s deficiencies.

This case may not completely remove the “visual inspection” defense from home inspectors (they still can’t see through walls), but it does offer valuable insight into how some courts interpret the responsibilities and duties of the inspector. It also is a sobering reminder for inspectors that when they mark an item “adequate” or “acceptable,” they are certifying that they have inspected the item. To limit their liability, it may be wise for inspectors to qualify their statements in similar cases, describing to what extent an item was inspected and what specialists should be contacted if further information is sought.

### **State Requirements**

The Standards of Practice (SoP) in some states have specific requirements that the inspection cannot be strictly visual. For example, Indiana’s SoP states that the inspector must “inspect the interior components of service panels and subpanels.” However, state SoPs can also help to limit an inspector’s liability. In Indiana, the state SoP specifically clarifies that inspectors are not required to “inspect the interiors of flues or chimneys.” Inspectors working in states with SoP should be mindful of what they are and what they are not responsible for.

## Local Standard of Care

At the end of the day, most home inspectors just want to do a thorough job and stay out of trouble, protecting their license and livelihood while providing a quality service to their clients. The best way to do that, according to many veteran home inspectors, is to meet the “standard of care” required of your profession. Scott Patterson, veteran inspector and expert witness, reports that he has seen the issue of “visual inspection” arise in more than one legal defense. “I can tell you firsthand that the standard of care, i.e., what other professional inspectors in your area would do, is the best defense and what most, if not all, attorneys strive to show,” says Patterson. Patterson continues, “If you are in a licensed state that has an SoP, as long as you perform your inspection to the standards of the licensing law, it makes it extremely difficult for a plaintiff to claim you were negligent. This is just another unexpected bonus from home inspector licensing laws.”

Todd Stevens, experienced home inspector trial lawyer and past President of the San Diego Bar Association, says that the home inspector’s responsibility for a visual inspection is a tricky area. “I’ve litigated cases that involve mold or other defects that were behind a wall. The plaintiffs will typically argue that the inspector should’ve seen it anyway, or that something was visual that at least was a red flag and the inspector failed to mention it,” says Stevens.

Stevens echoes Patterson’s comments, explaining that these cases often come down to a standard of care. However, the inspector’s standard of care is not always crystal clear, and may vary by state or locality. “A standard of care is what is generally practiced by professionals in the community. Here in California, the only codified standards are the California Real Estate Inspection Association (CREIA) standards, so these function as the minimum standards an inspector is held to. The catch is that if it’s common practice for home inspectors in a state or community to perform a certain function that is beyond the minimum requirements, some plaintiffs may try to argue that an inspector’s standard of care should exceed the minimum standards,” says Stevens.

When there’s a disagreement on what constitutes a standard of care in an area, it will frequently turn into a battle between expert witnesses. “When cases go to trial, experts are typically hired by both sides, with the expert on one side saying that the standard of care is X, Y, and Z, and the other expert will say the opposite,” Stevens explains. “Good experts are home inspectors themselves or former home inspectors who know the industry well. The jury then has to decide what’s the more reasonable requirement or standard.”

The best way for inspectors to protect themselves is to document and photograph any red flags, put them in the report, and state that further testing is required, according to Stevens.

The lesson for home inspectors is clear: even if a home inspection contract has language limiting a home inspector’s liability to what is visually observable, the home inspector still may be held liable for something not readily “visible.”

Home inspectors should be careful to follow their SOP and meet the standard of care in their area, where applicable. Additionally, home inspectors should be very cautious when reporting that items in a home are “acceptable” if the inspector did not, or was not, able to fully inspect the item. Wherever possible, a home inspector should qualify the degree to which different items in the home were inspected and recommend that qualified specialists inspect items that the inspector has no experience or ability to fully investigate.

Reprinted with permission from [Working RE Magazine](#) and [OREP](#), a leading provider of E&O and General Liability insurance for home inspectors and other real estate professionals in 49 states



# Cold Weather

Winter in New England can bring very cold weather. With cold temperatures and winds, it can sometimes feel well below zero degrees. In these extreme cold temperatures, exposed skin can become frostbitten in just a matter of minutes. Hypothermia is when your body's core temperature drops below 95 degrees and can be fatal.

When the extreme cold hits, it's important you do what you can to stay warm. Here are some things you can do to help beat the cold:

- **Dress in layers.** This helps keep you insulated and lets you take off or add more layers of clothing as needed. Wear many layers of loose-fitting clothing and stay dry.
- **Cover your skin.** When the wind chill brings the temperature well below zero, be sure to cover your skin. In extreme cold, skin exposed to the cold air can get frostbite in just a few minutes. If you have to go outside, you should wear:
  - o Hat
  - o Scarf or knit face mask to cover your face and mouth
  - o Sleeves that are snug at the wrist
  - o Mittens (they are warmer than gloves)
  - o Water-resistant coat and boots
- **Avoid alcohol and caffeinated beverages.** Beverages with alcohol and caffeine actually make your body lose heat more quickly. Drink hot, sweetened beverages to help you stay warm.
- **Perform your work during the warmest part of the day.** People who work outside should do so during the warmest part of the day, if possible.
- **Take frequent breaks from the cold.** If you have to be outside, take frequent breaks in warm, dry shelters to let your body warm up.
- **Know the signs of frostbite and hypothermia.** Know how to recognize cold illness and when to get medical treatment right away.
- **Make sure infants stay warm.** Infants under one year old should not sleep in cold bedrooms because they lose body heat more easily and are unable to shiver to keep themselves warm. Keep them properly clothed and indoors in warm temperatures.
- **Check on elderly neighbors and family members.** People over the age of 65 often are less active and have lower metabolisms, making them lose body heat more quickly. Make sure that the temperature in their home is adequate enough to keep them warm.



GENERAL TIPS: *Click on links below for more Cold weather info*

[Extreme Cold weather and Safety Guided \(CDC\)](#)

[Frostbite and Hypothermia](#)

[Extreme Cold Weather Awareness and Information \(DEMHS\)](#)

## Chimney Inspection: Preventing Collapse

Chimneys are among the heaviest and most structurally vulnerable of all exterior components of a building. Accidents caused by their collapse can lead to death. A collapse can also cause costly structural damage to the building and its surroundings. Inspection, maintenance and preparedness are critical safeguards against chimney collapse.

