Alberta New Home Warranty Program

A Guide to the Care & Maintenance of Your New Home

BUILDING CONFIDENCE TOGETHER

Protect Your Investment

A new home is a large investment—the largest investment many people will ever make. The Alberta New Home Warranty Program (ANHWP Group) knows just how important that investment is to you and has developed this guide to help you protect your investment. Like a vehicle, a home requires maintenance to keep it in good working order. We encourage you to protect your investment and safeguard your warranties by following the advice in this guide.

Homes have always reflected the technology of the day as manufacturers and builders strive to improve their product. Tried and true materials and systems often change slowly but custom materials and new systems are always coming on the market. Though newer models/ products often prove more robust than previous generations, maintenance of some sort is still usually required.

Most of us take care of minor maintenance problems as they arise but many repairs would not be necessary if our focus shifted to preventative maintenance. There are many easy things a homeowner can do to prevent a minor maintenance project from becoming an expensive repair. We have included a list of maintenance tasks for each month of the year to help you stay on top of your home's maintenance needs.

In addition to avoiding expensive repairs, regular maintenance is often required to preserve warranty protection. Products should be used for their intended purpose and serviced accordingly.

The warranty protection ANHWP Group provides is detailed in the home's warranty policy or certificate, which often stipulate that maintenance is required to ensure warranty protection.

Throughout this guide, the term 'home' is used. While single-family homes may immediately come to mind, 'home' is also intended to represent multiplexes, townhomes, and units in multi-family buildings.

Guide Limitations

This guide addresses common maintenance requirements for homes and highlights potential solutions. It does not include all situations or all potential solutions. You must also assess your own capabilities to successfully complete maintenance or hire professionals where necessary.

Acknowledgments

This guide could not have been produced without substantial contributions from suppliers, manufacturers and i ndustry partners.

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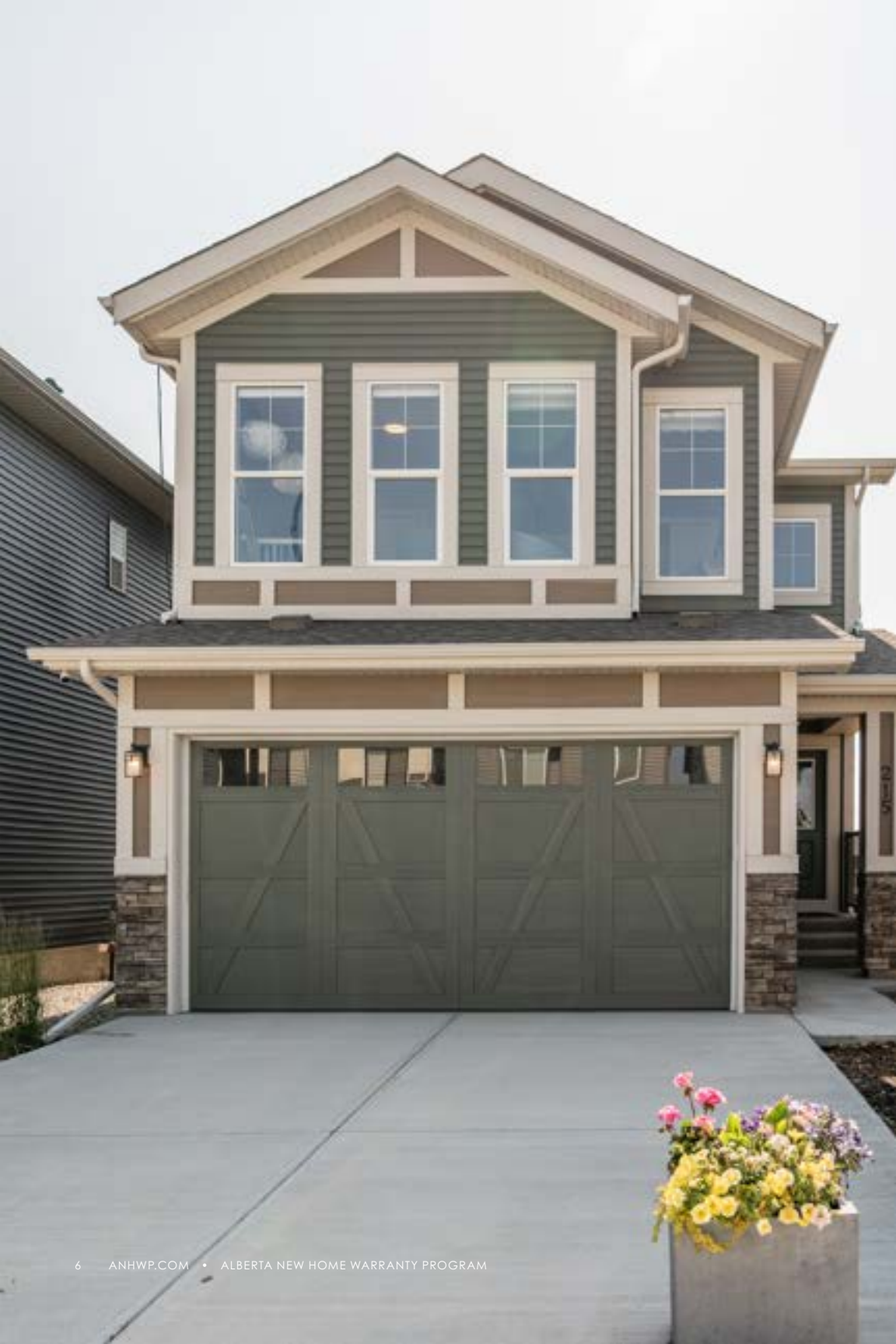


CHAPTER 1:

Exterior Elements

- Property Boundaries & Access
- Water Management Strategies
- Eavestroughs & Downspouts
- Landscaping
- Exterior Plumbing
- Fencing
- Wood Decking & Hand Rails

Property Boundaries & Access

What are survey plans and what do I do if I find a survey pin?

A survey plan establishes legal boundaries and defines the extent of a person's ownership or other land rights. Survey plans also include information about rights-of-way for utilities such as gas lines. Alberta Land Surveyors will mark each lot in a new subdivision with iron pins. These pins provide the legal boundaries of a property and a point of measure for future improvements such as a garage, an addition or a fence.

New homeowners may find a pin and think it's simply debris and throw it away. However, it's illegal to remove or tamper with an official boundary marker. For example, if the survey pin is right where you want a fence post, you must move the fence. **Do not** remove the pin. The cost of replacing a survey marker could be as much as the cost of the fence, driveway or landscaping.

You should also ask your local land surveyors to identify boundaries, so you know exactly where your property lines are located prior to a construction project. Sometimes pins are destroyed during construction or moved from their original position. Also, pins may not relate to your property at all but simply mark rights-of-way or other land-related measurements.

People frequently assume certain improvements (e.g. shed or fence) and physical features (e.g. a swale or power/telephone installation) indicate property lines. However, these physical features are not evidence of boundary lines and should not be used to determine your boundary lines.

Get more information about surveying from Alberta Land Surveyors' Association.

How do easements and utility corridors impact my property?

An easement provides another party access to a defined section of your property. For example, access is granted to service water/drainage systems, power/telephone cable routes or even a driveway route to an adjacent property.

Easements deal with the lot itself, not the homeowners, so when land is bought or sold the easements remain attached to that land in the sale. Easements are noted on the Real Property Report or on the Certificate of Title.

If you plan to build or landscape next to an easement (such as a power box, a drainage swale, property line or roadway), contact the planning department in your jurisdiction regarding buffer zones. Make sure you are aware of what you can and cannot do near utility poles, electrical boxes or meters installed on your property.

Before digging anything—from a new flowerbed to a deck pile—make sure you know the locations of all underground services. Within your province, utility services can be located free of charge with the "Call Before You Dig" service. Schedule an appointment by calling 1.800.242.3447 or visit clickbeforeyoudig.com.

Before digging anything — from a new flowerbed to a deck pile — make sure you know the locations of all underground services.

OTHER PROPERTY CONSIDERATIONS

- Before paving or installing a concrete driveway, look for a survey pin, plastic pipe or metal cover that indicates a water shut-off valve (sometimes called a 'cc valve') is in the area. Access to that valve must be brought to the top of the driveway. Do not cover the valve with concrete or asphalt
- When watering your lawn, avoid getting water on electrical boxes
- Do not surround gas meters with any enclosures. Enclosures could concentrate gas that would normally be vented.

Water Management Strategies

Water can cause significant damage to your home. A surface water management plan will remind you what actions must be taken to help keep water away from your home.

- Fill areas that have settled next to the foundation with clay—not topsoil— with a positive slope away from the foundation (10 per cent is recommended)
- Use downspout extensions to move water farther from the foundation and keep them extended year-round
- Ensure eavestroughs and downspouts are clear of debris
- Ensure window wells are clear of debris so water can flow to the weeping tile system. The top of a window well should be a minimum of two inches (50 mm) above finished grade. Do not plant flowers in window wells
- Sprinkler heads should not direct water against the foundation or cladding and should not be placed within the backfill area near the foundation
- Ensure your sump systems are in working order. Install a discharge hose if necessary to move water collected in your sump pit farther away from your home.
- Regularly clear any ice or frost buildup from storm water leaders connected to below grade storm lines and redirect any water through the overflow, away from the foundation.

ADDITIONAL RESOURCES:

For more detailed water management strategies, check out our Surface Water Management brochure or visit anhwp.com/surface-water

How is my lot designed to drain water?

In Alberta, most individual lots are graded according to a municipally-approved grading plan. Grading slopes the clay sub-soil away from the home. A second grading may take place to fine-tune the grade before topsoil is applied. In some jurisdictions, the homeowner is responsible for the second (final) grading of the lot. If you are unsure, contact your local authority (e.g. City of Calgary, Strathcona County) for lot grading requirements.

The lot may have drainage systems such as swales (shallow valleys), catch basins (storm water collection points) or holding ponds designed to control and assist in overall surface drainage.

Standing water near a home's foundation can find its way into the basement. For this reason, it's critical to drain pools of water as soon as possible. Homeowners are responsible to maintain drainage systems/strategies that move water away from their homes and away from neighbours' properties.

This can be accomplished by filling areas that have settled.

A lot is graded for drainage during normal rainfall but heavy or prolonged rain may result in standing water. Areas excavated during construction (e.g. utility trenches or basement areas) are more susceptible because they often settle over time, forming areas where water can collect and cause leakage problems.

To fill these settled areas (also called depressions), remove the topsoil and fill the depression with compacted clay—not topsoil. Topsoil absorbs water like a sponge and the water will simply drain through it and collect again when it reaches the clay layer located just below the topsoil.

OTHER DRAINAGE CONSIDERATIONS

- Do not alter the general drainage pattern of your lot without consulting your municipal authority
- Do not divert water from your property onto a neighbour's property
- Clear ice and snow from drains each spring and provide a drainage pathway to move water away from your home.
- Some window wells feature a drain to direct water down to the weeping tile. Window wells should be kept free of leaves, dirt and debris that could hamper drainage.

Eavestroughs & Downspouts

Efficient rooftop drainage will help you keep your basement dry. Eavestroughs move water to downspouts and away from your home or from your downspout to the drain, below ground. During heavy rainfall, this drainage system can move hundreds of gallons of water in a single day so it's important that eavestroughs are sloped towards the downspouts and are clear of debris. Surface particles from asphalt shingles are often washed away by rain and settle in the eavestroughs, reducing their efficiency.

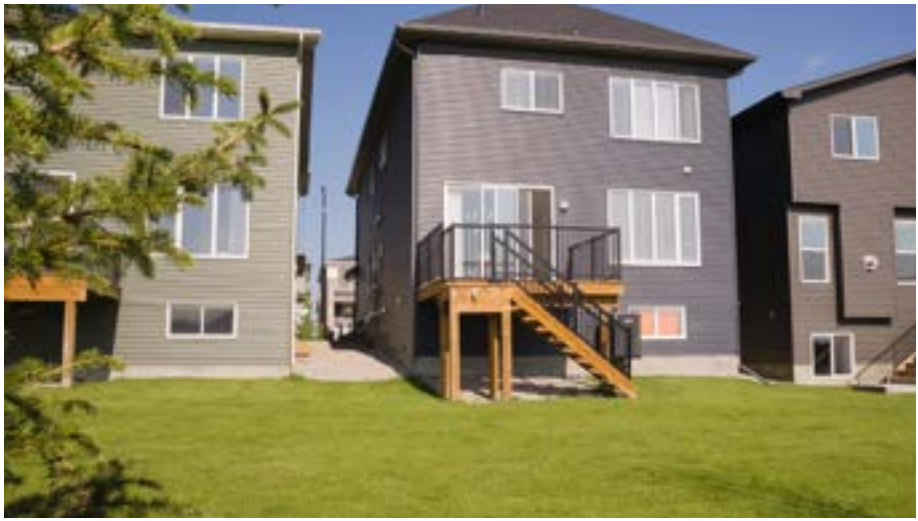
Clean your eavestroughs at least once a year to prevent this.

Downspouts ending on sod usually feature an extension to move water farther from the perimeter of the home. Always return downspout extensions to their lowered positions after cutting the lawn.

Surface drainage is far more efficient than weeping tile at keeping water away from your foundation. Weeping tile is a piping system that collects and channels subsurface water away from the foundation. Surface water (e.g. rainwater) must be directed away from the perimeter of the home to reduce demand on a weeping tile system.

Landscaping

Landscaping is **not** usually included in the contractual agreement between a builder and a homeowner. However, landscaping decisions and implementation can cause significant damage to a home so it's important to plan landscaping carefully and hire a professional if necessary.



How does landscaping impact water drainage?

The Prairie Provinces and interior BC, the can receive between 15 to 20 inches of precipitation per year. On a typical lot, this could produce over 166,000 litres of water, so it's important to consider the drainage plan for your lot when planning your landscape design. Here are some things to consider before landscaping:

- Grassed areas generally require steeper drainage slopes compared to hard surfaces like concrete or asphalt
- Planting beds should also be graded away from your foundation walls
- Some species of trees (such as poplar) have invasive root systems that can enter utility corridors and weeping tile systems. Tree roots have been known to rupture water and sewer lines and can exert enough force to crack concrete basement walls. Plant trees away from the perimeter of the home
- An established lawn prevents soil erosion. To avoid erosion, establish a lawn or implement your landscape design as soon as possible after the rough and final grades have been completed.

How do I take care of my new landscaping?

Newly planted lawns, shrubs or trees require special care and attention in the first few years to ensure proper root establishment.

SOD

Grass grows better in some areas than in others depending on exposure to sun, wind, rain and other factors such as drainage, soil type and maintenance. When establishing new sod, the first two weeks are critical. You should avoid walking on newly laid sod and should saturate the sod with water as soon as it's laid. Keep the grass moist for the next few days and in the second week, reduce watering to every other day. Once the grass has 'taken,' a weekly watering is usually adequate. Water evenly and slowly so the water penetrates the soil without running off.

Your lawn needs about 25mm (1 inch) of water a week—including rain—when it's actively growing in the summer. You can track this with a rain gauge. Shallow watering results in a shallow root system, leaving the lawn susceptible to damage. Deep watering establishes a strong, healthy root system. Hot, sunny areas may need more water and shady areas may require less water. It's important to avoid over-watering because saturated soil prevents air from reaching the root zone where it's needed.

Proper mowing keeps grass healthy. Grass cut too short is susceptible to sun damage. Landscapers recommend grass should be approximately 50 mm (2 inches) long and also suggest you never cut more than 3 cm (1.18 inches) of grass blade height at one time. Sharp mower blades will also prevent ragged, brown tips on the grass. If you mow frequently, fine clippings will decompose and help maintain the lawn. Heavy clippings must be removed from the lawn. Fertilizing for weed control also protects your lawn. Consult your garden centre for products and application techniques

Finally, to give your lawn a healthy start in the spring, remove snow from shaded areas to avoid 'winter kill.'

There are other effective methods to weed control withoput the use of chemicals, consult your local authority for guidlines

TREES AND SHRUBS

Building and repairing root systems and ensuring plants have adequate water are the most important elements when establishing newly transplanted trees and shrubs.

Trees and shrubs should be watered immediately after being transplanted with quality drinking water that includes a root starter fertilizer. Do not use water high in sodium such as water from water softeners or from sloughs. Also, use well water with caution as some wells contain water with high salt content.

Water shrubs and trees at least once per week for the first year. In the first year, fertilize with a root grow fertilizer each time you water between May 15 to June 30. Use a balanced fertilizer with each watering from July 1 to August 1. Do not fertilize trees and shrubs after August 1. The resulting new growth will not have time to harden off before winter and may die.

Contact your local garden centre for advice on suitable fertilizers. Trees should also be watered thoroughly in early fall to ensure there is adequate moisture at the root zone during the winter. Evergreens may require watering in late winter or early spring to keep the root ball frozen, especially in areas that experience chinooks.

Trees and shrubs require about one gallon of water per foot of growth at each watering (includes rain). If 12.7 mm (0.5 inch) of rain falls in a week, you may not need to water. However, maintain the fertilizing schedule and use some water when you do so. Water slowly all around the plant from the centre to the outer circle of the leaves. For evergreens, spray the leaves or needles on hot days in the morning and the evening.

Evergreens exposed to wind need extra protection in the winter to avoid drying and browning of the leaves. A young tree exposed to high winds should be staked until it's well established. Make sure you use the correct stakes and ties for your type of tree. Contact your local garden centre for specific advice on how to prepare your plants for winter.

When you plant a tree, it's important to consider how large the tree will be in 15 to 20 years because a plant in the wrong place is simply a weed. For example, a full-grown tree may block windows, impede upon walkways or encroach upon a deck and a mature evergreen can create so much shade that lawn will not grow beneath it.

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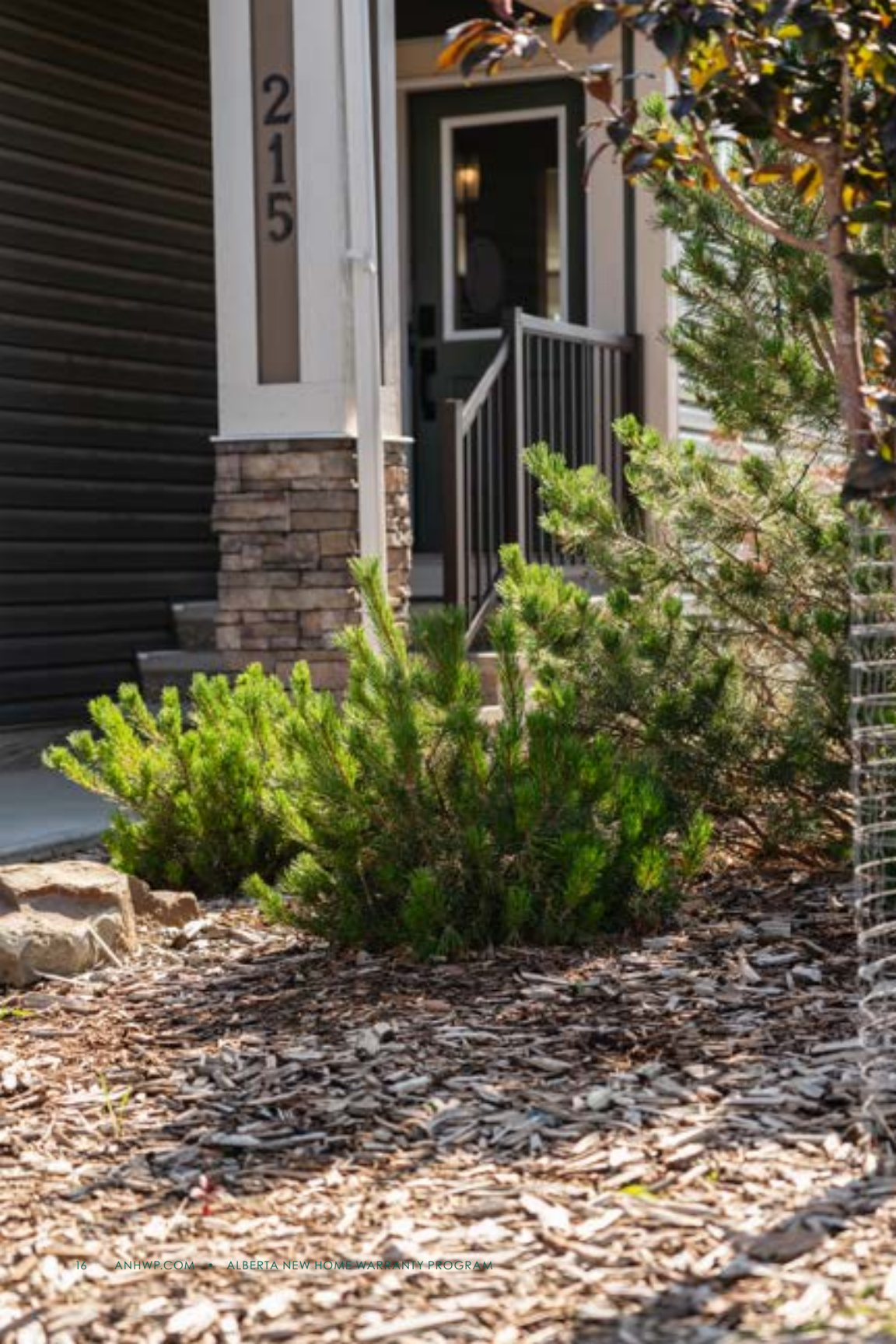
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Exterior Plumbing

How do I prepare my outdoor hose connections for winter?

Most exterior water valves on newer homes are 'frost-free' types. This type of valve is connected by a shaft (12 inches or more in length) to the shut-off valve located inside the wall towards the warm interior of the home. When the handle of the tap is turned to the off position, it closes the valve in the wall. Any water contained in the shaft between the valve and tap will drain out when closing and protect the tap from freezing.

Frost-free lines will not protect outside water supply lines from freezing if the exterior hoses have not been disconnected from the threaded connection. The hose must be disconnected from the tap for the automatic drain-down function of the frost-free valves to work. If a hose is attached to the outside tap, the tap may not drain down and the trapped water will freeze in cold weather. This frozen water can split the pipe that extends into the home, resulting in a leak in the wall each time the tap is turned on. It's important to disconnect a hose from the tap if temperatures are expected to dip below freezing.

Older taps have a shut-off valve with a drainage port inside the home (usually located in the mechanical room) that you must drain the water in the line before cold weather comes to protect the system from freezing.

A frost-free house bib not operated or maintained could lead to major water damage that would not be covered under home warranty.

If a hose is attached to the outside tap, the tap may not drain down and the trapped water will freeze in cold weather. This frozen water can split the pipe that extends into the home, resulting in a leak in the wall each time the tap is turned on. Always disconnect a hose from the tap if temperatures are expected to dip below freezing

How do I use and maintain my irrigation system?

