

# Home Maintenance Guide

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## INTRODUCTION

In a home, very few things are maintenance free. While it is a bitter pill for most homeowners to swallow, the fact is that preventative maintenance, with all the time and money it consumes, is still far more cost effective than the crisis management approach of waiting until something breaks and then scrambling to have it repaired. Preventative maintenance can avoid repairs, extend the life expectancy of many components and in some cases, reduce energy consumption.

## Advance Warning

A systematic maintenance approach also allows one to monitor certain conditions and components. Regular roof inspections, for example, will give one enough advance warning to allow for several roofing quotes in order to make an educated and cost effective purchase of a new roof covering. If on the other hand, no maintenance is done, and the roof suddenly leaks, there is very little time to do comparative shopping. Under these circumstances, one is forced to go with the roofer who can do the job the fastest - not necessarily with the roofing materials of your choice or at the best possible price.

In addition to monitoring systems which wear out, structural monitoring can also be performed. It is not uncommon for people who have been living in a house for some time to suddenly realize that a door frame is out of square and the door does not close properly. With regular maintenance, the cracks which occur in the wall surfaces adjacent to the door frame can be monitored. Knowing whether these cracks have appeared suddenly or have been increasing at a specific rate, is valuable information when diagnosing the problem and designing a repair.

## Structure Monitoring

Regular maintenance is not everybody's cup of tea. Hiring a handyman to perform maintenance inspections and minor repairs is not unwise.

Ideally, preventative maintenance inspections should be performed semi-annually in the spring and fall. However, some components require more or less frequent inspections. Where appropriate, this is noted.

One last thought. There probably is not a homeowner alive who performs maintenance inspections to the degree that we suggest. So take all of this with a grain of salt. Suffice it to say, the more you do, the better.

## EXTERIOR

**Chimneys:** Chimneys should be inspected for loose or deteriorated bricks or mortar. If covered with stucco or parging, look for cracks or loose sections. Chimney caps should be inspected for loose or broken sections as should the protruding clay chimney liners. Chimney flashings should be inspected for leakage. Efflorescence (a white salt build-up on the chimney) indicates moisture within the chimney and further investigation is required. Metal chimneys should be checked for rust, missing rain caps and loose braces.

## Roofs:

**Shingle Roofs:** Roofing should be inspected for damaged, loose or missing shingles. Special attention should be paid to high wear areas such as areas where there is significant foot traffic or areas where downspouts from upper roofs discharge onto lower roofs. Flashings at dormers, plumbing stacks, valleys, et cetera, should be carefully inspected. Supports for television antennas or satellite dishes should be checked. Electric cables (eave

protection) should be well secured and properly powered. Tree branches should be kept cut back to avoid damaging the roof surface.

**Flat Roofs:** Flat roofs should be inspected for blisters, bubbles, and flashing details. Tar and gravel roofs should be inspected for areas of gravel erosion. Tree branches should not contact the roof surface.

**Gutters and Downspouts:** Gutters and downspouts should be checked for blockage, leakage (from rust holes or leaking joints) and areas requiring re-securing or re-sloping. Paint deterioration should also be noted. Downspout seams should be checked for splitting (the seam is usually against the wall). A split downspout is often plugged with debris. Water accumulates in the downspout, freezes and splits it open.

**Eaves:** Soffits and fascia should be inspected for loose and rotted areas as well as areas damaged by vermin. Paint condition should be noted.

**Walls:** Masonry walls should be checked for deteriorated brick and mortar. Stucco walls should be inspected for cracking and separating. Wood walls should be checked for rot, loose or damaged boards, caulking, and wood/ soil contact. If paint deterioration is the result of blistering or bubbling, the cause should be determined. It may be due to outward moisture migration from the interior of the house, indicating more serious problems.

Metal and vinyl sidings, insulbrick and shingle sidings should be inspected for mechanical damage and loose or missing components. All walls should be checked for indications of settling. Vines should be monitored to determine whether damage to the wall surface is occurring. Deciduous vines are best checked during winter months, when there are no leaves. Vines should be kept cut back from wood trim (windows, doors, eaves, etc) and from gutters.

**Exposed Foundation Walls:** Foundation walls should be inspected for deteriorated brick, block, mortar or parging. Cracking due to settlement should also be noted and monitored.

**Grading:** The grading immediately adjacent to the house should be checked to ensure a slope of one inch per foot for the first six feet away from the house (where practical). Catch basins should be cleaned and tested.