Wind and other elements may cause an already weakened chimney to collapse. An elderly man in Britain was crushed by a wind-topped chimney as it fell from the roof of the managed-care facility where he lived. This case is, unfortunately, fairly unremarkable, as such accidents occur often for a variety of reasons -- from weathering and wind, to falling tree limbs and poor design.

Chimneys collapse by the hundreds during major earthquakes, typically snapping at the roofline. More than half of the homes in Washington State inspected by the Federal Emergency Management Agency (FEMA) following the Nisqually Earthquake in 2001 sustained chimney damage. Chimney collapses were widely reported following the massive-magnitude 7.1 earthquake that struck New Zealand in September 2010.



Earthquake damage and injuries can be caused, in large part, by bricks and stones as they fall from chimneys onto vehicles, structures and people. These collapses happen suddenly and without warning. Collapses can also cause implosion-type destruction as the chimney makes its way through the roof and attic, demolishing part of the living space and injuring occupants below. For these reasons, it is crucial that chimneys, especially in seismically active regions, be inspected periodically for signs of weakening. Following an earthquake, it is even more vital that chimneys be inspected for indications of imminent or future collapse.

Chimneys should be inspected for the following defects:

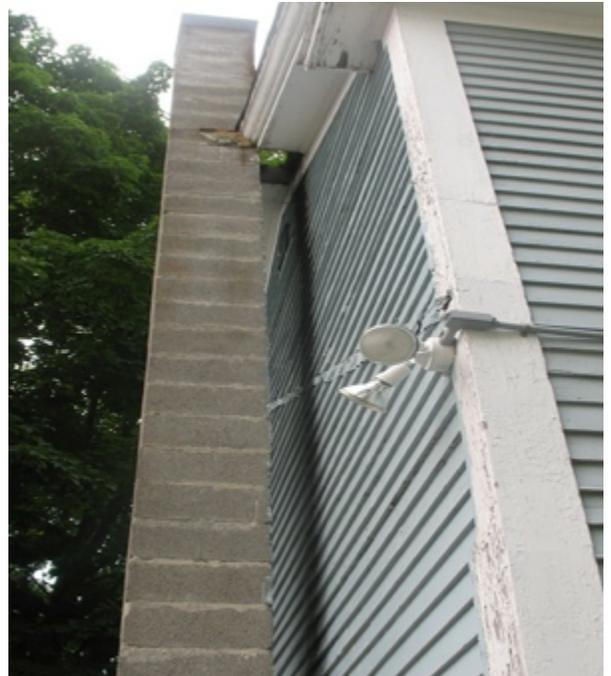
- mortar between the bricks or stones that crumbles when poked with a screwdriver;
- missing or insufficient lateral support -- typically, steel straps -- used to tie the chimney to the structure at the roof and floor levels. Building codes in some seismically active regions require internal and external bracing of chimneys to the structure;
- mechanical damage to the chimney, such as that caused by falling tree limbs or scaffolding;
- visible tilting or separation from the building. Any gap should be frequently measured to monitor whether it is increasing; and

- chimney footing defects, including the following:
  - undersized footing, which is footing cast so thin that it breaks, or does not sufficiently extend past the chimney's base to support its weight;
  - deteriorated footing, caused by weathering, frost, loose or poor-quality construction; and
  - poor soil below footing, including eroded, settled or otherwise weakened soil, frost heaves or expansive clay beneath the footing.

A more thorough inspection performed to the [International Phase I Standards of Practice for Inspecting Fireplaces and Chimneys](#) may also be considered.

The following additional precautions may be taken:

- Attach plywood panels to the roof or above the ceiling joists to act as a barrier between falling masonry and the roof.
- Strengthen the existing chimney by repairing weak areas.
- Tear down the chimney and replace it with a flue or a stronger chimney. Keep in mind that tall, slender, masonry chimneys are most vulnerable to earthquakes, weathering, and other forms of wear. However, even newer, reinforced or metal flue chimneys can sustain significant damage and require repair.
- Relocate children's play areas, patios and parking areas away from a damaged chimney.
  - Instruct family members to get away from chimneys during earthquakes.



Homeowners should contact their local building departments to obtain required permits before starting any significant construction that may affect the chimney structure and/or its supports.

In addition to collapse hazards, leaning chimneys can also make using the fireplace dangerous. Hearth cracks, side cracks in the fireplace, openings around the fireplace, and chimney damage all present the risk that sparks or smoke will enter the living space or building cavities. Check for evidence of fireplace movement. Following an earthquake, homeowners should have their chimney inspected before using the fireplace.

Commercial chimney collapses are rare, but they deserve mention due to the devastation they cause. In one terrible incident in central India, more than 100 workers were killed when a 900-foot (275-meter) tall chimney collapsed on a construction site. One of the worst construction site disasters in recent history, the collapse was blamed on heavy rain. While safety standards are generally more stringent outside of India, commercial chimneys everywhere require inspection.

In summary, chimneys should be inspected to prevent deadly, expensive collapses.

[http://www.csia.org/homeowner-resources/chimney\\_inspections.aspx](http://www.csia.org/homeowner-resources/chimney_inspections.aspx)



## CLEAN YOUR HUMIDIFIERS

The U.S. Consumer Product Safety Commission (CPSC) is alerting consumers to possible health hazards resulting from dirty humidifiers. CPSC has found that bacteria and fungi often grow in the tanks of humidifiers and can be released in the mist. Breathing dirty mist may cause lung problems ranging from flu-like symptoms to serious infection. This information is of special concern to allergy or asthma sufferers whose symptoms may be increased.

Your humidifier **MUST** be serviced at least once per year. Here are some general recommendations, but you should follow the manufacturers recommendations.

1. Turn off the water to the humidifier.
2. Turn off the electricity to the furnace and the humidifier.
3. Disassemble humidifier & wash out the components that are exposed to water.
4. Replace humidifier filter.
5. Reassemble humidifier and turn water and electricity back on to furnace and humidifier.
6. Test operation of humidifier and look for water leaks.

