



## **W Z G HOME INSPECTION**

### **MAINTENANCE MANUAL**

#### **INTRODUCTION**

Every home needs attention, it has to be in top shape so, it is necessary for a homeowner to do preventive maintenance. Despite the time and money it consumes, preventive maintenance is still far more cost effective than waiting for something to break and then scramble to have it repaired. It avoids costly repairs, extends the life expectancy of many components and in some areas, and reduces energy consumption. Without preventive maintenance the minor repairs today can be major problems tomorrow. Regular maintenance may be tedious for other people but it is one form of protecting what is probably the largest investment you have ever made. In addition, it is also beneficial and wise to hire a handyman to perform maintenance inspections. Ideally inspections should be done semi-annually in the spring and fall. However, some components require more or less frequent inspections.

#### **1.0 STRUCTURE**

##### **1.1 FOUNDATION WALLS**

Foundation walls should be checked for evidence of dampness. From slow moisture migration can be anticipated with most old foundation walls. This will often result in minor surface deterioration. Semi-annual inspections allow 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.

##### **1.2 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.

##### **1.3 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.

##### **1.4 DOOR FRAMES**

Doorframes should be checked to determine their square ness. Doorframes showing significant movement over a six-month period are normally indications of more serious problems.

#### **2.0 ELECTRICAL**

##### **2.1 MAIN PANEL**

The main electrical panel should be checked annually for rust or watermark indicating moisture penetration. All breakers should be turned off and on to ensure none has 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. A qualified electrician should do this. The area around the panel for roughly three feet in all directions should be kept clear of storage.

##### **2.2 INDOOR WIRINGS**

A qualified electrician should correct poor or loose connection noted when viewing the exposed wiring in the basement. 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. Installation of AFCI protectors and GFCI outlets must be checked by licensed and qualified Electrician.

### **2.3 OUTDOOR WIRINGS**

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

### **3.0 PLUMBING**

#### **3.1 SUPPLY PLUMBING**

Supply Plumbing should be checked annually for leaks. Precautions should be taken to ensure that plumbing in areas such as crawl spaces would not freeze during winter months. Outdoor faucets should be shut off from the interior and drained for the winter. Operated 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.

#### **3.2 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 clear. Basement floor drain traps should be filled with water to ensure that they are not broken. If cracked, or if water has evaporated, sewer odors will enter the house. Septic tanks should be checked and cleaned if necessary every year.

#### **3.3 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.

#### **3.4 WATER HEATERS**

Modern water heaters have a test level 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 the power off or fuel supply prior to draining any water from the tank.

### **4.0 HEATING**

#### **4.1 ALL FORCED AIR SYSTEM**

Conventional system on forced air system 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 should be brought to the attention of a technician. Water levels in humidifier 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 system with air conditioning or the heat pump, the damper in the humidifier ductwork should be closed during the cooling season.

#### **4.2 ALL HOT WATER SYSTEM**

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.

#### **4.3 ELECTRIC HEATER**

Electric furnaces and boilers should be inspected by a qualified technician every year to insure that all the components are operating properly and no connections are loose or burned. The owner can check the fuses or circuit breakers in some electric system.

#### **4.4 OIL FURNACES AND BOILERS**

A qualified technician should check oil systems 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 should be cleaned out and free 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.

#### **4.5 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 furnace and boilers should be cleaned and serviced annually. The exhaust pipe should be checked for loose or corroded sections. The chimney should be cleaned out and free of 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 shields may indicate a draft or combustion problem. A technician should be contacted.

#### **4.6 WOOD STOVES**

Wood stove chimneys and flues should be checked for creosote build-up and cleaned at least annually by a qualified technician.

### **5.0 COOLING/ HEAT PUMPS**

A qualified technician should be engaged to inspect the system and recharge it if necessary annually. Most system requires the power to be on for up to 24- hours before using the system. A condensate drain line emerging for the ductwork above the furnace should be visually checked for leakage during the cooling season. The outdoor section should be level. If the outdoors -component settles or heaves, adjustment should be made by a specialist. The refrigerant lines should be checked for damages, missing or loose insulation. Debris and vegetation should be kept away from the outdoor component left uncovered during the winter to prevent rust. The outdoor coil should be kept clean. A noisy fan may indicate a bearing a bearing problem or misalignment. Window air conditioners should be removed for the winter.

### **6.0 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. Checked for bear spots and 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.) Rafter (supporting the roof) and collar ties (horizontal members running across the attic the attic between opposing rafters) should be inspected for rot and movement. Be careful walking around. Do not fall through or step on wires. Compressed insulation loses much of its insulating value.

