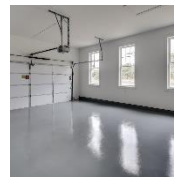




Homeowner Tips for Mechanical Systems



Plumbing, Gasfitting, Heating, Sheet Metal & Air Conditioning

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BATHROOM

Bath Fan(s)

Every bathroom requires a means to exhaust air for ventilation. The most typical method of accomplishing this is with a bath fan controlled by a standard wall switch.

- ✓ According to the Home Ventilation Institute (HVI), a good rule of thumb is to run the bath fan for at least 20 minutes after the shower has been used to avoid excessive humidity related issues (i.e., water staining and surface mold).
- ✗ Leaving the fan on for extended periods of time will increase utility costs.

✓ Service: Annually

- Fans should be serviced by a certified HVAC technician for safety and efficiency.

Tub & Shower Drain

Tub and shower drains are among the most problematic in any home, but proper use and maintenance can prevent blockages, or at very least, have them be fewer and farther between.

A blocked tub or shower drain is most typically the result of hair blocking the drain.

- ✓ Use needle nose pliers or tweezers to carefully remove hair on a regular basis will help to prevent blockage from occurring, as well as foul odors associated with decomposing hair. Simply rotate the drain plug counterclockwise to remove to allow easier access to the drain.

Also, care should be taken to ensure objects (such as razor guards, shampoo bottle caps, etc.) do not enter the drain, as once they enter, they can be very difficult to retrieve.

- ✓ Ensure drain plugs and grates remain in place at all times to help prevent objects from falling into drain.

Soap scum can also build up and create a restriction or blockage in the drain.

- ✓ Filling a tub with hot water and releasing (with hand protection to prevent scalding) all at once monthly will likely eliminate any restrictions in the entire drain and help prevent blockages.

✓ **Service:** Monthly

- Use needle nose pliers or tweezers to carefully remove hair on a regular basis to prevent and eliminate blockages as well as foul odors caused from decomposing hair.
- Fill the tub with hot water and release to help prevent and eliminate any soap scum build up or blockages. Use hand protection to prevent scalding.



GARAGE

Garage Sump(s)

Your garage may be equipped with one or more sumps in the floor. Garage sumps are most commonly drained to the sewer system. In some cases, garage sumps may drain into a larger sump with a pump that discharges to the outside. This arrangement is most commonly used in homes with a private septic system to prevent unnecessary dilution within the septic tank.

Lastly, garage sumps may not have a drain at all and must be manually pumped out when it becomes necessary. This arrangement is less common but is sometimes used in homes with a private septic system to prevent unnecessary dilution within the septic tank.

Garage sump systems are typically designed to contain dirt, gravel, and sand (solids), while allowing water to drain out. The accumulation of solids may eventually result in the drain plugging off, resulting in water backing up.

✓ Service: Water Backing Up

1. Remove the sump grate(s) - ***for safety never leave a sump without a cover unattended***
 2. Remove the accumulated solids with a shovel or shop vac.
 3. Return the sump(s) to normal operation.
- Should the issue persist, remove the cleanout cap for the downstream P-trap (most typically located in the mechanical room or under the front door landing) and remove accumulated solids, most effectively done with a shop vac. Add 2L of water to the P-trap after cleaning to create a trap seal again to prevent sewer gas from entering the living space.

Garage Unit Heater

The most common method of heating a garage space is with a gas fired unit heater.

- ✘ Do not operate heater in sub-zero temperatures for prolonged periods of time (this will reduce the service life of the appliance). It is recommended that the thermostat be set no lower than 5°C.
- ✘ Do not turn thermostat to the bottom. If heat is only required intermittently, it is best to shut the power off to the heater altogether and then turn power back on when heat is required.

There is typically an intake pipe supplying outside air to the unit heater, this air is required for combustion.

- ✘ Do not obstruct combustion air intake in any way.

Venting is typically sloped down to the outside. If condensation forms in the venting system, it will be deposited outside under the vent termination. This condensation is quite acidic and can damage concrete, so vent terminations are not typically placed over a sidewalk or driveway. In the rare case that placement over a sidewalk or driveway was required and condensation *does* occur, it's best to place a plastic pail underneath during the heating season. If any frozen condensate builds up, be advised that it is much harder than regular ice and is not easily broken. (Do not attempt to kick it!).

✓ Service: Annually

- Unit heaters should be serviced by a certified HVAC Technician for safety and efficiency.

Garage Ventilation System

Your garage may be equipped with a ventilation system. This system is most typically employed in combination with in-floor heat in a garage. Its primary purpose is to exhaust hot humid air and replace it with cool dry air, and is typically controlled by a wall de-humidistat, effectively lowering humidity within the space.