### **SUMMER SHUTDOWN PROCEDURE**

1. Turn off the manual water valve to your humidifier.
2. Close the manual bypass damper (if your model has one).



3. Turn the power off to your furnace or air handler.
4. Set the humidistat at its lowest setting to prevent the humidifier from turning on.
5. Take the cover off of your humidifier and remove the humidifier filter.
6. Remove all the internal components that came into contact with water and wash them off. For items that are coated with scale you can soak them in household white vinegar overnight. This will loosen the scale and make it easier to remove. It may be necessary to lightly scrub some items with a bristle brush to remove the scale deposits. Rinse with fresh water when done.
7. Replace the humidifier filter with a new one and reassemble the humidifier.
8. Leave the water turned OFF, the bypass damper turned off (if your model has one).
9. Turn the power back on to the furnace or air handler.
10. Your humidifier is now clean and ready for next year.

---

## CAHI, THE LARGEST HOME INSPECTION ORGANIZATION IN CT

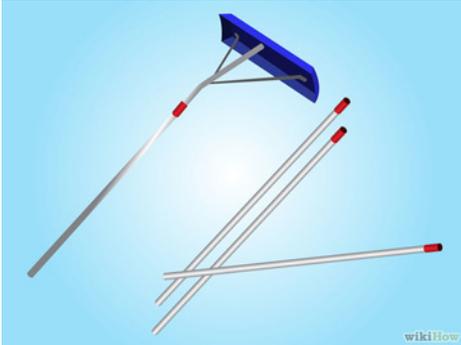
The Connecticut Association of Home Inspectors Inc. was formed in 1992 to organize home inspectors and provide them with quality education to make them more knowledgeable and we have been doing that ever since! Find a member of our organization at

<https://www.ctinspectors.com>

# How to Remove Snow from a Roof Using a Roof Rake

www.wikihow.com

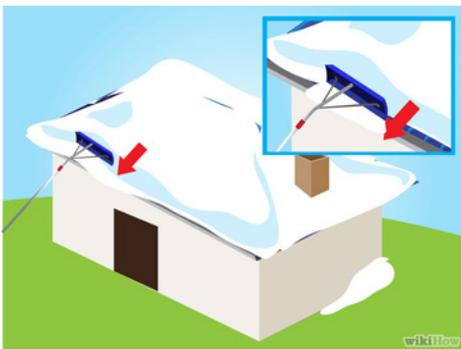
Snow removal from your roof can be made a little easier by using a roof rake. Remove snow without even leaving the ground! All while avoiding costly interior leaking that results from ice dams that can form.



**1** Invest in a roof rake. They'll cost about \$60 at your local hardware store.



**2** Assemble roof rake.



**3** Use the roof rake to remove snow from roof. Start on the left side of the house, go about 2–4 feet (0.6–1.2 m) up from the gutter and pull down with a slight tug until you clear the gutter. The snow will fall down, gravity is our friend. Shift to the right and repeat this process for another section of snow.



**4** Step forward and reach, rock back. A step and reach, pull rocking motion that repeats as you work your way from one end of house to the other.



**5** Now repeat on the other 3 sides of the house.



**6** Reward yourself with some hot cocoa, you deserve it!

**Warnings** - Stay on the ground to avoid a risky fall and costly roof damage that can spill into your interior.

For the complete article visit <http://www.wikihow.com/Remove-Snow-from-a-Roof-Using-a-Roof-Rake>

# How to Rake Snow Off Your Roof

By Ed Abbott - WebSiteRepairGuy

If you live in an area where it snows a lot, you may find yourself raking snow off your roof. In a well-designed house, this is rarely necessary. Not all houses, however, are well-designed for snow.

Some houses have porches with flat roofs that collect snow. The porch is an addition to the house and is an afterthought. Other houses have shallow-pitched roofs that are not steep enough to cause the accumulated snow to slide off naturally.

In the case of the house I live in, the house is positioned just below a hill that stops the wind. The wind stops there, deposits the snow, and it makes accumulates in huge drifts that are out of proportion to the size of the actual storm.

In any case, here are some tips for raking snow off of your roof:

## **1. Buy a snow rake.**

This is the first step. Typically, snow rakes are sold at the hardware store in snow country.

Snow rakes come in kits which you assemble yourself.

## **2. Buy more than one snow rake if your roof is a long way from the ground.**

Buying more than one kit allows you to assemble two kits together to make a snow rake that is extra long.

Here you have to be careful. Since you are now exceeding the design specification of the rake, you must handle your snow rake very carefully being sure not to stress it or flex it too much.

When I make two kits into one long kit, I replace the fasteners with nuts and bolts that I buy at the same hardware store. Kits are designed to be easy to put together. In some cases, the fasteners that hold the parts together are made out of plastic.

I don't trust these plastic parts and I'm afraid of orphaning the rake on the roof while I'm left on the ground holding the handle. That's why I replace these plastic parts.

## **3. Build a path around the house so that you can walk on top of the snow.**

I consider this to be an essential step. One half hour of building paths through the snow so that you can walk on top of it will save you lots of trudging through deep snow and falling into holes.

You don't want to be falling into holes. This really slows you down. Trust me on this one. I know.

How do I build a path? I walk through the snow taking little tiny baby steps retracing my steps many times. I walk forwards. I walk sideways. I cover the same ground over and over again.

The idea is to create a flat surface that you can walk on as easily as you would walk on a narrow sidewalk.

Your paths through the snow will support your weight if you will follow this simple rule: Whenever you step into a hole, fill that hole with snow until it is as solid and flat as the rest of your sidewalk made out of snow.

It's so much easier to work the snow rake when you have a sidewalk to walk on that you've built yourself.

I've thought of using snow shoes but have rejected this solution. To me, there's nothing that is better than walking on hardened and flat snow with my own two feet. I like being able to move around easily.

## **4. Go for the easy stuff first.**

Since the whole point of snow-raking is to remove weight off the roof so that it does not collapse under the weight, you might as well go after the easy stuff first.

