

Appendix

1.0 GRADING/ROOF/EXTERIOR STRUCTURE

GRADING

- 1.1 The grading at the foundation walls should always slope away at a rate of at least 1" per foot for a minimum of 6-10 feet. Gutters should be installed and downspouts should be extended at least six or more feet away from the foundation. Patios, driveways and walkways that have a negative slope toward the foundation walls should either be repaired or replaced. Negative grading and water pooling at the foundation is a major contributor to basement water problems. We suggest you contact a professional.
- 1.2 Trees and shrubbery should be trimmed away from the house and roofline at least twelve inches. Severe damage to the siding, trim or roof can result from long-term abrasion by trees and shrubbery.
- 1.3 Concrete, concrete block, stone or wood retaining walls often move. This movement is usually caused by soil settlement or water pressure behind the wall. Walls that lean, or have moved, normally require repair or replacement to correct the condition.
- 1.4 Comments regarding the fences may be made although fences are not normally a part of a home inspection. Most fences require frequent maintenance and repair.
- 1.5 Concrete or asphalt driveways, walkways and sidewalks often settle and crack. Minor cracks without settlement are normal. Serious cracks with differential movement may require replacement of the damaged segments. Spalled concrete (the top quarter of an inch is peeling off) cannot be permanently repaired. Minor cracks should be filled with a quality epoxy material made for that purpose.
- 1.6 Exterior railings often deteriorate from lack of maintenance and may become a safety hazard.
- 1.7 Exterior stairwells are subject to deterioration and should have handrails at the steps and the area surrounding the stairwell are required. It is essential that the area at the base of the stairwell be kept clear of debris, failure to do so will likely result in water seeping into the basement.

ROOF

- 1.8 Flame retardant plywood (FRT) is sometimes used in multi-unit structures; apartments, condos and townhomes. It is located at the roof edge (a minimum of four feet at each side of adjoining units) and is observed from the attic space. It is designed to prevent flames from spreading from one unit to another in the event of a structure fire. It is a chemically treated plywood product intended to char at high temperature rather than support flame. It does not char at a relatively low temperature and may lose its structural integrity. Deterioration is observed when the plywood darkens to a deep brown color, develops cracks, fissures, delaminating and downward deflection. It flexes and crackles when pressed upon with the palm of the hand. Early replacement is essential. Failure to replace deteriorated FRT plywood can result in its total failure and likely structural damage. It is unsafe to walk on this roof.
- 1.9 Composition roof coverings are the most common roofing materials. Typically, these are fiberglass or an asphalt material covered with a granular surface. A roof reported as "good" or "fair" means it is satisfactory for its age and general usefulness. A roof reported as "repair" may have advanced deterioration such as curling, broken shingles, excessive granular loss and generalized brittleness. These roofs should be replaced as soon as possible. Only active, ongoing roof leaks can be detected and reported. Again, this report includes only the conditions that exist at the time of the inspection.
- 1.10 Flat roofs are typically covered with asphalt roll roofing, rubber membrane roofing or with either soldered-seam or standing-seam metal. A coating of gravel or slag normally conceals asphalt roll roofs. It is nearly impossible to determine the condition of the asphalt roll roof when so covered. Metal roofs must be kept adequately painted to prevent rust damage. Flat roofs require ongoing maintenance.
- 1.11 Slate roofs require some maintenance. Broken and damaged slates must be replaced and ridges and valleys require sealants. Do not attempt to walk on a slate roof, damage will likely result.
- 1.12 Wood shake roofs may curl, split and develop mildew or decay. The quality of wood shakes fluctuates widely. Wood shake roofs should be checked every few years.
- 1.13 All roofs are hazardous to walk on and may be easily damaged. The information in this report may be a visual inspection without actually walking on the roof. Observe flashings at chimneys, valleys, and the roof edges to assure they are sealed and free of cracks. Have any problems professionally checked and repaired.

- 1.14 Damaged or loose flashing at the chimney or at other roof penetrations is a likely cause of roof leaks. Heavily caulked flashings are usually a guarantee of past water leaks. When roofs are replaced, it is essential that all the flashings also be replaced.
- 1.15 Gutters and downspouts must be kept clear of debris, well secured to the house and extend away from the foundation. Gutters and downspouts dumping at the foundation walls are a prime contributor to basement water problems.