Recommended de-humidistat setting is 35-55%. The system may require some adjustment between seasons. Be cautious of setting it too high or too low. A good starting point is 50%, turning down 5% per day if any evidence of high humidity, and up 5% per day if any evidence of excessive exhaust fan operation (can result in garage cooling off too much and increased utility costs).

✓ Service: Annually

- Ventilation systems should be serviced by a certified HVAC Technician for safety and efficiency.



LIVING SPACE

Fireplace

Your home may be equipped with a natural gas fireplace, most of which are now electronic ignition (no pilot flame). The most typical method of controlling the operation of the flame is with a wall switch. Simply turn the switch on and the flame should turn on within a few seconds. If it does not turn on, common causes are likely that the switch inside of the unit is set to off or the gas valve inside of the unit is closed. In cold weather it may take your fireplace a few trials for ignition before flame will come on, this process could take a couple of minutes. If after 2 minutes the flame hasn't come on, shut the switch off, wait 5 minutes and then repeat the process. If issue persists, contact a gas technician for service.

Your fireplace may be equipped with a fan. The most typical method by which a fireplace fan is controlled is with a temperature switch, which will automatically turn the fan on once the fireplace has reached a set temperature (generally takes about 5 minutes after the flame is on for the fan to turn on). Less commonly, there may also be a wall switch for the fireplace fan that must also be on in order for the fan to operate. It is not imperative that the fan is used, it simply increases the efficiency of heat distribution to the space.

✓ **Service:** Annually

- Gas fireplaces should be serviced by a certified gas technician for safety and efficiency.

Garburator (Food Disposal)

Your home may be equipped with a garburator (food disposal) in the kitchen sink. Although these are meant to handle food scraps, excessive use can be problematic.

- ✓ Do limit the amount of food being disposed of as the more food that goes in, the more likely drain issues will arise. Also, food takes longer to decompose and is hard on private septic systems (septic systems must be upsized to accommodate a garburator).

The more food that is put down a drain, the more water that is required to flush it away.

- ✓ Do ensure to run plenty of cold water during food disposal, and then flush with hot water for a few minutes afterwards.
- ✗ Do not dispose of foods like coffee grounds, grease, eggshells, onion skins, potato peels, hard foods (bones, nuts, pits), and dry expandable foods (pasta, oats, and rice).
- ✗ Do not use drain cleaning or unclogging chemicals to attempt to clear blockages – contact a trained professional.

✓ **Service: Monthly**

- Fill both sides of kitchen sink with hot water and release (with hand protection to prevent scalding) both sides at once (this will likely eliminate any restrictions in the entire drain and help to prevent blockages).

✓ **Service: Plugged Sink**

- Should your kitchen sink become plugged, correction is best left to a trained professional.

Kitchen Sink Drain

Kitchen sink drains are among the most problematic in any home, but proper use and maintenance can prevent blockages, or at very least have them be fewer and farther between.

Grease is the most common cause of blockage in kitchen sink drains.

- ✓ Do limit grease from going down the drain as much as possible. Should it become absolutely necessary for grease to go down the drain, be sure to run plenty of hot water afterwards.

Food solids are the second most common cause of blockages in kitchen sink drains.

- ✓ Do limit food solids from going down the drain. Should it become absolutely necessary for food to go down the drain, be sure to run plenty of hot water down afterwards.

These same conditions apply to dishwashers, as they are affected just as adversely by grease and food, and discharge into the same drain as the kitchen sink.

- ✗
- ✗ Do not dispose of foods like coffee grounds, grease, eggshells, onion skins, potato peels, hard foods (bones, nuts, pits), and dry expandable foods (pasta, oats, and rice).
- ✗ Do not use drain cleaning or unclogging chemicals to attempt to clear blockages – contact a trained professional.

✓ **Service: Monthly**

- Fill both sides of kitchen sink with hot water and release (with hand protection to prevent scalding) both sides all at once (this will likely eliminate any restrictions in the entire drain and help to prevent blockages).

✓ **Service: Plugged Sink**

- Should your kitchen sink become plugged, correction is best left to a trained professional.

Principle Ventilation System

Every new home requires a means by which to provide ventilation to ensure that fresh air is brought into the home on a regular basis. The most typical method of accomplishing this is with a timer switch controlling both an exhaust fan (typically the most central bath fan, but sometimes an inline fan in the mechanical room) and the furnace fan simultaneously.