I do the easy stuff first and then if I have the time and energy, I go after the hard stuff that is higher up.

## **5. Remember that it is harder to move snow once it hits the ground than it is to get it off the roof in the first place.**

I always keep this in mind when I pull snow off the roof and on to the driveway.

It's at least 3 times as hard moving the snow once it hits the ground versus making it fall off the roof with the snow rake.

Snow falls easily off the roof because you have a fall line working in your favor. Once it hits the ground, you have to pick it up and throw it with a shovel.

I'm very careful not to remove more snow than I can shovel. Of course, it helps if you own a snow-blower.

I don't own a snow-blower.

Leave a protective layer of snow on the roof.

#### **6. Remember! You don't have to get all the snow. Just the excess that threatens the load-bearing capacity of the roof.**

It helps to leave the bottom-most layer of snow on the roof as this protects the shingles from damage by the snow rake.

#### **7. Rake a little snow each day.**

If you do a little bit each day, you won't have to worry about it accumulating. Generally speaking, it is not any one storm that will collapse a roof. It is a series of storms -- each building on the next.

#### **8. Consider your roof your winter health club.**

This is a health club where you pay no dues and you don't have to get in the car to get there. You simply go outside and start raking anytime you need exercise.

#### **9. Be aware that snow rakes destroy gloves.**

I can't believe how quickly my snow rake has destroyed mine.

I haven't solved this problem yet, but I'm thinking of buying some fireman's gloves to solve the problem.

The gloves I have in mind are the ones that the fireman on an old fashioned steam locomotive uses to shovel coal into the steam furnace of the steam engine.

I figure if these gloves can be used to shovel coal, surely they can be used to rake snow.

As I recall, they are well-insulated against the heat which should provide some cold protection as well. Furthermore, the outside surface is heavy leather. In theory, it should take quite some time for a snow rake to wear these gloves out. I'll have to try this out to see how it works in practice.

#### **Snow-raking is Good Exercise**

I find snow-raking to be very good exercise. I can't believe how much I eat after I've been out snow-raking.

In all probability, our roof would not collapse even if I never snow-raked it.

However, snow-raking for me is a probability game. Even if the chance is 1 out of 10,000 that our roof might collapse, I'd still like to take some steps to lessen that probability.

#### **How to Snow Rake Blog**

I've started a snow-raking blog. If I can't answer your question, perhaps someone else can.

If you email me with a snow rake question, I'll try to answer it somewhere on the blog. This way, other people can benefit from the discussion.

Fair enough? This way I don't answer the same question over and over again. Also, since I'm really not a snow-raking expert, it makes it possible for others to point out any erroneous suppositions I may have made.

©Edward Abbott, 2005-2010. All rights reserved. Revised December 29, 2010.

Questions or comments? Email me at [ed@WebSiteRepairGuy.com](mailto:ed@WebSiteRepairGuy.com).

[http://www.websiterepairguy.com/articles/household\\_tips/rake\\_snow.html](http://www.websiterepairguy.com/articles/household_tips/rake_snow.html)



## Home Generator Systems

# Be safe while powering up.

Portable generators are easy and safe to use when correctly operated.

Here are a few usage tips you should keep in mind.



**IMPORTANT:** Carbon monoxide is an invisible, poisonous gas. Make sure that there is proper ventilation. Do not operate your portable generator in-doors, in a garage or other enclosed structure or near open windows. If you experience dizziness, fatigue, headache, nausea or irregular breathing, turn off portable generator, get fresh air and seek medical attention.

- **Wattage** - Determine what appliances you will be able to run with the wattage guide.
- **Testing** - Perform a dry run of your generator to make sure you are familiar of how you will operate it during a power outage.
- **Flashlight** - Keep a flashlight handy to find your way to your generator.
- **Location** - Keep your generator conveniently located.
- **Electric Start** - If your generator is equipped with electric start, keep the battery charged.
- **Lubrication** - Run your generator occasionally to keep the engine well lubricated.
- **Powering Your Generator** - Keep an adequate supply of fresh gasoline and extension cords. Use fuel stabilizer if you plan on extended storage.
- **Plugging In** - Plug in appliances one at a time being careful not to overload the circuits.
- **Cool After Use** - Allow your generator to adequately cool-down before storing.
- **Cover** - Use a storage cover to keep the generator free of dirt and debris.

### Safety Precautions for Operating Portable Generators

With what seems like an increase of weather related power outages, it's important to be prepared blackouts. Owning a portable electric generator will help keep appliances like your sump pump or refrigerator on to help protect your valuables, and keep your cell phone and portable electronics powered to keep you connected.

While generators are extremely powerful and helpful, it is absolutely vital that you follow portable generator safety instructions. Briggs and Stratton, North America's largest supplier of portable generators, has put together this informative video & list below to keep your lights on while staying safe this hurricane season.

## What You Need to Know

1. Always read and follow the equipment operator's manual before operating.
2. Engine exhaust contains carbon monoxide a poisonous gas that could kill you in minutes. You CANNNOT smell it, see it, or taste it. Even if you do not smell exhaust fumes, you could still be exposed to carbon monoxide gas.
3. Operate the equipment ONLY outside far away from windows, doors, and vent to reduce the risk of carbon monoxide gas from accumulating and potentially being drawn towards occupied spaces.
4. Install battery-operated carbon monoxide alarms or plug-in carbon monoxide alarms with battery back-up according to the manufacturer's instructions. Smoke alarms cannot detect carbon monoxide gas.
5. DO NOT run equipment inside homes, garages, basements, crawl spaces, sheds, or other partially-enclosed spaces even if using fans or opening doors and windows for ventilation. Carbon monoxide can quickly build up in these spaces and can linger for hours, even after the generator has shut off.
6. Always place equipment downwind and point the engine exhaust away from occupied spaces.
7. If you start to feel sick, dizzy, or weak while using the portable generator, shut it off and get to fresh air RIGHT AWAY. See a doctor.

You may have carbon monoxide poisoning.

## Know the Warning Signs

The symptoms of carbon monoxide poisoning can be similar to those caused by other illnesses such as cold, flu, or food poisoning.

