



General Information

Refer to each section of the ACE Home Inspection report

I. TYPE OF PROPERTY: See description in Inspection report

II. SITE & DRAINAGE: Excluded from this inspection are erosion controls, earth stabilization measures and sub grade soil conditions. The presence of underground streams (dry or active) is unknown as not visible. If present, and/or high ground water, soil saturation or sub-slab water conditions can cause significant basement water penetration or flooding. Obtain information regarding actual sub surface groundwater conditions from owner, or local authorities.

Pools, hot tubs and spas are excluded from the inspection; this exclusion includes zoning, safety hazards/issues, electric and or gas services, lighting and lighting safety, fencing, gates, heaters, alarms, covers, pumps and piping. Enlist pool inspection company service before closing. Check with local building department for conformance with requirements and recommendations for fencing and other safety concerns to reduce potential for water related accidents.

A. GRADING- Deficient/defective grading and drainage conditions can cause foundation parging/stucco/plaster delamination, masonry/foundation deterioration, and dampness at interior walls, basement, crawlspace, and/or beneath the slab water and/or moisture penetration. It can cause water penetration during prolonged periods of rain or snowmelt. Over time, this can cause abnormal foundation settlement and damage. Maintain positive drainage and grading to reduce occurrence. Ponding water can occur with adverse grading and unknown soil drainage conditions.

B. VEGETATION- Shrubs, bushes, and vegetation should be kept at least one foot in distance from the house as if closer, presents inadequate ventilation and is attractive conditions for insects. Stored firewood and other wood and debris close to the house can be breeding and harborage grounds for mosquitoes and is attractive to carpenter ants and termites. Water accumulation in containers and receptacles at the exterior of the house presents conditions conducive to mosquito breeding.

Dead tree branches should be trimmed or removed and trees pruned periodically to prevent property damage and personal injury. These conditions cause debris to accumulate in the gutters; damage to service entries, roof, and house; and are a path for ants and squirrels to reach the house. Safe tree planting distance from the foundation is 1 to 1½ times the anticipated final height, according to many authorities. Removal of those that do not conform is advised.

Vegetation and landscaping located within one foot in distance from or those contacting the house, and near foundations require irrigation that holds moisture, can be detrimental, and be a cause of or contributor to, basement/foundation seepage and masonry damage, house and roof damage, loads the gutters with debris, and provides an easy path for rodents and other vermin to access the house.

C. WALKS: Cracking and shifting of walkways is a common occurrence and can be caused by tree roots, moisture, freezing, settlement or incorrect installation. When slabs displace vertically upward, they present a tripping hazard. When walks settle, water can accumulate which can freeze in the winter causing icing and hazardous conditions. When cracks develop, sealing or patching is required to prevent water penetration and accelerated deterioration.

D. STAIRS/Steps/Railings: Maintain masonry mortar joints to exclude water, which can cause accelerated deterioration. All steps, stairs, entrances, and exits should be illuminated for safety. Graspable handrails, installed 34"-38" high are suggested at all steps for safety, regardless of number of risers/steps. Balusters on steps should be spaced with gaps at 4-3/8 inches or less and 4" on landings, to prevent fall-through or entrapment, open risers should be closed to 4 inches or less. Steel or decorative iron railings need regular maintenance. Loose handrails should be secured by either mechanical means when wood or setting with anchor cement when metal to secure and to exclude water, which can cause tread cracking, steel

corrosion, and repairs that are more expensive. Steps need powerwashing when stained and algae covered. Anti-slip strips or sand paint is recommended at wooden steps as can be slippery. Unnecessary higher insurance premiums may result where handrails are absent due to risk from falls.

E. DECK: The actual depth of the footings that support the deck is undetermined as unobservable. This can only be determined by excavation and measurement. This is why obtaining permits for the installation of a deck is important as it ensures correct construction, as approved by the local authorities having jurisdiction. Check with the local building department. Cleaning and application is recommended periodically to maintain the deck surfaces to reduce warping, cupping, cracking of components and keep it new looking. Use a protector with UV blockers and mildewcide. Wood is naturally prone to warping, shrinkage, and checking. When an excess of these characteristics appear on deck surfaces, rails or balusters, replacement of those components is required.

The International Code Council recommends that homeowners visually inspect elevated decks, porches, balconies and similar structures twice annually as these structures degrade over time and have finite lives. **Professional inspection of decks advised annually after purchase.**

Deck construction standards include guardrails 36" high with balusters at 4" or less spacing between and stair rails 30 to 38 inches high with no more than 4-3/8" or less spacing between. When decks have greater spacing or horizontal or open railings, the installation of additional balusters, changing guardrails or adding safety netting for child safety is needed. Balusters should be spaced with gaps at 4 inches or less to prevent fall-through or entrapment, open risers should be closed to 4 inches or less. Upgrading decks to minimum building standards is recommended for increased safety.

F. PATIO: Masonry cracking is common and all masonry should be periodically inspected for integrity of mortar pointing to prevent water penetration, causing cracking, spalling, and deterioration. When cracks develop, sealing or patching is required to prevent water penetration and accelerated deterioration. Patios, especially large concrete ones which abut the house, should have a positive slope away from the house as can cause water penetration, accumulation, and frost heave which can push foundation walls in.

G. PORCH/BALCONY: Periodically paint or treat wood decking to prevent fading, checking and to protect from the weather. The International Code Council recommends that homeowners visually inspect porches, balconies, decks, and similar structures twice annually as these structures degrade over time and have finite lives. **Professional inspection of balconies advised annually after purchase.**

Construction standards include guardrails 36" high with balusters at 4" or less spacing between and stair rails 30 to 38 inches high with no more than 4-3/8" or less spacing between. When these have greater spacing or horizontal, or open railings, the installation of additional balusters, changing guardrails or adding safety netting for child safety is needed. Upgrading these structures to minimum building standards is recommended for increased safety.

H. RETAINING WALL/ and or house built on slopes: (>4'): Property and or components built on and/or adjacent to a slope requires special engineering and construction to prevent slippage or movement. We do not provide an opinion or any information as to whether such engineering or construction was performed with respect to these walls. Furthermore, we do not render any opinion as to potential problems, if such engineering or construction were not so provided. The most important components of retaining walls are not visible. The rate of movement of retaining walls cannot be determined by a one-time visit. Should cracking or leaning be noted in the report, ongoing monitoring is needed. Our goal is to make you aware of readily visible conditions that exist during inspection. Appropriate information sources and competent specialists should be consulted for specialized type of inspections and analysis should this be recommended because of observed conditions. Information regarding the building site and the general area should also be reviewed.