You may notice that a few times a day a bath fan will turn on automatically along with the furnace fan, this is normal. This timer switch is typically located directly above the thermostat in a central area and is programmed to turn on multiple times a day.

Should you want to temporarily increase the ventilation in your home, you can press the button on the timer switch to turn it from “auto” mode to “on” mode. Be careful to switch it back to “auto” mode once the need for extra ventilation has been satisfied as leaving it on indefinitely will result in increased utility costs.



Service: Annually

- Fans should be serviced by a certified HVAC Technician for safety and efficiency.

Range Vent Fan

Every new home requires a means by which to exhaust air from over the range and a means of “make-up air” (air to replace that which has been exhausted). The most typical method of accomplishing this is with a range fan interlocked with the furnace fan (using either a current sensing relay or an air pressure switch). Either way, you may notice that whenever the range fan is activated, the furnace fan also turns on automatically, this is normal.



Service: Annually

- Fans should be serviced by a certified HVAC Technician for safety and efficiency.



MECHANICAL ROOM

Air Conditioning System

Your home may be equipped with central air conditioning. These systems are designed to lower and maintain the temperature in your home to room temperature (21.5°C). Restricted filters are the most common reason for A/C systems to freeze up.

- ✓ **VERY IMPORTANT:** Do keep your furnace air filter clean to prevent system freeze up. **(See furnace section).** *This is the most common reason A/C systems freeze. *Freeze ups resulting from restricted or plugged filters are not a warranty issue.*

Although your thermostat may be able to adjust the cooling setpoint lower than 21.5°C, doing so may cause your A/C coil to freeze up inside the ductwork. Any setting lower than 19°C will almost certainly cause this issue.

- ✗ Do not set cooling setpoint lower than 19°C. *Freeze ups resulting from thermostat turned too low are not a warranty issue.*

- ✓ If your furnace is equipped with both A/C and a humidifier, it is imperative that the humidifier damper be turned to “summer” mode during cooling operation. **(See humidifier section).**

Cooler air naturally falls, so it is common to have basements cool more quickly than the rest of the home while operating A/C.

- ✓ Do adjust ceiling registers in basement gradually until a satisfactory temperature is reached. General rule of thumb is to close them completely, and then open until minimal airflow can be felt while the A/C is operating, and then adjust from there (if too warm, open more; if too cold, close more).

- ✓ **Service:** Annually

- Air conditioning systems should be serviced by a certified HVAC Technician for safety and efficiency.

✓ **Service:** A/C Stops Cooling

- Should your A/C seem to stop cooling the house, first check your cooling setpoint and then check your filter. If there is ice built up anywhere outside of the A/C coil (cabinet on top of the furnace), it is almost certain that the coil itself is frozen up inside ductwork. If this is the case, shut the power off to the furnace and the A/C and allow it to thaw for 24hrs before turning back on. Water will likely pool around the furnace as the coil thaws, so putting a couple towels at the base of the furnace can help contain this.

Boiler System

Boiler systems are a great way to provide heat to a space, but are more costly, so they are much less commonly used than other methods such as furnaces. The most common methods to distribute the heat is “in-floor” (piping installed within a concrete floor), or “staple-up” (under a wood floor). Boilers can also be utilized to produce hot water by either an “in-direct” hot water tank or by an integral heat exchanger to provide “on-demand” hot water (common in “combi” boilers).

- ✓ It is important that if an external circulator is utilized with a “combi” boiler, that the pump be set to “temperature” mode, indicated with a thermometer symbol (see diagram in **Hot Water Recirculation System section**).
- ✗ Do not run circulator in other modes (“continuous” mode, “100%” mode, or “AUTO ADAPT” smart mode) with a “combi” boiler as this will adversely affect the in-floor heating operation.

Boiler systems are inherently complicated, but if properly installed, setup and serviced annually, they do not require much attention from the homeowner.

Modern boilers produce condensation, which is collected within the appliance and then piped to a nearby floor drain. The relatively cool exhaust gases are vented to the outdoors, typically out the side wall of the home. The **exhaust vent outside terminations** for these appliances are quite susceptible to becoming blocked with ice, especially during prolonged periods of extreme cold weather. The **intake outside terminations** for these appliances also typically terminates out the side wall of the home and are also quite susceptible to becoming blocked with frost, especially during prolonged periods of extreme cold weather or whenever there is ice fog.