**Doors and Windows:** Caulking and weather-stripping should be checked. Broken or cracked panes of glass should be replaced. Storms should be installed in the fall and screens in the spring. The finishes should be checked for paint deterioration and rot (particularly sills). Window wells should be cleaned.

**Porches and Decks:** Wooden components should be checked for rot and insect infestation. Wood should be painted or stained as required. Steps and railings should be secure.

**Garages:** Garage roofs should be checked for wear. The structure should be inspected for evidence of movement. Wooden components should be investigated for evidence of rot or insect infestation. Wooden components should be painted or stained as required.

**Automatic garage door openers should be tested monthly and adjusted to reverse in the event of an emergency. Floor drains should be cleared and tested.**

**Driveways and Sidewalks:** Driveways and sidewalks should be checked for cracks and deterioration. Settling which will result in surface water run off towards the house should be corrected as should uneven sections which pose a safety hazard to pedestrians.

**Retaining Walls and Fences:** Wooden retaining walls and fences should be checked for rot and insect infestation. Retaining walls should be checked for evidence of movement.

**Trees, Shrubs and Vines:** Limbs overhanging the house should be cut back. Dead limbs should be removed. Vines should be trimmed back from all wood surfaces.

## STRUCTURE

**Foundation Walls:** Foundation walls should be checked for evidence of deterioration, dampness and movement. Limited dampness from slow moisture migration can be anticipated with older foundation walls. This will often result in minor surface deterioration. Semi-annual inspections allow for monitoring of this situation. Cracks and voids should be filled. Filling cracks allows for easy monitoring of movement between inspections.

Access hatches should be provided to all crawl space areas.

**Wood Framing:** Exposed wooden structural components in the basement should be checked for evidence of rot and insect infestation. Deterioration usually results in sagging structural components.

**Wall and Ceiling Surface Cracks:** Wall and ceiling surface cracks should be monitored for evidence of significant movement. Minor movement due to normal settling and shrinkage should be anticipated.

**Door Frames:** Door frames should be checked to determine their square—ness. Door frames showing significant movement over a six month period are normally indications of more serious problems.

## ELECTRICAL

**Main Panel:** The main electrical panel should be checked annually for rust or water marks indicating moisture penetration. All breakers should be turned off and on to ensure none have seized. All fuses should be tightened. A panel which is warm to the touch or smells of burned insulation should be brought to the attention of an electrician. Burned wires indicating loose or poor connections should be repaired by qualified personnel. All circuits should be labeled. Ground fault circuit interrupters should be tested monthly. Aluminum wire connections inside the distribution panel should be tightened annually. This should be done by a qualified electrician. The area around the panel for roughly three feet in all directions should be kept clear of storage.

**Indoor Wiring:** Poor or loose connections noted when viewing the exposed wiring in the basement should be corrected by a qualified electrician. Frayed or damaged wire, including extension cords, appliance cords and plugs, should be replaced. Loose outlets and switches should be tightened. Ground fault circuit interrupter electrical outlets should be tested monthly. Aluminum wire connections throughout the house should be tightened annually by a qualified electrician.

**Outdoor Wire:** The mast head and the wires leading to the street (if overhead) should be inspected to make sure that they are not loose or frayed. Overhead wiring leading to out buildings such as garages should also be inspected. Exterior outlets should have proper covers. Ideally, ordinary exterior outlets should be replaced with ground fault circuit interrupter type outlets.

## HEATING

**All Forced Air Systems:** Conventional filters on forced-air systems should be checked monthly and cleaned or replaced as needed. Electronic filters should be checked monthly and cleaned as needed. The manufacturer's instructions should be followed carefully. Care should be taken to ensure the interior components are installed in the correct orientation after cleaning.

Noisy blower sections should be brought to the attention of a technician.

Water levels in humidifiers should be checked and adjusted monthly. Interior components should be replaced on an as needed basis. The pad on drum type humidifiers should be replaced annually. The water supply to humidifiers should be shut off for the summer months and activated for the heating months. On systems with air conditioning or a heat pump, the damper in the humidifier ductwork should be closed during the cooling season.

**All Hot Water Systems:** Radiators and convectors should be inspected annually for leakage (particularly at the valves). Radiators should be bled of air annually, and as necessary during the heating season.

Circulating pumps should be lubricated twice during the heating season. Expansion tanks should be drained annually.

**Electric Heat:** Electric furnaces and boilers should be inspected by a qualified technician every year to ensure that all the components are operating properly and no connections are loose or burned. The fuses or circuit breakers in some electric systems can be checked by the homeowner.