I. **DRIVEWAY:** Blacktop driveways, on the average, have a 15-25-year life expectancy, which depends on the base preparation, thickness and material grade. Cracking and heaving are common, especially after a severe winter. Filling minor cracks in the surface of the driveway prevents accelerating surface deterioration. Structure abutting driveways should pitch away or can cause water accumulation and building penetration, and foundation problems. *Sealcoating the driveway with water-based emulsions is not recommended by professional driveway installation/paving contractors and should not be done.*

III. STRUCTURAL SYSTEMS & Components- This Company is not performing an engineering analysis or providing any engineering or architectural services. We render no opinions as to the adequacy of any structural system or component. Hidden damage from wood destroying insects and water is excluded. Probing is NOT conducted when it would damage a finished surface or where no deterioration is visible.

When buildings have been structurally modified and/or extended, it is the responsibility of the property owner to obtain permits. Obtain copies of all permits and final inspection reports from them, or if not forthcoming, consult with local building department code official pertaining to all phases of work and obtain copies. If no permits are available, but were required, the owner should procure to insure safe building practices were used for the changes, to comply with usual local requirements and for current tax assessments.

A. FOUNDATION: The purpose of a foundation is to support the main portion of the house and to transmit the loads to the ground through the footings to the supporting soil. It supports vertical loads from the house and resists horizontal forces from the pressure of the earth. Determination of whether settlement is active is difficult to determine during the short time that a building inspection takes. Foundation movement is a slow process. Ongoing monitoring of any noted cracking is required over a period of a year. Masonry cracks are very common and most are not significant, as do not threaten building integrity. The inspection, however, makes no representations as to the progression of any cracks, gaps, or displacement. Small cracks and spalled masonry should be sealed to prevent water incursion and monitored over time for movement. Large cracks should be fully investigated. Contact this office for advice or a separate re-inspection if discovered at walk-through. Finished walls and storage makes foundation walls unobservable and conditions unknown. This prevents complete visual observation of foundation walls and accessibility to floor framing.

Coating the walls / adding “waterproofing” paint sealant on foundation walls should never be done without first remediation of the causes for the water penetration; this can cause other and more severe problems such as blocks filling with water, masonry damage, sillplate and floor/wall framing rot and mold formation. Doming and or adding drains to foundation window or vent wells where present can help reduce accumulation of debris and water, and water seepage into foundation, basement and or crawlspace.

Utility system components, such as heating ductwork or piping; electrical, domestic water and sewer lines and others can be within or beneath slabs and or within crawlspaces. Problems with these can be expensive, as slab may have to be broken for examination and repairs and crawlspace accessibility is restricted. Slab floors are normally colder than others are. Moisture inhibiting paint can cause more severe problems than it helps if causes for water infiltration are not addressed, as wall and roof framing moisture and rot. Chronic water pressure against the foundation can cause foundation problems including failure. Water at footings can cause footing subsidence and failure. Constant water pumping from French drains can cause footing subsidence and failures.

[House built on SLAB or parts built on slab-](#) Finished floors and furnishings make areas and conditions unobservable, as prevents complete visual observation. Slab floors are normally colder than others are. Sub slab water penetration can cause foundation problems including failure. Water at the footings can cause footing subsidence and failure.

B. FLOOR FRAMING and subfloor: Consideration is given that buildings and structures of all ages experience some degree of settlement, sag, and permanent member deformation. It is a natural occurrence, expected within limits, and depends on structure age. Most checking cracks on joists and girders are common. Hidden damage from the bathroom/shower/ drainpipe leakage, from leaking water piping in wall and ceiling cavities and from leaking radiator valves or heating systems cannot be determined if not manifesting.

C. WALL FRAMING: Wall framing is commonly and mostly, not visible. Most houses are constructed with western wooden framing. Hidden wall and other framing damage from past wood destroying insect infestation and water intrusion, is not visible to inspector, cannot be determined by visual inspection.

E. ROOF FRAMING and decking/sheathing: The presence of excessive moisture from condensation, leakage or other cause at the roof underside, insulation, sheathing, framing and in the attic can quickly, or over time, lead to the growth of microbial contaminants, including mold.

IV. BASEMENT/LOWER LEVEL and/or CRAWLSPACE- Caution advised using below grade areas for storage or as living space(s), whether already finished or not, or when converting into living spaces. If you are considering doing any of this, *be sure* that the basement is dry beforehand, which should include living with and observing for water during the course of a year. Site drainage and other causative conditions should first be improved as recommended to reduce occurrence or severity of water and moisture penetration and damage. The presence of excessive moisture from wall leakage, condensation, or other cause in basements and crawlspaces can quickly, or over time lead to the growth of microbial contaminants, including mold.

A. DESIGN:

B. WATER/MOISTURE PENETRATION/SEEPAGE: Dampness is a normal phenomenon that occurs because cool air cannot hold as much moisture as warm air. Ground water is difficult to predict and our knowledge is limited. Obtain information on the water table conditions or the presence of any surface or sub-surface water conditions in the area as an added precaution. Obtain disclosure regarding this subject from the owner. This inspection does not make any warranties or guarantees against future moisture or water penetration or flooding, and cannot predict future flooding severity.

A periodic water problem, which is a common, could occur during a seasonally high water table. Water penetration can occur during prolonged periods of rain or from the melting of a heavy snowfall. Frequency or extent of future occurrences of penetration is indeterminable by this short inspection. Concrete is permeable. It can absorb moisture from a high water table. Even in well-drained soil, a relatively dry slab can pick up moisture through capillary action. Follow the recommendations throughout the report to reduce moisture or water penetration.

The presence or existence of an exterior foundation footing drain and or damp proofing is unknown. If present, functionality cannot be checked. A de-humidifier may be needed in summer to keep the RH between 40 and 60%. Get a hygrometer to see what your humidity is.

Mold can be formed at gypsum board, wood paneling, storage, and other areas where chronically wetted or damp. The presence of excessive moisture can quickly, or over time, lead to growth of microbial contaminants and mold.

C. FLOOR SLABS: Slab or floor cracks should be sealed to prevent water penetration. Perimeter drain systems, if present, are not tested for functionality, and no representations are made. Perimeter drain systems work to drain water penetrating the walls and does not eliminate the rising water under the center of the slab, *nor is a substitute for eliminating the conditions which allow water to penetrate the walls*. Asbestos tiles are commonly installed under carpets and other floor coverings in pre 1986 houses, which cannot be seen.