Irrigation systems save time and reduce labour but caution is required when installing, using and maintaining them.

An irrigation system should not direct water towards the home's foundation.

It must also be checked regularly for leakage to prevent the accumulation of unnecessary water underground.

Finally, a soil moisture sensor will ensure the irrigation system only delivers the amount of water needed.

Fencing

There are three factors to consider before building a fence: personal safety, location and design.

What should I do before digging posts for my fence?

Within your province, utility services can be located free of charge with the "Call Before You Dig" service. Schedule an appointment by calling 1.800.242.3447 or visit clickbeforeyoudig.com

How do I determine where to place my fence?

The survey line denotes the edge of your property line—not a fence centerline. Every portion of your fence must be placed on your property—not on the line. This includes the concrete anchoring the posts.

Check with your municipality regarding where you can and cannot place a fence. Usually, a homeowner is not allowed to build a fence that would encroach upon an easement or utility corridor. Fences are also subject to height and location restrictions.

Are there rules about fence design?

Many municipalities have by-laws restricting fence location and/or height. Some neighbourhoods also have architectural guidelines to provide aesthetic consistency or to create a theme for the area. The neighbourhood developer can tell you if any architectural guidelines are in place for your community. These guidelines may define the range of fence styles and possibly even the colour of the fence.

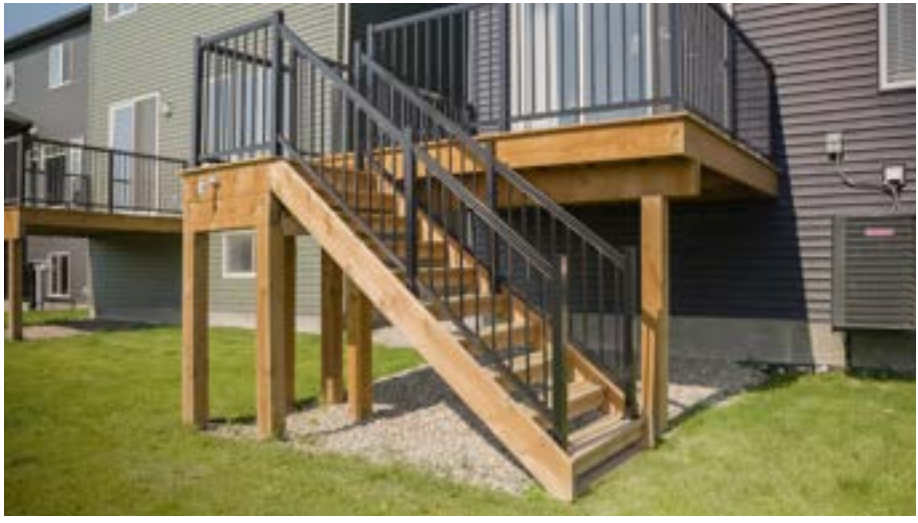
If you have a neighbour on the other side of the property line, it's always a good idea to discuss details of the fence with them. Neighbours will often share the construction cost of a new fence.

Wood Decking & Handrails

Sundecks, verandas and raised patios are subjected to unrelenting sun, rain and snow. Decks installed by homeowners are outside the coverage of new home warranties. Even with seasonal care, a conventional wood deck will not match the lifespan of the home and will ultimately need replacement. Because of this expected deterioration, it's important to check the integrity of all stairs, handrails and platforms and repair or replace any components that are not firmly fastened.

Are there rules about where I can build a deck?

Check with your municipality for where you can and cannot place a deck. Usually a homeowner is not allowed to build a deck that would encroach upon an easement or utility corridor.



Are there rules about deck design and the materials I can use?

Before you build a deck, make sure you understand all local bylaws and Alberta Building Codes regarding deck construction.
The 2006 Alberta Building Code changed rules for required bracing and anchorage to the foundation, the type of fasteners used and foundation depth. Make sure you are familiar with these rules before designing and building a deck.

For example, wood I joists can only be used in interior applications protected from rain or moisture and railings are required on decks more than two-feet above grade. In Alberta, handrails are also required on exterior steps with more than three risers.

Many alternatives to wood, such as vinyl or wood/plastic composites are now commonly used for deck construction. Although more expensive, these alternatives require less maintenance and may have a longer lifespan than wood. Follow manufacturers' instructions to maintain these materials.

You can minimize slivers by applying a protective coating such as paint, stain or a water repellent that minimizes water penetration into the wood and protects the wood from the sun.

How do slivers form and how do I get rid of them?

Wood is a natural material and reacts to weather changes. Horizontal surfaces, such as decks and the top of handrails, are subject to significant traffic and will sliver more readily than vertical surfaces.

Wood slivers form when the wood surface is subject to repeated wet/dry cycles which cause the wood fibres to bend and twist. The fibres want to return to their natural shape and in trying to do so, may rise above the original surface. Over time, this movement will form a sliver.

While the forming of slivers cannot be stopped, you can minimize slivers by applying a protective coating such as paint, stain or a water repellent that minimizes water penetration into the wood and protects the wood from the sun.

If the wood has been exposed to the weather for more than two weeks, sand it with medium grit, garnet sandpaper (80-100 grit sand paper) before applying a protective coating to remove weathered fibres. This will allow for better coating adhesion.

How do I maintain my stained deck?

It's important to use the correct type of applicator and the correct application technique to ensure the coating is evenly distributed and provides maximum protection for the wood.

Exposure to the elements and foot traffic cause deck surfaces to fade. Horizontal areas such as deck surfaces and handrails wear much faster than vertical deck elements such as spindles. Regular maintenance will help maintain the appearance of your deck and also preserve the wood.

A wood stain is used to protect and colour exterior wood surfaces. There are two types of stains: film forming (solid stains) and penetrating stains (transparent and semi-transparent). Stain colour varies because of characteristics in the wood and how the wood is treated prior to staining.

Wood characteristics such as density and grain vary from tree to tree and even in boards cut from the same tree. For example, a portion of board that is dense will not accept stain as well as a portion of board that has a more open grain. Wood that is rough sawn, unprimed or very dry may absorb stain more quickly than wood that is smooth cut, damp or treated with a sealer.

When a wood surface needs to be re-coated, it should be repaired, sanded and cleaned so the new stain can fully penetrate the surface of the wood for maximum durability of the finish.

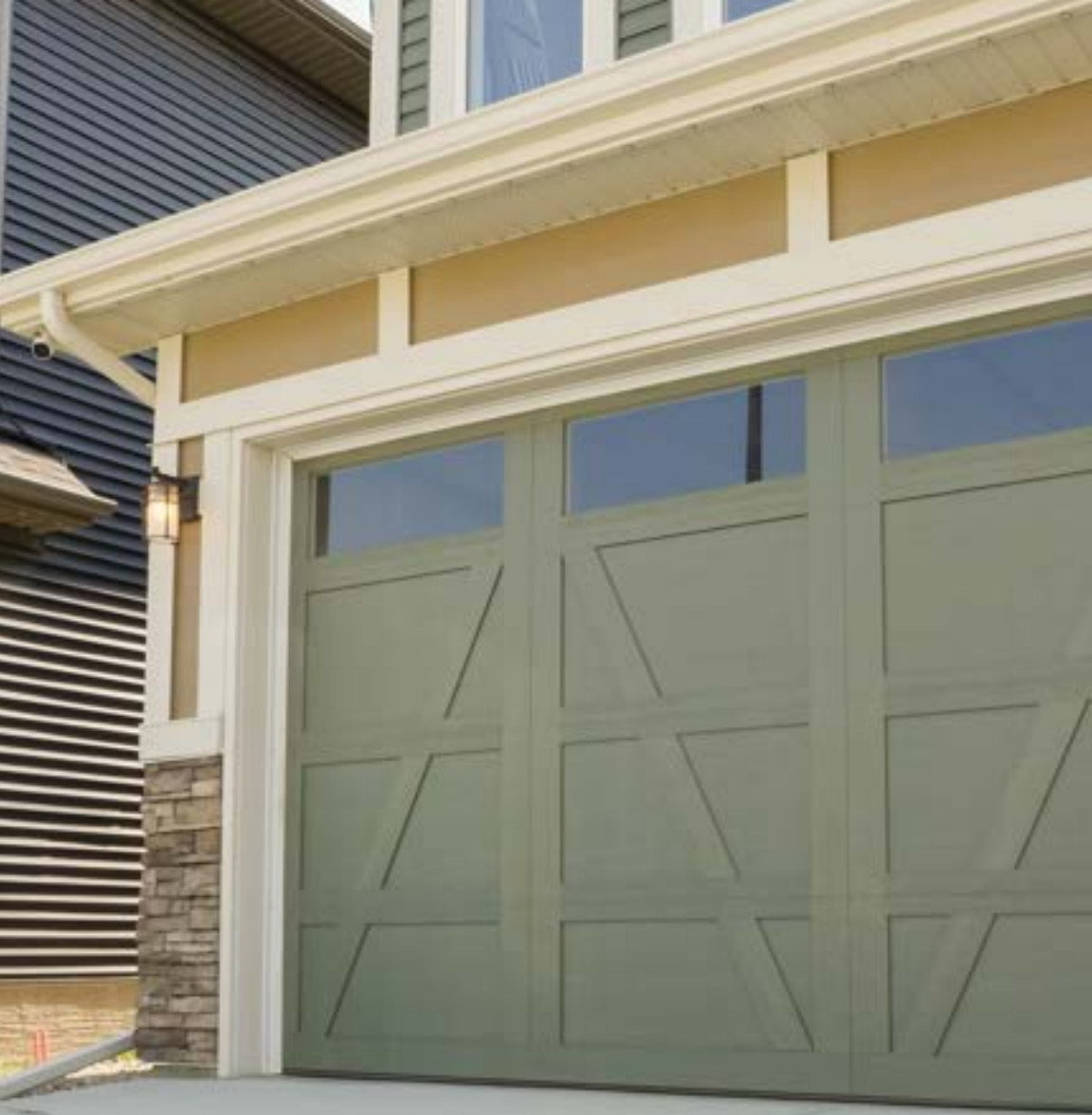
After the wood is prepared, new stain can be applied. This coating will help protect the wood from sun damage.

Paint on the other hand, will completely block the sun but it can also trap moisture which encourages faster decay of the wood. It's important to use the correct type of applicator and the correct application technique to ensure the coating is evenly distributed and provides maximum protection for the wood. For example, a roller-applied stain must first be worked into the wood with a brush to give a more uniform colour and deeper stain penetration.

Most stain manufacturers provide detailed brochures that discuss stain product options, surface preparation and application tools and techniques.

ADDITIONAL RESOURCES:

- **Behr: Wood Stains & Finishes How-To**
- **Fine Homebuilding: Why Exterior Finishes Fail**
- **The U.S. Department of Agriculture: The Finish Line - Practical Facts on Wood Finishing**



CHAPTER 2:

Concrete

- Concrete Walks & Driveways
- Basements
- Floor Drains
- Garage Floors

Concrete Walks & Driveways

Seasonal temperatures and varying precipitation may cause cracking in your sidewalks and driveway. Frost penetration can also cause heaving or settlement and change the direction of surface drainage. Sometimes, affected areas return to their original position in warm weather. In most cases, these issues are beyond the control of the builder.

Your driveway was constructed for use by light vehicles—not for heavy trucks or equipment, even for a short period of time. Seal your concrete annually to increase its longevity.

Why is my concrete damaged?

Concrete is a mixture of stone and sand called 'aggregate' combined with water and cementing materials. As concrete is placed and finished, the aggregate settles into the paste, causing a thin layer of paste to rise above the aggregate. The paste layer can separate from the main body of the concrete. When the fine, top layer of the paste peels away, the concrete is said to be 'mortar flaking.' When the separation occurs as circular/oval pieces across several sections of aggregate, it's called 'spalling.' When the separation occurs as small holes above a piece of aggregate, it's called 'pitting.'

Surface impact, weathering and freeze/thaw cycles are the most common causes of flaking, spalling and pitting. Salts and de-icers can also cause spalling and pitting. In some cases, improperly-cured concrete or the corrosion of rebar can also cause separation. Also, in rare cases, the aggregate can be contaminated by materials that expand when wet or heated (e.g. ironstone or organic matter) and cause pitting. Sometimes, the contaminated material can also pop out and leave a hole or raised spot in the concrete.

Quality mix and proper installation and curing will significantly reduce the likelihood of these defects and are in the hands of the builder. The following measures will increase your chances of a successful concrete installation:

- Use air-entrained concrete mixes with a low water-to-cement mix ratio
- Delay finishing until the water sheen on the concrete surface is gone
- Edge the concrete near forms
- Use isolation joints and construction joints where appropriate
- Do not power-trowel concrete subject to freeze-thaw cycles and de-icing chemicals

How can I protect my concrete?

The application of a breathable surface sealer can reduce damage caused by de-icing and road salts. Silane and siloxane are the two most common sealers. These sealers can penetrate concrete as deep as three millimeters while still allowing the concrete to breath.

This prevents vapour pressure from building up between the concrete and sealer. Because the sealer is embedded within the concrete, it's more durable to abrasive forces and ultraviolet deterioration, providing longer-lasting protection.

TREATMENT AND RE-TREATMENT SHOULD BE CARRIED OUT ACCORDING TO MANUFACTURERS' DIRECTIONS BUT SOME GUIDELINES APPLY TO ALL SEALERS

- Wait at least 28 days before applying sealer to new concrete
- Sealer should only be applied to clean concrete left to dry for at least 24 hours at temperatures above 16°C
- Penetrating sealers cannot fill surface voids that are filled with water
- Concrete should be clean
- Concrete placed in late fall should not be sealed until spring because the sealer may cause the concrete to retain water and increase the likelihood for freeze-thaw damage

Basements

Basement walls are subjected to many stresses. For example, the base of the wall (below grade) maintains a fairly uniform temperature but the portion above grade is exposed to seasonal temperature variations. These temperature changes can cause the wall to shift or crack.

How can I keep water from penetrating my concrete foundation walls or floor?

Moisture is always present in soil. The amount of moisture will increase in the spring when snow begins to melt and during heavy or prolonged rains. Builders take measures to ensure water does not accumulate against the foundation walls or under the basement slab. Moving surface water away from the foundation is the best way to protect your home from water penetration.

Unless there is an unusual amount of water accumulating against the foundation (such as in a severe rainstorm or from poorly maintained grade around the foundation), large amounts of water should not flow into the basement.

However, concrete is a porous material and any coatings applied to the walls to repel water do not go under the footing the wall rests on. In this space, small amounts of water may be transferred through the concrete and show up as dampness on the inside of the concrete wall.

Make sure you are prepared to manage water if it does enter the basement.

Check your sump pit and pump in the spring and fall to ensure the pump is operational, the power cord is in good shape, the pipes are connected and the pump turns on when the float is lifted. If your weeping tile is gravity fed and you do not have a pump and pit, there may be little you can do to check the operation and no maintenance required

As a homeowner, you are responsible to make sure systems put in place by your builder are maintained and working as intended to prevent unnecessary water damage to your property.

Visit anhwp.com/surface-water for more surface water management strategies

Why is my basement floor damp and how do I reduce the moisture?

Concrete basement floors sometimes feel damp to the touch. This damp feel is due to one of two factors: First, the amount of water present in new concrete. After being poured, concrete contains an amount of water that will evaporate to the inside of the basement and possibly create a damp floor. Avoid placing materials such as carpet or boxes directly on the floor for the first year after a basement floor is poured.

Second, there may be small voids in the concrete that act like tiny straws, drawing small amounts of water from the soil into the basement slab. The rate of this movement depends on the amount of moisture under the slab, the relative humidity of the basement and the porosity of the concrete. If the basement is very dry and the ground is very wet, the flow of water will be faster.

You can stop this flow of water by breaking the connection between the source of moisture under the slab and the slab itself. Builders use measures such as granular fill, polyethylene membrane or foam insulation underneath the basement floor slab to create this break. Please follow the water management strategies listed in this guide.

If the dampness persists, consider installing a de-humidifier or increasing the amount of ventilation in the area. Moving surface water away from your foundation will also reduce opportunities for water penetration.

Before you apply any finish over a concrete floor (paint, carpet, solid flooring), make sure the concrete is dry.

Moving surface water away from the foundation is the best way to protect your home from water penetration.

Floor Drains

Floor drains are usually located next to the furnace to help remove water spilled on the basement floor and, in some cases, for the drainage of water condensation from the chimney of a high efficiency furnace.

To prevent sewer gas from entering your home through floor drains, make sure water is always present in the drains.

To test if your drains have water in them, pour a little water into the drain and listen. You should hear if the water hits more water or if it hits the bottom of the trap. Every few months or if you smell sewer gas, pour a bucket of water down the drain to re-establish the water seal.

To prevent sewer gas from entering your home through floor drains, make sure water is always present in the drains.

Garage Floors

Some cracking in a garage slab is common and will not impact the floor's performance. Contractors may cut control joints to provide a line for the cracking to follow. You may further protect the concrete and treat it with a concrete sealer to help protect the concrete and prevent staining. Be sure to follow manufactures installation instructions.

RADON GAS

Radon is a radioactive gas that comes from the breakdown of uranium in soil and rock, is a common element found everywhere in the earth's crust and can be found in almost all homes in Canada. It is invisible, odorless and tasteless and when it is released into the outdoor air, is diluted and not a concern, however Health concerns have been attributed to prolonged exposure from radon gas at levels above safety guidelines.

Radon concentration levels will vary from one house to another even if the homes are next door or a similar model and design and can enter a home any place it finds an opening where the house contacts the ground; cracks in foundation walls and floors, floor drains, sumps or construction joints. New homes are constructed to seal around the basement floor and openings and Builders will install a roughed-in ventilation pipe for future connection to an active mitigation system should the homeowner decided to install one. The only way to be sure of the radon level in your home is to test. Homeowners should look for a mitigation professional that is certified by the Canadian National Radon Proficiency Program (C-NRPP) to complete the job if testing shows radon levels above the safe guideline.

CHAPTER 3:

The House Frame

- Shrinking Wood
- Main Support Beams & Telepost Adjustments
- Windows
- Attic Ventilation

Shrinking Wood

LUMBER USED FOR FRAMING A HOME MUST NOT CONTAIN MORE THAN 19 PER CENT MOISTURE. DURING THE FIRST HEATING SEASON, SHRINKAGE CAUSED BY THE CONTINUED NATURAL DRYING OF THE WOOD MAY CAUSE THE FOLLOWING ISSUES:

- Thin cracks may appear in exposed wood structural members (e.g. joists and beams)
- Small gaps may appear between countertops, cabinets, vanities and the wall and minor joints may open in door and window trims, baseboards etc.
- Fireplace mantels may shrink slightly and separate from the wall or at joints
- Gaps may appear between individual wood floor pieces or between the floor and the baseboard, door jambs or stair treads
- Squeaks may develop in floor underlay, wood flooring and stair treads

Wood expands and shrinks when the humidity level changes. Minor shrinkage is inherent to wood construction and does not impact the structural integrity of your home. In many cases, gaps from shrinkage can be attributed to temperature extremes between the interior and exterior walls in the winter months (thermal bowing, truss uplift etc.). These gaps and cracks may become less noticeable when more temperate weather returns.

Main Support Beams & Telepost Adjustments

Adjustable steel posts or 'teleposts' are used to support main beams in the basement and transfer loads to the foundation. The bearing plate at the top of the telepost should be fastened to and rest snugly beneath the beam.

On a regular basis, homeowners should check that the supporting post is truly supporting the beam. Uneven pressure on a beam can cause issues down the road, so you should check the level of the beam with a four-foot level to ensure everything is properly positioned. If adjustments are necessary, hire a contractor specializing in this type of structural work.

If you are finishing the basement, consider a design that gives you easy access to adjust the teleposts and the beams above the teleposts. Ensure the new interior walls are built and installed short of the supporting floor joists.

A gap of 35 – 50mm between the top of wall stud and bottom of floor joist (or beam) is recommended to allow for normal settlement or heaving.

Moisture beneath the concrete basement floor slab can cause the earth beneath the slab to swell and, consequently, lift the telepost. A downward adjustment of the telepost is required to bring the beam back to level. Settlement of the soil beneath the basement concrete slab would require an upward adjustment to level the beam.

If drywall is cracking or doors are starting to stick on the upper levels of your home, a telepost adjustment is likely required. Allowing for expansion and contraction along the main support beam will also reduce drywall cracking in the finished basement.

Uneven pressure on a beam can cause issues down the road, so you should check the level of the beam with a four-foot level to ensure everything is properly positioned.

Windows

Windows are typically composed of a vinyl frame or a wood frame covered by a metal skin on the exterior. The frames of vinyl windows and the exterior metal on a metal-clad window are virtually maintenance free. Interior wood finishes should be maintained as per the manufacturer's instructions. Weatherstripping between the fixed and opening parts of a window should be checked regularly and replaced when necessary. Clean windows yearly during moderate temperatures like the spring or fall using a solution of soap and warm water with a soft cloth. Do no use abrasive cleaners, razors or stiff brushes. Clean and lubricate hardware and tracks as recommended by the manufacturer.

What is weatherstripping and how do I maintain it?

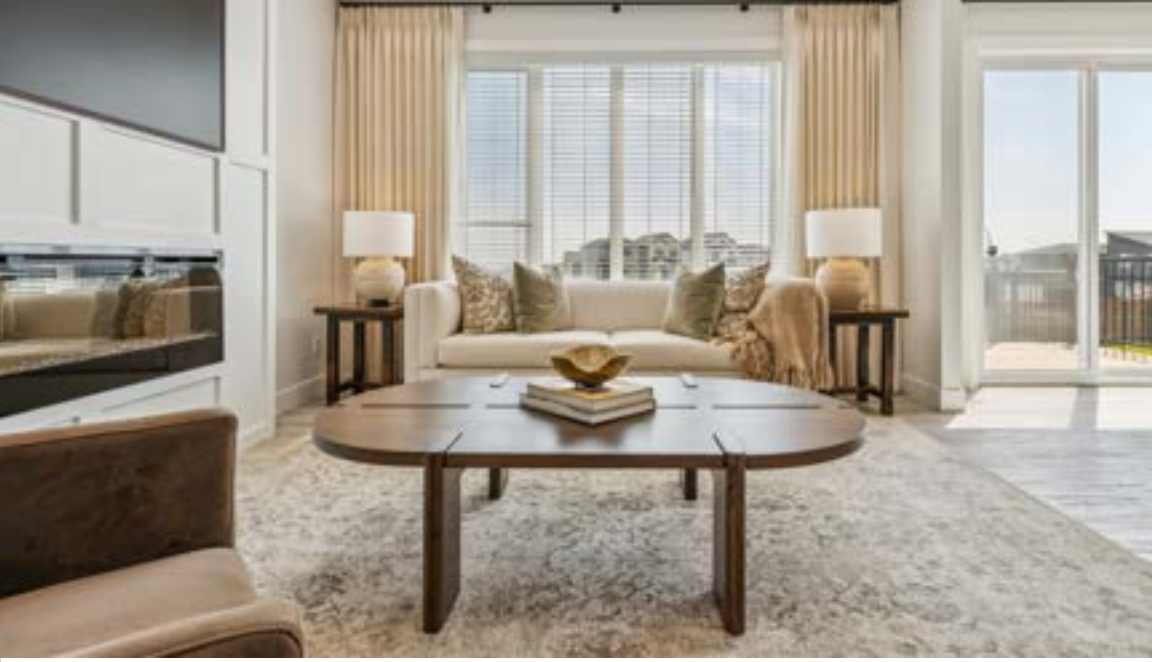
Weatherstripping provides a flexible seal around windows to prevent unwanted air from moving in or out of your home.