- ✓ VERY IMPORTANT! Do check these terminations on a regular basis, especially during extreme cold weather and whenever there is ice fog. *Rule of thumb: if the trees are frosty, then your terminations probably are too!* Should your boiler quit working, this is the **first thing** to check before requesting service. *Blocked intakes or exhausts are not a warranty issue.*

✓ **Service:** Annually

- Boilers should be serviced by a certified gas technician for safety and efficiency.
- “Combi” boilers require descaling on an annual basis as they are highly subject to scale build up as compared to hot water tanks. Note: Hot water tanks do not require descaling but do require flushing on an annual basis.

- Boilers with an air filter (on the intake air, located behind the front cover) should have the filter checked annually.

✓ **Service:** No Hot Water or Boiler Quits Working

- If there is an issue with heat or hot water, check the air filter (should your boiler have one, it will be on the intake air behind the front cover) before calling for service. *Plugged filters are not a warranty issue.*
- Also check outside terminations for blockage, especially during extreme cold weather before calling for service. *Blocked intakes or exhausts are not a warranty issue.*

Floor Drain(s)

Every new home requires a floor drain(s) to direct unwanted wastewater to the sewer system. The most common location to find a floor drain is within the mechanical room, although they are often also found near the weeping tile sump and sometimes under or near washing machines.

Floor drains keep sewer gas from entering living space by means of a trap seal. This is accomplished by a P-trap (the u-shaped part of the drainpipe) being filled with water. This water can evaporate over time, so it is imperative that it be checked and “topped up” periodically.

- ✓ Do add 2 litres of water to all traps monthly
- ✓ Adding a small amount (30 mL/ 1 oz.) of food grade oil such as vegetable or canola oil to the floor drain will extend the time that it takes for the trap to dry out.

If the trap has a foul smell even after water has been added, the trap has likely gone “septic” (bacterial growth). This can be resolved by flushing the trap with 8 litres of water and then adding 1 cup of bleach.

✗ ***Never mix two different chemicals such as bleach and ammonia!***

If symptoms persist, repeat these steps again the following day. If the symptoms continue to persist, contact a plumbing technician for assistance.

It is suggested that water alarms be setup in or around floor drains, as they are helpful in alerting occupants as soon as a sewer backup issue arises. They are relatively inexpensive and readily available at most hardware stores.

✓ **Service:** Regularly

- Check periodically to ensure floor drain trap has not dried out as the water will evaporate over time.

✓ **Service:** Emergency - Sewer Backing Up

In the event that the main sewer becomes restricted or blocked, the first fixture to be affected is the one lowest in the home, which is typically the floor drain(s).

If wastewater is ever to be found rising (backing up) out of any plumbing drain, ***stop using all water immediately*** and contact a plumbing technician for assistance.

Furnace

Every new home requires a means by which to provide heat to the space. The most typical method of accomplishing this is with a forced air furnace.

Today's forced air furnaces are highly efficient condensing appliances (90% AFUE or higher, typically 95%+) and are efficient enough that the products of combustion are cooled to the point at which some of it turns into liquid condensate. This condensate is collected within the furnace and is piped to a nearby floor drain.

The relatively cool exhaust gases are vented to the outdoors, typically out the side wall of the home.

The **exhaust vent outside terminations** for these appliances are quite susceptible to becoming blocked with ice, especially during prolonged periods of extreme cold weather.

The **intake outside terminations** for these appliances also typically terminate out the side wall of the home, and are quite susceptible to becoming blocked with frost, especially during prolonged periods of extreme cold weather or whenever there is ice fog.

- ✓ **VERY IMPORTANT!** Do check these terminations on a regular basis, especially during extreme cold weather and whenever there is ice fog. *Rule of thumb: if the trees are frosty, then your terminations probably are too!* Should your furnace quit working, this is the **first thing** to check before requesting service. *Blocked intakes or exhausts are not a warranty issue.*

Every furnace requires a means by which to filter the return air before it re-enters the furnace. The most typical method of accomplishing this is with a furnace filter rack.

Furnace Filter Rack:

- Typically located near the floor on one side or the other of the furnace.
- Typically, there is a door on the filter rack that must be removed or opened to access the filter.
- The slot for the filter will typically range from 1 to 6 inches wide but can accommodate any filter that width or smaller.
- The height and depth of the filter **must** match the height and depth of the filter rack.
- The most typical size of filter rack is 20" x 25".
- Filters generally last about 1 month for every 1 inch of their width. (So, a 20" x 25" x 4" filter would generally last about 4 months before needing to be changed, while a 20" x 25" x 1" would last about 1 month). That said, they should still be checked *every month*, by comparing the existing filter to a new filter, and changing if there is much difference in appearance.)
- Generally, the least restrictive filter that suits your application should be used (see chart on next page).
- More restrictive filters will certainly filter out finer particles but will result in noisier operation and higher utility costs.