Electric baseboard heaters should be inspected to ensure an adequate clearance from combustibles. Baseboard heaters which have been mechanically damaged should be repaired or replaced.

**Oil Furnaces and Boilers:** Oil systems should be checked by a qualified technician on an annual basis. Oily soot deposits at registers of forced-air systems may indicate a cracked heat exchanger. A technician should be contacted.

The exhaust pipe from the furnace or boiler should be checked for loose connections or corroded sections. The barometric damper on the exhaust pipe should rotate freely. The chimney clean out should be cleared of any debris. The oil tank should be inspected for leaks. Soot on the front of the furnace or boiler may indicate a draft or combustion problem. A technician should be contacted.

**Gas Furnaces and Boilers:** If gas odors can be detected, call the gas company immediately. Do not turn on any electrical equipment or use anything with an open flame.

Gas furnaces and boilers should be cleaned and serviced annually. The exhaust pipe should be checked for loose or corroded sections. The chimney clean out should be cleared of any debris. The heat shield (located where the burner enters the heat exchanger) should be checked to ensure that it is not loose or corroded. Burn marks around the heat shield may indicate a draft or combustion problem. A technician should be contacted.

**Wood Stoves:** Wood stove chimneys and flues should be checked for creosote build-up and cleaned at least annually (more frequently depending upon use). Clearance to combustibles around wood stoves should be maintained at all times. If there is any doubt about the safety of a wood stove, contact the city building inspector immediately.

## COOLING/HEAT PUMPS

A qualified technician should be engaged to inspect the system and recharge it if necessary annually. Most systems require the power to be on for up to twenty four hours before using the system. A condensate drain line emerging from the ductwork above the furnace should be visually checked for leakage during the cooling season.

The outdoor section should be level. If the outdoor component settles or heaves, adjustments should be made by a specialist. The refrigerant lines should be checked for damaged, missing or loose insulation. Debris and vegetation should be kept away from the outdoor component of the system. Most manufacturers prefer to have the outdoor component left uncovered during the winter to prevent rust. The outdoor coil should be kept clean. A noisy fan may mean a bearing problem or misalignment. Window air conditioners should be removed for the winter.

## ATTICS

Attics should be inspected annually for water stains on the underside of the roof sheathing. One should also look for rot, mildew, and fungus indicating high humidity levels in the attic. Check to make sure the insulation is not wet. Some types of loose insulation are prone to being blown around during periods of high wind. Check for bare spots and ensure that insulation is not covering pot lights. Attic vents should be checked to ensure that they are not obstructed. Often, birds build nests in these vents. Vents at the eaves are often plugged with insulation. Watch for evidence of pests (squirrels, raccoons, etc.).

Rafters (supporting the roof) and collar ties (horizontal members running across the attic between opposing rafters) should be inspected for rot and movement.

NOTE: Be careful walking around. Don't fall through or step on wires. Compressed insulation loses much of its insulating value.

## PLUMBING

**Supply Plumbing:** Supply plumbing should be checked annually for leaks. Precautions should be taken to ensure that plumbing in areas such as crawl spaces will not freeze during winter months. Outdoor faucets should be shut off from the interior and drained for the winter. Operate the main shut-off valve and critical isolating valves to ensure proper operation in the event of an emergency. Leaking or dripping faucets should be repaired.

Well equipment should be inspected semi-annually. A water quality test should be performed periodically on the advice of local authorities.

**Waste Plumbing:** Visible waste plumbing should be checked for leaks. Basement floor drains and exterior drains should be checked and cleaned as necessary. Slow drains within the house should be cleared. Basement floor drain traps should be filled with water to ensure that they are not broken. If cracked, or if the water has evaporated, sewer odors will enter the house.

Septic tanks should be checked and cleaned if necessary every year.

**Fixtures:** Toilets should be checked to ensure that they are properly secured to the floor. Listen for toilets which run continuously. Grouting and caulking at all bathroom fixtures should be checked and renewed as necessary. Sump pumps should be tested.

**Water Heaters:** Modern water heaters have a test lever on the pressure relief valve. This lever should be tested every three months or so to ensure that the pressure relief valve is not seized. If the relief valve does not discharge near a drain, a bucket will be required.

In some areas, sludge may accumulate in the bottom of the tank. Draining some water from the bottom of the tank will indicate the presence of sludge and the necessity for regular draining. Be sure to shut off the power or fuel supply prior to draining any water from the tank.