On windows that open outwards with a crank (casement or awning windows), the weatherstripping is usually a compressible, moulded strip of foam or rubber set against the frame towards the outside. The opening part of the window rests against the weatherstripping when the door or window is closed, forming an air and water seal.

On sliding windows, the weatherstripping is usually a flexible v-strip or a brush/bristle type and is placed between the track and the movable window and at the point where the fixed and the sliding window meet.

Felt-type weatherstripping should be avoided as it can gather at one edge of the window over time and create an air gap. Weatherstripping that has lost its resiliency will not provide an effective seal and should be replaced. Check your windows each fall and reposition or replace this weatherstripping as required.

Weatherstripping will lose its flexibility if painted.



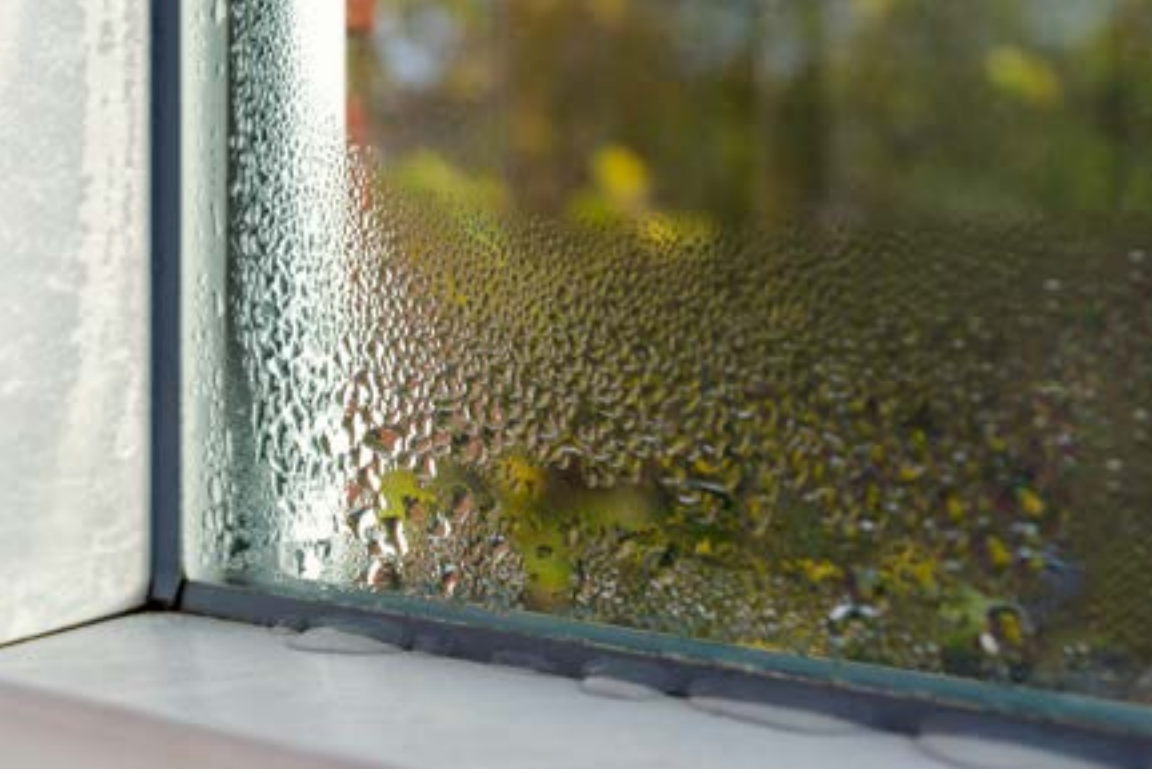
Why is my window leaking?

Water movement from the outside of the home to the inside through windows can occur if a window is not properly closed or if the weatherstripping around a window opening is damaged or worn. Windows can also introduce water into the building if the window's drain ports, designed to drain water out from an opening portion of a window, are plugged. Water leakage can pool on the interior casings and sill and, if left unattended, will stain the finishes or cause water damage.

Many windows provide a small drainage port on the outside-face of the bottom sill of the window. This round or oblong opening is often capped and drains any water that finds its way behind the weatherstripping or window/frame seal to the outside of the window. This opening must be clear of debris (e.g. fluff, insect webs etc.) so water can flow out.

The seal between the window glass and the window frame is designed to withstand a certain level of wind-driven rain. Should a major storm occur, it may produce leakage in windows that normally would not leak.

Water leakage should not be confused with condensation. Condensation occurs when water vapour in the air, inside the home, condenses on a cold interior window surface. If there is enough water vapour, it can condense and form ice on the window. When this ice melts, it will flow onto the sill and stain the finish or cause water damage.



Why is my window covered in condensation?

Condensation of moisture on interior windows occurs naturally when interior air with sufficient moisture (humidity) comes into contact with a cold window surface.

Air can only hold a limited amount of water vapour at any given temperature. As warm room air comes in contact with a cool window surface, the air cools and loses the ability to hold water. If the moisture in the air is high enough or if the surface of the glass is cool enough, the water in the air will deposit on the glass surface. This is called condensation.

Condensation typically appears on windows before any other surface because windows usually have the least insulation value of anything on an exterior wall and react the quickest to changes in outdoor temperature.

When outdoor temperatures drop, you can reduce condensation in your home by limiting the amount of moisture in the indoor air. The number of occupants in the home will raise the humidity in the home and routine activities such as cooking, showering and laundry add moisture to indoor air. Plants, fish tanks and humidifiers are also examples of common household items that contribute to indoor moisture.

How can I reduce condensation on my window?

You can reduce moisture by venting moisture-laden air to the outside and by bringing fresh, dry air from the outside into the home. Ventilation is accomplished in many ways.

Exhaust fans placed near high sources of humidity, such as bathrooms and kitchens, are used to reduce localized humidity. Some new homes may also have a whole-home ventilation system. In its simplest form, this system consists of a central exhaust fan and a fresh air intake connected to the heating system.

The system may be operated by a timer or by a switch located in a central position in the home. A more advanced ventilation system will recapture heat lost in the ventilated air and will have dedicated ventilation ducts in various locations throughout the home.

Opening window coverings, even partially, during cold weather is an easy way to reduce condensation. Drapes can restrict air movement near the window which will cause the glass surface to cool, creating the perfect environment for condensation.

Heat outlets placed near windows wash the window surface with warm air. This increases the temperature of the window surface and reduces the potential for condensation. Do not deflect the movement of air away from windows or cover outlets with rugs or furniture. Finally, during periods of extreme cold, keep the furnace fan running to maintain a more even heat in the home.

Wood flooring manufacturers may recommend a certain humidity level be maintained to prevent warping, cracking and separating of wood flooring components. However, this floor maintenance must be balanced with the need to control window condensation and humidity in cold weather.

Opening window coverings, even partially, during cold weather is an easy way to reduce condensation.

My window has condensation between the panes of glass. Do I have to replace the window?

Heat moves through a dense material such as glass easily and quickly. But, heat does not easily move through still air. By separating the pieces of glass in a window frame with an air space, the transfer of heat through a window to the outside is reduced. To work effectively, this separation must be airtight.

Window glass spacers are made from materials such as silicone foam, butyl rubber, metal or combinations of these materials. The spacer is bonded to the glass to form an airtight seal. This is achieved with adhesives, and in some cases, an additional layer of sealant. The spacer will contain a small amount of desiccant (a drying agent) that absorbs any moisture in the air trapped when the unit's sealed. The seal will also keep insulating gases such as argon between the window panes.

The panes of glass expand and contract when exposed to changing temperatures and amounts of sunlight. This occurs on a daily basis.

Windows experience high temperatures when the sun shines through them. The temperature of the inside and outside panes of a window is rarely the same. These continuous changes in temperature place stress on the bonds of the adhesive between the edge spacer and the glass panes.

Over time, the seal between the spacer and the window glass will let go. When this happens, fresh air containing moisture will enter between the window panes. The desiccant drying agent will not be able to absorb all this moisture and air will begin to condense on one of the glass surfaces above the edge spacer. This is referred to as 'fog between the glass.' When this occurs, the sealed unit has failed. When the seal fails, the glass unit in the frame should be replaced.

To repair/replace, contact the window manufacturer or a company that specializes in window repair/replacement.

FURTHER RESOURCES:

Check out The City of Edmonton's "Condensation Concerns Booklet"

Attic Ventilation

Attic ventilation serves two important purposes. First, it removes moisture that travels into the attic from the living space below through openings such as plumbing stacks, bathroom fans and attic hatches. Second, attic ventilation removes heat from the attic that can reduce the life of roof shingles. Attic ventilation is separate from ventilation used in the living space (e.g. bathroom exhaust fan).

Natural (passive) air flow is used to provide attic ventilation. With this method, air flows into the roof space through perforated soffits at the eaves and exits through passive (non-powered) vents located near the peak of the roof.

A continuous strip vent located along the peak or 'ridge' of the roof is called a ridge vent. A vent with a rotating top section on a round vent is called a rotating vent and a vent placed on the wall that encloses the attic at the end of the trusses is called a gable vent. The number of vents, and their positioning on the roof, is determined by the Alberta Building Code.

Passive roof vents function year-round and are generally maintenance-free. Do not block these vents in the winter months. In some cases, where attic spaces have complex roof designs, powered fans may be used. These units will require occasional motor maintenance.

Is it bad if there's moisture in my attic?

In high winds, even a properly installed roof vent may allow some moisture into the attic space. The moisture will usually evaporate without any staining or leakage to the interior of your home. It's possible for cellulose type insulation to be displaced during high wind events or storms If leakage or staining does occur, inspect the attic to identify the source of the moisture.

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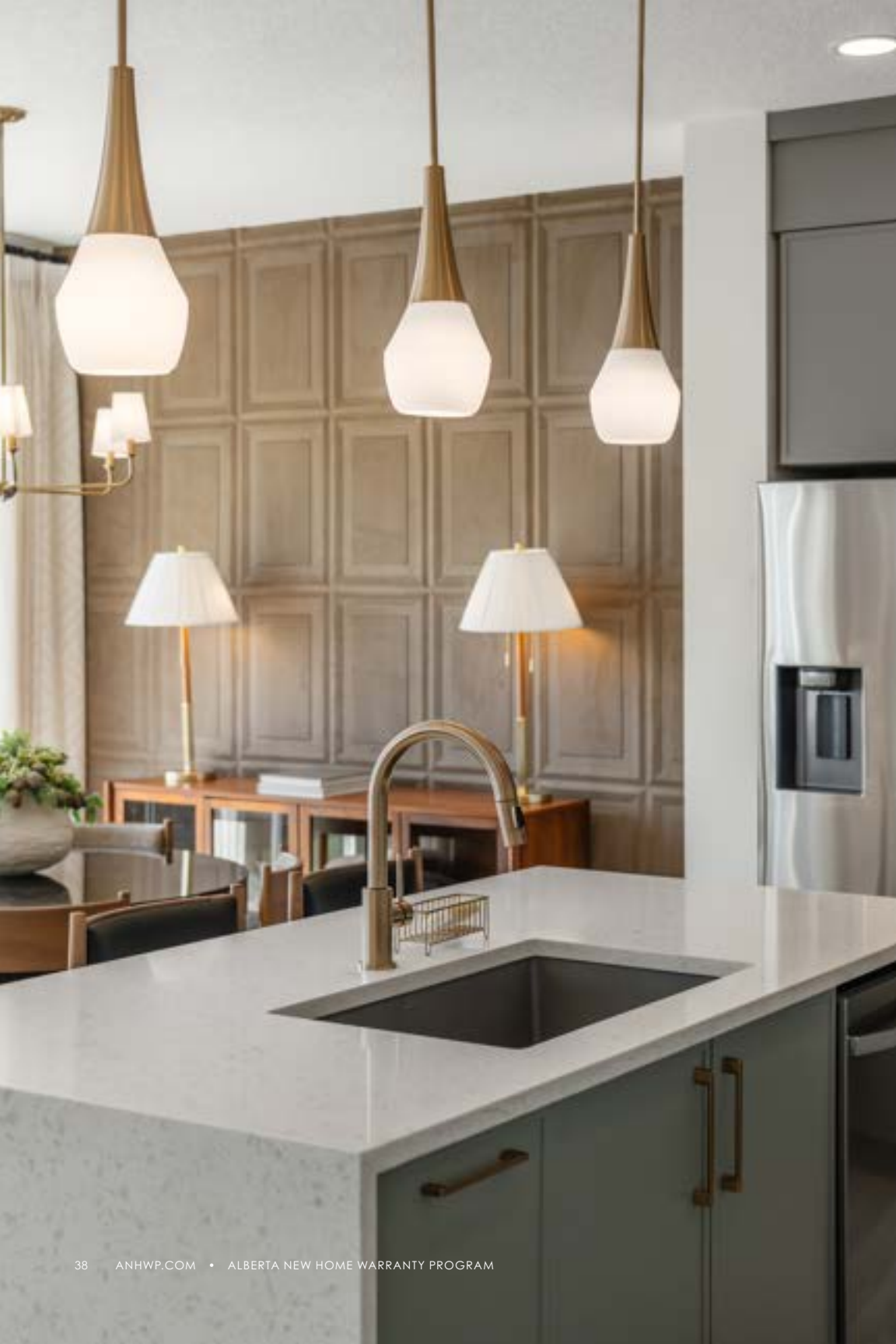
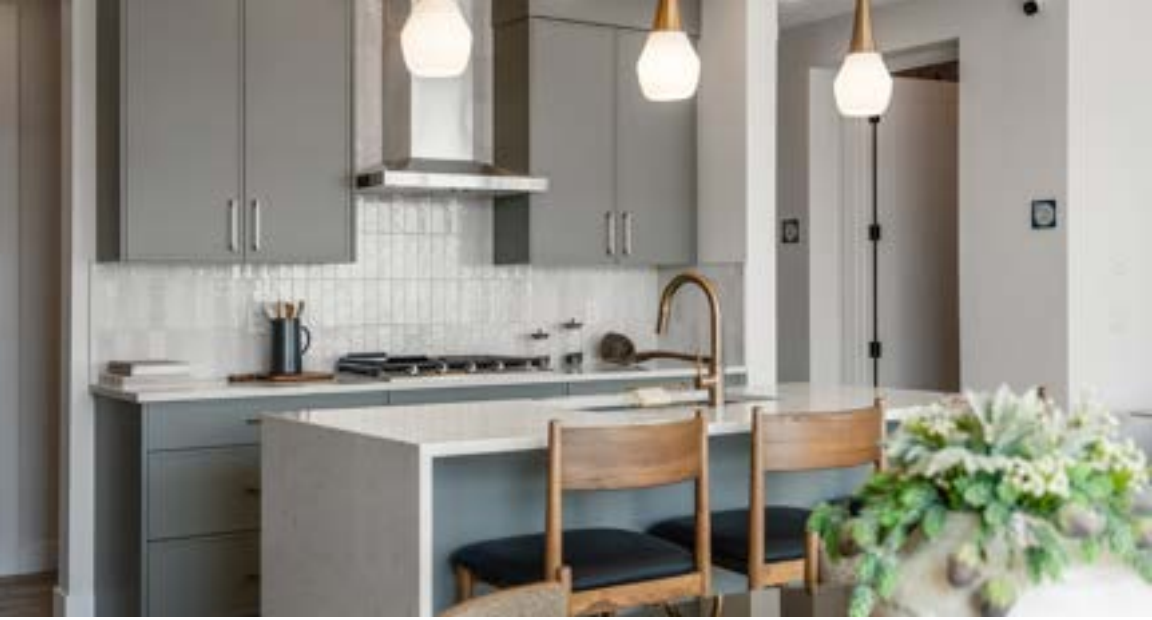


CHAPTER 4:

Countertops

- Laminate Countertops
- Tile Countertops
- Natural Stone Countertops
- Quartz Surfaces & Other Engineered Stone Countertops
- Concrete Countertops
- Metal Countertops



Countertops are made from a variety of materials such as laminate, ceramic tile, natural stone, engineered stone, concrete and metal. With proper care, all countertops are durable. However, they are not indestructible and require a certain level of care.

You can protect the finish of your countertop by cleaning with a soft cloth and using a mild soap. Avoid corrosive or abrasive cleaners or cleaners that contain ammonia.

Laminate Countertops

Laminate is made from many different materials combined with resin. In laminates, the colour is a thin layer at the surface. Sheets of laminate are bonded to a wood substrate and can be moulded around curves such as the edges of countertops. It's available in a wide variety of colours and in granular, low-sheen or glossy finishes.

For everyday cleaning, simply use a damp, soapy cloth. Do not use cleaners that contain strong acids or abrasives such as those for ceramic stovetops or toilet bowls.

For stubborn stains or spills such as nail polish, contact the manufacturer for special cleaning instructions.

A wood edge on a laminate countertop is a common finishing option. These wood edges do require some maintenance. Every couple of years or when wear is visible, you will need to sand and refinish the edges. Refinishing can be done with spray-on lacquer or brush-on urethanes. These products are available at most home improvement centres.

Why did my laminate countertop bubble?

Prolonged or extreme heat (e.g. from hot pans) can cause the contact cement, used to attach the laminate to the substrate layer, to become soft and release.

This could result in the formation of a bubble in the laminate surface. The bond may be re-established by applying localized pressure to the area of the bubble.

In other cases, additional adhesive must be applied to permanently re-establish the bond. A professional should be called to repair a bubble.

A trivet (a three-legged stand placed under a hot serving dish) should be used under all heated appliances such as electric frying pans, coffee pots, hot pots, etc.

Why did my laminate countertop swell?

Laminates are bonded to a substrate made of wood products. When water gets under laminate, it's absorbed by the wood and the wood swells. Even after the wood dries, the substrate will not lie as flat as the original product.

For this reason, it's important to keep laminate countertops free of standing water at joints and where the counter joins the backsplash. You should also mend a chipped edge before water seeps into the particleboard base and loosens even more laminate.

Why did my laminate countertop delaminate?

Delamination, the lifting of laminate from the wood substrate, can happen for several reasons: insufficient adhesive applied during construction, too much heat applied to the surface or water penetration. Delamination due to a lack of adhesive usually occurs near the corners on vertical edges.

To reattach corners, simply apply more adhesive. If the detached piece is broken, the procedure is much more complex. Make sure broken edges are taped down to avoid any further delamination or fracturing of the laminate until a repair can be done by a professional.

Can I fix the scratches and chips in my laminate countertop?

Delamination, the lifting of laminate from the wood substrate, can happen for several reasons: insufficient adhesive applied during construction, too much heat applied to the surface or water penetration. Delamination due to a lack of adhesive usually occurs near the corners on vertical edges.

To reattach corners, simply apply more adhesive. If the detached piece is broken, the procedure is much more complex. Make sure broken edges are taped down to avoid any further delamination or fracturing of the laminate until a repair can be done by a professional.

Tile Countertops

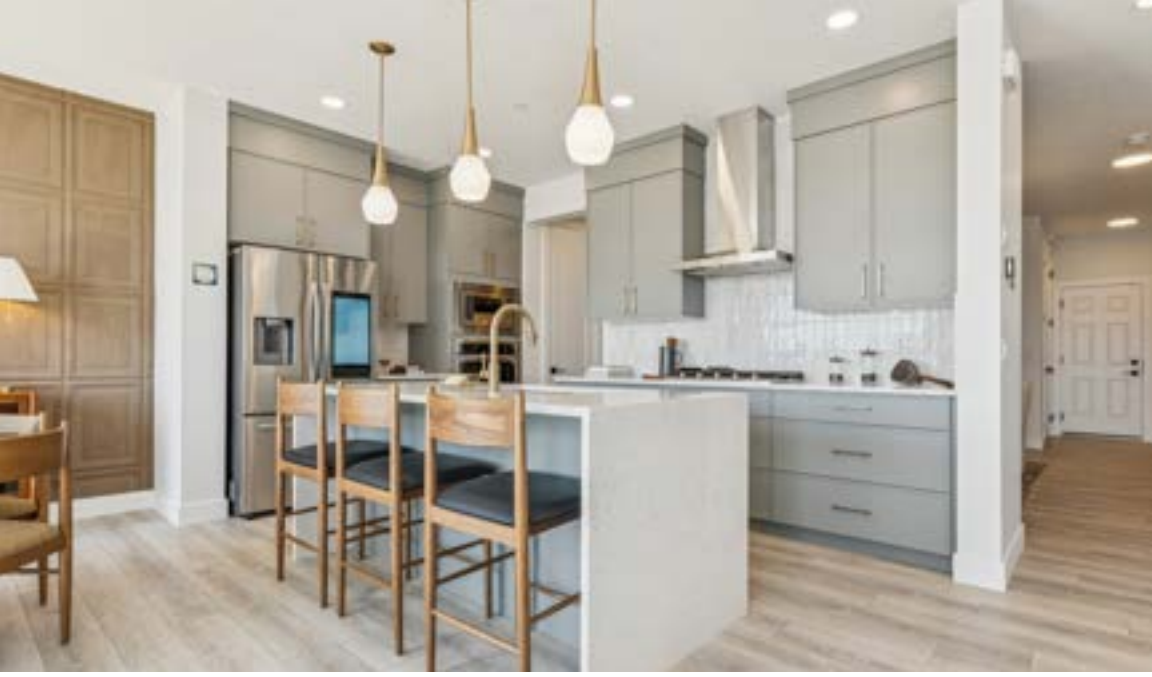
Tiles can be made from ceramic, porcelain or natural stone. Ceramic tiles are made from pressed clay. They come in matte, metallic or glazed finishes. Glazed finishes are more susceptible to scratches. Porcelain tiles, also made from clay, are baked at high temperatures and hide scratches and chips better than ceramic tiles because the colour goes through the full thickness of the tile.