- ✗ **Never operate your furnace without a filter in place.**
- ✗ **Never change the filter while the furnace is in operation.**

Should a filter become too restricted due to lack of maintenance, it can result in the high limit switch opening (causing heat to shut off) or the A/C coil to freeze up (if applicable).

Should your furnace need to be operated during construction, a minimum 4" wide MERV11 (MPR 1000-1200, FPR 7) filter must be in place. After construction is complete and the furnace and ductwork have

been professionally cleaned, a MERV8 (MPR 600, FPR 5) filter is typically more than adequate for most applications.

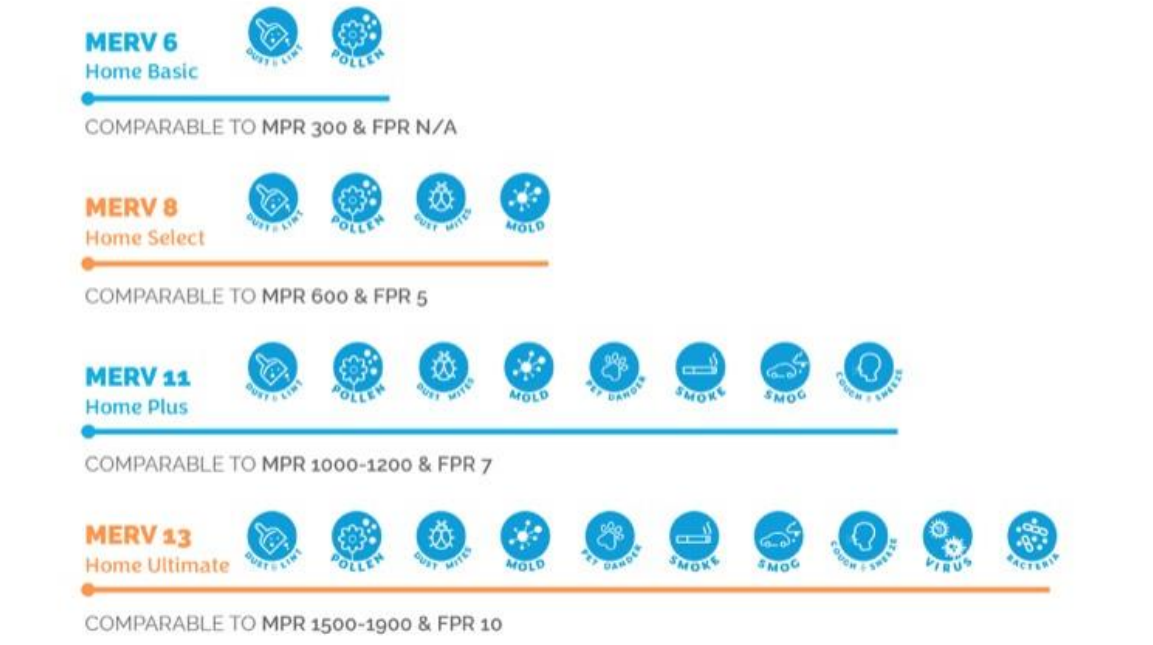
✓ **Service:** Annually

- Furnaces should be serviced by a certified HVAC or gas technician for safety and efficiency.

✓ **Service:** No Heat or Furnace Quits Working

- If there is an issue with heat, before calling for service, check the air filter. *Plugged filters are not a warranty issue.*
- Also check outside terminations for blockage, especially during extreme cold weather. *Blocked intakes or exhausts are not a warranty issue.*

MERV Rating	Air Filter will trap Air Particles size .3 to 1.0 microns	Air Filter will trap Air Particles size 1.0 to 3.0 microns	Air Filter will trap Air Particles size 3 to 10 microns	Filter Type ~ Removes These Particles
MERV 1	< 20%	< 20%	< 20%	Fiberglass & Aluminum Mesh
MERV 2	< 20%	< 20%	< 20%	~
MERV 3	< 20%	< 20%	< 20%	Pollen, Dust Mites, Spray Paint,
MERV 4	< 20%	< 20%	< 20%	Carpet Fibres
MERV 5	< 20%	< 20%	20% - 34%	Cheap Disposable Filters
MERV 6	< 20%	< 20%	35% - 49%	~
MERV 7	< 20%	< 20%	50% - 69%	Mold Spores, Cooking Dusts,
MERV 8	< 20%	< 20%	70% - 85%	Hair Spray, Furniture Polish
MERV 9	< 20%	Less than 50%	85% or Better	Better Home Box Filters
MERV10	< 20%	50% to 64%	85% or Better	~
MERV 11	< 20%	65% - 79%	85% or Better	Lead Dust, Flour, Auto
MERV 12	< 20%	80% - 90%	90% or Better	Fumes, Welding Fumes
MERV 13	Less than 75%	90% or Better	90% or Better	Superior Commercial Filters
MERV 14	75% - 84%	90% or Better	90% or Better	~
MERV 15	85% - 94%	95% or Better	90% or Better	Bacteria, Smoke, Sneezes
MERV 16	95% or Better	95% or Better	90% or Better	
MERV 17	99.97%	99% or Better	99% or Better	HEPA & ULPA
MERV 18	99.997%	99% or Better	99% or Better	~
MERV 19	99.9997%	99% or Better	99% or Better	Viruses, Carbon Dust, <.30 pm
MERV 20	99.99997%	99% or Better	99% or Better	