- Headaches
- Dizziness
- Nauseated
- Faint
- Shortness of Breathe
- Fatigue

**If you suspect that you are experiencing any of the systems to CO poisoning, get outside to fresh air immediately.**

## To Prevent CO Poisoning

- Never operate a portable generator or any other gas engine-powered tool in or near enclosed or partially enclosed spaces.
- Install a CO alarm that meets the requirements of the current UL 2034 safety standard.
- Remember, a CO alarm can provide added protection, but it is no substitute to proper use and upkeep of your generator.

<https://www.briggsandstratton.com/us/en/portable-generators/portable-generators-101/safety-first>

# Portable Generators

Posted 02.12.2015 in Home Safety

Portable generators can provide a good, temporary source of power during electrical outages, but can become deadly if improperly installed or operated.

The Electrical Safety Foundation International (ESFI) urges consumers to become more knowledgeable about electrical safety. Understanding the dangers associated with the use of portable generators could save your life.

## Facts and Statistics

- 739 carbon monoxide deaths associated with portable generators were reported to the Consumer Product Safety Commission (CPSC) in the years from 1999-2012. Another 61 fatalities were associated with both a generator and another consumer product (one involved both a generator and another engine-driven tool).
- 69% of the fatalities known to have occurred in the home and involving generators occurred when a generator was placed in the living area or basement of the home. Another 24% occurred when a generator was used inside an attached garage or shed.
- Power outages, most commonly weather-related, were the single most common reason for generator usage that resulted in a non-fire CO fatality, accounting for 30% of fatalities.
- 50% of all portable generator-related carbon monoxide deaths occurred during the winter months (November - February).

Taking a few simple precautions can keep you and your family safe from the dangers of carbon monoxide poisoning and electric shock resulting from the improper use of portable generators:

## Generator Installation Safety Tips

- ESFI strongly recommends that a licensed electrician install home generators to ensure they meet all local electrical codes.
- Do not connect generators directly to the household wiring without an appropriate transfer switch installed. Power from generators connected directly to household wiring can backfeed along power lines and electrocute anyone coming in contact with them, including utility lineworkers making repairs.
- Make sure your generator is properly grounded.
- Use a ground fault circuit interrupter (GFCI) to prevent electrocutions and electrical shock injuries. Portable GFCIs require no tools to install and are available at prices ranging from \$12 to \$30.

## Using Your Generator Safely

- Make sure your home is equipped with a battery-operated or battery back-up carbon monoxide alarm.
- Never operate a generator inside your home or in other enclosed or partially-enclosed spaces. Generators can very quickly produce high levels of carbon monoxide (CO), which can be deadly.
- Opening doors and windows or operating fans to attempt to ventilate a generator will not prevent carbon monoxide build-up in the home. Even with a working CO alarm, you should never use a gasoline-powered generator inside your home or in a garage.
- Position the generator outside the home and away from doors, windows and vents that can allow CO to enter the home.
- Carbon Monoxide is the “silent killer.” Don’t take chances. Get to fresh air right away if you feel dizzy or weak.
- Do not overload the generator.
- Plug appliances directly into the generator or use a heavy-duty, outdoor rated extension cord.
- Make sure extension cords used with generators are rated for the load and have three-pronged plugs. They should be inspected for damage, such as cuts and/or worn insulation before use.
- Turn off all appliances powered by the generator before shutting down the generator.
- Make sure fuel for the generator is stored safely, away from living areas, in properly labeled containers, and away from fuel-burning appliances. Before re-fueling, always turn the generator off and let it cool down.
- Keep children away from portable generators at all times.
- A generator is a temporary power source. Use a generator only when necessary to power essential equipment or appliances.

Be sure to watch ESFI’s generator safety videos for more information to help you power up safely during an outage.



Portable generators can provide a good, temporary source of power during storm-induced electrical outages, but can become deadly if improperly installed or operated. Taking a few simple precautions can keep you and your family safe from the dangers of carbon monoxide poisoning and electric shock resulting from the improper use of portable generators:

## Generator Installation Safety Tips:

- ESFI strongly recommends that a **licensed electrician** install home generators to ensure they meet all local electrical codes.
- Do not connect generators directly to the household wiring without an appropriate **transfer switch** installed. Power from generators connected directly to household wiring can **backfeed** along power lines and **electrocute** anyone coming in contact with them, including utility lineworkers making repairs.
- Make sure your generator is **properly grounded**. Use a ground fault circuit interrupter (GFCI) to prevent electrocutions and electrical shock injuries. Portable GFCIs require no tools to install and are available at prices ranging from \$12 to \$30.



## Using Your Generator Safely:

- Make sure your home is equipped with a battery-operated or battery back-up **carbon monoxide alarm**. 
- Never operate a generator inside your home** or in other enclosed or partially-enclosed spaces. Generators can very quickly produce high levels of carbon monoxide (CO), which can be deadly. 
- Opening doors and windows or operating fans to attempt to ventilate a generator **will not prevent carbon monoxide build-up** in the home. Even with a working CO alarm, you should never use a gasoline-powered generator inside your home or in a garage. 
- ESFI recommends positioning the generator at least **25 feet outside the home** and **away from doors, windows and vents** that can allow CO to enter.
- Carbon Monoxide is the "silent killer."** Don't take chances. Get to fresh air right away if you feel dizzy or weak.
- Do not **overload** the generator.
- Do not use a generator in **wet conditions**. 
- Plug appliances **directly** into the generator or use a heavy-duty, outdoor rated extension cord.
- Make sure extension cords used with generators are **rated for the load** and have **three-pronged plugs**. They should be **inspected for damage**, such as cuts and/or worn insulation before use.
- Turn off** all appliances powered by the generator **before** shutting down the generator.
- Make sure fuel for the generator is **stored safely**, away from living areas, in properly labeled containers, and away from fuel-burning appliances. Before re-fueling, always **turn the generator off** and let it cool down.
- Keep children away** from portable generators at all times.
- A generator is a **temporary power source**. Use a generator only when necessary to power essential equipment or appliances.
- Warn those in your home **not to open windows or leave doors open** while a generator is operating outside.