To reduce staining of the grout on your tile countertop or backsplash, apply grout sealer every other year.

Quartz Surfaces & Other Engineered Stone Countertops

Engineered stones are composed of natural minerals such as granite, marble and quartz. Particles of stone aggregate are combined with resin and colour pigments. They do not have the veining or cracks that appear in natural stone, making them more robust.

Engineered stone countertops vary in their resistance to scratches and stains. For most countertops, regular application of sealer is required.



Natural Stone Countertops

Stone countertops require at least the same degree of care as laminate countertops. Natural quarry stone may be as hard as granite or relatively soft and porous like marble. Slate, travertine and limestone can also be used for countertops. They each have varying degrees of porosity and resistance to scratching and chipping.

Granite is highly resistant to chips and scratches but is porous and should be treated every six months with a sealer to prevent staining. Marble is softer and more porous than granite and sealer should be applied more frequently. Slate is durable, heat-resistant and doesn't stain easily.

For extra protection of slate surfaces, you can apply a sealer as well. Limestone is not recommended for busy cooks, as it stains easily.

Acid from citrus fruits can etch some natural stone surfaces and may require professional services to restore. To clean any of these countertops, use a soft cloth and a mild soap. Consult the manufacturer of your countertop for specific care instructions.

Granite is highly resistant to chips and scratches but is porous and should be treated every six months with a sealer to prevent staining.

Concrete Countertops

Concrete is composed of stone, silica-based cement and water. In its natural state, concrete is porous and will stain. Concrete countertops must have sealers applied for water and stain resistance. Staining can occur if the sealer is compromised by hot pans, cutting or acidic fruits, vinegars or alcohol.

Consult the countertop manufacturer for advice on how frequently you should seal your concrete countertop.

Metal Countertops

Stainless steel is an iron, chrome and nickel alloy and is susceptible to scratching. Nicks and scratches are less visible on low-sheen or sanded metal surfaces. Stainless countertops can be polished with a damp cloth and baking soda.

Copper takes on a golden-brown colour with age. Because it's a soft, smooth metal, copper is more susceptible to scratching and should be sealed with beeswax or butcher's wax.

CHAPTER 5:

Cabinets & Doors

- Cabinets
- Exterior Entry Doors
- Exterior Hinged Screen Doors
- Exterior Sliding Screen Doors
- Interior Passage Doors
- Bi-Fold Doors
- Garage Doors

Cabinets

Most cabinet bodies are made from painted or thermafoil medium density fibreboard (MDF) or melamine particleboard. The doors are often made of fine woods such as birch, cherry, oak, maple, alder or mahogany.

Cabinet door panels float inside a perimeter frame to reduce stress and protect the panel from cracking.

These floating panels can shrink and expand in response to changing environmental elements common in Alberta. This movement is normal.

Follow your cabinet manufacturer's recommendations for cleaning and maintenance products.

Most manufacturers do not recommend wax-based furniture polishes because they tend to build-up on the surface of the wood. Ammonia-based cleaners should also be avoided as they can prematurely yellow the wood finish. Most fine cabinetry uses melamine on shelves and internal surfaces. Care for melamine is similar to laminate surfaces. See page 40 for laminate care instructions.

Over time, cabinet and drawer hardware may loosen and require tightening. This is considered normal maintenance. New hardware now incorporates nylon wear components that do not require lubrication.

Why are my cabinet doors not lining up with each other?

Cabinet doors can move out of alignment with normal use. This shifting can cause the doors to bind or rub.

After the first year (in Alberta), the homeowner is responsible for making adjustments. Most new hardware is fully adjustable and user-friendly.

Why did my cabinet door warp?

Woods such as oak, birch and mahogany are sensitive to extreme changes in the moisture content of the air. They can deform and warp if they come into contact with water or steam.

In cold weather, a humidifier should be used to maintain some moisture in the air and water spills and kitchen splatters should be cleaned up immediately. Warping due to environmental conditions in the home would not be considered a warranty issue.

Exterior Entry Doors

Most entry doors are made of steel or fibreglass with a glued piece of foam core or injected foam core sandwiched between the door faces.

Why is my exterior door assembly not sealing?

Weatherstripping provides a flexible seal around doors to help prevent unwanted air from moving in or out of your home.

Doors generally have two types of weatherstripping. The first is a compressible, moulded strip of foam or rubber set against the frame towards the outside. The opening part of the door rests against the weatherstripping when the door is closed, forming an air and water seal.

The second type located at the bottom of the door is called a 'sweep' or a 'threshold' and is typically a metal or vinyl piece that holds a flexible fin or a row of thin fins that sweep across the door's sill as the door closes. Door sweeps can be purchased in a variety of types and depths.

Exterior door sills usually feature a series of adjustment screws so the level of the sill can be raised to the door sweep to provide an effective seal.

The door between the garage and the home will be carefully weather-stripped to prevent garage fumes from entering the home. Check this weatherstripping yearly and if installed the self closing hinges that automatically closes the door after opening. The door should fully close and latch after entry to the home or exiting to the attached garage.

Weatherstripping will wear out with time. Each fall, you should check weatherstripping and sweeps around the perimeter of exterior doors and replace if necessary.

Exterior Hinged Screendoors

Exterior storm doors were traditionally used to protect wood doors from the elements. In most new homes, exterior doors are steel-clad with an insulated foam core, making aluminum storm doors unnecessary. However, storm doors do provide a great source of increased ventilation when the weather is warm.

Most screen doors are composed of anodized or enamelled aluminum or steel and only require an occasional cleaning and lubrication of hinges and sliding components.

Exterior Sliding Screendoors

Normal wear can cause rollers or slides to deteriorate, causing latches to become misaligned.

Dirt in a threshold track can also interfere with the glide of a sliding door.

Why is my door not staying on the track or sliding smoothly?

To maintain a sliding door, clean the tracks and hardware and lubricate both periodically. If a screen door is loose on the track, check to see if it has been warped by impact and adjust or replace if necessary.

If the door slides on wheels, it may have an adjustment screw in the frame of the screen.

Interior Passage Doors

Wood and wood composite doors are made of natural wood fibre veneers or wood composite panels over a frame. They are not as durable as exterior doors. Interior doors do not require weatherstripping. There is usually a generous gap below each interior door to facilitate air movement from room to room when a door is closed. Remember to re-establish this gap should you decide to install a thicker floor finish. Consider hiring a carpenter for this adjustment.

Why has my door panel split?

A home with very low or very high humidity may cause the veneer on an interior door to shrink or expand, causing the veneer to delaminate from the supporting frame or shrink and split. Once this happens, you will most likely have to replace the door.

Bi-Fold Doors

Bi-fold doors are anchored by a pin that fits into a bracket attached at the floor to the closet frame. They also have a bracket at the top that moves in a track.

As the sliding bracket wears, the door may start to stick and bind. Catching a coat sleeve between the doors as they close or merely bumping the doors, can loosen the top bracket or move the anchor pin in the bottom bracket. The top bracket comes with a screw to allow for adjustments. If the bracket's slide or pin wears out, the bracket can be replaced.

What do I do if my bi-fold/sliding doors come off the tracks?

If the door height is not properly adjusted to raise the door firmly into the top track, the door may come off the track.

Using a pair of pliers, unscrew the pin in the bottom bracket to push the door up and firmly anchor it into the track. The bottom pin can also be adjusted (both back and forth or up and down) to re-align the door gap.

Garage Doors

Most garage doors are made with a polyurethane foam core wrapped with a steel or aluminum skin that is often painted. These door surfaces require only a light cleaning to maintain them.

Every few years, the hinges on your garage door should be lubricated. Perimeter weatherstripping should also be examined each fall and replaced if necessary.

Most overhead garage doors feature automatic door openers. These units require periodic maintenance specific to the make and model. Familiarize yourself with the functional and safety features of your unit.

In the event of a power outage, you must know how to disconnect the overhead door from the track. On most models, there is a red handle on a short rope that, when pulled, will dislodge a pin and allow manual opening and closing of the overhead door.

Your service manual will detail exactly how to re-establish the connection. It's a good idea to review this procedure before a power outage occurs.

Overhead garage doors often use weight compensation springs to offset the weight of the door. These springs store considerable force and can easily inflict critical injuries. Only an experienced installer should repair/install these springs.

If your garage is attached to your home, the interior door leading to the garage must be a fire-rated steel door with an automatic closer. Do not replace this door with a conventional interior wood door and do not disable the automatic door closer. Doing so will violate building code and increase the risk of Carbon Monoxide (CO) entering your home.

CHAPTER 6:

Exterior Finishes

- Vinyl Siding
- Masonry
- Wood or Composite Wood Sidings & Trims
- Cement Board Sidings
- Stucco

Vinyl Siding

Vinyl siding is generally a maintenance-free exterior finish, but you can wash it occasionally with a mild detergent and a garden hose to remove dust. Do not use a power-washer as you can force water behind the siding and cause water damage.

Masonry

Masonry refers to the stacking of bricks or stones bound together by mortar to create a wall. Clay bricks, concrete bricks, natural stone or many types of manufactured stone available on the market are used in masonry. Masonry veneer walls, a non-structural brick/stone wall laid in front of a structural wall, are made of brick or stone laid in a mortar bed and anchored by metal ties to the wood frame of the home.

The masonry limits the inward movement of moisture. An air space located behind the masonry prevents further absorption of moisture and allows air circulation for drying. Any moisture that does pass through the veneer is drained downward to the wall base where it's redirected back to the exterior.

Do not allow snow to accumulate against a masonry surface. Sprinklers, especially automatic sprinkler systems, should never be directed against the wall surface. The volume of water a sprinkler projects against a wall, in even a short period of time, is significantly more than that of the most severe rainstorm.

You may notice empty vertical joints (no mortar in the seam) between adjacent bricks or stone units along the bottom row of masonry on a wall. Empty joints are not a builder oversight. Rather, they are called 'weep holes,' intentionally placed during construction to drain moisture from behind the masonry veneer to the exterior. Weep holes also help circulate air to evaporate moisture. Do not fill or block them. Planting beds should not cover masonry weep holes.

Hairline cracks between bricks or stones and mortar have little impact on a wall's ability to manage water. However, loose bricks or stones and missing mortar should be repaired or replaced.

What are those white streaks on my home's masonry?

Efflorescence is a mineral salt deposit, usually white in colour, which may develop on the surface of masonry. All masonry materials are susceptible to efflorescence. As water moves through the body of these materials, it will dissolve any available mineral salts. As the moisture evaporates at the surface, it will deposit these salts on the surface. The degree of efflorescence varies with the age of the finished surface, the type and colour of the cement materials, weather conditions and the availability of water and salt sources.

There are several potential sources of mineral salts. The most common source is the salt naturally present in cement-based construction materials that are not yet bonded by chemical reaction with the cement particles.

The water used to mix cement-based materials may also contain salt. Tap water is usually low in dissolved salts but well-water can contain high concentrations.

To limit a significant salt source, avoid the use of de-icing salts adjacent to any masonry. Soil also provides a continuous supply of moisture and salts for absorption so avoid placing planting beds up to masonry.

Unless there is a source such as soil or de-icing salts present, efflorescence tends to lessen with the passage of time (1-2 years after construction) as the cement materials 'purge' themselves of salts.

Wood Or Composite Wood Sidings & Trims

Wood siding and wood composite sidings and trims may require new primer and paint every few years. In Alberta, south and west facing exterior exposures will weather the most due to prolonged sun exposure.

Sealant is often applied where wood siding pieces join or where they butt up against a trim (e.g. at a window).

Once a year, exterior sealant should be examined for voids and shrinkage that could allow wind-driven moisture into the wall cavity. Remove any defective caulking and replace it with a bead of high-quality sealant. Some silicone blends will accept paint. Read sealant tube labels carefully and follow directions.

Before you repaint wood siding or trim, examine the old paint for any patterns or discolouration that could indicate an underlying problem you should address prior to painting. Follow the advice of a reputable paint store for preparing and refinishing the siding or trim.

As a final note, when watering lawns,avoid excessive overspray on any type of exterior cladding.

Before you repaint wood siding or trim, examine the old paint for any patterns or discolouration that could indicate an underlying problem you should address prior to painting.

Cement Board Sidings

Cement board sidings are made from a mixture of cement and wood fibres and come in planks, shingles and panels. Because this siding has a painted finish, you will need to repaint at some point.

The life of your paint will depend on the colour, sun exposure and driving wind and rain. Consult the siding manufacturer before selecting a paint product.

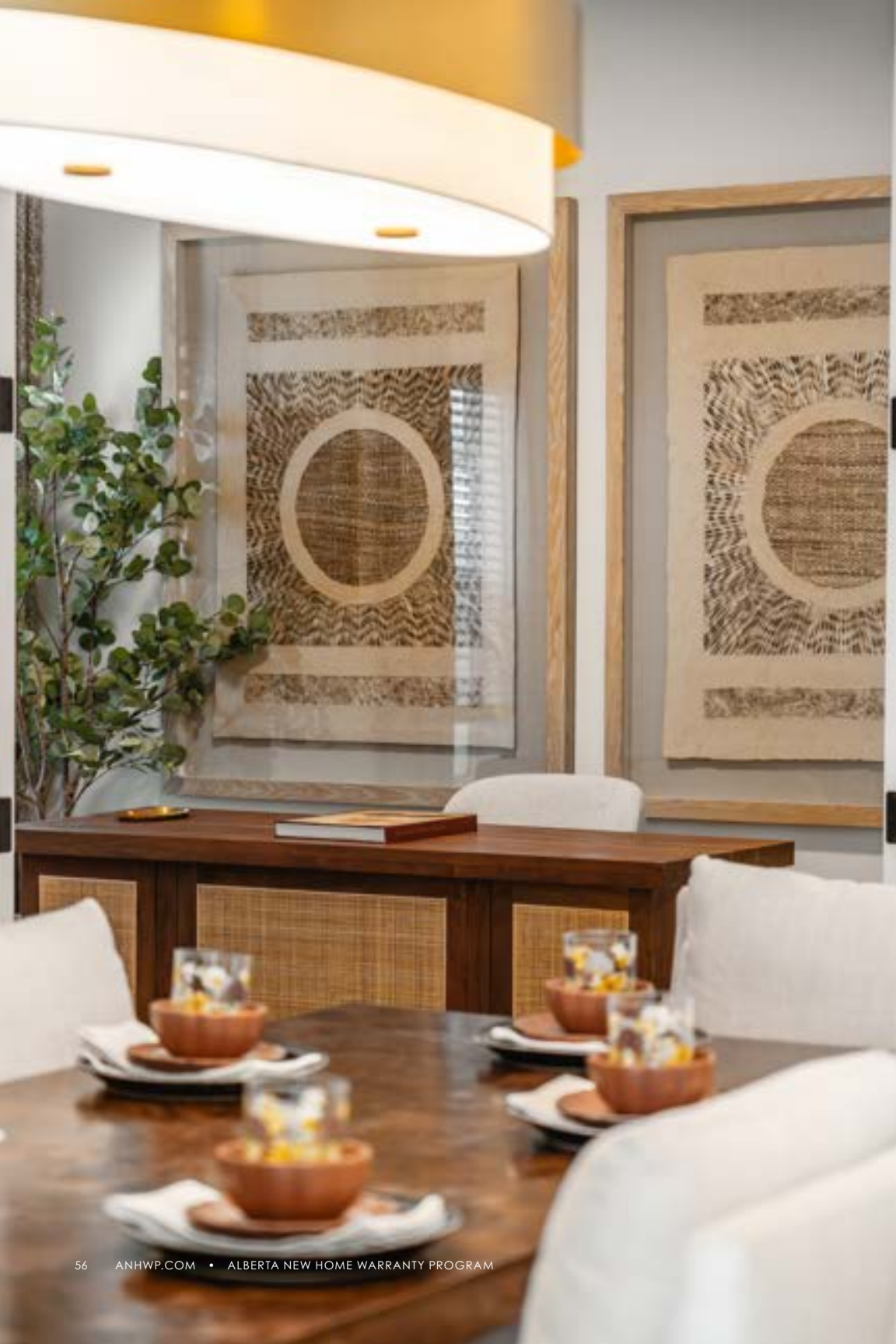
Stucco

If the exterior of your new home is finished with stucco, hairline cracks may appear in the finish coat. Minor cracking (hairline cracking) is expected with stucco surfaces and is most noticeable on smooth finish coats.

Do not wash your stucco with a high pressure spray or let your lawn sprinkler saturate the wall, especially within the first year of it being applied.

Cementitious stucco is a porous material and water will eventually make its way behind it, accumulate and leak into the wall.

When exposed to water, especially a new stucco surface, the water may bring out salts contained in the stucco that have not yet had a chance to bond in the material. Like masonry, discussed on page 52, the salt appears as white streaks or spots on the wall. The salt can usually be removed with a brush.



CHAPTER 7:

Interior Finishing

- Paint
- Clear Finishes
- Sealants & Caulking
- Grout
- Gypsum Wallboard

Paint

Paint surfaces become scuffed, marked and chipped with normal use. Paint colours will also fade with exposure to cleaners, dirt and strong light. Before you clean any painted surface, look for the manufacturer's cleaning recommendations. Abrasive scrub pads used to remove scuff marks will dull or scratch your painted surfaces.

Clear Finishes

The use of inappropriate household cleaners, abrasives, soaps and wood conditioners may discolour a clear finish and cause it to deteriorate quickly.

Clear finishes on fine woods are influenced by the wood substrate and the moisture balance in the wood. Extreme humidity (too low or too high) can cause a finish to deteriorate prematurely. Maintaining proper humidity is a homeowner's responsibility.

Sealants & Caulking

Sealant is usually a clear, white or light-coloured flexible material placed where two hard surfaces come together.

It's often seen at the joint between a countertop and a backsplash or where a tile wall meets the top of a bathtub. This 'bead' of sealant prevents water from finding its way behind water-resistant materials to less resistant materials behind the joint. This bead of sealant should be applied in a continuous, unbroken line.

With cleaning, and the natural expansion and contraction of the materials bonded by the sealant, the sealant may crack or separate from one or both sides of a joint. Sealant joints should be checked on a regular basis and repaired immediately if deteriorating.

After your home's warranty period expires, the maintenance and repair of sealant is the responsibility of the homeowner.

WATER HAS GONE BEHIND MY SEALANT. HOW DO I REPAIR THIS?

If water has penetrated behind a sealant joint:

- Check for damage of the materials underneath the joint. This damage could be a discolouration or a softening of the material. From the source of penetration, continue to look for damage on the floor below because water often runs behind cabinets or down drywall towards the floor
- Replace or dry and repair the damaged area
- Remove all or parts of the old sealant bead and clean and dry the area
- Re-apply an appropriate type of sealant. Various types of sealants are specially formulated for kitchens, bathrooms etc. The sealant tube will provide information on the properties of the sealant and application instructions

There's water behind my ceramic bathtub/ shower enclosure. How do I repair this?

Grout joints or caulk joints between ceramic tiles and adjacent surfaces may deteriorate over time and should be inspected routinely. If a water leak is allowed to develop behind a tub or shower, the leak can cause the substrate behind the tile wall to soften or swell. This can cause the tiles to break loose, creating more areas for water to penetrate.

Small amounts of water may also run behind the tub or shower, soaking wood components and creating ideal conditions for mould growth and rot.

If the grout is cracked, repair it and re-seal it. If the caulking fails, remove the damaged caulking and reapply. If there is no apparent break in the grout or the caulk, clean the tiles and the grout lines and re-apply a grout sealer. Also, check for leaks from water pipes or drains.

Small amounts of water may also run behind the tub or shower, soaking wood components and creating ideal conditions for mould growth and rot.

Grout

Grout is a mixture of fine sand and cement (a thin mortar) used to fill the joints between wall or floor tiles. All grout is porous and can stain. Sealing grout and maintaining that seal will greatly reduce discolouration. Tile and grout in areas where water may come in contact should be resealed annually.

Make sure you choose a sealer compatible with your tile and know how to properly apply the sealer.

A sealer can enhance the colour of grout, minimize any minor issues with the grout application and help protect the grout from staining.

Grout discolours easily, especially lighter shades. Even something as simple as washing a tile floor can discolour grout over time. A variety of cleaners and sealers are available on the market to restore and maintain your grout.

Gypsum Wallboard

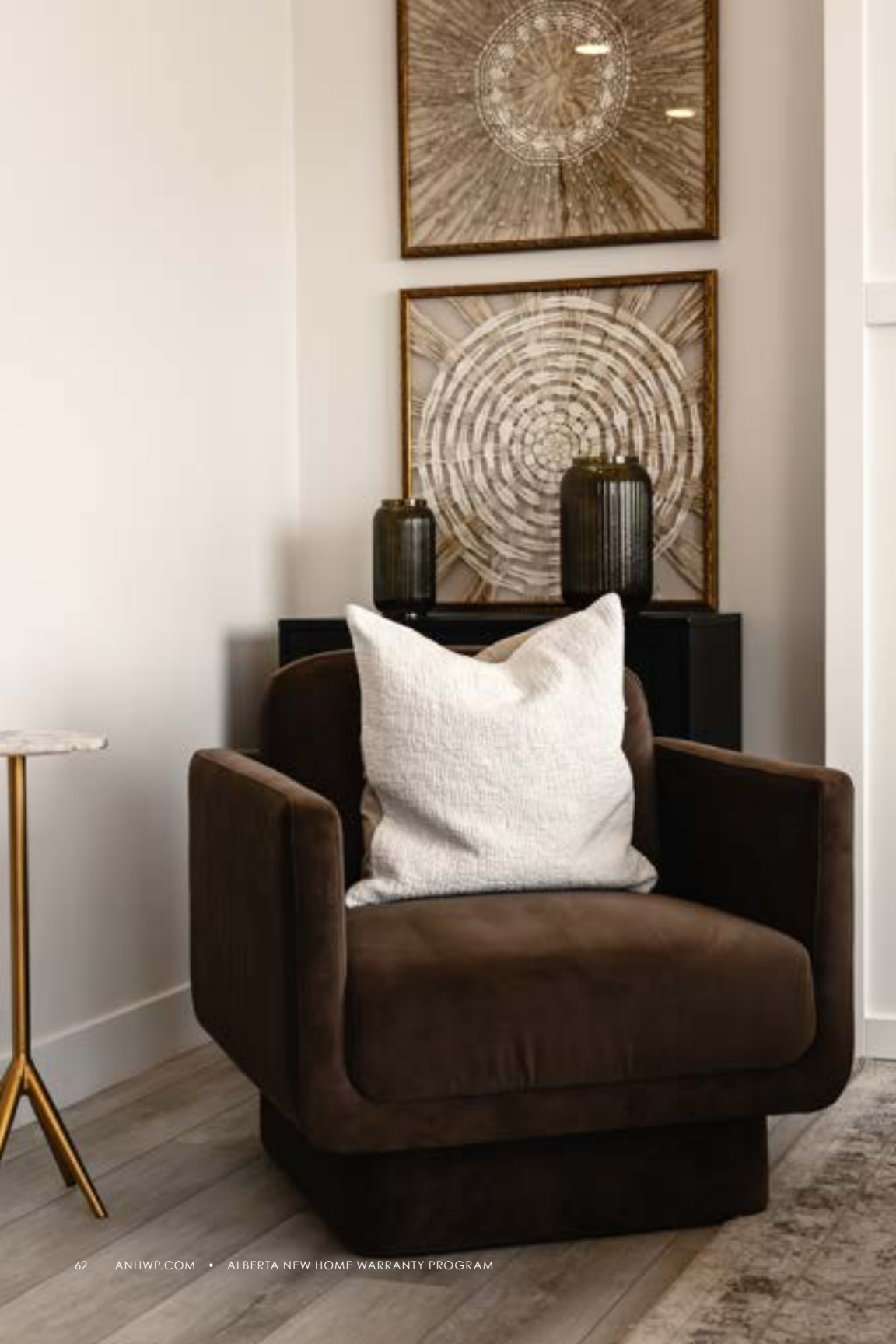
A wood-framed, two-story home can shrink vertically and place substantial forces on rigid building components such as gypsum wallboard (drywall).