D. SUMP PUMPS: Check (one-way) valves prevent re-entry of previously pumped water back into the sump pit from the vertical discharge pipe, which makes the pump cycle more, shortens the service life, and suggested if not present and there are periods when the pump cycles frequently. A water overflow sensor is suggested to alert you for pump failure to prevent flooding and damage to finished areas, storage, furnishings, and appliances. A back-up pump and power system is recommended with all systems. The integrity of underground drains is excluded from the inspection as not visible.

The water discharge should be extended far enough away from the house to prevent accumulation against the foundation, and sloppy and hazardous conditions, and prevent recirculation of water back into house and pit.

Condition and functionality cannot be ascertained or confirmed for mostly unobservable piping systems (interior perimeter piping if present and discharge piping if underground). Malfunction/leakage can cause ponding and cause foundation damage and basement water penetration. Testing of underground sump pump discharge piping for proper function and condition, cannot be done by this inspection.

Older floor slabs are sometimes installed directly over soil with poor drainage characteristics or cinders rather than over a gravel base. Sump pumps are sometimes not connected to a French or perimeter drain system. These restrict sub slab water flow, drainage into pit and pump/system effectiveness.

E. HEAT: Adequacy is not determined by this inspection. Finished basements may or may not require heat. Consider adding heat if the basement is too cold for your comfort, however, when basements are heated and cooled from air registers cut into the pre-existing duct system, a reduction of airflow in part or the rest of the house can occur as not originally designed into the system.

V. ROOF SYSTEM

A. ROOF DESIGN & SURFACE MATERIAL: The roof inspection is limited to height of a roof accessible with an 11-foot ladder, and inspector safety, as there is an inherent danger in ascending and traversing steep, high and wet roofs. The surface material could also be damaged. No representations are made as to the absence or presence of leakage. The age is approximated by the inspector or represented by the owner.

The actual and service life of a roof depends on individual circumstances such as quality of the shingles, number of layers, weather, exposure, pitch of the roof, shingle color, adequacy of attic ventilation, and quality of installation and application details. Multiple layers shorten the life of each successive layer. Surface materials on shallower pitched roof surfaces wear more quickly than on steeper pitched roof surfaces. Roof underside ventilation plays an important role in the life of a roof and for validity of roof warranties. Warranties cannot be considered an accurate prediction of shingle life according to a general agreement of technical people throughout roofing industry. Premature failures are typically not due to the material but rather to the other factors.

Quiescent leaking roof conditions, common to present or prior older roofs may have caused or can cause areas of roof sheathing and framing rot, damage and mold formation not visible to the inspector. The extent of damage, if any is unknown, cannot be determined by this inspection, and is easily determined when the roof surface is removed.

The presence of excessive moisture from condensation, leakage or other cause at the roof underside, insulation, sheathing, framing can quickly or over time, lead to the growth of microbial contaminants, including mold.

Two layers of shingles are the maximum allowed number permitted since the early 1990s. When it comes time for a new roof, if there are two layers already, or if there are excessive layers now, all roofs should be removed before re-roofing.

Tearoff adds to the cost of a new roof. Re-decking damaged sheathing or replacing wood or slate shingles with new sheathing or underlayment can add significantly to the cost.

Newer roof surface materials may have a warranty, obtain a copy from the owner if possible. Many shingle manufacturers and roofers do not transfer warranties to new owners. Check with your attorney for review of the warranty information for warranty value and advice.

Permits are usually required for new roofs; obtain this information from the owner or building department.

If there is a satellite dish on the roof, and it will be removed, obtain assurance holes are patched to prevent leakage.

MB (Modified Bitumen) roofs have a 12-year service life.

Older building's roof valleys and lower roof edges may not be fitted with an ice and water shield or winter weather membrane barrier designed to protect the building against winter weather water penetration or ice-dam leakage. If these areas develop water penetration, anticipate stripping the edges and valleys and installing a winter weather membrane barrier or '*ice and water shield*' designed to protect the building from water penetration during extreme winter weather conditions.

B. FLASHINGS and roof penetrations: Flashings, solid waterproof materials, used at joints in roof construction, seal at chimney and other roof penetrations. Examine roof flashing annually and maintain to prevent water leakage and damage. Flashing seals the sliding connections that allow the building to move independently of the chimney penetrations, exhausts, and plumbing vents. Metal roof edge and rake flashings and a rubber membrane eave protection should be added with newer roof installation as a mark of a quality job. Tarring flashings are a temporary and unreliable repair solution to worn or damaged materials, and can leak.

C. ROOF Drainage & Rainwater Management System– incl. Gutters, downspouts, & drains: Leaking and overflowing gutters can cause trim and fascia damage, carpenter ant infestation and water accumulation against the foundation, which can undermine its support; and cause basement/crawlspace/sub-slab water penetration and roof leakage. Joints and end caps frequently leak and should be periodically checked and sealed. Gutters, downspouts and drains should be cleaned and inspected minimally twice annually, more often when large trees are overhead or nearby.

The integrity and functionality of underground drains is excluded from this inspection, as not visible. Ask the owner for further information about materials of construction and about where they discharge. Drywells and drain tiles will eventually clog. Underground drains are not tested. Underground downspout drains should be flushed with a hose, checked, and cleaned periodically to prevent accumulation of debris, which can block flow. Have the owner demonstrate this to you. If drains cannot be hose flushed, a mechanical drain cleaner must be employed. If this fails, the downspouts need to be converted to above ground draining, or new underground drains installed. New underground drains can be costly to install.

Above ground downspouts that discharge close to the house cause backsplash, water accumulation against the house and basement, crawlspace and or sub slab seepage, and should be extended or converted to underground draining.

D. SOFFITS/Fascia/Trim: Maintaining the roof, gutters, and wooden surfaces will help resist water penetration, wood rot and carpenter ant infestation. Lack of gutter cleaning and leakage can cause hidden damage.