EXTERIOR

- 1.16 Exterior wood and wood product siding and trim require routine maintenance. Wood absorbs water, which causes decay. It is essential that wood be sealed from all water sources by caulking and keeping the surfaces sealed using premium quality paint. Check wood trim and siding frequently, if deterioration is noted, repair it promptly. Windows and doorframes are most susceptible to early decay. For any house built prior to 1978 there is a potential of lead-based paint. Vinyl, aluminum and steel siding and/or trim require no painting but any loose or missing pieces should be refastened or replaced immediately. Ground contact with any siding product is not good and fosters deterioration or insect infestation.
- 1.17 Exterior Insulation and Finish Systems (EIFS) is a synthetic stucco siding system that has a history of failures and may result in structural damage. Systems installed prior to the manufacturer's specifications are usually safe from failure. There are two major types of installation, the barrier system in which the wall finish is sealed against any water penetration and a water management system, in which entrapped water has an avenue of escape. This inspector does not differentiate between the two, nor does it attempt to detect concealed damage. If a home's exterior is finished with brick, stucco or EIFS, we recommend the manufacturer's trained inspector or a moisture intrusion specialist be retained to evaluate the system for possible damage and proper installation. See <http://www.4specs.com/s/07/07240.html>

Traditional stucco (3-coat system) has a moisture barrier that must be installed properly. Any cracks in the stucco or gaps around any penetrations should be caulked to prevent water from getting to the base structure. We also recommend further inspection for concealed damage by a trained stucco specialist.
- 1.18 Water penetration between the panes of insulated glass windows cannot be repaired and requires glass replacement. The condition worsens until the glass becomes opaque, but in the early stages the condition may not be detectable in certain weather conditions. The insulation value of the double pane glass is essentially lost when the seals fail.
- 1.19 The exterior doors, storm doors and patio doors should open, close and latch as designed. If not they may be a safety hazard. Broken or cracked window panes pose a major hazard. Assure that the pneumatic rollers or closers on the storm doors are properly secured and the spring chain is adjusted to limit position and damage.
- 1.20 Garage doors and openers require periodic maintenance. Door tracks and hardware require lubrication to assure their smooth operation. If equipped with an automatic garage door opener assure that the automatic reversing mechanism operates as designed. Some very old door openers do not have reversing mechanisms. They are unsafe and should be immediately replaced or updated.
- 1.21 Decks must be adequately secured to the house. All elevated decks (above thirty inches from the grade) should have a railing that meets the current local requirements. Wide gapped or ladder type railings pose a serious hazard and should be modified or replaced. Decks, porches and columns should be kept well painted or sealed to delay decay.
- 1.22 Fume barriers, fire-grade sheetrock, and fire doors are required in most new construction. For safety, if your attached garage does not have these features you should consider adding them.
- 1.23 FYI - Pest Control. A qualified pest control company can determine if your home has either present or past wood boring insect infestation and determine the proper course of action. Detection of insect boring activity or damage is a specialized profession and is not part of this inspection. Visual damage will be reported only if observed.

2.0 BASEMENT

- 2.1 Minor cracks in basement walls and floors represent normal shrinkage. To reduce possibility of any water penetration they can be filled with hydraulic cement. Cracks that are offset or "V" shaped are signs of differential settlement. This inspection cannot determine if movement is continuous - consult owner or professional for history. The white powdery substance often evident on concrete walls and floors is called efflorescence. It is usually an indication that dampness or water penetration has occurred at some time.
- 2.2 Long-term wetness in crawl spaces can result in major wood decay, mold accumulation and wood boring insect damage. Even if there has been a sustained dry period, signs of water penetration may still be evident. Dried mud, mold/mildew signs and water ponding at the depressions may be present. However, the home inspector can only report on the signs observed at the time of the inspection. Query the homeowner regarding water penetration history. Ideally this information should be furnished in writing. When dry, it is impossible to determine if the condition has been corrected. It is essential that crawl spaces be kept dry. Failure to do so will likely result in major damage to your home.
- 2.3 The sump pump and discharge lines should be checked regularly. Sump discharge lines should extend a minimum of 15 ft. from the house or far enough to ensure the water cannot run back toward the foundation. Unless water is present in sump or easily accessible, complete sump action may not be ascertained by inspector during this inspection.
- 2.4 Examination of structural members, walls, floors, ceilings, windows, and pipes, cannot be conducted if these areas are finished. Some areas are usually accessible.