These forces can cause drywall to crack. Minor cracks can be filled and primed before the area is repainted.

Though drywall nails have been replaced by drywall screws (which hold better than nails), nails are still used to initially hold the wallboard in place until it can be screwed down.

Nails are susceptible to 'nail pops' which happen when wood shrinks and expands, forcing nails holding the gypsum to work their way through the wallboard. This results in a bump in the drywall as the nail forces its way through the drywall. These nail pops typically appear at the upper edge of a wall or at a truss line on a ceiling.

To repair nail pops, cut away the damaged wallboard. Then, pull the nail out with a pair of needle-nosed pliers, nail it farther into the wall with a punch tool or replace the nail with a screw. Finally, fill the hole with joint compound, prime and re-paint the area.



CHAPTER 8:

Flooring

- Resilient Flooring
- Hardwood Flooring
- Laminate Flooring
- Carpet & Area Rugs
- Luxury Vinyl Planks (LVP)

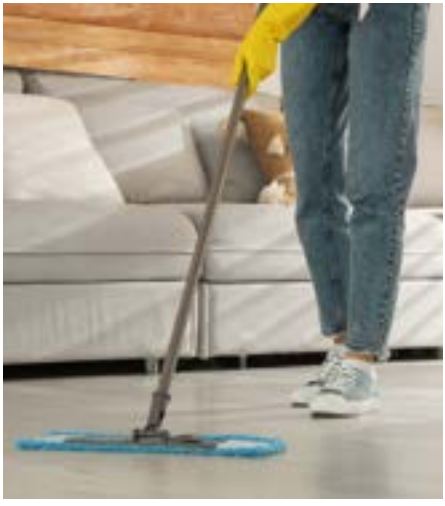
Resilient Flooring

Resilient flooring refers to a family of plastic flooring that offers a measure of impact absorption, making floors more comfortable to walk on. It's commonly available in sheet format as well as 12 x 12 inch flexible tiles.

How do I clean/maintain my resilient flooring?

Vinyl flooring can be scratched by sand and other abrasives and should only be cleaned with lukewarm water and a mild detergent. Harsh cleaners can cause fading, discolouration and, in some cases, cause vinyl to become hard and brittle. Stubborn scuff marks can usually be removed with a damp cloth and some effort.

Use water sparingly on resilient tile floors. Excessive water may seep between tiles, flooring joints and where the flooring meets baseboards and other trim.



Any uplifted edge or corner should be repaired immediately to prevent water intrusion and further lifting. The repair may require contact cement and the area should be weighed down to give the adhesive time to bond.

Although some resilient flooring may present itself as a 'No Wax' floor, you may find wax (or an acrylic product) is the best way to restore a high lustre to your floor. Waxes with solvents, varnish, shellac or any plastic finishing material can cause material breakdown or buckling. Contact the floor manufacturer before selecting a wax for your floor.

Use water sparingly on resilient tile floors. Excessive water may seep between tiles, flooring joints and where the flooring meets baseboards and other trim.

How did my resilient flooring get ridges/depressions?

Heavy furniture can dent resilient flooring. Typically, the floor will return to its original condition when the furniture is moved. Placing a coaster under the legs of heavy furniture will distribute the weight and reduce the likelihood of dents.

Occasionally, a piece of material can become trapped beneath the floor during installation and cause a 'ridge' on the flooring.

The visibility of a ridge depends on a number of factors, including the floor's material, pattern and colour, texture and the lighting in the room. To repair a ridge, you may have to remove a section of flooring and the repair may be less appealing to the eye than the defect.

If you do undertake such a repair, consider hiring a professional.

Why is my resilient flooring faded/discoloured?

Like other floor coverings, resilient flooring will fade if exposed to constant and direct sunlight. Closing window coverings during the day will help prevent fading.

Some materials can react with resilient flooring materials and cause a yellow discolouration. Items such as latex-backed carpets (e.g. kitchen/bath mat), oven cleaners, hair sprays and foods such as mustard can cause this discolouration which cannot be removed by cleaners. Using bleach-based chemicals to clean the discolouration can actually aggravate the situation. Sometimes, the discolouration will fade with time.

Luxury Vinyl Plank

Luxury Vinyl Plank or LVP are made of planks instead of one large sheet or individual tiles, and are popular for being easy to install, durable, lower cost and comes in many aesthetic options. They are typically able to withstand heavy foot traffic, scratches, spills and can be installed to resist water through the joints.

Available in various thicknesses from glued down 3mm, laydown 6mm or snap in place 6 - 9mm adhered to an engineered backing, there are many options a builder or homeowner can choose. The durable wear layer includes poly urethane and aaluminum ooxide finish and is found to be very durable reducing the risk if damage to the flooring. Internally, the layer of material is a reinforced PVC core that is stable and waterproof.

However, some of the thinner products can be affected by direct sunlight and cause shrinkage between the planks or peaking at joints. Regular maintenance includes broom sweeping or vacuum as needed and damp mop and floor cleaner as recommended by the manufacturer.

Thinner glued down LVP is susceptible to telegraphing where under glancing light, display slight unevenness in the subfloor. This is normal for this product type and not considered to be a condition of poor workmanship or installation. If there is damage to the flooring, the benefit of LVP is the ease in which the floor plank can be removed and replaced. Though a durable product, scratches and dents can still occur. Avoid moving heavy objects across the floor and clean up spills as soon as they occur.

Hardwood Flooring

Hardwood flooring describes flooring products made from broadleaf trees as opposed to softwoods harvested from trees with needle-like leaves (e.g. evergreens). The term 'hardwood' does not necessarily relate to the impact resistance of the wood. New materials such as bamboo are also included in this flooring category.

Engineered hardwoods often use a 1/8" thick hardwood on top of a plywood substrate. The plywood substrate adds dimensional stability and resistance to shrinkage.

Both types of hardwood floors use real wood on the cosmetic surface of the floor.

It's important to remember each plank of hardwood floor is unique.

Grain structure, knots and dark/light patches add to the warmth and charm of hardwood flooring. Even expensive hardwood flooring will have these variations.

How should I manage my home's humidity levels to protect my hardwood floor?

Hardwood flooring is highly susceptible to changes in indoor humidity. The first two years are especially critical for fine woods as they normalize to climatic conditions.

Hardwood floor manufacturers suggest keeping your home's humidity between 40-50 per cent year-round to minimize cupping and crowning. This is unrealistic in a cold northern climate during the winter. Maintaining such a high humidity would compromise external components of your home.

Windows, for example, would be covered in condensation in the cold weather.

Humidity in your home must be balanced to provide human comfort, minimize condensation and maintain your wood floor. Excess humidity must be controlled through ventilation and excessively dry conditions must be addressed by humidification. Adjust your home's humidity throughout the year to maintain a desired level.

Radiant heating systems should be engineered for wood flooring with correct heat source temperatures and thermostatic controls.

Why are my hardwood floors cupping/crowning or shrinking?

When wood absorbs moisture in the air or loses moisture to the air, the wood fibres stretch and shrink. This stretching and shrinking happens faster at the edges of the wood. This can cause separation between the pieces of wood in two ways: 'cupping' (where the long edges of the wood units are higher than the centre) or 'crowning' (where the edges shrink, causing the middle of a piece of wood to rise).

Cupping and crowning is largely attributed to water reaching the unfinished side of a hardwood board. Moisture may accumulate from excessive wet mopping or from humidity rising from a lower level of the home (e.g. a basement laundry area).

If the water is removed and/or proper humidity levels are restored, the flooring may return to its original condition without further remediation. If you have any concerns with the condition of your floor, consult a hardwood flooring installer.

Why are my hardwood floors making a popping/ cracking sounds?

A parquet or laminated wood block floor can make 'crack' or 'pop' sounds as it expands and contracts. These sounds are usually infrequent and should not be cause for alarm. Exotic woods with extreme hardness and stability will also make these noises as the wood adjusts to its new environment.

Why are cracks developing between strips of my hardwood flooring?

Cracks can develop between strips of hardwood if the wood loses moisture because the humidity in the home is too low. Adjust your humidity, especially in the winter. Areas around heat registers and areas exposed to concentrated sunlight are more susceptible to shrinkage.

Wood flooring applied over a floor with radiant heating is also more susceptible to cracks developing between the strips of wood. Radiant heating systems should be engineered for wood flooring with correct heat source temperatures and thermostatic controls.

An engineered wood floor, where the hardwood is attached to wooden sleepers, is a better choice for radiant-heated floors.

Corrosive solutions, chlorine cleaners or abrasives will slowly dull the finish of a hardwood floor. To avoid this, only use cleaners recommended by the flooring manufacturer.

How durable is my hardwood floor?

Today, most hardwood manufacturers add chips of aluminum oxide to the ultraviolet-cured urethane finish of their hardwood flooring to greatly increase its lifespan. These coatings are extremely durable—but not indestructible. For example, wearing high heels can exert over 400 pounds per square inch at the heel of her shoe and, in some instances, can actually dent a hardwood floor. High-heeled shoes should not be worn on hardwood floors.

The durability of a wood floor finish also depends on how well you protect it from abrasives such as dirt and sand. A protective runner in hallways and in front of the kitchen sink can also slow wear patterns from forming.

If you are renovating, consider installing an alternate material, like tile, at entry points to reduce the opportunity for abrasives to come in contact with your hardwood floor.

Use a soft head attachment for vacuuming your hardwood floors—not a power head (beater bar) and, when mopping, remember that no amount of standing water should be left on the surface of a hardwood floor.

Corrosive solutions, chlorine cleaners or abrasives will slowly dull the finish of a hardwood floor. To avoid this, only use cleaners recommended by the flooring manufacturer. Though commonly available cleaners, soaps, oils, waxes or polishes will not typically damage the floor, they can leave a residue on the floor. We are not aware of any hardwood floor cleaners universally recommended by all hardwood manufacturers.

Direct sunlight can fade hardwood floor colouring. Closing curtains to filter the light will reduce fading.

ADDITIONAL RESOURCES:

For more information on hardwood flooring, visit the National Wood Flooring Association's website.

Laminate Flooring

Laminate flooring provides another hard surface option for homeowners in locations where solid hardwood is not recommended. Although it's often designed to look like hardwood flooring, it's also available in finishes that resemble ceramic tile or resilient flooring (see page 64).

Laminate is composed of a wear layer, a pattern layer and one or two rigid layers that provide impact resistance and connection for the flooring system.

These layers are made from an engineered wood product. As such, laminate flooring is susceptible to swelling when moisture is present but it's also considered more stable than solid hardwood. Most new laminates include some type of moisture sealant to protect against moisture penetration.

Though strong, laminate flooring can be chipped. Unlike hardwood, it cannot be sanded and refinished. Do not wax, polish or lacquer a laminate floor.

Laminate floors are relatively maintenance free. Do not use abrasive or harsh cleaners or scouring pads for cleaning. Sweep, vacuum or damp mop with water and a cleaner approved for the specific floor. Never use a steam cleaner on a laminate floor and remove any standing water immediately to avoid swelling of the laminate. Contact the manufacturer for instructions on how to remove stains caused by paint, adhesive, asphalt, oil, etc.

Carpet & Area Rugs

The performance of carpet is determined by the height of the cut, the density of the construction, the backing and the type of fibre used to make the carpet. Carpet fibres are made from nylon, olefin and wool.

Dirt and sand are the major causes of carpet wear. With each compression of the carpet, a particle of sand is given another opportunity to cut at the carpet fibre.

A clean carpet will last years longer than a dirty carpet. Use a vacuum with a beater bar. Vacuuming will not wear out your carpets.

How should I clean my carpets?

Remove spots and spills immediately to prevent them from setting. Routine food spills can typically be removed with water. Pretest any spot removal cleaner in an inconspicuous area to make certain the solution will not damage the carpet's fibres or lift the dye. Apply a small amount of the selected cleaning solution to a white cloth and blot—do not scrub! Work from the edges of the spill to the centre to prevent the spill from spreading and rinse the area thoroughly with clean water after the stain is removed. Finally, blot the area with a dry cloth until most of the water has been absorbed.

Never use bleach on a carpet stain. While, you may remove the stain, you will likely remove the carpet's colour as well.

For oil-based stains such as ink, grease, nail polish, tar or wax, consult a cleaning professional. Fine area carpets should also be professionally cleaned as they can be damaged by water and conventional carpet care products. Consult a professional for the best cleaning option available to suit your particular carpet. Seasonal carpet cleaning will remove oils and imbedded dirt and renew your carpets. Some carpet cleaning products contain anti-allergens.

ADDITIONAL RESOURCES:

For more information about carpeting, check out the Carpet and Rug Institute's website.

Can my loose/stretched carpet be repaired?

Carpet can stretch in high heat or humid conditions and may lift along a room perimeter if the tack strip holding the carpet fails. In most cases, the carpet can be re-stretched and re-attached.

A ripple in the middle of the carpet can occur after heavy furniture has been moved across a carpet that's still wet from carpet cleaning. A professional carpet installer can correct both of these issues.

Why are there dark stains around my heating registers and the perimeter of my room?

Filtration soiling may appear as dark or grayish lines on carpet adjacent to walls or stairways, around vents and under doors. It's caused by airflow over and through the carpet that allows fine, airborne particles to settle on the carpet surface. This type of soiling, while sometimes permanent, requires special treatments for effective removal. Contact a carpet cleaning professional for assistance.

Frequent candle lighting, smoking, fireplace smoke or vehicle emissions from an attached garage add considerable particles to the air. These dark particles can stain as they settle on the carpet surface. Because these particles move through a home's heating system, staining is commonly found around heating registers.

CHAPTER 9:

Roofing

- Asphalt Shingles
- Eavestroughs & Downspouts

Asphalt Shingles

Your home's roof should give you many years of service. Asphalt shingles are the most common type of roofing material but alternatives such as tile, concrete, wood, rubber and metal are becoming more popular.

Following heavy windstorms, homeowners are encouraged to check for loose, broken or missing shingles. Builders are not responsible for repairing storm-related damage. A damaged roof should be repaired as soon as possible to prevent leakage into the interior of your home.

Roofs can also be damaged when items such as a satellite dish are installed. Use care during these installations to avoid damaging the shingles and ensure hold-down devices (e.g. screws) are properly sealed to prevent leaks.

Asphalt shingles are soft on warm days and can easily be damaged if you walk on them. If you must be on the roof, it's best to do so early in the morning when the shingles are still cool to the touch.

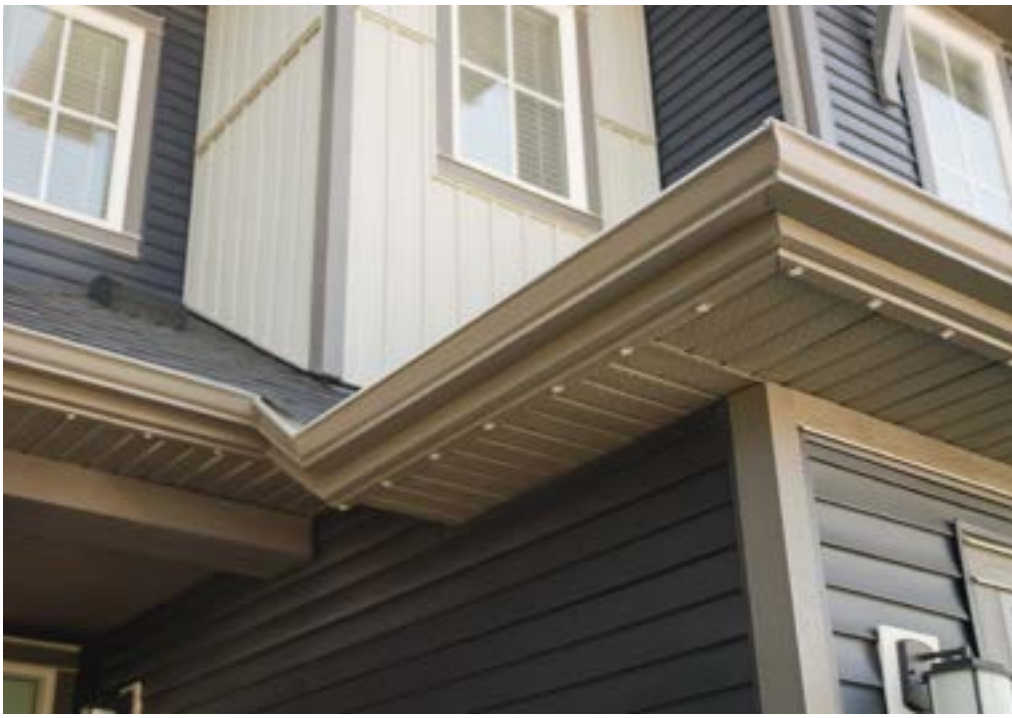
Slight differences in colour are inherent to the manufacturing process of asphalt shingles, even within the same factory run. This is unavoidable and does not affect durability.

Why are my asphalt shingle edges curled/cupped?

As shingles age, they will shrink and curl slightly. New shingles may curl or cup if exposed to cool temperatures.

The surface of a shingle cools when frost forms. At the same time, the underside of the shingle receives passive heat from the attic.

This temperature difference can cause the shingle to lift or curl slightly. Shingle age and type, attic ventilation, roof pitch, humidity, climate, colour, etc. will determine the visibility of any lifting or curling. This movement will not affect the performance of the shingles.



Eavestroughs & Downspouts

Why do my eavestroughs overflow during normal rain conditions?

The volume of rain an eavestrough can handle is altered when the eavestrough is clogged with obstructions such as leaves or surface particles from asphalt shingles. Dented or bent downspouts will also slow the flow of water.

Remove debris from your eavestroughs each spring, so water can move efficiently from the roof and away from your home's foundation.

Why are my asphalt shingle edges curled/cupped?

Regions that experience snow with above freezing temperatures during the day and below freezing temperatures at night are more prone to ice dams. An ice dam forms when snow on a roof melts and runs down the roof towards the eaves. Because the eave is cooler than other areas of a roof, the water will freeze at the edge.

As this ice accumulates, it will act as a dam, preventing water from flowing off the roof and into the eavestroughs. This water will accumulate on the roof and can move under the shingles, possibly causing leaks into the attic and even into the interior of your home.

An ice dam can also occasionally form near a chimney or roof vent when there is a heavy accumulation of snow. This may cause water to move under the flashing. To avoid this, do not allow snow to accumulate near flashed areas and roof eaves.

To reduce the likelihood of ice dams, clear snow off the roof, particularly at the eaves and around attic, bathroom and kitchen vents. You can also remove ice formations from the eaves and at the end of the valley formed when two roofs join. Take care not to damage the roofing and use safe work practices.

Chronic ice damming may indicate a need for improved insulation in the attic. Sometimes, insulation has been displaced, and you can simply return it to its proper position. Inspect your insulation every fall by entering through the attic hatch and looking for displaced insulation due to wind wash. Do not enter the attic but use a flashlight and view the space from the attic hatch area. Be sure to return the attic hatch to it's proper location and ensure the weatherstripping is making good contact when closed.

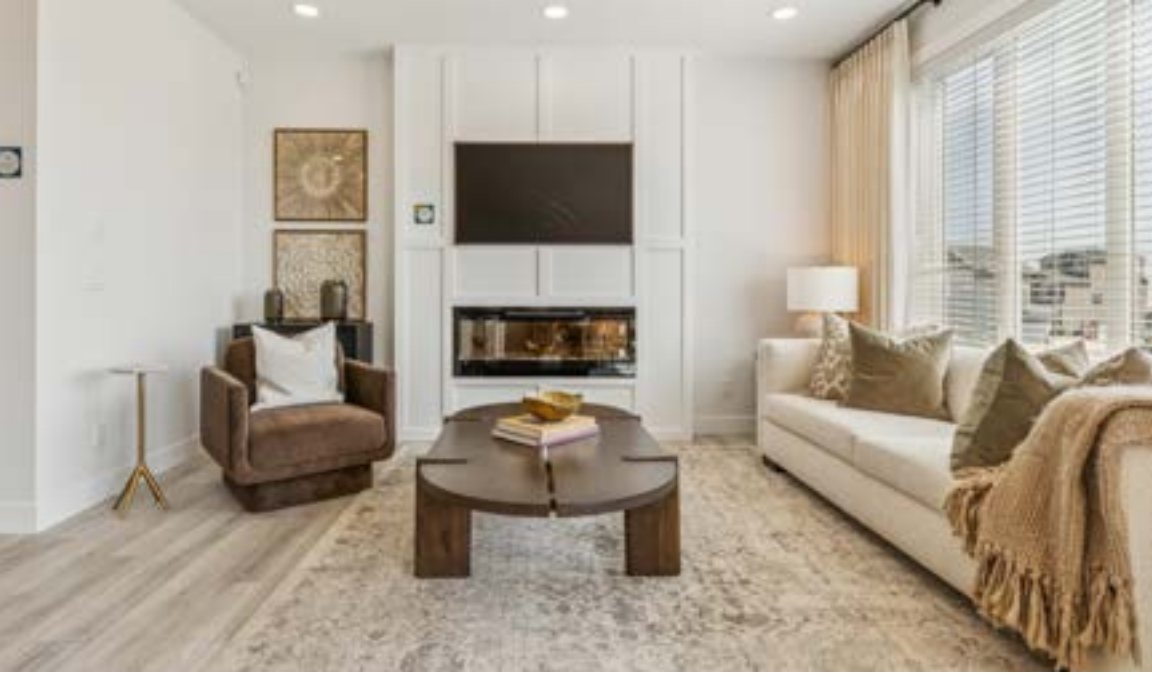
Insulation should be positioned up to the exterior perimeter of the wall but should not interfere with the exchange of air in the attic and the free flow of air to the soffits. A cardboard batten is usually installed to maintain the necessary two-inch space between the top of the insulation and the underside of the roof sheathing. If you add insulation to the attic, do not block air circulation to the soffits. Attics require circulation to properly expel moisture and heat.