E. CHIMNEY: Many chimneys and vents frequently do not meet current standards. Only visible damage and major visible failings are noted. **The full flue interiors are not observed nor inspected. You are advised to obtain chimney interior inspection before closing by qualified professional.** If have Internet access, log on to www.chimneys.com and csia.org (chimney safety) for chimneys. Go to the following web site for New Jersey chimney professionals- <http://www.newjerseychimneysweepguild.com>. Drafts are not checked nor assured. Fireplace chimneys, if present, should be professionally inspected and, if necessary cleaned prior to each heating season. The chimney, mortar joints, and the masonry crown or steel chase or rain caps and chase caps are exposed to the weather and subject to masonry freeze/thaw cycles and steel corrosion. Periodic inspection and masonry maintenance including pointing and sealing can reduce deterioration. A fractured crown can cause accelerated chimney, flue deterioration and roof leakage. Rain/screen caps can prevent flue blockage, animal entry, wind induced downdrafts, flying embers, and water penetration. Install where not present.

VI. EXTERIOR- Industry building standards require exterior walls to provide the building with a weather resistant exterior wall envelope.

The presence of excessive moisture from exterior building envelope leakage, condensation, or other cause can quickly or over time, lead to the growth of microbial contaminants, including mold. Opening up all areas of noted or suspected occurrence of these conditions is required before closing for further specialist inspection.

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Wear, tear and minor decay should be expected consistent with structure age.

Lead paint inspection is excluded from the inspection and no representations are made unless provided contractually. Buildings built before 1978 are presumed to have lead-containing paint. If desired, have paint sampled by a state-licensed lead testing company. For more info., call National Lead Information Center at 800-424-LEAD or go to <http://www.epa.gov/lead/>. Deterioration of any painted surfaces suggests caution and further action /risk assessment. A listing of the currently licensed NJ Lead Abatement and Evaluation Contractors is available by mail, by calling (609) 530-8812. The list has also been posted at the NJ Dept. of Community Affairs web site at <http://www.state.nj.us/dca/codes/leadhom.htm>. See note #5 in [General Note's](#) section of report. As of April 22, 2010 (has now been extended), any renovations in pre-1978 housing must be conducted by certified renovation firms, using renovators with accredited training and following the work practice requirements of the EPA Renovation, Repair and Painting (RRP) rule. One must be in possession of a "Lead Safe Work Certificate" to do this work. Special methods and techniques to prevent lead contamination are utilized. The rule has been delayed until September 30, 2010, see <http://online.wsj.com/article/SB10001424052748704895204575320880925552208.html>

Screening, shutters, awnings and similar seasonal accessories are not inspected. Geological, geotechnical, or hydrological conditions are specifically excluded from and not part of the inspection as specialized engineering services.

Siding, wood and other exterior components contacting or closer than 6 inches to grade invite insects such as termites and ants, and are subject to hidden wetting from wicking and hidden rot. Wash siding with a hose and soapy brush or powerwash it when soiled.

A. SIDING/EXTERIOR WALL COVERING and TRIM: Most sidings are durable if are installed properly and properly maintained. Water resistance is required by building standards and best practice.

Faux/cultured stone- Requires drainage plane, terminations and expansion joints to prevent water penetration into walls. Adhered masonry veneer, faux/manufactured stone covers a portion of the house. It cannot be ascertained if the veneer is secured and supported through the adhesion of an approved bonding material applied to an approved backing. Mortar joints are tight, and wide. Weep holes and flashing is needed to allow for the drainage of water, which penetrates mortar. These materials are porous and subject to water intrusion through soaking as well as through cracks and other voids that exist or may appear. Water can enter through voids in shelf cap and from EIFS or other siding above which may or may not have a drainage outlet. Trapped moisture can attract insects such as termites and carpenter ants. This material should be installed with a weep screed, an air gap, and drainage plane components. Refer to original building plans and consult with builder to insure that the proper behind the wall drainage system is designed and installed. If it is not, anticipate water intrusion and the potential exists for costly repairs, which may include full removal of stone material to rectify.

Brick/stone- Requires drainage plane, terminations and expansion joints to prevent water penetration into walls. It cannot be ascertained if the brick or stone veneer is properly supported by a brick ledge and to the wall through ties. Weep holes (33 inches apart as per International Residential Code and 24" as per Brick Industry Association) and flashing is required to allow for the drainage of water, which penetrates mortar. These materials are porous and subject to water intrusion through soaking as well as through cracks and other voids that exist or may appear. Water can enter through voids in shelf cap and from other siding above brick or stone, which may or may not have a drainage outlet. Trapped moisture can attract insects such as termites and carpenter ants. This material should be installed with a weep screed, an air gap, and drainage plane components. Refer to original building plans and consult with builder to insure that the proper behind the wall drainage system is designed and installed. If it is not, anticipate water intrusion and the potential exists for costly repairs, which may include full removal of stone material to rectify.

Vinyl or aluminum, sidings- Mineral cement/asbestos shingles are sometimes under vinyl, aluminum, and other sidings. We do not remove siding to check for asbestos or sub surface presence of other materials. Check with the owner as to what the siding is covering. This can affect resale, health and removal and repair budgets.

Aluminum siding can be painted with the proper surface preparation. It must be scrubbed with a brush and a heavy-duty detergent such as TSP (Tri-Sodium Phosphate), allowed to dry and painted with a high quality latex paint with a bonding agent additive. Re-painting then will be necessary every 7-12 years thereafter.

WOOD siding and wood trim- Exterior wood paint with protectors is required periodically for protection. Wash the siding beforehand to remove loose coatings and contamination. Apply a surface coating with mildewcide. It is required every 5-8 years to protect the house and prevent unnecessary surface preparation costs. Coating failure is usually attributable to moisture, poor preparation, or faulty application. Trim needs frequent painting (2-4 years). Keep windows and trim caulked to keep out water.

Mineral cement exterior shingles (pre 1986)- possible asbestos containing material. When present, further siding evaluation and laboratory testing is recommended by qualified licensed asbestos professional: See note #5 in [General Note](#) section of report.

- a) *to determine and confirm composition;*
- b) *to discover and determine the extent and presence of any other asbestos in the home*
- c) *to evaluate (now or eventual) removal budget, health and real estate re-sale risks.*

Cracked and broken exterior shingles will need replacement. Care should be exercised when working with these shingles during operations such as sanding, drilling, and cutting. If these shingles do contain asbestos, these are more hazardous when being removed or repaired. Removal and replacement involves special disposal costs for hazardous wastes. Removal is recommended when siding with vinyl or other materials is planned and must be done and disposed of in

an appropriate manner. Although shingles do not have to be removed by state licensed contractors, they must follow the same guidelines and requirements as licensed contractors.