Heat Recovery Ventilator (HRV)

HRVs are a great way to provide ventilation to a space, but are more costly, so they are much less commonly used than other methods, such as a simple fresh air intake on the return air to furnace. If an HRV is utilized, it often replaces the Principle Ventilation System and sometimes the fresh air intake.

They are typically hung from the ceiling in the mechanical room.

✘ **VERY IMPORTANT!** **Never** operate HRV without a filter in place.

✔ **Service:** Monthly

- Check reusable filter (behind the front cover). They can either be vacuumed or washed and left to dry before reinstalling.
- During the colder months of the year an HRV will produce condensation which must be directed to a drain. This will cause humidity to be reduced within the home.

✔ **Service:** Annually

- HRV's should be serviced by a certified HVAC technician for safety and efficiency.

Hot Water Recirculation System

A common household inconvenience and waste is waiting for hot water to arrive at a plumbing fixture. This wait and waste can be greatly reduced by employing a hot water recirculation line complete with a circulator (“recirc” pump).

There are two methods to accomplish this:

- integral circulator (built into a tankless water heater), or
- external circulator (used in conjunction with any type of water heater).

Most often, these pumps are equipped with a temperature control, to shut the pump off when the recirculation line has reached a set temperature.

- ✓ If you have a “combi” boiler and an external circulator is utilized, it is important that the pump be set to “temperature” mode, indicated with a thermometer symbol (see diagram on next page).
- ✗ Do not run circulator in other modes (“continuous” mode, “100%” mode, or “AUTO ADAPT” smart mode) as this will adversely affect the in-floor heating operation.



✓ **Service:** Annually

- Circulators should be serviced by a certified plumbing and gas technician for safety and efficiency.

Humidity

Humidity within today's modern home can be a delicate balance. The optimum humidity level recommended for different building materials often don't match up with each other or with the optimum humidity level recommended for occupants.

For example:

- Health Canada recommends 30-55% humidity within a home for the occupants' health.
- The National Wood Floor Association (NWFA) recommends 30-50% humidity for hardwood flooring material.
- Humidifier and window manufacturers have charts outlining varying levels of recommended humidity dependent on what the outdoor temperature is, such as 20% humidity at -23°C outside temperature (**see chart below**).

In northern Alberta it is typical for humidity to drop significantly within a home during the much dryer winter months. This can often be offset by utilizing a humidifier, whether it be a stand-alone unit or installed on furnace duct work (central humidifier).

However, as newer homes continue to become more airtight, it has become more common to see humidity remain high even through the winter. This is most likely due to the moisture being released from building materials such as new concrete. This can be offset by increasing ventilation or utilizing a stand-alone dehumidifier. For this reason, it is recommended that humidifiers not be used for the first year unless the humidity drops low enough to require it's use.

A very common complaint is condensation and/or ice buildup on windows. If the inside humidity is high enough and the outside temperature is low enough, condensation and/or ice can and will form. This is much the same principle as a glass of ice water sweating on the outside. Although eliminating this issue completely may not be possible, there are steps that can be taken to help alleviate it to some degree.

If condensation and/or ice buildup on windows is causing water damage and other associated issues:

- ✓ Do increase ventilation (see **Principle Ventilation System** and/or **Heat Recovery Ventilator (HRV)**).
- ✓ Do keep window coverings open at all times unless completely necessary.
- ✓ Do fully open heat registers nearest problematic windows.
- ✓ Do regularly adjust humidistat to match recommended settings, (**see chart below**), especially whenever there are dramatic changes in outdoor temperature.

If your home's HVAC system includes a central humidifier, it will be mounted on the furnace ductwork. Humidifiers are most typically controlled by a humidistat mounted on the furnace ductwork above the humidifier.