3.0 HEATING/COOLING SYSTEM

- 3.1 This report indicates the condition of the heat plant as observed during the inspection without regard to life expectancy. To determine the condition of the heat exchanger in forced air units, major disassembly by a heating technician is required. As part of our inspection, we do flame test and mirror check the exchanger and pressure test the system. However, these are not all-encompassing observations or tests. Heat exchangers can occur instantly during any heating (expansion & contraction).
- 3.2 Air conditioning units and heat pumps should not be operated out of season, as damage would result. Most compressors are sealed units that are not readily accessible.
- 3.3 Relief valves, valves, gauges, and other safety devices cannot be tested. They are listed on the report to denote that they were observed in place on the system.
- 3.4 Air filters in air conditioning systems should be serviced every thirty days. Failure to keep the air filters clean can result in clogged evaporator coils in the air conditioning or heat pump air handlers. This condition can result in poor performance or premature system failure.
- 3.5 Carbon monoxide and smoke detectors are recommended. Locate the detector(s) within the home as recommended by the manufacturer.
- 3.6 Central humidifiers are not a part of this inspection. For optimum protection against bacteria spread, the humidifier should be cleaned every thirty days during the months of use.
- 3.7 Residential underground fuel storage tanks (UST) may pose an environmental hazard. When tanks rust out or develop leaks, they not only contaminate the surrounding soil but also allow ground water to seep into the tank. Have your oil supplier check older tanks annually.

4.0 PLUMBING

- 4.1 Older homes frequently have water supply and waste plumbing systems that have some degree of deterioration. This inspection observes such systems, but we only report active leaks or obvious defects. We cannot accurately forecast failure of deteriorated systems. Replacement of failed waste lines due to age or tree roots can be expensive. There are chemical treatments for tree root problems. Search the web or contact us for more info.
- 4.2 This home inspection does not include any in-depth examination of private water supplies (wells) or septic systems; we do inspect them visually for obvious problems.
- 4.3 Polybutylene water service pipe (from the street) and interior water supply plumbing have a history of problems. This inspection report identifies, when visible, such material and its location. We recommend that you check with the local water authority, the homeowners association and the local municipal authorities to determine the product failure rates in the locale of the property. See <http://www.polybutylene.com/poly.html>, contact us or search the Web for more information.

- 4.4 Hose bibs must be shut off and drained during freezing weather unless they are the frost proof type. Failure to close and drain the bibs can result in freeze damage.
- 4.5 Observe water heaters frequently for signs of leakage. On both gas and electric heaters the pressure/temperature relief valve extension should extend to within six inches of the floor. The water temperature should not be greater than 120 degrees.
- 4.6 Ceramic tile in bathrooms must be kept well caulked at the tub, comers, faucets and floor.
- 4.7 Shower stalls often have a fiberglass, metal or membrane pan that is sometimes not visible. A visual inspection is made to observe if there are traces of current leaks.
- 4.8 Commodes loose at the floor may result in leaks. A new wax seal may be required if tightening the bolts does not repair the leak.