Modern mineral cement exterior siding- Hardiplank™ or similar. Care should be exercised when working with this material during operations such as sanding, drilling, and cutting. Needs painting similar to wood. Requires specific installation methods.

EIFS Stucco. Newer drainage type, and older water barrier types. When there are breeches in the exterior envelope, water can penetrate and cause interior water damage. Although many of the details, which prevent leakage, are covered and unobservable. Diligence is crucial to insure there are no breeches in the exterior envelope to allow water to penetrate. It then cannot come out if the old non-drainage type. Water penetration can cause hidden rot, mold, and mildew formation involving expensive repairs, and carpenter ant infestation. Class action lawsuits against manufacturers and builders of this siding material were won. Go to the internet or other sources for further information concerning this siding material to become educated about it. We are not experts in this material and further inspection may be desired. A detailed inspection of this material is **not** provided by us. Advise third party inspection.

Hard coat stucco- Older, traditional stucco may contain traces of asbestos fibers. This is not confirmed by this inspection, confirmation is only possible with lab testing. Care should be exercised (protection) when working with this material such as painting, cutting, drilling or removal. Hard coat stucco requires drainage plane, terminations and expansion joints to prevent water penetration into walls.

B. WINDOWS & Exterior DOORS, and skylights: A representative amount of accessible windows and doors and associated hardware are checked for fit, proper operation, weather stripping, integrity and security. Not all are accessible, and not all are checked. Older windows and doors can allow drafts, and pre-1978 windows and doors, frames, and trim components can be a source of air-borne lead dust. Most windows need routine maintenance, including lubrication, caulking and painting. This is also frequently neglected. Inoperable windows (painted closed, broken operators, etc.) are hazardous in case of fire and should be freed up for emergency egress. Change the door locks upon closing. Install peepholes in solid doors for security. Older windows are energy inefficient, uncomfortable, can be difficult to operate and can be costly with always high and ever escalating energy costs.

It is not possible always for the inspector to ascertain if double glazed window and skylight seals are intact, conditions such as temperature, humidity and lighting can affect visual indicators of condensation between panes.

Skylights can produce condensation at interior side and cause paint, wood and finishes staining and damage.

Single pane windows are energy inefficient; if present, consideration should be given to replacement or addition of thermal pane/panel.

C. GARAGE: Storage, shelving and personal items can and commonly prevent ready access for observation for important building concerns, and for a complete termite and wood destroying insect infestation inspection. Any storage needs to be removed and the garage cleared for inspection before closing.

Outbuildings are excluded from this inspection, except for garages.

70% of people use the garage as the main entry to the house. Turn the automobile off immediately upon parking inside a garage. Conversely, start the auto only after opening the door. Exit immediately when starting the auto to leave the garage, do not let it idle.

Attached garages should be constructed with a fire resistive envelope/partial envelope. Ceiling and wall holes and voids can allow fire, heat smoke and Carbon Monoxide to be drawn into or enter wall and floor cavities and attic or rooms above (if

present) from mal-functioning combustion equipment and or auto exhaust, or a fire. Check with the local building department for repair requirements. Patch jobs are inadequate, special methods and materials are usually needed.

Caution: Older stucco ceilings and walls may contain traces of asbestos fibers. This is not confirmed by this inspection, confirmation is only possible with lab testing. Care should be exercised (protection) when working with these areas such as painting, cutting, drilling, or removal.

When a motorized overhead door opener is present-, Installation should meet UL-325 standards. Obtain the remote control opener(s) and make sure you change the codes on the day of closing if the garage door has a motorized opener. Motorized overhead doors should have sensors spaced 4-6 inches above the floor or according to manufacturer's installation recommendations. Wall-mounted door opener button(s) should be placed 60 inches above accessible standing surface so children cannot operate. Refer to UL325-2010 (Garage door safety standards) or manufacturer's installation instructions. UL325-1982 is obsolete. Pre 1982 openers can fail due to age, installation and maintenance, are considered unsafe, and removed and replaced with a modern, safe opener.

VII. MECHANICAL SYSTEMS- Carbon monoxide (CO) monitors that meet the most recent NJ standard, which is the UL 2034 standard or International Approval Service 6-96 standard, and installed according to NFPA 720, and in accordance with local standards, are required when there are any of the following. Fuel fired appliances as gas or oil water heaters, gas ranges and stoves, gas and oil heaters; attached garage, wood or gas fireplace(s), wood, coal, pellet-burning stove. CO poisoning can occur when flues or chimneys become blocked; when a furnace has a cracked or rusted heat exchanger; when proper make-up and combustion air is not provided for gas- fired appliances, or when operated without adequate ventilation; when generators are run in garages or within the building; from car exhaust from an attached garage and others. We recommend that CO detectors are installed at all levels, including the heating plant area(s), all levels with bedrooms, appliance areas, *in the master bedroom*, and elsewhere, and in accordance with manufacturer's and local requirements. CO detectors are required in real estate sales as of April 7, 2003 for single and two-family homes. This is typically the seller's responsibility. Check for the town's certificate your attorney should have obtained for the closing.

Smoke detectors should be installed on every level of the house, in hallways near sleeping rooms and inside sleeping rooms. A working smoke detector cuts chances of dying in a fire in half according to the National Fire Protection Association. NFPA recommends replacement of smoke detectors every 10 years.

ACE and the Consumer Products Safety Commission (CPSC) recommends that all consumers have fuel burning appliances inspected each year for cracks or separations in vents, chimney connectors and heat exchangers that would allow CO to leak into the building.

Many buildings have systems and components have been mechanically modified and/or extended in the past beyond ordinary maintenance. Many of these require permits and approvals. It is responsibility of property owner to obtain these when work is done. Buyer should obtain copies of all permits and final inspection reports from owner, and if not available through them, direct your inquiry through the municipal sub-code official, pertaining to all phases of past work and obtain copies. If no permits are available, but were required, these should be obtained by the owner to insure safe building practices were used for changes, to comply with requirements and for current tax assessments.

The presence of excessive moisture from plumbing, heating, air conditioning system, or other cause can quickly, or over time, lead to the growth of microbial contaminants, including mold. **Further inspection by applicable specialists, which can include opening up all areas of noted or suspected occurrence of these conditions, and repair of these conditions is strongly recommended before closing.**

A. PLUMBING- Water supply, drainage/waste/vent system, natural gas service. Plumbing water supply, drain/waste/vent lines and natural gas lines are observed where visible. Plumbing is commonly concealed from view in walls and floor cavities precluding observation.