- ✓ Do adjust the humidistat on a regular basis, especially whenever there are dramatic changes in outdoor temperature.
- ✗ Do not operate humidifier at the same time as A/C.
During summer: the "bypass" duct damper lever (located where the round duct connects to the humidifier) must be in the closed or "summer" position.

During winter: the “bypass” duct damper lever (located where the round duct connects to the humidifier) must be in the open or “winter” position.

Recommended Humidistat Settings					
At Outside Temperature		Recommended Setting	At Outside Temperature		Recommended Setting
-20°F.	-29°C.	15%	+10°F.	-12°C.	30%
-10°F.	-23°C.	20%	+20°F.	-7°C.	35%
0°F.	-18°C.	25%	Above 20°	-7°C.	40%

✓ **Service:** Annually

- Humidifiers should be serviced by a certified HVAC technician for safety and efficiency

Sump (Weeping Tile Sump with Pump)

Every new home requires a means by which to collect and eliminate water from around the foundation. This is most typically accomplished by means of weeping tile around the perimeter of the foundation draining to a sump pit.

The sump pit is typically located in the mechanical room or under the front door landing, although they can also be located on the outside of the foundation.

These sump pits are typically equipped with a pump that discharges to the outside. This discharge can be extended with a flexible discharge extension kit (available at most hardware stores) to direct water further away from the foundation to help reduce water recycling back into the weeping tile system.

- ✓ Do be sure that these extensions are removed well before the outdoor temperature drops below 0°C. Should the discharge freeze up and become blocked, the pump may run continuously causing undue wear or complete failure, as well as sump backup/overflow and associated damages.
- ✓ *Extensions must be removed well before temperatures drop below 0°C.*

There may also be provision for the pump discharge to be diverted to the sewer as well. Should this be the case that provision is intended for emergency use only as this water isn't to be continually discharged into the sewer in most jurisdictions.

Sump pump failures are the leading cause of basement floods. The life expectancy of a common sump pump is 3-5 years, although they can sometimes last as long as 7-10 years. Sump pump failure is inevitable, so it should be accommodated and planned for ahead of time.

Your home may be equipped with a recessed sump pan complete with a floor drain. This is the very best method by which to mitigate issues related to sump pump failure.

- ✓ Do ensure that this floor drain (as well as any other) remain unobstructed at all times. A common unintentional obstruction is a carpet laid over top of a floor drain effectively rendering it useless.

- ✓ Additional backup pumps in both plug-in and battery powered options can be added to be even better prepared for a pump failure.

It is suggested that water alarm(s) be setup in or around sumps, as they are helpful in alerting occupants as soon as an issue arises. They are relatively inexpensive and readily available at most hardware stores.

Should a sump pump fail, it is imperative that replacement happen immediately, as even a quick rainstorm can dump a very large amount of water into the weeping tile system in a very short amount of time. Proper landscaping/grading away from the home is the best way to ensure the least amount of water possible enters the weeping tile system.

In rare cases, very small amounts or even no water at all will regularly make it into a weeping tile system. While this would be considered a good scenario, it can result in the pump not getting enough use or “exercise”, which can cause it to become stuck.

- ✓ Do test/run or “exercise” the pump monthly for all installations, this is especially important for a system that remains relatively “dry” throughout the year. Do this by manually lifting the float to simulate water rising in the sump to turn the pump on for 5 seconds.

✓ **Service:** Annually

- Sump pumps should be serviced by a certified plumbing technician for safety and efficiency.

Water Heater

Hot water in modern homes is provided by one of the following methods:

- tankless water heater (most common)
- hot water tank
- “combi” boiler
- Boiler with indirect tank

Currently, the most common method utilized is a tankless water heater.

Some of these appliances produce condensation, which is collected within the appliance and is piped to a nearby floor drain. The relatively cool exhaust gases are vented to the outdoors, typically out the side wall of the home.

The **exhaust vent outside terminations** for these appliances are quite susceptible to becoming blocked with ice, especially during prolonged period of extreme cold weather.

The **intake outside terminations** for these appliances also typically terminate out the side wall of the home, and are quite susceptible to becoming blocked with frost, especially during prolonged period of extreme cold weather or whenever there is ice fog.