Be sure to watch ESFI's generator safety videos for more information to help you power up safely during an outage.  
<http://esfi.org/index.cfm/page/Generator-Videos/pid/12678>

## Preventing Frozen & Burst Pipes:

# Winterizing The Plumbing System So The Heat Can Be Turned Off

By Bruce W. Maki, Editor - HammerZone.com



Recently a friend asked me to winterize her house. She wanted to move closer to town, so she put her house up for sale. Here in Northern Michigan it's normal for houses to sell slowly in the middle of winter, but with our current housing market troubles there are even fewer potential buyers. To save money, she needed to turn off the heat for the rest of the winter.

In a cold winter climate like Michigan, you can't just leave a house or cottage all winter with no heat... the pipes will freeze and possibly burst. So we had to drain the water supply pipes and prevent the water in the drain traps from freezing.

If the temperature inside a house gets below 32 degrees Fahrenheit (0° Celsius) it's likely that the water supply pipes and the drain traps will freeze.

When water freezes it expands 9 percent, and if there is no room for expansion it's possible that the pipe will burst. When the ice thaws the pipe will leak, and in the supply system this leak could occur *anywhere*. Fixing a burst pipe can be expensive, but the damage from uncontrolled water leakage can easily reach into the thousands of dollars. Believe me, you **do not** want to experience the hassle and expense of having a pipe burst and spraying water all over your basement, or anywhere in your home.

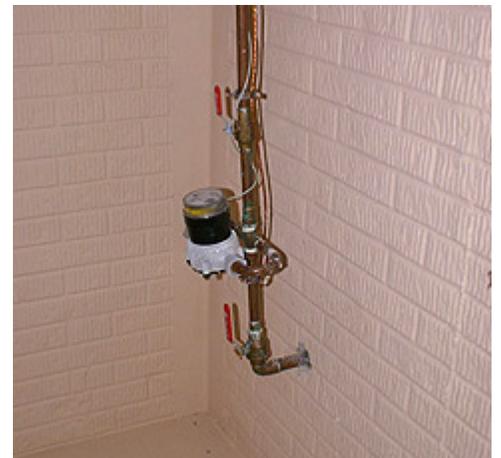
A properly-insulated house built to current building codes will probably never experience this problem under **normal conditions**. What do I mean by normal conditions? The heating system runs properly, the electricity supply stays on, and the furnace fuel supply never runs out.

## Basic Procedure For Draining Supply Pipes:

1. Shut off the water supply.
2. Open one or more faucets at the **highest** point in the system.
3. Open a faucet or drain valve at the **lowest** point in the system.

Since this house had municipal water service, there was a pipe entering the basement with a water meter just above the entry point.

Note that there are red handles above and below the water meter. This is done so the water meter can be removed for service and the pipes do not need to be drained.



### Step 1: Shut Off The Water

I turned off **both** valves. These are **ball valves**, which only require a **quarter turn**.



### Step 2: Let Air Into The System

Then I went upstairs and turned on the kitchen faucet. No water came out.

When I'm draining a water supply system, I always open the faucet at the highest point in the house, such as a second-floor bathroom. Since this was a one-story house, the kitchen faucet was the highest point in the system.

### Step 3: Open A Valve At The Lowest Point

Water heater is often the lowest point in system. The water heater (in the basement) was the lowest point in the water supply system, so the water heater drain was the logical point to drain the water out. This was a 38 gallon water heater, which is typical for a smaller house like this that has only one bathroom.



I turned off the water heater's gas supply by turning the gas valve to "OFF". The off position is reached when the OFF marking is aligned with the metal tab in molded into the front of the valve body (green arrow). That large red button to the left of the valve dial may need to be pressed down or lifted up in order for the dial to be turned past the PILOT position. This button is designed to prevent the dial from turning directly from OFF to ON without first stopping at the PILOT position.



Water Heater Drain Valve:

This water heater drain valve doesn't have a normal handle... it had a short stem with a screwdriver slot (red arrow).

Many water heaters have a plastic drain valve with a normal handle.



I placed a small plastic bucket under the drain valve and **opened the drain valve** with a large flat-blade screwdriver.

Since I had opened up a faucet upstairs, the water flowed out vigorously.

**Opening a faucet is important.** If there was no opening to let air into the supply pipes, the water will drain slowly or flow out in surges followed by moments of trickling flow. Gurgling sounds will be heard as air tries to enter the system from the drain opening. And it will take f-o-r-e-v-e-r to drain the system.



I let the water drain from the water heater until the bucket was nearly filled. Then I shut off the drain valve and carried the bucket upstairs and dumped the water down the toilet.

(Actually, I poured the water from this pail into a **larger** pail, started draining water again, and carried the larger pail upstairs. I brought two pails but the larger one didn't fit under the drain valve, so I couldn't just swap them while the water continued to drain.)

This smaller container must have been a 2-gallon pail, because I think I made about 19 trips. It took about 45 minutes for all the water to drain out. My advice: Use two pails that will fit under the drain valve.

#### **Note About Electric Water Heaters:**

Since gas water heaters have a burner beneath the water tank, the bottom of the tank (and therefore the drain valve) is usually about a foot above the floor. But... electric water heaters often have a drain valve that is very close to the bottom of the appliance, and since most plumbers install a water heater directly on the floor, the drain valve on an electric heater may be very close to the floor. This is a real pain-in-the-@ss to drain. I usually connect a short piece of garden hose to the water heater drain valve and place the hose in a bucket. When water will no longer flow from the hose into a bucket I will place the end of the hose in something shallow, such as a dishpan or even a cake pan.

**Walk Out Basements:** If a house had a “walk-out” basement, then a garden hose could be connected to the water heater drain valve. The hose can be run out the door and the system will drain itself with minimal effort.

**Pumping:** I have used a cheap drill-powered pump (that connects to a couple of garden hoses) to push the water up and out of a basement window. It worked okay, but the pump leaked and sprayed a couple of gallons of water all over the basement.