DRAIN/Waste/Vent- No representations made whether sewage system is public or private. Obtain information from owner, Realtors, or local authorities. Private waste disposal systems are excluded from inspection. If present, the CLIENT is advised to enlist NJ licensed sanitarian for open pit inspection, camera probe and records check by a qualified and licensed contractor for function and condition with a written report, before closing. The local Health department should be consulted to confirm system design and agreement with number of bedrooms represented for this sale.

No representations are made concerning the frequency or occurrence of future drain clogging or the disposition of the piping or drainage as it exits the building, as not visible. A camera inspection of the main sewer line is needed to determine condition and point of discharge, especially if the report identifies problems with drainage at sinks, tubs or lavatories or there is a sewer-clearing sticker observed and noted in the report. Older houses can have broken and cracked components, blockage and tree root intrusion. Replacement of a soil pipe/sewer line can be costly. Old houses can have vents and drains that can be 50% blocked and smaller vents than today's standards so clogging can occur.

Sewage ejector pumps are excluded from the inspection as not visible. Check with the local plumbing sub code plumbing inspector/sub code official to verify correct installation, as this is a sanitary and health concern. A visual and audio alarm is needed if not present/identified as present in the report.

Domestic Water Supply- Gate valves are unreliable and consideration should be given to replacement with quarter-turn ball valves. Spray penetrating oil on seized valves to loosen. Safety and or shut-off valves are not operated.

Change refrigerator icemaker water filters, in most cases when present, it cannot be determined when last changed.

Corrosive water (green staining at pipe joints) shortens piping life and need to be monitored and repaired when needed. Aged cast iron and galvanized steel drainpipes are old and because of the varying grades used in construction, deterioration is not usually obvious. These corrode from the inside out and thins-out pipe walls. Monitor valves, drains and piping for corrosion, as corroded and or seized shut-off valves can leak or break when used or operated, cannot be relied on. When corrosion is noted, or later develops, repairs are needed, or full replacement. Outside hose-bibbs present should be shut during the winter months (Halloween, or end of November at latest) and turned on at after freezing weather (mid-April or beyond). If not, pipes can burst.

Inspector is not required to determine quantity or quality of water supply, water is not tested. Water treatment components, if present, are not evaluated as part of this inspection. The seller should provide information regarding the function of the treatment component(s) and whether purchased or leased from a water conditioner company. The function and maintenance schedule of each treatment component should be reviewed with the seller prior to closing.

Wells (mechanical components and function) are excluded from inspection. **If present, buyer is advised to enlist NJ licensed water laboratory for NJ Safe Water Act required water testing. A plumber with a special well driller's license for a mechanical inspection for condition of all components also needed.**

Laundry appliances are not checked, as personal property. Laundry connections are checked as present and can include electric, water, air, & gas. Clothes dryer fires (80% are in residential buildings) account for about 15,600 structure fires, 15 deaths and 400 injuries annually, according to the U.S Fire Administration. Failure to clean is the leading factor contributing to clothes dryer fires in residential buildings. Clean vent annually. Besides danger of fire, lint build-up prolongs drying times and wastes energy. See www.LintAlert.com for vent pressure alarm for constricted or blocked vent situation. Keep clothes washer water valves closed when not in use. Please refer to Consumer Products Safety Commission Document # 5022 <http://www.cpsc.gov/CPSCPUB/PUBS/5022.html>.

A burst water supply line causes half of all damage involving washers, leading to an average loss of \$6000. Turn the supply valves off when the machine is not in use. Make sure there is a 3 to 4 inch gap in place between the back of the

washer and the wall to avoid kinking the hose to the valve connections. Washer manufacturers recommend replacing the hose every five years. Consider reinforced, braided stainless steel hoses for greater security.

Washer hoses- if left by the homeowner (with or without washer), should be discarded. We advise use of Floodchek™ brand. (<http://www.floodchek.com/wp-content/uploads/floodchek-report.pdf>). Manufacturers of other hoses, such as braided stainless steel or plain rubber, are of lower quality. These manufacturers recommend replacing hoses every three to five years as hoses are known to fail and can cause considerable damage. Turning off washer water valves when not in use reduces chance of water damage from hose bursting or other failure.

When time permits, checking for gas leaks on readily accessible lines with a Tiff 8800 Combustible Gas Detector is done and if found are noted in report. For gas leaks in Union County area, call 800-492-4009 (Elizabethtown Gas) or your local gas utility if the house is located out of the Union County area.

Lawn sprinkler systems are excluded from inspection. Check with seller for system details, information and system description before closing. A backflow preventer should be part of system. Contact installing/servicing company or qualified expert for walk-through of system and operation.

Central vacuum systems are excluded from this inspection. A physical inspection and courtesy comments may be made but should not be construed as a full evaluation or confirmation of proper operation.

B. DOMESTIC HOT WATER- GAS- Keep combustibles and storage at least 18" away from heaters. Burners should be cleaned and adjusted periodically to optimize operation by preventing excessive flue carbon monoxide, to lower operating costs and to extend lives. A leaking vent of an improperly operating gas appliance can cause carbon monoxide and combustion gas entry into interior spaces, which can cause severe personal injury or death.

Flammable Vapor Ignition Resistant Water Heaters- If flammable vapors accidentally enter the combustion chamber, the flame arrestor is designed so flames burn off the top surface and cannot escape down through the arrestor. American National Standards Institute standards (ANS Z21.10.1) that deal with the accidental or unintended ignition of flammable vapors, such as those emitted by gasoline. This includes a sealed combustion chamber with air intake screen and a fireproof Corderite or other flame arrestor built into the water heater base. In addition, a thermal cutoff (TCO) device, integral with the thermocouple, is designed to shut off gas flow to the burner and pilot if poor combustion is detected.

Gas utility companies recommend upgrading water heaters more than 10 years of age as can be working at 50% efficiency, wasting money and energy.

The chances of a heater failing increase drastically when it is 5 years old or older, and three-quarters fail before they are 12 years old. Remove sediment by flushing the tank every six months.