- ✓ VERY IMPORTANT! Do check these terminations on a regular basis, especially during extreme cold weather and whenever there is ice fog. *Rule of thumb: if the trees are frosty, then your terminations probably are too!* Should your water heater quit working, this is the **first thing** to check before requesting service. *Blocked intakes or exhausts are not a warranty issue.*

✓ **Service: Annually**

- Water heaters should be serviced by a certified gas technician for safety and efficiency.
- Tankless water heaters and “combi” boilers also require descaling on an annual basis, as they are much more subject to scale buildup than hot water tanks.
- Hot water tanks and indirect tanks do not require descaling but do require flushing on an annual basis.
- Water heaters with an air filter (on the intake air, located behind the front cover) should have the filter checked annually.

✓ **Service: No Hot Water or Water Heater Quits Working**

- If there is an issue with hot water, before calling for service, check the air filter (should your water heater have one, it will be on the intake air behind the front cover). *Plugged filters are not a warranty issue.*
- Also check outside terminations for blockage, especially during extreme cold weather. *Blocked intakes or exhausts are not a warranty issue.*



EXTERIOR

Intake/Exhaust Terminations

Most modern gas appliances produce condensation, which is collected within the appliance and is piped to a nearby floor drain. The relatively cool exhaust gases are vented to the outdoors, typically out the side wall of the home.

The **exhaust vent outside terminations** for these appliances are quite susceptible to becoming blocked with ice, especially during prolonged period of extreme cold weather.

The **intake outside terminations** for these appliances also typically terminate out the side wall of the home, and are quite susceptible to becoming blocked with frost, especially during prolonged period of extreme cold weather or whenever there is ice fog.

- ✓ VERY IMPORTANT! Do check these terminations on a regular basis, especially during extreme cold weather and whenever there is ice fog. *Rule of thumb: if the trees are frosty, then your terminations probably are too!* Should any of your appliances quit working, this is the **first thing** to check before requesting service. *Blocked intakes or exhausts are not a warranty issue.*

There are other exhaust and intake terminations besides the ones for gas appliances, including but not limited to: bath fans, range fan, dryer vent, principle ventilation fan, heat recovery ventilator (HRV), fresh air intake, and radon vent.

- ✓ **Service:** Annually
 - All exhausts and intakes should be checked on an annual basis.
- ✓ **Service:** Any appliance or system is not working properly
 - Check these terminations for blockage, especially during extreme cold weather! *Blocked intakes or exhausts are not a warranty issue.*

Irrigation

Your home may be equipped with an irrigation system.

✓ **Service:** Annually/Seasonally

- A certified irrigation technician should service irrigation systems.
- Your irrigation system may be equipped with a testable backflow device. If this is the case, it is recommended that it be tested by a certified technician on an annual basis.
- It is imperative that this system be winterized every year well before temperatures fall below 0°C. Typically the system will have drain and blowout ports to allow an irrigation professional to complete winterization of the system.

Lawn Hydrants (Outside “Hose Bibs”)

The most common method of providing water outside for gardening etc. is with non-freeze lawn hydrants. These devices are equipped with a vacuum breaker on the top to prevent water from back-siphoning into the plumbing system. This can happen on the rare occasion of negative pressure occurring in the water distribution system, such as when the water supplier has a shut-down in the area. Vacuum breakers may leak from time to time, but so long as it is momentary it is normal. If a vacuum breaker leaks continuously while the hydrant is in use, repairs may be necessary.

If the hydrant has not been used for an extended period of time, such as over the winter, it may leak the first time that it is used. Turn the water flow on and off a few times in rapid succession in order to operate the vacuum breaker. This will often allow the vacuum breaker to unstick and return to proper operation.

It should also be noted that if a garden hose is pressurized but flow is stopped, any changes in pressure within the hose will cause the vacuum breaker to leak momentarily, this is normal. (Example of this would be a closed valve on the end of the hose then stepping on the hose or sun exposure heating and expanding the water in the line.)

Non-freeze hydrants shut the water flow off within the heated space in the home, not directly at the outside handle. This allows the portion of the hydrant that is exposed to freezing temperatures to drain out, thus preventing damage due to freezing and splitting.

Should the hydrant have anything connected to it and the outdoor temperature drop below 0°C, the hydrant is in danger of freezing and splitting, often resulting in damages.

✓ **Service:** Annually/Seasonally

- All hoses and hose accessories must be removed well before temperatures drop below 0°C.
- Lawn hydrants should be serviced by a certified plumbing technician.

RV Drain

Your home may be equipped with a drain outside for emptying black and gray tanks from your RV. These drains direct waste to the home's sewer system.

- ✓ Do ensure that these drains remain capped at all times when not in use to prevent sewer gas from exiting and anything other than sewage from entering.
- ✓ Do run plenty of clear water after use to ensure that sewage is flushed out of the drain to reduce smell and the chance of solids becoming lodged in the drain.