Visit anhwp.com/surface-water for more surface water management tips (including details about eavestroughs and downspouts).

CHAPTER 10:

Fireplaces

- Curing or 'Burning In' a New Fireplace
- Natural Gas or Propane Fireplaces
- Solid Fuel-Burning Appliances
- Carbon Monoxide Detectors
- Smoke & Fire Detectors



Curing Or 'Burning In' A New Fireplace

Fireplaces generally operate on natural gas or solid fuel (wood, manufactured logs, pellets, etc.).

When a new fireplace is lit for the first time, materials found on the external surfaces, such as paint, sealants, lubricating oils and gasket adhesives, can produce odours and a small amount of Carbon Monoxide (CO), a dangerous gas that can cause asphyxiation. This is called 'curing' or 'burning in,' a process that can take up to 24 hours of run time. During this curing, the fireplace should burn for no less than five to six hours at a time with a high flame.

If the fireplace is equipped with a fan, do not run it during the curing period. The fan cools the surfaces and will inhibit the curing process. Ensure your home is well ventilated during the curing process. If your home has a CO detector, it may detect CO and sound an alarm.

During curing, the fireplace should burn for no less than five to six hours at a time with a high flame.

Natural Gas or Propane Fireplaces

Natural gas fireplaces have eclipsed the popularity of solid fuel-burning appliances in most municipalities. Generally, gas fireplaces operate in much the same manner as natural gas furnaces and should command an equal amount of caution and operational awareness. Read your owner's manual carefully. Fireplaces and other open flame appliances should never be left unattended when lit.

Most natural gas fireplaces pull combustion air from the outside through an inlet vent. Do not obstruct this vent.

Conventional gas fireplaces have their own air intake and exhaust paths, so there is no damper to open and close as there is in wood burning fireplaces.

After several years, it's not uncommon for a sensor (called a thermocouple) to fail. When the sensor fails, the fireplace will mysteriously shut down and extinguish the pilot light.

Because the thermocouple can be serviced without disturbing the natural gas line, a homeowner can safely replace the sensor on his/her own. If you are not comfortable making this repair, call a service technician.

Solid Fuel-Burning Appliances

The efficiency of solid fuel-burning appliances has increased greatly since the late 1990s. Today, most new appliances have positive closures on their doors to eliminate the drafts that can move down the chimney and cool the room. Higher quality models bring air directly to the firebox from the outside to ensure the appliance does not draw air from the home. Make sure the chimney flue is open to prevent generating a large amount of smoke when you initially start a fire.

You should also preheat the chimney. To do so, build a small, hot fire with paper and small slivers of wood. You can also use a hair dryer. You may want to open a window slightly to provide replacement air to the room before lighting a fire.

As gas or solid fuel burns, it releases heat, moisture and combustion gases. These gases include CO. Smouldering embers do not generate enough heat to maintain the chimney draft and gases can accumulate in the firebox. Because these gases are heavier than air, they can flow out of the firebox. To prevent this, do not leave appliance doors open and do not close the chimney damper until all ashes are cold to the touch. If any smoke or gas is being emitted, a closed damper could cause gases to divert into the living space of your home with tragic consequences.

A CO detector should be placed near a wood burning appliance in accordance with the Alberta Building Code and/or the manufacturer's recommendation. Smoke detectors are not the same as CO detectors. Solid fuel fireplaces require regular inspections of the chimney and should be cleaned regularly and inspected for any blockages.

Make sure the chimney flue is open to prevent generating a large amount of smoke when you initially start a fire. You should also preheat the chimney.

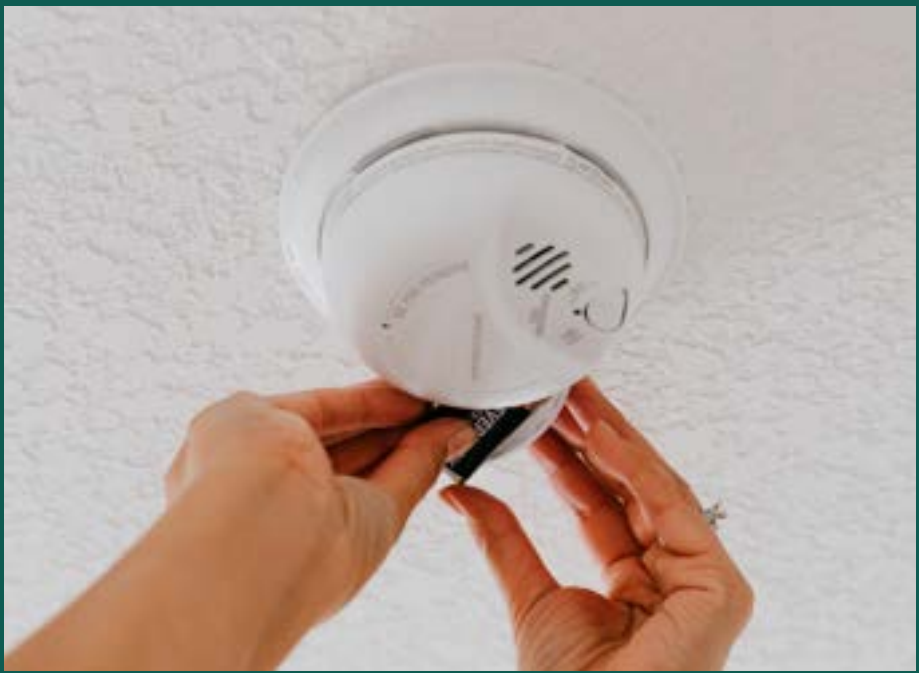
Carbon Monoxide Detectors

CO is a colourless, odourless gas. You can't see, taste or smell it. CO is a common by-product of the burning of natural gas, gasoline and solid fuels (wood, pellets, etc.). Fireplaces that are properly installed, maintained and operated will produce little CO. However, if anything disrupts the venting process (such as a bird's nest in a chimney) or restricts the oxygen to a gas burner, CO production can quickly rise.

Gasoline engines produce CO, especially when a cold engine starts. CO can accumulate if you start and idle your vehicle or gas mower in the garage. CO can enter a home through connecting walls or doorways and quickly rise to dangerous levels. Doors leading from the garage to your home should be regularly checked to ensure they are properly sealed.

Rooms with solid fuel-burning appliances must also have a CO detector. Some examples include a Furnace, a water heater, a fireplace and gas appliances.

Make sure you read the owner's manual for your CO detector, so you know what level of CO your model is capable of sensing. You should also know what your CO detector alarm sounds like.



BEFORE YOU INSTALL YOUR DETECTOR:

- Read the manufacturer's instructions carefully before installing a CO detector
- Do not place the detector within five feet of household chemicals
- Do not place your detector directly on top of or directly across from, a fuel-burning appliance. These appliances will emit some CO when initially lit
- Code requires carbon monoxide alarms to be interconnected, so that when one alarm sounds, all alarms sound

TESTING YOUR DETECTOR IS IMPORTANT:

- If your CO detector is wired directly into your home's electrical system, you should test it monthly. For an added level of protection, install a battery operated detector as well in case of a power failure
- If your CO detector is battery operated, test the detector regularly. Change the batteries every spring (along with any smoke detectors) or more regularly if recommended by the manufacturer

Changes to the Building Code made it mandatory for CO detectors to be placed in any room that shares a floor, wall or ceiling with a garage as well as in or within 5 m of each bedroom.

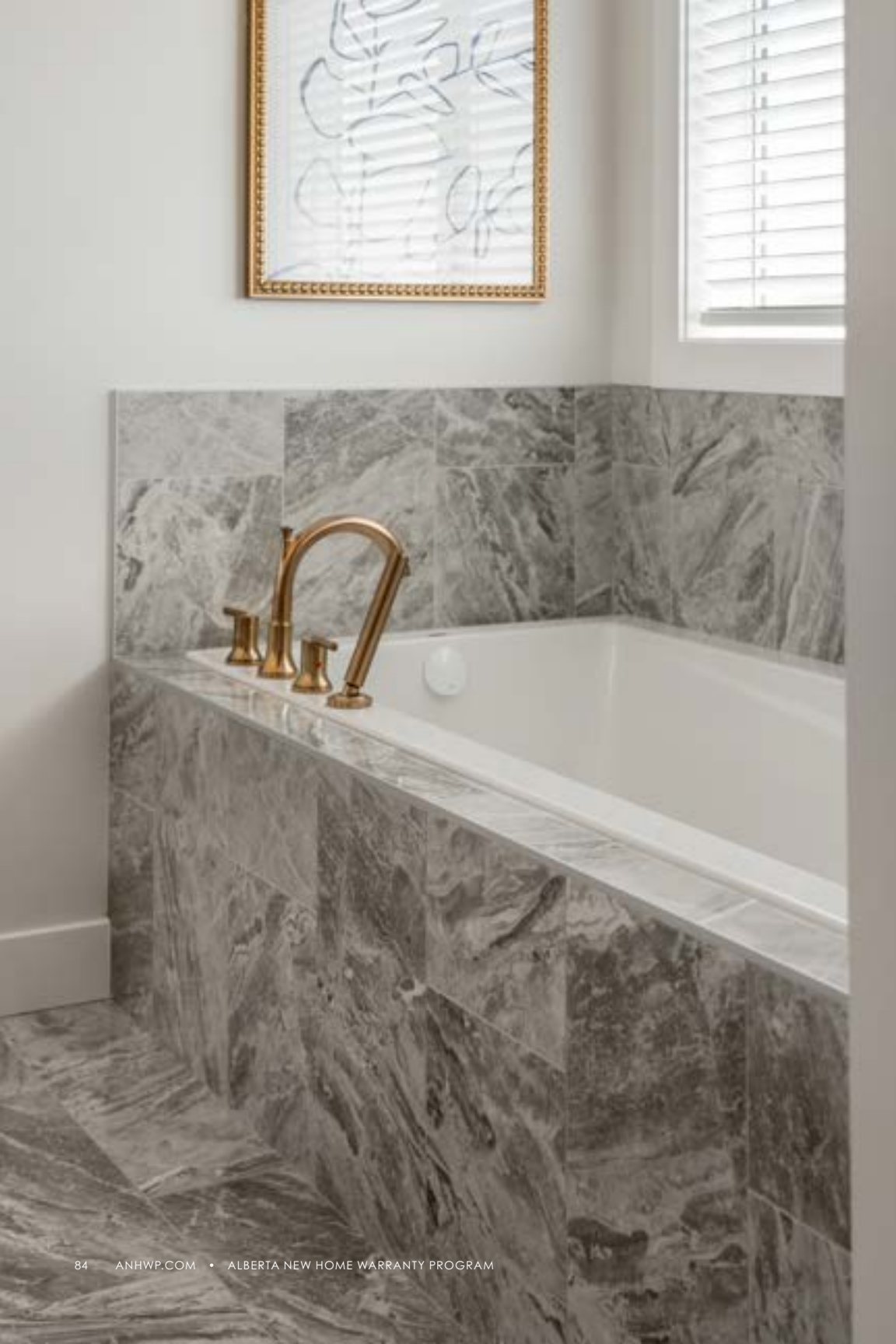
Smoke & Fire Detectors

Smoke detectors are not the same as CO detectors. Smoke detectors are required by code o be installed on every level of the home including basements and located in each bedroom and hallway serving a bedroom. They are available as 120-volt, wired-in models and as nine-volt battery models.

Experts encourage homeowners to have both power options in the home. The 120-volt detectors do not need a battery and battery-operated models will protect your family in the event of a power outage.

How to maintain your smoke detector:

- Test your smoke detectors monthly by pressing the 'test' button. An American study found that when a home smoke detector fails, it tends to fail totally as opposed to a creeping failure (e.g. loss of sensitivity over time). Regular testing will find a faulty detector quickly and ensure your family is protected
- Replace the batteries in your smoke detector as soon as it chirps to warn you the battery is low. You can also schedule battery replacements for the same day you change your clocks from daylight savings time to standard time in the fall
- Do not borrow a battery from a smoke detector
- Do not disable smoke detectors—even temporarily. If your smoke detector is sounding 'nuisance alarms,' try relocating it farther from kitchens or bathrooms where cooking fumes and steam can trigger an alarm
- Vacuum or dust your smoke detectors regularly (follow manufacturer's instructions)
- Consider installing smoke detectors with 'long-life' batteries
- Do not paint a smoke detector
- Smoke detectors have a lifespan and better technology is always coming onto the market. Consider replacing smoke detectors in your home every 10 years or less



CHAPTER 11:

Plumbing

- Private Sewage Treatment Systems
- Plumbing Drains
- Plumbing Supply Lines
- Gravity Flow Toilets
- Pressure-Assisted Toilets
- Faucets
- Sinks, Toilets, Tubs & Showers
- Hot Water Tank
- Gas Appliance Safety
- Water Softeners

Keep heavy construction equipment away from the septic tank and disposal system and keep all traffic off the system during the winter months.

The plumbing system in a home consists of plastic drain piping, copper or plastic water delivery piping and the fixtures that connect to these piping systems (such as toilets, bathtubs and faucets). If you are finishing a basement, take note of the plumbing routes and make sure you leave access to meters, valves, drains and cleanouts.

Many plumbing components such as faucets and toilets are mechanical devices and as such require periodic maintenance or the replacement of parts.

Private Sewage Treatment Systems

Outside of municipalities, the home's drainage system may carry sewage to a private, on-site sewage treatment system. If you have such a system, you must learn how to use it and maintain it properly. In Alberta, the "Private Sewage Systems Standard of Practice" requires installers to give system owners a manual. Make sure you receive this manual from your builder and are familiar with how to operate the system. Faulty systems create health hazards and contaminate the environment. A private sewage treatment system may require regular service by a professional.

Most systems are located some distance from the home and may have restrictions on what is placed or grown above or around them. Also, keep heavy construction equipment away from the septic tank and disposal system and keep all traffic off the system during the winter months.

Certain chemicals and products can alter the balance of bacteria and microbes that breakdown waste and should not enter your sewage treatment system.

Plumbing Drains

Virtually all draining fixtures feature a water-filled 'P' trap. This trap holds a few cups of water to prevent sewer gases from entering your home. If a sink, bathtub or floor drain has not been used for an extended time, the water in the trap can evaporate. To re-establish a seal and keep sewer gases from entering your home, simply pour a few cups of water down the drain.

A blocked drain is the most common plumbing issue and can lead to a sewage back-up. If you experience a back-up from the main sewer line in the basement during a heavy rain, contact your builder, your insurer and your municipality. The issue may involve the municipal sewage system and will be beyond the control of your builder.

What should I do if my sewers, drains or fixtures are blocked?

To avoid the majority of drain blockage problems, do not pour fat, oil, wax, grease or any type of sediments (e.g. egg shells) into your home's plumbing system. Also, do not dispose of flammable, noxious or dangerous materials through the plumbing system.

When a plumbing trap is blocked, the trap can usually be separated from the plumbing and the obstruction removed. Otherwise, your home's plumbing will include several cleanouts. Specific plumbing tools can use these cleanouts to remove a blockage.

Extreme caution should be used if acid or corrosive drain cleaners have been poured into the plumbing system. Tell your plumber if you have utilized any chemical drain cleaners because these cleaners can cause chemical burns on exposed skin.

Plumbing Supply Lines

What should I do if my water pipes are leaking or have frozen and burst? How do I prevent this from happening again?

If a leak is detected in a water supply line, the water supply to the home or affected area should be turned off immediately, and your builder and insurer should be contacted.

When colder weather approaches, disconnect exterior hoses, close exterior valves and allow the line to the exterior hose bibs to drain. 'Frost-free' lines will not protect outside water supply lines from freezing if the exterior hoses have not been disconnected from the threaded connection.

See page 17 for more information about preparing outside water supply lines for winter.

When colder weather approaches, disconnect exterior hoses, close exterior valves and allow the line to the exterior hose bibs to drain.

Why is there condensation on my water supply lines and toilets?

When pipes or toilet tanks are cooled by the movement of cold water into or through them—and sufficient humidity is present—moisture in the air can condense on the cold surface of the piping or toilet tank. This is similar to the condensation that occurs on a cold glass of water on a humid summer day.

Toilet condensation is most common after showers or baths and just after the toilet tank has filled. To remove the condensation, ventilate the area by opening a window or turning on the bathroom fan to remove excess humidity from the room.

Why does it feel like my water supply is inadequate?

There are several common reasons why water supply to a toilet or sink may seem inadequate. Sometimes, shut-off valves on the water lines that feed a sink or toilet may be partially closed, limiting the volume of water coming through the line. These valves are not designed to meter water flow and can affect the performance of fixtures and toilets if not fully open.

Another reason water supply may seem limited is the common use of faucet aerators in new homes to restrict water flow. This conserves water and is not a defect. However, water flow can be inappropriately reduced if an aerator becomes clogged by minerals in the water that accumulate over time.

To improve flow, replace the aerator or clean it.

Within a city or town, water pressure is regulated by the municipality and is not usually adjusted. Variations may occur during peak periods of demand.

On private water systems (e.g. wells, cisterns), a pressure regulator valve is usually located on the outlet of the pressure tank. This valve should be set between 40 and 80 pounds per square inch (PSI) of water pressure.

Another reason water supply may seem limited is the common use of faucet aerators in new homes to restrict water flow.

Gravity Flow Toilets

When the flush lever is pressed on a gravity flow toilet, water flows out through the flush valve, into the toilet bowl and through the trap, taking waste with it. The toilet's flush lever is connected to a chain or wire that lifts a flapper or a tank ball that controls the flow of water from the tank to the bowl. Water moving into the bowl from the tank acts like a siphon, pulling waste and water from the bowl into the drain line.

Pressure-Assisted Toilets

These toilets use water coming into the tank to compress air in a chamber inside the tank. The flush releases this air, pushing the water into the trap which starts the siphoning action.

With power-assisted toilets, avoid pushing the flush button before the tank has completely filled. Otherwise, the tank may not refill with enough water for the next flush.

Why does my toilet need more than one flush to empty the bowl?

Low-volume toilets, widely installed in new homes today, use less water to flush than older models. However, they are unable to handle the same amount of waste as an older model and may require more water—a second flush—to handle a greater load.

Gravity toilets regulate the amount of water released from the tank with a flush handle. Holding the flush handle down will allow more water into the bowl from the tank. Ensure the tank has completely filled before flushing a second time. The length of the chain or the location of the float on the wire connected to the flush valve can often be adjusted to keep the flapper valve open for longer.

This allows more water to flow into the bowl with each flush.

With power-assisted toilets, avoid pushing the flush button before the tank has completely filled. Otherwise, the tank may not refill with enough water for the next flush. To correct this, shut off the water supply to the toilet, drain the tank completely and turn the water back on.

Over time, mineral and bacteria deposits may also reduce the performance of a toilet. Regular use of a toilet cleaner or vinegar may slow these deposits from forming. A toilet usually drains poorly because of drain blockages rather than a problem with the toilet itself.

Why does my toilet run continuously?

A running toilet is a common plumbing complaint. In a gravity flow toilet, this usually means the flapper seal is worn and should be replaced. New flapper seals are available at most hardware stores. Make sure you choose the right style for your toilet.

If a pressure-assisted toilet is running between flushes, it may mean a poorly adjusted flush button is keeping the flush-valve cartridge open. The button can be re-adjusted but in some cases you may have to replace the pressure regulating valve.

Why do I smell a sewer gas smell in my home?

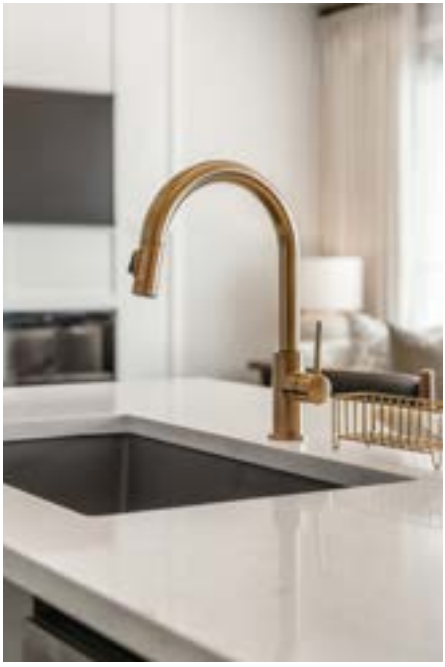
A recurring sewer gas smell could indicate the wax seal between the base of the drain and the underside of the toilet has failed. Wax seals are available at any hardware store but do require some plumbing knowledge to install.

If you are adding a heated floor to your bathroom, do not run heating lines or cables within one foot of the wax seal. The heat could liquefy the seal and cause sewer gases to escape.

Faucets

The smooth and glossy surfaces on plumbing fixtures are beautiful and durable but they are not indestructible. Harsh, abrasive cleaners will, in time, wear through the surface, making the finish dull and porous. Steel pads and strong cleaners can also do irreparable damage. Use only mild, non-abrasive cleaners.

Most new faucets use cartridge assemblies. Cartridges utilize different mechanisms to reduce dripping faucets and eliminate routine maintenance. Repairs to these cartridges should only be attempted, if you have the necessary tools, mechanical inclination and the patience to complete the job.



What should I do if my faucet starts leaking?

Faucets or showerheads often develop leaks over time from wear or mineral deposits. If this occurs, contact the manufacturer to find out if the fixture can be cleaned or if a replacement part or cartridge exists for your particular brand and model.

Sinks, Toilets, Tubs & Showers

Bathroom and kitchen sinks can be made from ceramic, glass, metal, enameled metal, stone composite or real stone.

Tubs and showers can be made from enamel over steel, moulded acrylic, fibreglass or from an acrylic base with tile on the surrounding walls.

See page 42 for more information on tile.

What do I do if there are cracks, chips or scratches on my bathroom fixtures?