#### **Gravity Makes It Easy:**

Draining the water in this house was easy because while standing in the basement I could see all of the horizontal plumbing runs. I traced the copper pipes from the water heater and wherever the lines turned vertical, they went up, never down. I could tell that all of the water would drain simply by opening the water heater drain. Good plumbing, but not all houses are so lucky. Often the pipes will turn down and then up, leaving a “trap” or “valley” that won't drain by gravity. To fully drain those pipes compressed air is the logical solution.

## Forcing Out Water With Compressed Air:

If the plumbing can't be drained by gravity, then an air compressor can be used to blow the water from the supply pipes. The trick is getting air into the pipes.

Washing machine connections and outdoor faucets are the easiest because a garden hose can be adapted to an air hose.

A kitchen or bath faucet isn't as easy. Perhaps the simplest way to force compressed air into these faucets is to remove the aerator and insert a simple blow gun, wrapping a rag around the nozzle to seal the connection.

## Letting More Air Into The System:

When the water flow had slowed to a trickle, I went outside and opened up the outdoor faucet.



Then I set the clothes washer control to the beginning of a normal wash cycle and started it. No water came out (as expected) and I could hear a low hum from the solenoid-operated fill valves being held open.



I stopped the cycle after a few seconds.

There was one minor problem area: the vertical pipe just above the water meter. With no opening to drain this short section of pipe, I used a large wrench to loosen one of the threaded fittings on the water meter.



In Hindsight...

I didn't think of this until later... there may have been a bleeder valve on one of those ball valves used to shut off the main incoming water line.

This picture shows a "Stop and Waste" ball valve.

This is different from a regular ball valve because it has a cap that covers a small opening. When the water is shut off, this cap can be unscrewed so the water downstream of the valve can be drained.

This valve is supposed to be installed with the bleeder downstream of the ball valve, otherwise it's useless.



### Other Details:

Since the washing machine water supply hoses ran down behind the appliance, they formed a trap. Unless forced out or drained out by gravity, water will stay in these hoses.

I removed the washing machine supply hoses (I needed a pair of Channel-Lock pliers to loosen the fittings) and drained each hose into a cup.



Even though I had already flushed the toilet once, the tank was still about half full.

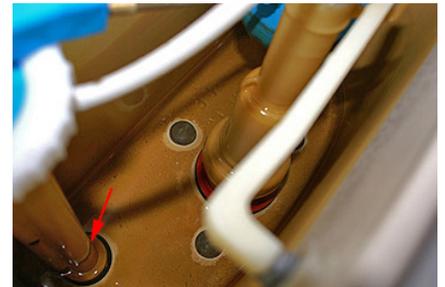
These newer 1.6 gallon per flush toilets have the same size tanks as older units; the only change is that the flush valve closes sooner, thereby letting less water into the tank.



To drain the remaining water from the toilet tank, I flushed again and held the flush lever down until the water level reached its lowest possible point.



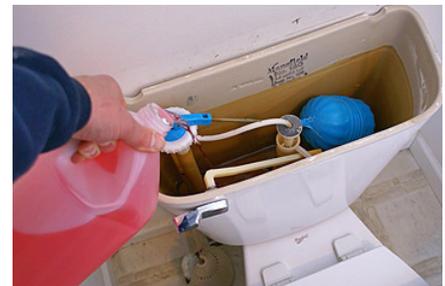
There was still about ¼ inch of water left in the tank. I suppose I could remove this water with a sponge, some towels, or a turkey baster, but I didn't have any supplies because this house was vacant. Slight amount of water remaining in toilet tank after flushing.



### Adding RV Antifreeze:

To prevent this small amount of water from freezing, I poured about a cup of RV antifreeze into the toilet tank.

Even if this water froze, it's unlikely to cause any damage because when the ice forms it would have room to expand.



I used a plunger to remove some of the water from the toilet bowl.



Then I poured about a quart of RV antifreeze into the bowl. It's important to make sure the liquid covers the opening, or else sewer gases could enter the building.



I poured about two cups of RV antifreeze into each sink drain.



I poured a similar amount into the bath tub drain.

I wiped up the excess antifreeze around the drain, just in case. I can't imagine how ethylene glycol and propylene glycol could damage any plumbing fixtures... but I didn't want to take chances with this stuff leaving a pink stain. Maybe I'm just paranoid.



I poured antifreeze into the kitchen sink. Antifreeze for the kitchen sink drain trap.



The point here is to try to replace the water in the sink trap with antifreeze... but the antifreeze won't displace the water, it will mix and displace some of the water. The only way to ensure that the antifreeze has its maximum protection (i.e. -50 degree freezing point) is to remove all of the water before adding antifreeze. I doubt that this house will get anywhere near that temperature, given that the coldest winter temperatures around here are about -20° F, and the house is sure to stay much warmer than that. I would be surprised if the temperature inside this house ever got below 10 degrees... but I'm certain that the temperature will get below freezing.

## But Wait... Appliances Hold Water Too:

You may not see any water, but normally a dishwasher holds some water below below it's drain.

Underneath this point there is (normally) a pump that has water in it all the time. I poured about a quart of water into the dishwasher drain.



Then I ran the dishwasher until I could hear the pump run. If this dishwasher had a manual timer (a rotary dial with many positions) I would've turned it to a point in a rinse cycle, turned on the machine and manually advanced the timer until the pump ran.

Since this appliance had an electronic control, I selected a short cycle (rinse only) and pressed the ON button. I heard the fill valves open (they made a slight hum) but nothing else. When I pressed the CANCEL button, the pump ran for a short period. That's all I needed.



I poured about a quart of antifreeze into the clothes washer...



...then I turned the control to the SPIN cycle and pulled the knob to start the machine. I let the washer run for about 30 seconds, until I could no longer hear any water going down the drain.



I suppose some antifreeze got into the washing machine drain, but I couldn't be sure. So I pulled the drain hose out and poured in a cup of antifreeze.



## The Refrigerator Icemaker:

The other water-containing appliance in a typical house would be the refrigerator, if it was equipped with an **icemaker**. The frig in this house didn't have an icemaker. **If** it did, I would have pulled the refrigerator away from the wall and disconnected the icemaker water line and let the water flow out into a pail. Any water remaining in the appliance should be fine (it's meant to freeze).