Pressure relief valves should be professionally inspected and tested by a qualified plumber every three years. Tank sediment should be drained every 3 months for safety and to extend tank life. Water heaters lives are shortened with hard water and high temperature use. Water sensors are suggested to alert you of tank failures. Do not operate above 120°F to prevent scalding, a risk for children, and the elderly, and infirm. Water heaters have a 5-10 year design life and most have a 5-year tank warranty. Actual and serviceable life depends on factors as temperature setting, hardness of water and usage. Anticipate failure accordingly. Anticipate replacement of water heaters at or beyond the end of the design and service life. Replace before failure. Failure can cause flooding and damage to the structure and contents. Older water heaters can suffer from a buildup of minerals in the tank, which causes higher energy consumption and reduced and possibly inadequate hot water production. When gurgling and popping noises are heard during operation, it is time to replace the heater.

Place new water heaters in area where damage to floors, ceilings, and furniture is minimized during leakage. When this is not possible, a drain pan should be installed under the new water heater. Since a typical pan doesn't hold much water, it should have a drain piped to a place, such as a sump pit, that will cause no harm. When installed properly, this can keep leakage under control and helps to reduce water damage to your belongings and the building.

Water and gas safety valve (WAGS) https://www.taco-hvac.com/products/hydronic_accessories/wags_valve/index.html, when installed, can minimize damage caused by water heater leakage by shutting off water supply and gas valve when senses tank leakage.

ELECTRIC- Access to the adjusters for the temperature accomplished by removal of one or more of the element covers. (NM) Non-metallic sheathed cable is not proper for installation according to electrical standards for wiring a hot water heater, as conductors should be anchored within 12" of connection and solid wire should not to be used as a flexible connection.

INSTANTANEOUS/tankless, GAS- Keep combustibles and storage at least 18" away from heaters. Burners should be cleaned and adjusted periodically to optimize operation by preventing excessive flue carbon monoxide, to lower operating costs and to extend lives. A leaking vent of an improperly operating gas appliance can cause carbon monoxide and combustion gas entry into interior spaces, which can cause severe personal injury or death. Pressure relief valves should be professionally inspected and tested by a qualified plumber every three years. Water heater's life is shortened with hard water and high temperature use. Do not operate above 120-125°F to prevent scalding, a risk for children, and the elderly, and infirm. Actual and serviceable life depends on factors as temperature setting, hardness of water and usage. Anticipate failure accordingly. Anticipate replacement of water heaters at or beyond the end of the design and service life. Replace before failure. Failure can cause flooding and damage to the structure and contents.

C. ELECTRICAL SERVICES- According to the Consumer Product Safety Commission, 10% of all residential fires are caused by electrical systems. Meter socket cabinet is not opened to check for integrity of electrical connections. Although this is not a "code" inspection, obvious unsafe conditions and practices are reported. A qualified and licensed electrician should be consulted for review of reported defective or deficient conditions and to provide an estimate for remediation. Keep three feet of clearance in front of all electrical cabinets for access. No representations concerning the frequency or occurrence of electrical circuit overloading are made. In older houses, circuits are commonly not distributed and balanced and may cause breaker tripping or fuse blowing where circuits are overloaded. This cannot be determined by this inspection. System or distribution adequacy is not determined by this inspection as technically exhaustive. 100-Amp service is considered the minimal requirement by today's standards. Increases in electrical demand and usage with new occupants may prove insufficiency with any sized system.

All readily accessible GFCI receptacles and a representative number of readily accessible installed interior and exterior lighting fixtures, switches and receptacles are inspected for correct wiring and functionality with a Suretest ST-1D Digital Branch Circuit and Wiring Analyzer. Voltage, amperage, or impedance is not measured.

Do not connect a garage refrigerator or freezer to a GFCI circuit to avoid shutdown and food loss.

Performing periodic GFCI-testing and maintenance should reduce electrical hazards at areas installed.

Security, fire, smoke, heat sensors and alarm systems, carbon monoxide detectors, intercom and stereo components and systems are not evaluated as part of this inspection. Ancillary wiring systems and components not a part of the primary electrical power distribution system are not inspected. Information regarding operation, use, care, and maintenance should be obtained from the seller or from the manufacturers of the systems, components, or devices.

New types of receptacles are devices are available for increased electrical, fire safety, and required in new and renovated construction, such as tamper-resistant, and weather resistant.

Circuit breakers are recalled- Square D brand breakers are recalled, as 30,000 are known to be counterfeit. These may not trip when they are overloaded, posing a safety hazard. Go to www.scottelectricusa.com for more information if you have this brand panel.

D. HEATING SYSTEM- Heat and smoke detectors should be installed near the heating plant for safety. Keep combustibles and flammables 18 inches away. Systems often do not heat evenly. The heat emitting distance from the source, the number of windows, air infiltration, wall insulation and house orientation all have effects on the evenness of heating. Evenness, distribution balance, or adequacy of heating is not determined by this inspection. The design of some residences, including expanded homes, bi- or split-levels can cause heating system balancing problems. Therefore, certain rooms may be colder than others may. Turning up the heat will not solve problem of cold areas, as this will overheat some of the rooms.

Heating-system age is an approximation and the accuracy of this estimate is not assured.

Underground (fuel or other) Storage Tanks are specifically excluded from the inspection unless specifically contracted for. No investigation was conducted to locate USTs, which may or may not be present. You should undertake a separate investigation whether or not we report on the presence or absence, which should include a property tank sweep. Older and even newer homes may have a buried underground oil tank(s) or an interior tank. See note #5 in [General Note](#) section of report.

FURNACES (warm air): All gas burner controls, safeties, and air high limit and fan controls are present, but are not checked for functionality.

Ducted furnace heating systems sometimes can be balanced by reducing the air delivery to the rooms that require less heat, by closing down those room register louvers. Disadvantages of warm air furnaces are distracting noise from duct expansion and contraction, restrictions for furniture arrangement blocking ducts, air turbulence with accompanying dust particle deposition on furniture. You may want to have the ducts cleaned professionally to remove accumulated dirt and dust in them that could be a breeding ground for bacteria and a source of allergens.

Cleaning, inspection and service by a qualified heating contractor is required before the heating season on an annual basis. Have the burner cleaned and adjusted periodically to reduce the occurrence of failure, to prevent excessive flue carbon monoxide generation, to extend the heating system life and for lower operating costs. Keep furnace filters clean as dirty filters can cause blower damage, and if air conditioning is also present- coil freeze-up; drain pan clogging and overflowing problems. Return duct gaps can draw in unwanted fumes (and radon if present) for distribution throughout the house. Leaking supply and return ducts can waste 20%-30% of the system capacity as conditioned air leaks out and unconditioned air is drawn into the return ducts. Warm air furnaces and furnace-mounted humidifiers can be harmful to people with allergies, especially if not maintained.