### **7.0 EXTERIOR**

#### **7.1 CHIMNEYS**

Chimneys should be inspected for loose or deteriorated bricks or mortar. If covers with stucco or purging, 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 chimney should be checked for rust, missing rain caps and loose braces.

## 7.2 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 roof discharge onto lower roofs. Flashing dormers, plumbing stacks, valleys, etc., 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.

## 7.3 GUTTERS AND DOWNSPOUTS

Gutters and downspouts should be checked for blockage. Leakage (from rust holes or leaking joints) and areas requiring rescuing or eloping. Paint deterioration should also be noted.

## 7.4 EAVES

Soffit and fascia should be inspected for loose and rotted areas as well as areas damaged by vermin. Paint condition should be noted.

## 7.5 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, insularism and shingle siding should be inspected for mechanical damage and loose missing components. All walls should be checked for indications of settling.

Vines should be monitoring to determine whether the damage to the wall surface is occurring. Deciduous vines are best checked during the winter months, when there are no leaves. Vines should be kept back from wood trim (windows, doors, eave, etc.) and from the gutters.

## 7.6 EXPOSED FOUNDATION WALLS

Foundation walls should be inspected for deteriorated brick, block mortar or purging. Cracking due to settlement should also be noted and monitored.

## 7.7 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 basin should be cleaned and tested, check by qualified plumber annually for clean-up.

## 7.8 DOORS AND WINDOWS

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

## 7.9 PORCHES AND DECK

Wooden components should be checked for rot and insect infestation. Wood should be painted or stained as required. Steps and railing should be secured.

## 7.10 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.

## 7.11 RETAINING WALLS

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

## 8.0 INTERIOR

Walls and ceilings should be inspected for cracks in interior finish. The amount of movement should be noted so that it can be monitored in the future. Bulges in walls or 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 should be noted. If the source be detected, they should be monitored.

Doorframes should be inspected. Doorframes, which becomes out of square during a relatively short period (6 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.

## 9.0 HOUSEHOLD PESTS

### 9.1 CARPENTER ANTS

Carpenter ants are the largest variety of common ants found in North America. Carpenter ants do not eat wood; however, they do not nest in it. They earned their name by building galleries.

When chewing their way through wood they leave small particles resembling sawdust, which they push out of the colony. Carpenter ants tend to be most active in the spring and early summer. They are usually dormant during 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 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. Foodstuffs, such as sugar should be stored in closed containers and should a spill occur, it should be cleaned up immediately.

A qualified pest control company should undertake chemical control of carpenter ants. Carpenter ants often nest inside walls, ceiling, outdoor sidings, eaves, floors, window casing, etc. They prefer wet and often are found in rotting.

### 9.2 EARWIGS

Earwigs are one of the most pests in homes and gardens. They eat both plants 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, woodpiles, garages and tree trunks. Chemical treatment is effective in the short term; however, it is not uncommon for a garden to be reinvested in as little as two weeks after treatment. Earwigs are nocturnal, searching for food at night and hiding during the day.

### 9.3 SILVERFISH

Silverfish are nocturnal and prefer damp dark areas of the house. They appreciate warm temperatures and can be often be found in furnace rooms. They feed on starchy materials such as wallpaper paste or sizing and glue. They will also eat breadcrumbs and other human foods. 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, paper, etc. 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.

### 9.4 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 salmonella bacteria.

Getting rid of roaches 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. A professional best performs chemical treatment.

## 9.5 SOW BUGS

Sow bugs are actually not insects. They are crustaceans. Sow bugs seldom do serious damage to houses; however they do feed on decaying organic matter and rotted wood is sometimes their food. They are actually found in dark, damp environments such as the corners of basements. The drier and better ventilated the basement is the less the likelihood of sow bugs.

## 9.6 TERMITES

Subterranean termites usually do not live in the houses but in the soil below. 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 1/4 to 1/2 inch in width and are made of soil glued together by the termites. The amount of damage which termites can cause can be extensive. If shelter tubes are noticed, a pest control company should be contacted immediately. In some treatment, it is also necessary to break all wood/soil contact.

## 9.7 FLEAS

Fleas are typically brought into the house by animals. They live on the blood of their host. 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 on 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; the larva live in strong protective cocoons. Both the eggs and 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.

## 9.8 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 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, and soft mortar 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.

Poison can 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 children or pets won't find them. When stored they should be marked as poison.

## 9.9 RACOONS

Raccoons are highly intelligent animals. They eat fruits, nuts, grains, corn, 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 in TV towers and trees to prevent access to the roofs of buildings. Tree limbs should be cut back.

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