**Furnace-Mounted Humidifier:** It may be necessary to manually open the humidifier float valve to let the water drain out. Many humidifiers have a basin of water that may need to be drained. **Do not** put antifreeze in a humidifier, it'll ruin it.

## The Furnace:

You wouldn't think that a furnace would contain water, but some do. High-efficiency furnaces (also called **condensing** furnaces) generate a significant amount of condensation from the water vapor in the flue gases. These furnaces always have a condensate drain line. Sometimes the condensate drains into a floor drain, but if there's no drain available the condensate drains into a small pump which pumps the fluid uphill into the plumbing drain.

You can tell this is a high-efficiency furnace because the chimney is the white plastic pipe visible in the upper right of the picture.



The condensate pump (1) was located just above the floor. This unit contains a small electric pump, a plastic basin for the water, a float device that turns the pump on and off.

Arrow 2 points to a gray plastic trap device on the side of the furnace. Two small white plastic tubes lead into this trap, and a larger plastic tube drains the trap into the condensate pump.

Arrow 3 points to the flexible plastic discharge tube that leads from the pump to the drain pipe.



I poured some RV antifreeze into the trap. As I poured, the pump kicked on. I continued to pour antifreeze into the drain until I saw some pink color in the discharge tube.



Note that this discharge tube is always **filled with water**... at least up to the level where the tube turns downhill and goes into the drain. I suppose that **if** this flexible vinyl tubing were to freeze it might not rupture. And if it **did** rupture, it wouldn't be too difficult or expensive to replace it. My biggest concern was the pump itself, which could be damaged if water froze inside. The last time I bought one of these pumps it cost about \$50.

When I was done putting antifreeze in the condensate drain system, I turned off the power to the furnace. A few days later the homeowner had the gas company turn off the natural gas. Even when no gas is consumed they still charge a service fee of \$8.50 per month



### Hot Water Heating Systems:

A hot water (or hydronic) heating system would also need to be drained if the heat was going to be shut off during the winter. Draining a hydronic heating system is slightly more complicated than draining the potable water system.

1. Shut off the power to the boiler.
2. The “make up” water supply needs to be shut off. All hydronic heating systems have a connection to the cold water supply, and there is always a shutoff valve on this line.
3. The system drain needs to be opened. There will be a drain valve at the lowest point in the system.
4. Air needs to be allowed in. Every radiator should have a bleeder valve, which is typically a small cap on the elbow at the end of a baseboard radiator. Old cast iron radiators have a bleeder valve near the top, which can be opened with a special key (available at a plumbing supply or hardware store). Needle-nose pliers work too.

All of the bleeder valves need to be opened while the water drains out. This can take a while, perhaps an hour.

**Refilling:** All of the bleeder valves need to be opened. The system drain needs to be closed, of course. The make-up water supply valve is opened. When water spurts out of a bleeder, close it. When all of the bleeders have been closed the system can be run. Odds are you will hear occasional gurgling sounds as air bubbles circulate through the system. Many systems have an automatic bleeder valve above the boiler that lets these bubbles escape. Otherwise it may be necessary to open a bleeder to let the air out. First try the highest bleeder in the system, because air will often accumulate at the highest point.

### Well Water:

If a house has a well instead of municipal water, then the well pump needs to be shut off and the pressure tank drained. To turn off the well pump, the breaker can be turned off, or look for a disconnect switch near the well tank.

A well system can be emptied at the pressure tank drain valve (red arrow).

This valve is often close to the floor, so a short garden hose is helpful. The last few gallons will need to be drained into a shallow container, such as a dishpan or cake pan. Draining a well pressure tank with a garden hose and bucket.



If the entire system is drained through this valve, the water heater will still need to be drained.

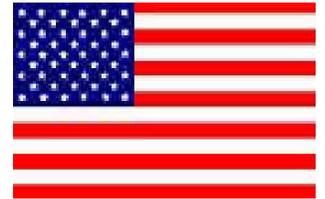
[http://www.hammerzone.com/archives/plumbing/systems/winterize/heat\\_off.htm](http://www.hammerzone.com/archives/plumbing/systems/winterize/heat_off.htm)

Contact CAHI c/o  
 Scott Monforte  
 39 Baker St.  
 Milford, CT. 06461

Email: [info@ctinspectors.com](mailto:info@ctinspectors.com)

Web: [www.ctinspectors.com](http://www.ctinspectors.com)

*Articles published in CAHI Monthly are the sole opinion of the author. CAHI does not endorse or state a position for or against the content of said articles.*



CAHI Executive Board		CAHI Presidents	CT Home Inspection Licensing Board	
<b>President</b>	Stanley Bajerski 203-257-1694	Bernie Caliendo	William Stanley, Chairman	Inspector
		Robert Dattilo	Rich Kobylenski	Inspector
<b>Vice President</b>	Scott Monforte 203-877-4774	Woody Dawson	Larry Willette	Inspector
		Michael DeLugan	Bruce Schaefer	Inspector
<b>Treasurer</b>	Dan Kristiansen 203-257-0912	David Hetzel	David Sherwood	Inspector
		Richard Kobylenski	Eric Curtis	Public Member
<b>Secretary</b>	Dean Aliberti 202-414-8336	Scott Monforte	James J. O'Neill	Public Member
		Joseph Pelliccio	Daniel Scott	Public Member
<b>Director</b>	William Kievit 860-919-4960	Pete Petrino	<p><b>The Licensing Board meetings are held at 9:30 am</b>  <b>Dept of Consumer Protection</b>  <b>165 Capitol Avenue. Hartford</b>  <b>The public is always welcome.</b></p>	
<b>Director</b>	Kevin Morey 203-375-5997	Dwight Uffer		
<b>Director</b>	Woody Dawson 203-272-7400	They have served as our primary leaders and in other capacities since 1992.		
<b>Director</b>	Al Dingfelder 203-376-8452	Please thank them for their service when you have a chance.		

**Published by:** Larry Ruddy  
 Larryhp@cox.net