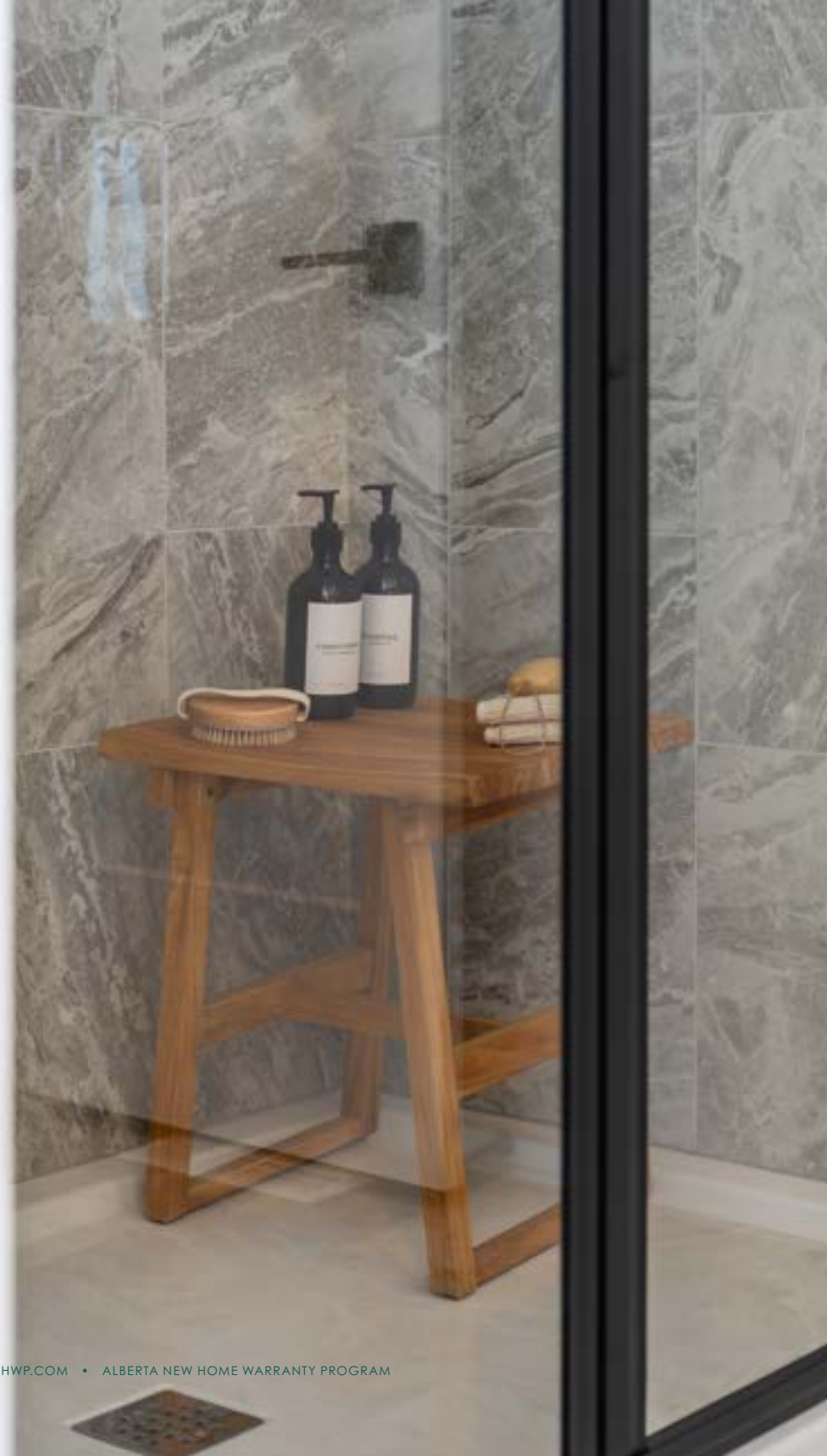
The likelihood of scratches, chips, stains and fading of bathroom fixtures depends on the material used to make the fixtures. Always follow the manufacturer's cleaning and maintenance recommendations and never use abrasive cleaners.

Also, when selecting accessories such as a soap dispenser, recognize that glass or ceramic items falling onto a bathroom fixture will likely chip or dent the fixture.

What should I do if my bathtub/ shower enclosure door is leaking?

Sealants are used in many areas near a bathtub or shower. Sealant may be used between the tub and the tile, where the bathtub and tile surround meet and to seal the doorframe of a tub or shower stall. Rubber or vinyl seals are used where swinging or sliding doors come in contact with the doorframe.

Over time, with cleaning and movement, seals and sealants may need replacing. To repair, you must remove the old sealant, clean the substrate and add new, mildew-resistant sealant. To replace a door seal, contact your tub/shower manufacturer to confirm the correct type and size of seal needed.



Hot Water Tank

A storage gas-fired water heater is the most common type of appliance used to heat water in Alberta homes. These water heaters typically have a burner at the base and a glass or metal-lined tank. Controls at the base allow you to adjust the temperature and shut down or start up your tank. Most tanks have pilot lights (a small flame that burns continuously) that light the burner when the tank calls for heat. Some tanks have an electronic ignition.

To select a temperature, choose the lowest temperature setting on the thermostat that will still provide you with an adequate supply of hot water. Consider turning the tank thermostat down to the lowest setting before going on holidays.

Most electric tanks have a top and bottom element. Usually the reset buttons and adjustable temperature settings can be found under the cover plate. When making adjustments, do not make contact with the adjacent wire ends on terminals located near the temperature setting screw. Doing so could cause electric shock. If your tank stops working, check the fuse or breaker panel before calling a plumber or an electrician.

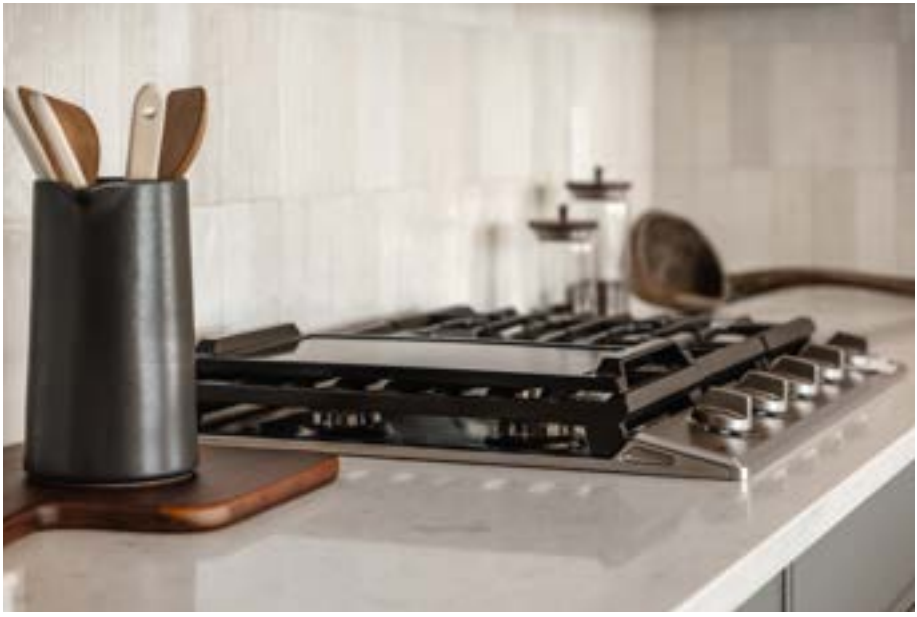
Sediment that accumulates at the bottom of the tank (especially with immersion-type elements) can cause the heaters to operate longer than necessary. This increases your energy consumption. The tank should be flushed regularly in accordance with the manufacturer's directions.

Every hot water storage tank is equipped with a pressure relief valve at the top of the tank. This is a safety device designed to open and relieve pressure should the water pressure in the tank exceed its rated working pressure. Do not tamper with this valve.

Each year, many children and seniors are scalded by hot tap water. Even slightly lower hot water settings can prevent tragic burn accidents.

Even slightly lower hot water settings can prevent tragic burn accidents.

Gas Appliance Safety



Inspect your home for uncapped gas lines. Occasionally, gas appliances are removed without proper termination of old lines. Any steel line not connected to an appliance should end with a valve and a black steel cap. Only a qualified gasfitter should install, repair or remove natural gas appliances. Gas appliances such as your furnace, water heater, stove, fireplace, etc. should be checked annually by a qualified professional.

If you detect a gas odour, immediately vacate the premises without activating any electrical switches (e.g. light switch) and leave the door open behind you. Immediately call your natural gas supplier for assistance.

If you detect a gas odour, immediately vacate the premises without activating any electrical switches.

Water Softeners

Soaps and detergents lose some effectiveness in hard water. Instead of dissolving completely, soap combines with the minerals in the water to form a coagulated soap curd.

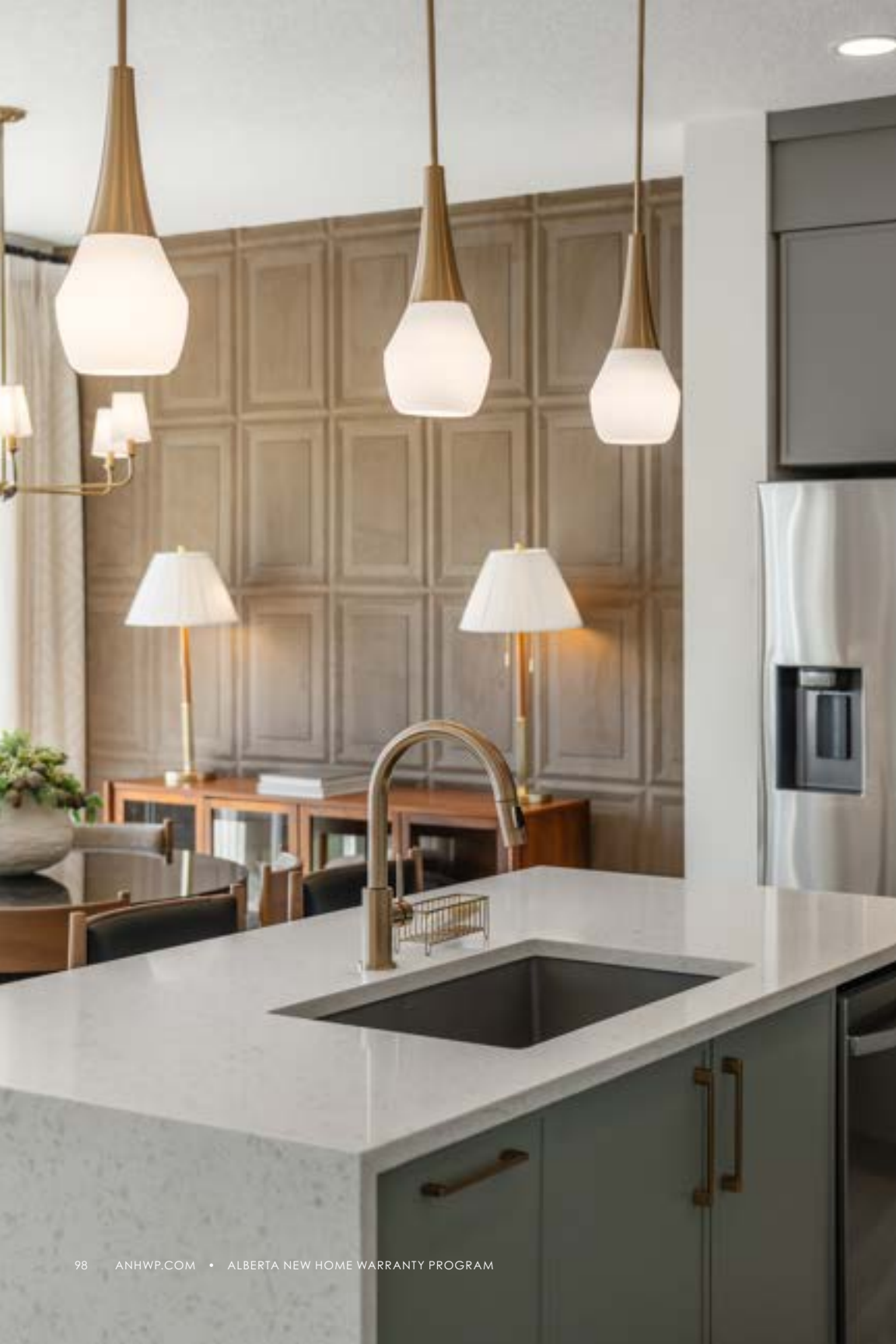
Water softeners improve the quality of water by removing excessive minerals (usually calcium and magnesium). Mineral-laden water is often referred to as 'hard water.'

Soaps and detergents lose some effectiveness in hard water. Instead of dissolving completely, soap combines with the minerals in the water to form a coagulated soap curd. Also, because less soap dissolves in the water, you will need to use more soap to clean. Hard water also reduces the efficiency of hot water tanks, toilets, humidifiers, dishwashers and virtually any devise or appliance that uses water. If your home has hard water, you will need to follow a de-scaling regime.

A water softener has two tanks—a mineral tank (where the water softening actually takes place) and a brine or salt tank (that flushes and cleans the mineral tank). In some systems the two tanks are placed in one enclosure.

Water softeners cycle/regenerate once every three or four days with a cycle of backwashing, recharging and rinsing. The regeneration cycle can take several hours and homeowners usually schedule this to happen at night when water demand is low.

Before selecting the size of a water softener, consider how hard your water is and how much water you consume on a daily basis. A unit that is too small will not soften the water enough and a unit that is too large will cause unnecessary regeneration, which wastes salt and water. Your owner's manual will provide you with suggested settings for optimal results.



CHAPTER 12:

Electrical

- Circuit Breakers
- Arc Fault Circuit Interrupters
- Ground Fault Interrupters
- Appliances

Circuit Breakers

The heart of your electrical system is the main electrical panel that contains an array of circuit breakers. Circuit breakers protect the wiring in your home. Arc Fault Circuit Interrupters prevent fires caused by loose or broken wires. Ground Fault Interrupters protect people from electric shock.

Circuit breakers are the modern day version of the fuse. Circuit breakers automatically turn off the flow of electricity at the electrical panel when too much current is drawn through them. Circuit breakers operate either by reacting to excessive heat build-up (via a bimetal strip) or by electromagnets that sense a dramatic surge in power that could cause a short circuit. In either case, once the electrical fault is corrected, the breaker can be reset and power restored.

You should be familiar with the electrical panel and know which breaker controls each electrical area of your home.

Most electrical panels feature a chart for the electrician who installed the system to record where each breaker has been assigned (e.g. Breaker #1 – Kitchen). Keep a flashlight near the electrical panel, so you can read this chart during a power failure.

Usually, electrical problems are the fault of an electrical appliance, and your home's electrical system is simply responding to a potential circuit overload by shutting off the electrical power. Frequent tripping of the circuit breakers may indicate the circuit's overloaded or a breaker is faulty. Some appliances have special power requirements and may draw more electricity than the average appliance. If the power outage is the result of a short circuit, as opposed to an appliance overload, the panel should be repaired by an electrician.

Many fires occur each year from misuse of electrical equipment. Contact an electrician or a recognized appliance service agent to make these repairs.

You should be familiar with the electrical panel and know which breaker controls each electrical area of your home.

Arc Fault Circuit Interrupters

Traditional circuit breakers are designed to protect just the wires behind the walls and the switches and outlets they are connected to. Circuit breakers will trip when a massive amount of electricity passes through the circuit and causes heat to build-up within the breaker.

Arc Fault Circuit Interrupters (AFCI) are designed to detect electrical arcs caused by broken or cut wires. Arcs occur in electrical cords when the insulation becomes brittle or cracks. Loose wire connections on switches and outlets and wires that have been nicked by nails or pinched by fasteners can also cause arcs.

Bedrooms are more susceptible to these types of electrical problems because of the common use of extension cords and inconsistent power demand (use lots of power in the morning when you're getting ready and then require little power during the day). To address this, the Alberta Electrical Code mandates the use of AFCI's in bedroom circuits. These breakers will replace the normal circuit breakers in your electrical panel. If the AFCI breaker trips, first check any extension cords for breakage and confirm they're plugged in and then consult your builder and/or an electrician before resetting the AFCI breaker.

Bedrooms are more susceptible to these types of electrical problems because of the common use of extension cords and inconsistent power demand.

Ground Fault Interrupters

A Ground Fault Circuit Interrupter (GFI) protects people from electric shock.

You can recognize a GFI outlet by the 'Test' and 'Reset' buttons located between the plug receptacles of the outlet. One GFI can be wired to protect several electrical outlets on the same circuit.

GFI's are installed wherever there is the potential for contact between a person, an electrical appliance and water. For example, GF'Is would be located on outlets placed near swimming pools, kitchen sinks, bathrooms or exterior plugs.

A GFI-protection circuit can also be integrated into a breaker at the main electrical panel. A GFI breaker will have a separate ground wire connection. A reset button sets it apart from regular circuit breakers. A GFI breaker serves a dual purpose. Not only will this breaker shut off electricity in the event of a 'ground-fault' but it will also trip when a short circuit or an overload occurs, protecting anything downstream (outlets, lamps, heaters, etc.) connected to the GFI breaker.

A GFI should be tested once a month. To test, plug a light into the outlet with the light on and push the 'Test' button. The power should cut immediately and the 'Reset' button should pop out. To reset the circuit, simply push the 'Reset' button. Power should be immediately restored.

Why does my GFI trip? What should I do when it trips?

A GFI circuit senses the difference between electrical current entering an appliance and electrical current exiting an appliance. If the current exiting the appliance is different from the current that entered the appliance, the GFI will identify the change in current as a power 'leak' from the appliance—a leak that is probably going through a person's body. The GFI will shut down the flow of electrical current in a fraction of a second.

If you have lost power at a regular-looking outlet, it may be due to a tripped GFI outlet further up the circuit line.

To confirm this, check if the cord plugged into the outlet works if plugged into another outlet in the home. If they do, then check the GFI outlet in the ensuite bathroom to see if it has tripped. If it hasn't tripped, check the breaker itself on the electrical panel. You can also check that electrical appliances plugged into a GFI outlet, or appliances on a circuit protected by a GFI circuit breaker, are working.

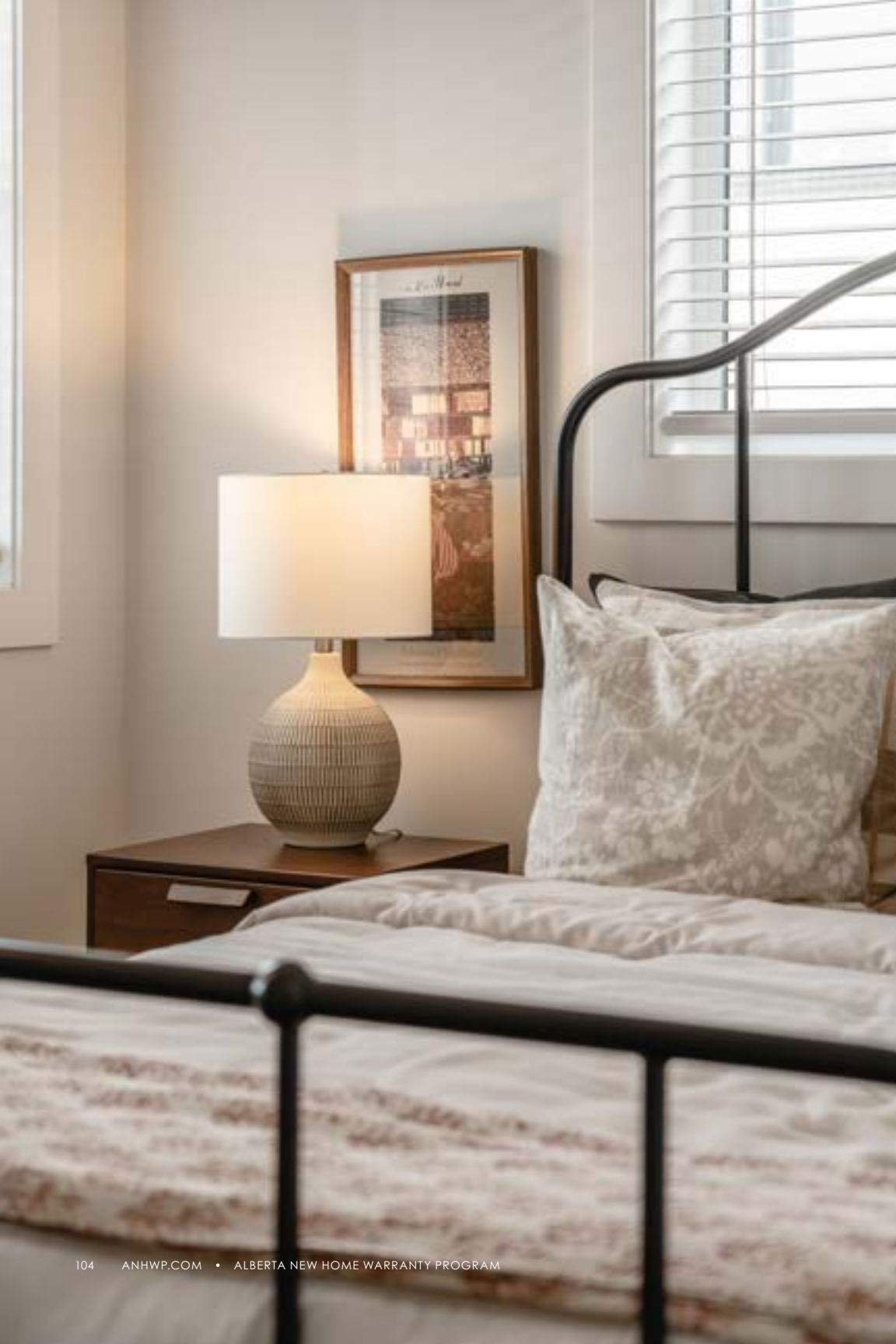
If you have reoccurring problems, contact the electrical contractor who wired the home.

Appliances

Before you move in, your builder should ensure all appliances included with the home are in working order. Electrical appliances come with manuals and warranty papers. Review these documents carefully, particularly the operating/ maintenance instructions. You should also file warranty cards with the appliance manufacturers, so you are informed of any recalls. Local service technicians can help if you encounter any operational problems or have questions regarding an appliance.

Placing all your manuals in a binder is a great way to keep information together and will be a great resource for a buyer should you ever sell your home.

Electrical appliances come with manuals and warranty papers. Review these documents carefully, particularly the operating/ maintenance instructions.



CHAPTER 13:

Interior Climate Control

- Heating/Cooling
- Air Leakage
- Ventilation
- Range Hoods
- Humidifiers

Heating/Cooling

Interior climate control refers to the management of the heating, cooling, ventilation and humidity required to keep your home comfortable.

Today's heating and cooling systems are reliable and require little maintenance. Most heating systems are forced air systems that heat the air and distribute it throughout a home with a furnace and a ducting system.

In some cases, a hydronic heating system is used. With this system, water is heated and circulated to either a radiator placed in forced-air ducting to radiators located on walls or through water piping placed in or under the floors. Cooling systems work like a refrigerator. Cold liquid is circulated through pipes. The pipes become cool and air is blown across them. This air also becomes cool and is then distributed through your home, usually through the same ducting that supplies heat.