## INTERIOR

Walls and ceilings should be inspected for cracks in interior finishes. The amount of movement should be noted so that it can be monitored in the future. Bulges in wall and ceiling surfaces should be carefully monitored. Separated plaster, particularly on ceilings, can fall and cause injury.

Walls, particularly in corners and areas of dead air (behind drapes for example), should be checked for evidence of condensation and mildew indicating high humidity levels within the house. Water stains on interior finishes should be noted. If the source cannot be detected, they should be monitored.

Door frames should be inspected. Door frames which become out of square during a relatively short period (six months) may indicate structural problems.

Condensation on windows indicates high humidity levels during winter months. This can sometimes lead to rot.

Fireplaces and chimneys should be cleaned and inspected at least annually, depending upon usage.

## HOUSEHOLD PESTS

**Carpenter Ants:** Carpenter ants are the largest variety of common ants found in North America. Carpenter ants do not eat wood; however, they do nest in it. They earned their name by building galleries in wood and by carefully finishing the surfaces of these galleries. When chewing their way through wood they leave small particles resembling saw dust which they push out of the colony. It is the presence of this saw dust which indicates a colony. Carpenter ants tend to be most active in the spring and early summer. They are usually dormant during a portion of the winter. Outdoors, they feed on other insects and plant material while indoors they feed on household food.

To prevent a carpenter ant infestation, decayed wood should be removed from around the building. Firewood should not be stored indoors for long periods of time. Wood used where dampness may occur should be treated with a preservative. Food stuffs, such as sugar, should be stored in closed containers and, should a spill occur, it should be cleaned up quickly.

Chemical control of carpenter ants should be undertaken by a qualified pest control company. Carpenter ants often nest inside walls, ceilings, outdoor siding, eaves, floors, window casings, etc. They prefer wet wood, and can often be found in rotting wood.

**Earwigs:** Earwigs are one of the most common pests in homes and gardens. They eat both plant and animal food. They often damage flowers, fruit and vegetables.

Chemical treatment for the control of earwigs should be applied in June or early July. The treatment should be applied along building foundations, under porches and around fences, wood piles, garages and tree trunks. Chemical treatment is effective in the short term; however, it is not uncommon for a garden to be re-infested in as little as two weeks after treatment. Earwigs are nocturnal, searching for food at night and hiding during the day.

**Silverfish:** Silverfish are nocturnal and prefer damp dark areas of the house. They appreciate warm temperatures and can often be found in furnace rooms. They feed on starchy materials such as wallpaper paste or sizing and glue. They will also eat bread crumbs and other human food. Sometimes, they feed on paper or other wood by-products.

While chemical treatment can be effective, non-chemical treatment also works. Proper vacuuming in areas where they are likely to hide is essential. Old books, papers, et cetera, should not be left in unventilated areas for long periods of time.

Small jars, partially filled with water can be used to trap silverfish. Once inside the jar they cannot crawl up the sides. The outside of the jar should be covered with masking tape to allow them to climb up easily.

**Cockroaches:** There are many species of cockroaches found in North America. Cockroaches eat many different things, including food, paper, plants, glue, etc. They prefer a damp dark environment. Roaches can be a health hazard as they have been known to carry salmonella bacteria. Getting rid of cockroaches is very difficult. Good housekeeping is a must. Spills should be cleaned up promptly and food should be kept in insect proof containers. If possible, repair any damp areas in the home.

Chemical treatment is best performed by a professional.

**Sow bugs:** Sow bugs are actually not insects. They are crustaceans (the same family as shrimp, lobsters, et cetera). Sow bugs seldom do serious damage to houses; however, they do feed on decaying organic matter and

chronically wet, rotted wood is sometimes their food. They are usually found in dark, damp environments such as the corners of basements. The dryer and better ventilated the basement is, the less the likelihood of sow bugs.

**Termites:** Subterranean termites usually do not live in houses but rather in the soil below. Termites live on wood. While they prefer damp or decaying wood, they will also eat sound dry lumber. The damage to the wood is seldom noticeable as they eat through the interior. If there is no direct wood/soil contact, termites must build shelter tubes or tunnels to get from the soil to the wood. It is the presence of these tubes which indicate an infestation. The tubes are typically  $\frac{1}{4}$  to  $\frac{1}{2}$  inch in width and are made of soil glued together by the termites.

The amount of damage which can be caused by termites can be extensive. If shelter tubes are noticed, a pest control company should be contacted immediately. In some areas, government assistance is available for treatment. In addition to chemical treatment, it is also necessary to break all wood/soil contact.