ELECTRICAL

- 5.1 Older homes may have electrical supply and distribution systems that are outmoded and inadequate. The electrical service from the street to the house exterior may be the old style three separate wire system. The wiring from the weather head to the exterior meter base and on into the main panel may be undersized for the requirements of the home. Main electrical panels occasionally contain screw-in fuses rather than circuit breakers. An inadequate number of branch circuits, especially at the kitchen, can pose fire and personal safety hazards. If an inspector observes the overall electrical system, however, we cannot determine the exact capacity. Systems that are undersized for today's requirements should be upgraded to a minimum of 100 or preferably 200 amp service. A licensed electrician should add additional branch circuits within the home to provide adequate and safe service. Some homes may have electrical wiring that has been less-than-professionally installed, especially at additions, finished basements and attics. Inadequate or improperly installed electrical wiring is a leading cause of residential house fires and personal injury.
- 5.2 Ground fault circuit interrupters (GFCI) protect against electrical shocks in kitchens, baths, outside receptacles, garages, crawl spaces, basements and any location that may be wet. Test by pressing the test button on the face of the device. Be aware that the outlets may be wired in a series and one test button affects several outlets. If the home is not GFCI equipped, have them installed.
- 5.3 Aluminum branch wiring is found in some homes constructed or remodeled from 1965 through 1979. This product should not be confused with multi-strand, heavy gauge aluminum wiring typically used for power applications. Aluminum branch wiring has a tendency to oxidize and loosen at the main panel and at the receptacles/switches. This condition causes high electrical resistance, overheating or occasionally fires. There are 3 ways to fix this problem. Install UL rated receptacles, "pig-tailing" short pieces of copper wire to the aluminum using approved connectors (COPALUM) and replacement of the aluminum wire (usually cost prohibitive). If the home has aluminum wire we recommend you contact a licensed electrician for additional information and associated costs.
- 5.4 Smoke detectors should be checked every 2 to 3 weeks to assure that they are functional. Change the batteries each time day light savings time changes. Most battery-powered detectors emit a chirping noise when the battery is low. Smoke detectors should be replaced every five years to help assure their sensitivity. Detectors should be located as required by your local codes.
- 5.5 Main electrical panel covers should not be removed by other than qualified persons. There is a potential for major electrical shock within the panel. Replacement of breakers or addition of circuits is best left to a licensed, qualified electrician. Electricians are qualified to determine circuit loads and breaker/wiring sizes necessary to safely handle anticipated electrical loads.

KITCHEN

- 6.1 Appliances do not typically have a date of manufacture listed. Any ages indicated in this report are, at best, approximations. They are not a part of this inspection, however we do visually inspect appliances for obvious problems. The seller should agree, in writing, so some type of guarantee of existing appliances or state, which do not operate properly.
- 6.2 Damaged refrigerator door gaskets can cause high utility bills and damage to the unit. Observe the gaskets on the inside perimeter of the door(s). Replace when damage is observed. Keep the evaporator coils clean by vacuuming them at least twice a year. They are located either under or at the rear of the refrigerator.
- 6.3 If so equipped, the air gap for the dishwasher may become clogged and allow water to escape. It is typically located at the sink rim. Failure to correct the condition can result in water damage to the countertop.

- 6.4 The clothes dryer should be vented to the exterior, a must if it is a gas-fired unit. The preferred vent type is a flexible metal pipe in lieu of the plastic type. Keep the internal lint filter clean according to the manufacturers instructions.
- 6.5 All appliances should be grounded and vented per the manufacturer's recommendations. Failure to do so may result in an electrical shock hazard.

INTERIORS

- 6.6 It is normal for interior walls and ceilings to develop minor imperfections such as nail pops, loose metal edging, opening seams and settlement/shrinkage cracks. These conditions are typically in addition to the normal wear and tear and are typically cosmetic in nature and are not included as part of this inspection.
- 6.7 Handrails should be present at all interior stairways and balconies. The rails must be secure to the wall or floor. Railings must be able to withstand impacts and have the maximum baluster spacing as dictated by local requirements.
- 6.8 Interior passage doors should open, close and latch as designed. Doors that rub on the jambs or carpet can hinder emergency escape.
- 6.9 Windows should open/close and latch as designed. Windows that do not open due to poor maintenance or defective lift mechanisms pose a potential safety hazard in the event of fire.
- 6.10 Paint, wallpaper, carpeting and other finish treatments of the interior walls, ceilings, and floors are not part of this inspection.

7.0 ATTIC

- 7.1 Excessive moisture in attics can be caused by inadequate ventilation and/or lack of insulation. Condensation in attics can cause rot of the roof sheathing as well as the development of mildew and mold which can have adverse health effects on the occupants of the home. Adding more insulation can worsen the condition.
- 7.2 For optimum energy saving cost savings the attic insulation should be at least R-30 and preferably R-38. Observe the manufacturers recommendations for personal protection when installing insulation.

8.0 FIREPLACES, WOOD AND GAS-FIRED

- 8.1 A qualified specialist should check fireplaces, before release of the inspection contingency. Ideally, the flues should be inspected with a camera that is designed for that purpose. Fireplaces should be checked at least once a year for deterioration and/or creosote build-up.
- 8.2 Other freestanding fuel burning appliances must have been installed properly and should be checked at least once a year for deterioration and/or creosote build-up. Long chimney pipe runs will cause creosote build up and can cause a dangerous chimney fire.