In addition, high velocity systems are gaining popularity due to their efficiency and overall home comfort. This system uses a blower fan to force air through smaller, flexible ducts, increasing air floor and uses less energy to move the same amount of air as a traditional system. However, as they are a sealed system, they are not cleaned using traditional methods and may not work well on these systems.
These systems typically require two seasonal maintenance checks of the air filter, blower motor and ducts.

Why does my heating or cooling system feel inadequate?

When the heating/cooling system of your home was selected, the rated capacity was checked to ensure your home could be heated or cooled to a comfortable temperature. This calculation takes the climatic conditions of your region into account. It's rare that a system is not sized correctly for a home. An obstruction in the vent or an imbalance of the heat flow from the heat registers throughout your home are more common causes of inadequate heating or cooling.

To check for obstructions, remove the floor register and look down the throat of the duct with a flashlight. Remove anything that may obstruct air flow.

Caution: Sheet metal screws can protrude from the joints in the ductwork.

Use gloves when reaching into the duct.
Each heat register in your home has a damper. If an area of your home is too cool or too warm, you can adjust the dampers to reduce or increase airflow into the area. This is known as balancing your system and is especially important for registers located near your home's thermostat.

A dirty or plugged air filter can also limit air flow from the furnace to the ducts. Inspect and clean or replace the furnace air filter at the beginning of the heating season and on a regular basis throughout the winter.
Dirt or debris on the heat exchanger for the cooling unit can also limit the efficiency of a cooling system. The manual for your cooling system will provide cleaning instructions.

If an area of your home is too cool or too warm, you can adjust the dampers to reduce or increase airflow into the area.

HOW CAN I STOP MY CEILING-MOUNTED FAN FROM VIBRATING AND CAN I MAKE IT OPERATE MORE QUIETLY?

- Ensure the blades have not come loose from the body of the fan. If they are loose, tighten the connection between the blades and the fan body
- Ensure the blades are not bent or cracked. If a blade is damaged, contact the manufacturer for a replacement
- Remove any debris (e.g. dust) from the fan. Debris on the blades can cause the fan to become unbalanced over time
- Ensure the fan is securely anchored to eliminate wobbles and vibration. The screws that secure the ceiling fan box to the ceiling must be snug. To tighten these screws, you may have to remove the trim around the electrical box.

  Caution: Ensure the electrical breaker that supplies power to the fan is turned off before the trim is removed.

Why does it feel like the temperature is different from one room to the next?

Uniformly heating or cooling a home throughout the year is a challenge because of the great variation in day, night and seasonal temperatures. The balance of heat in a home can also be affected by the number or size of windows in a room, the amount of sunlight that comes through the windows and the number of exterior walls in a room. For example, rooms situated over unheated areas such as a garage or an exterior cantilever are often cooler.

In most cases, a central furnace heats the home with a shared set of ductwork and relies on one thermostat, centrally located in the home, to sense when heat is needed. This general heating method may provide too much heat or not enough heat for a room. Windows and services (e.g. light switches) create openings through the walls and ceiling, providing paths for air movement between the interior and exterior of the home. Drapes and furnishings can also influence the heat balance in a room.

What should I do if my condensate line is blocked?

Some furnaces have the air conditioning coil placed in the same cabinet as the furnace. When an air conditioning unit is on, water present in the air condenses on the coils and runs off. This water is collected and sent to a floor drain near the unit through a metal or plastic drain line. Dirt, dust and the occasional ice crystal can plug this drain line. Inspect and clean the drain on a regular basis.

Air Leakage

How do I maintain my weatherstripping?

Weatherstripping provides a flexible seal around doors, windows and other openings to block unwanted air from moving in or out of your home. Doors also have weatherstripping along their top and sides and a 'sweep' along the bottom edge. Sweeps can be adjusted to narrow the clearances and eliminate drafts from the bottoms of doors.

Drafts emanating from electrical boxes on exterior walls can be reduced by placing a piece of foam under the switch or outlet cover. Caulk and expanding foams can reduce drafts around pipes and flues.

Weatherstripping should not be painted.

What can I do to stop air from coming in around windows and exterior doors?

Weatherstripping will eventually break down and should be checked each fall and replaced if necessary.

Before the onset of cold weather, it's a good idea to make sure windows that open are functioning well (can close tightly).
Debris in a window track for example, can prevent a window from fully closing, causing a significant source of air leakage.

Windows that are properly fitted, glazed and sealed will still lose heat. A double-glazed window typically has only 10 per cent of the R-value (insulation value) of the same size section of an insulated wall.

Air leakage, under average wind/weather conditions, and when windows/doors are properly closed, is rarely the source of a draft. A more likely cause of a draft at a window or door is air movement along and across the interior face of the window or door.

When warm air from the room comes in contact with the cooler surface of a window, the air cools, becomes denser and moves down towards the bottom of the window. More warm air moves into the void left by the cooling air and the cycle repeats. This downward movement of air is often mistaken for air leakage. To prevent this cycle, warm the surface of the window by ensuring a heat duct is located underneath it. Do not block or divert heat from these heat registers.

Ventilation

Ventilation in the home serves three purposes. The first purpose is to ensure fresh air enters the home. The second purpose is to remove odours, excess humidity and pollutants from the air in the home. The third purpose is to balance air being exhausted out of the home by drawing an equal amount of clean air into the home. This balance ensures moisture generated in the home is not forced into the walls or that gases moving out of exhaust vents or chimneys are not pulled back into the home. Attic ventilation is separate from home ventilation.

Windows are the simplest ventilation system in a home. For example, windows near a source of moisture, such as a bathroom, can open to vent out excess moisture and odours. This, however, does not work well in the winter as windows tend to ice over. With a forced-air heating system (furnace with ducting), fresh air is brought into the home from an intake vent (located near the ground at one side of the home) every time the furnace fan runs.

Kitchen and bath fans draw humidity and odours from cooking and bathing out of the home before the vapour can circulate. In some cases, the furnace fan and one or more of the exhaust fans are interconnected. This is an attempt to balance air coming into the home with air being exhausted out of the home.

Remember, exhaust fans are only effective when they are switched on.

Exhaust fans, and exhaust fan ventilation systems for the furnace, require little maintenance. To keep your ventilation systems operating efficiently, clean or replace filters as necessary and keep outdoor intake vents clear of obstructions.

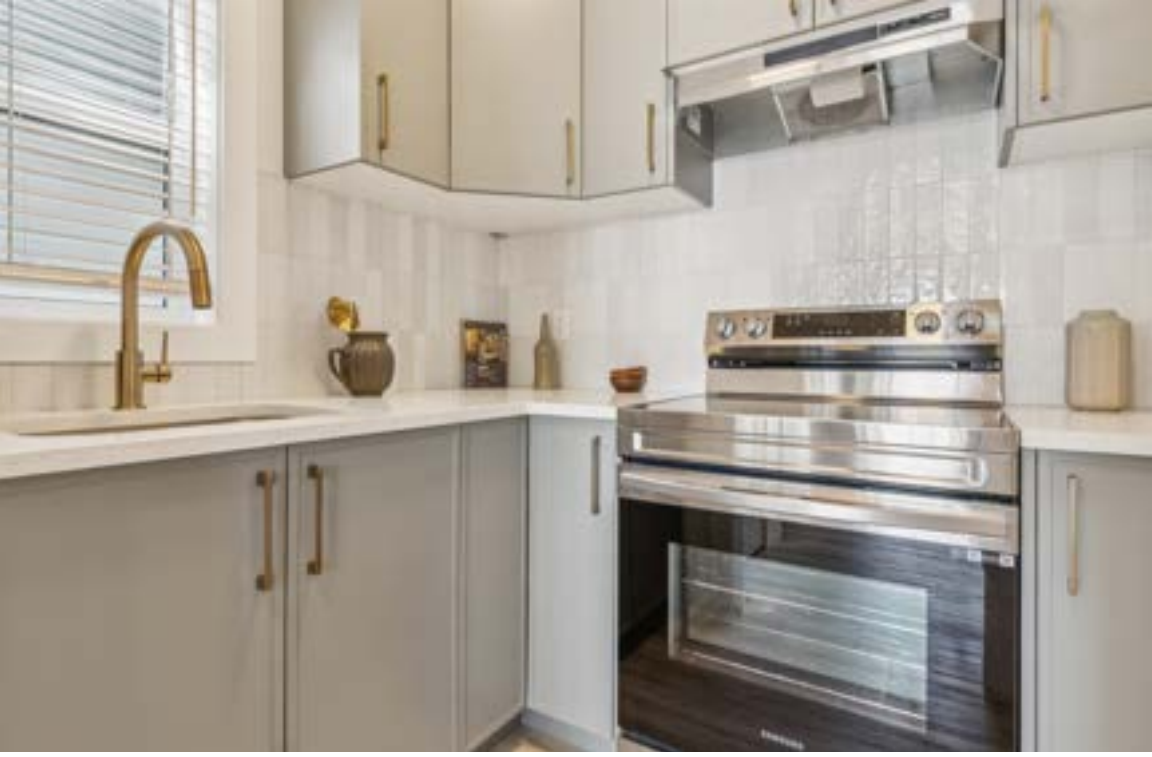
Most new homes have whole-home balanced ventilation systems, called an HRV (heat recovery ventilation) or ERV (energy recovery ventilation), to ensure a balanced intake and exhaust of air, airborne pollutants and moisture. These are usually box-like units which contain filters, a heat exchanger, a motor and supply and exhaust ducting. Balanced ventilation systems warm incoming air with some of the heat that would otherwise be lost to exhaust air, increasing a home's efficiency.

A home constructed and designed with an HRV is dependent on the HRV operating at all times and being regularly maintained. Today's energy efficient homes do not ventilate on their own as did older leakier homes and the only way to ensure an ongoing supply of clean fresh air in the home is to operate the HRV, or to keep your windows open year-round. Because that's not a real-world situation in our part of the county, the HRV is an essential component of the home that you must be familiar with. An improperly working HRV or one that has not been properly maintained can lead to excessive humidity, poor indoor air quality and persistent odours

Range Hoods

Kitchen range hoods are an important part of your home's ventilation system. They remove odours and improve indoor air quality. Cooking also generates significant airborne moisture which can cause window condensation and mould.
A range hood helps draw this moisture out of the home.

Filters in the throat of the hood must be kept clean to keep your fan running efficiently and quietly. Some range hood fans are interconnected with the operation of the furnace fan. To ensure this feature continues to work, you must keep the sensor located in the throat of the hood clean. Maintenance or replacement of filters should be in accordance with the manufacturer's recommendations. Most kitchen exhaust fans have sealed bearings and do not require lubrication.



How do I maintain my kitchen/ bath fans and can I stop cold air infiltration from these vents?

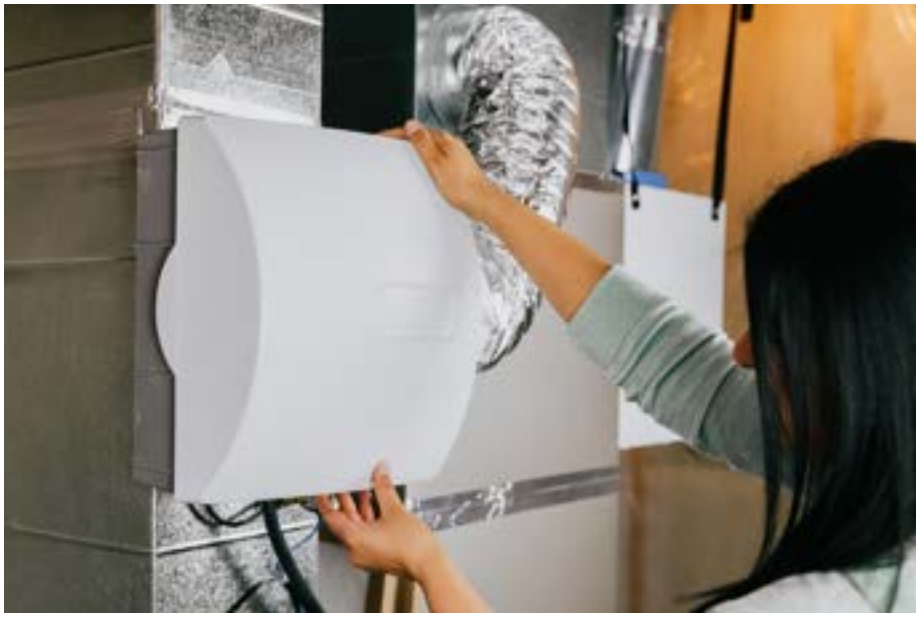
Ventilation fans are indirectly open to outside air. They contain a damper to limit the back-flow of cold air. The damper is balanced to allow exhaust air to escape freely and fall back to a closed position when the fan is turned off. By design, they are not completely effective at eliminating cold air infiltration. During gusty winds, the damper may flutter as it adjusts to fluctuating air pressure. This is normal.

Exhaust fans will accumulate dust and airborne debris over time that can impair fan efficiency, obstruct the damper and create excess noise. The fan is connected to ductwork that ends with a screen at an outside vent hood. Clean the fan housing and the screen of the hood vent regularly.

Exhaust fans will accumulate dust and airborne debris over time that can impair fan efficiency, obstruct the damper and create excess noise.

Humidifiers

During the spring and fall, relative humidity levels can be set around 35 - 40 per cent, should never be higher, and should be adjusted to 20 per cent during the coldest winter days.

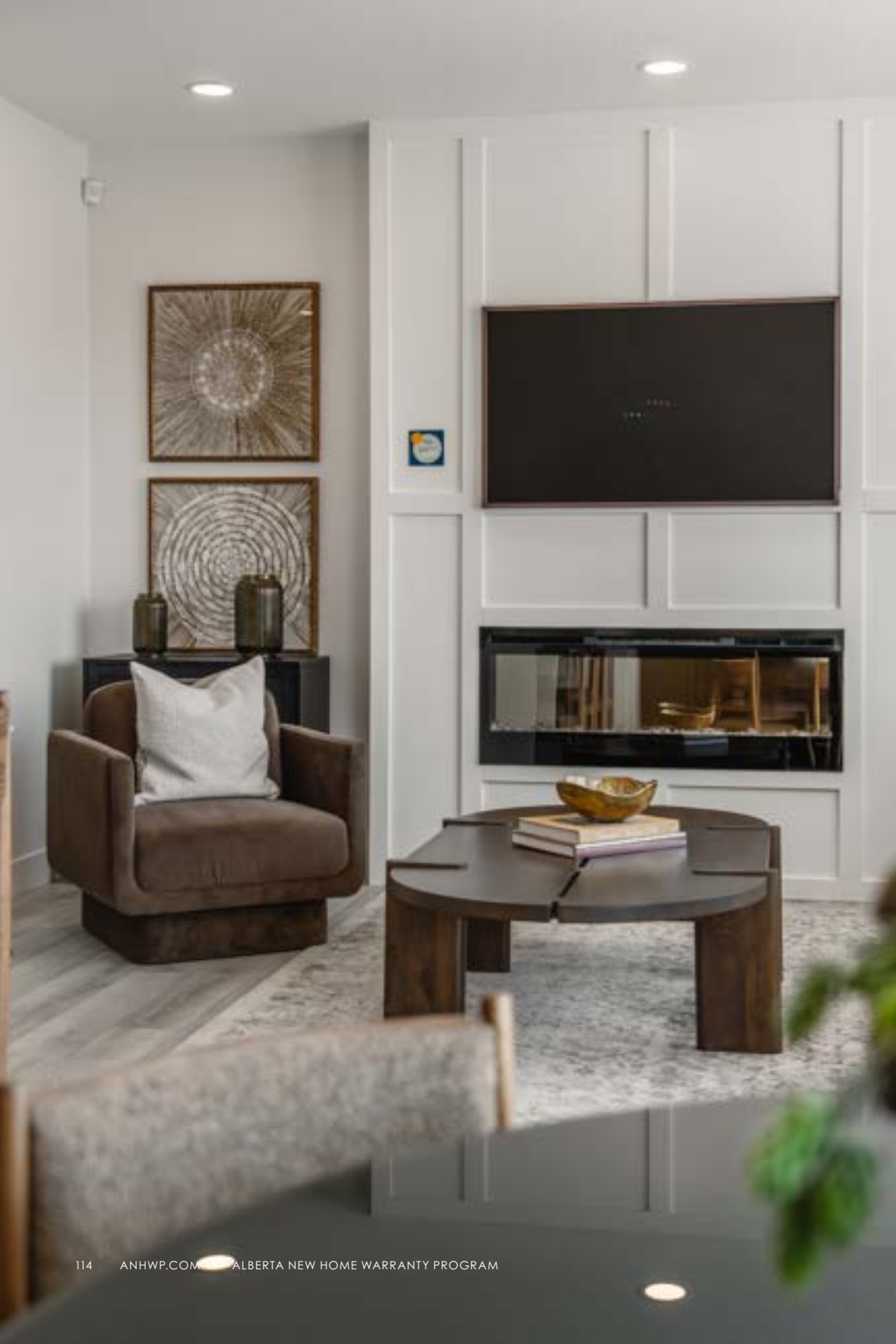


Due to our dry winter weather, we use humidifiers to maintain our health and the appearance of hardwood floors.

Most homes have a drum-type or drip-type humidifier mounted on the side of the furnace. It usually has an automatic water feed from a small line connected to a nearby water line.

Over time, the repeated evaporation of water will leave mineral deposits in the humidifier. Dust circulating through the furnace will also deposit in the humidifier. This debris can create a breeding ground for various types of mould and bacteria so it's important to clean the humidifier on a monthly basis. A number of anti-scale products can simplify the cleaning process. If the unit has a float valve, make sure it opens and shuts down the flow of water to maintain the desired water level (unit will have a water line indicator).

During the spring and fall, relative humidity levels can be set around 40 per cent but should be adjusted to 20 per cent during the coldest winter days. If ice or excessive condensation appears on your windows, reduce the humidity even more.



SUGGESTED

Home Maintenance Schedule

A monthly guide and checklist designed to maintain your home and protect your investment for years to come.

January

- [ ] Clean humidifier
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters
- [ ] Apply grout sealer to all grout in home every other year)
- [ ] Seal all granite countertops

February

- [ ] Check roof for ice dams
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters
- [ ] Pour bucket of water into floor drain in basement

March

- [ ] Clean humidifier
- [ ] Check sump pump (if installed)
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters

April

- [ ] Check eavestroughs and downspouts
- [ ] Inspect basement for water issues
- [ ] Inspect roof shingles
- [ ] Check for soil settlement at foundation
- [ ] Inspect driveways and walkways for cracking
- [ ] Clean filters on central ventilation systems (HRVs)
- [ ] Clean intake vent screens
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters
- [ ] Change humidity level on humidifier to around 40 per cent when warmer weather arrives.
  (Each home is different – adjust accordingly)

May

- [ ] Clean humidifier
- [ ] Inspect fences and decks
- [ ] Check caulking and weatherstripping
- [ ] Check windows and screens
- [ ] Check adjustable steel posts in the basement
- [ ] Inspect private sewage system (if applicable)
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters

June

- [ ] Inspect air conditioning system (if applicable)
- [ ] Fertilize the lawn
- [ ] Clean intake vent screens
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters
- [ ] Check for soil settlement at the foundation
- [ ] Seal all granite countertops (2x/year)

July

- [ ] Clean intake vent screens
- [ ] Inspect condensate line of air conditioner
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters

August

- [ ] Clean intake vent screens
- [ ] Check sealants and caulking
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters

September

- [ ] Clean solid fuel fireplace chimney
- [ ] Check door and window weatherstripping
- [ ] Clean and service humidifier
- [ ] Drain exterior water lines
- [ ] Drain sediment on hot water tank
- [ ] Fertilize lawn
- [ ] Winterize landscaping
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters
- [ ] Check for soil settlement at the foundation
- [ ] Check attic insulation

October

- [ ] Clean solid fuel fireplace chimney
- [ ] Check door and window weatherstripping
- [ ] Clean and service humidifier
- [ ] Drain exterior water lines
- [ ] Drain sediment on hot water tank
- [ ] Fertilize lawn
- [ ] Winterize landscaping
- [ ] Check CO and smoke detector batteries and test
- [ ] Clean range hood filters
- [ ] Check for soil settlement at the foundation

November

- [ ] Clean range hood filter
- [ ] Check CO and smoke detector batteries and test
- [ ] Check for condensation and humidity
- [ ] Clean humidifier

December

- [ ] Balance air flow at heating ducts
- [ ] Clean furnace filter
- [ ] Clean range hood filter

Notes:

SEASONAL MAINTENANCE SCHEDULE:

Surface Water Management:

Spring

- Inspect and make sure all downspouts are in the lowered position and extend at least 4 feet away from the home into a drainage swale or directed away from the home.
- Make sure all your drainage systems (sumps, drains,) are working properly and that water drains away from your home. If it does not, take corrective actions immediately.
- Check for settlement around hardscaping elements like patios, walkways and all landscaping to ensure good drainage away from the home. Repair to ensure proper slope.
- Examine your lot and look for low spots holding water or settlement of soil around the foundation, under decks and porches leading to water running back to toward the home. Repair as required to maintain proper grading away from the home.
- Check for leaves, debris and any blockage in gutters, eavestrough, downspouts and rainwater leaders (if applicable).
- Remove leaves and debris from window wells.

Summer

- Inspect the foundation, basement or crawl space for cracks or abnormal conditions. Minor cracks due to minor settlement or shrinkage is normal.
- Inspect irrigation or sprinklers for leaks and direct all spray heads away from the home's foundation.
- Check for damaged downspouts or leaks in the eavestrough and repair immediately.
- Do not allow trees or shrubs to grow near the foundation. Planters or gardens should not be located near the home.
- Check for leaks from the hose bib when connected to a garden hose or attachment.
- Check all landscaping and outdoor features to ensure good drainage away from the home.

Fall

- Check for leaves, debris and any blockage in gutters, eavestrough, downspouts and rainwater leaders (if applicable).
- Remove garden hoses and any attachment from the exterior hose bib before freezing temperatures.
- Drain and winterize inground sprinkler systems before freezing temperatures.
- Remove leaves and debris from window wells.

Winter

- Check for ice dams on the overhangs of the roof in freezing or snow conditions.
- Do not pile snow against the side of your home.
- If adding an outdoor element like an ice-rink, provide for drainage away from the home before it melts in the spring.
- Keep downspouts clear from blockage from snow or ice buildup.
- Inspect concrete flatwork, asphalt or pavers for signs of frost heaving. These areas will likely require attention in the spring or summer as frost heave is often due to insufficient surface water management or proper grading.

Alberta New Home Warranty Program

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