**Fleas:** Fleas are typically brought into the house by animals. They live on the blood of their hosts. There are many types of fleas; cat fleas, dog fleas, squirrel fleas, etc. Cat fleas give people the most problems. Fleas nest on the animal; however, they leave the animal from time to time and jump onto other species. They never stay, however. They always return to the host animal. If the host animal leaves the premises permanently, the fleas which are left behind will jump onto people, looking for food.

Adult fleas are relatively easy to kill; however, the larva lives in strong protective cocoons. Both the eggs and the cocoons are very resistant to flea control attempts. While there are products on the market for the homeowner, best results are obtained by hiring an expert.

**Mice:** The typical life expectancy of a house mouse is approximately one year. During that time, a female mouse can bear up to eight litters of four or five mice. While mice will eat virtually any type of food, they prefer grain and seed. They require very little water. Mice travel in a very limited territory, usually not much more than thirty feet from their nest. Mice must gnaw on things to keep their teeth worn down. They are able to chew through wood, asphalt, soft mortar and even aluminum. Mice can get through holes as small as one-half inch in diameter. They are nocturnal creatures.

The best control for mice is proper sanitation. This includes the storage of food materials in mouse-proof containers and proper cleaning of spills. Mice can easily be caught in spring traps using bait such as peanut butter, cheese, bacon, or bread. Dead mice should be removed promptly.

Poisons can also be used; however, they must be handled very carefully. Usually the poison has to be consumed over a period of several days to become effective. If poisons are to be used, they should be placed in areas where they won't be found by children or pets. When stored, they should be marked as poison.

**Raccoons:** Raccoons are highly intelligent animals. They will feed on fruits, nuts, grain, fish, meat, etc. They are nocturnal animals and are often found in urban settings.

The best control of raccoons is to preclude their entry. Chimney flues should be covered with substantial screens. Garage doors should be kept shut. Garbage should be kept in closed containers and shields can be provided on T.V. towers and trees to prevent access to the roofs of buildings. Tree limbs should be cut back.

Box traps or wire cage traps can be used to trap the animals so that they can be removed to a remote area. The trap should be set to catch the raccoon as it approaches its feeding place. It should be secured to prevent it from being tipped over and the bait taken. Bait such as corn, melon, prunes and peanut butter is effective. This is best done by a professional. It is not wise to corner a raccoon.

## **PRIORITY MAINTENANCE FOR HOMEOWNERS**

There are so many home maintenance and repair items that are important; it can be confusing trying to establish which are the most critical. To simplify things, we have compiled a short list of our favorites. These are by no means all-inclusive, nor do they replace any of the information in a home inspection report. They should, however, help you get started on the right foot. Remember, any items marked as priority or safety issues on your home inspection report need immediate attention.

### **ONE TIME TASKS**

1. Install smoke detectors as necessary (usually one on each level of the home, near any sleeping areas).
2. Make any electrical improvements recommended in the home inspection report.
3. Remove any wood/soil contact to prevent rot and insect damage.
4. Change the locks on all doors.
5. Remove or correct trip hazards such as broken or uneven walks, patios and driveways. Loose or torn carpet or flooring should also be repaired promptly.
6. Correct unsafe stairways and landings. (Treads uneven, too narrow, sloped, loose; risers irregular or too high; landings missing, poorly lit or too small; railings missing, loose, too low, et cetera).
7. Have all chimneys inspected and serviced before operating any of these appliances.
8. Locate and mark the shut-offs for the heating, electrical and plumbing systems.
9. If there is a septic system, have the tank inspected, and pumped if necessary. If the house is on a private water supply (well), set up a regular testing procedure for checking water quality.
10. If the house has a basement or crawl space, read Section 10.0, Basement Leakage in the Interior Section of the Home Reference Book.

### **REGULAR MAINTENANCE ITEMS**

1. Clean the gutters in the spring and fall.
2. Check for damaged roofing and flashing materials twice a year.
3. Cut back trees and shrubs from the house walls, roof and air conditioning system as needed.
4. Clean the tracks on horizontal sliding windows annually, and ensure the drain holes are clear.
5. Test ground fault circuit interrupters using the test button, monthly.
6. Service furnace or boiler yearly.
7. Check furnace filters, humidifiers and electronic air cleaners monthly.
8. Check the bathtub and shower caulking monthly and improve promptly as needed.
9. If you are in a climate where freezing occurs, shut off outdoor water faucets in the fall.
10. Install and re-secure door stops as needed.
11. Check attics for evidence of leaks and condensation and make sure vents are not obstructed, at least twice a year. (Provide access into all attics and crawl spaces.)