You may want to have the ducts cleaned professionally to remove accumulated dirt and dust in them that could be a breeding ground for bacteria and a source of allergens. Cleaning, inspection and service by a qualified heating contractor is required before the heating season on an annual basis, to extend the heating system life and for lower operating costs. Keep filters clean as dirty filters can cause blower damage, coil freeze-up; drain pan clogging and overflowing problems. Clean air filters are particularly important on the heating cycle of a heat pump. For proper and efficient operation, change or wash the air filters often.

Pre 1986 furnaces and duct systems can contain internal asbestos components in the air stream.

Multiple return type ducting system gives more even distribution and heating than central type, which can cause drafts, and uneven heating. Doors must remain open in each room for proper circulation, or door bottoms must be cut to allow air to get back to the central return, located in a hallway ceiling or wall.

For systems equipped with a humidifier for wintertime use, proper maintenance is essential for years of service and for proper operation. Humidifiers need to be emptied, disinfected with household bleach, and thoroughly dried before cooling season starts. This can be done at the end of the heating season in any case, whether there is air conditioning or not.

BOILERS (circulating hot water or steam):

Hot-water heating systems use water as the medium for conveying and transmitting heat to the rooms. The motive force for the water in this system is forced circulation. This system is a hydronic or forced hot water heating utilizing water circulation pump(s).

Systems can be of the one or two pipe configuration. An advantage of the two-pipe system is that one or more heat-emitting unit can be shut off without interfering with the flow of water to other units. This is not true with the economical (cheaper and easier to install) one pipe series-loop type system in which the units are connected in series and form a part of the supply line. In this system, the same hot water passes through each emitting unit in succession. As a result, the closer the emitter is to the boiler, the hotter the water, the last unit is the coldest. Furthermore, individual units cannot be shut off. Zoning is possible in larger one-pipe systems by providing for more than one piping circuit from the boiler, each with its own thermostat and zone valve or pump. The two pipe systems (direct and reverse return), hot water returns to the boiler from each heat-emitting unit. These systems use more pipes. The direct return type can have water-balancing problems. Chemical water treatment can lessen the degree of corrosion.

Steam is a very effective heating medium. Until in the not too distant past, this property of steam has resulted in being the most commonly used method of heating residential, commercial and industrial buildings. Over the past 50 years or so, steam heating has been largely replaced in the building of residences by other types of heating systems. The basic operating principles are simple. The boiler is used to heat water until it turns to steam. When the steam forms, it rises in the pipes to the heat emitting units (radiators, convectors, etc.) in the various rooms of the structure. The metal heat emitting units, being cooler, cause the steam to condense and return to the boiler in the form of water for reheating. Residential systems are of the low-pressure (0 to 15--psig) vapor type, and can be of the one or two pipe configuration. One-pipe gravity steam heating systems are the most common type installed in residences.

Disadvantages of these systems are: the possibility of water hammer developing, because steam and water must flow in opposite directions in the same pipe; and air valves sometimes malfunction by either spurting water or failing to open, causing a cold radiator. Balancing of these systems is accomplished by regulating the air valves on individual radiators. Do not use the steam valves for balancing.

All controls and safeties including the gas control valve, low water cut off, electric high-pressure controller, and mechanical pressure and temperature relief valve with proper extension are present, but are not checked for functionality.

Cleaning, inspection and service by a qualified heating contractor is required before the heating season on an annual basis.

Check and drain the low water cutoff if present and blow off/drain valves at the low part of the boiler. This should be done once a week into a bucket during the heating season to flush the sediments, contaminants and other impurities that settle out and accumulate from the house pipes. Do this to reduce occurrence of water hammer, and flush the safety switch. The boiler may require replenishment with water up to half way on the gauge glass after flushing. This is done automatically if the boiler has automatic water feed. Keep the water level at the center of the water gauge glass during operation. Always add water to the boiler gradually, and if possible, avoid adding water to a hot boiler. Never add water to an operating cast iron boiler. Locate the manual feed valve shown to you during the inspection. Do not take your hand off this valve when filling. Watch the water level rise and close the valve.

Enclosure panels are not normally removed and the boiler is not disassembled to observe the interior cast iron sections. Only readily removable panels are taken off to provide a limited view. Bases of heat exchangers or cast iron sections are checked with a mirror for integrity and leakage from the firebox via service panels, ports, or covers. Fireboxes are also checked for deterioration. Boilers and vents are checked for gas leakage using a TIFF 8800A combustion gas detector. Unless noted, no leakage is detected. Pre-1986 boilers contain internal asbestos components, such as in the combustion chamber and on the burner shield, or on furnace cement on the chimney and connector.

HEAT PUMPS: Fan blown air is the medium used for conveying heated and cooled air to the rooms. It is a refrigerant-type device used to transfer heat from one space or substance to another. The heat pump is designed to take heat from a medium temperature source, such as outdoor air, and convert it to a higher temperature heat for distribution within a structure. By means of a specially designed reversing valve, the heat pump can also extract heat from the indoor air and expel it outdoors. In winter, cool air enters the heat pump through the return air system and is heated via the heating coils. The warm air is forced through ductwork and dampers and it is discharged directly into each room through registers or diffusers with directional louvers. After the air surrenders its heat, it becomes cooler, and is returned by suction through individual room return air grilles and ductwork, through return duct(s) where it is reheated and the cycle is repeated. In the summer, the opposite is done.

You may want to have the ducts cleaned professionally to remove accumulated dirt and dust in them that could be a breeding ground for bacteria and a source of allergens. Cleaning, inspection and service by a qualified heating contractor is required before the heating season on an annual basis, to extend the heating system life and for lower operating costs. Keep filters clean as dirty filters can cause blower damage, coil freeze-up; drain pan clogging and overflowing problems. Clean air filters are particularly important on the heating cycle of a heat pump. For proper and efficient operation, change or wash the air filters often.

Some of the advantages of a forced warm-air heat pump system are heat delivery is quicker than other systems, heat delivery can be shut off immediately, air cleaning and filtering can be cheaply and easily provided, the humidity level of the air can be easily controlled.

Some disadvantages are: The heat pump is largely ineffective when the outdoor temperatures drop below 0° F., distracting noise from expansion and contraction of the ducts, restrictions for furniture arrangement to not block ducts, air turbulence with accompanying dust particle deposition on furniture, etc. Sometimes a supplementary heating system is installed and used until outdoor air temperatures rise to a suitable level for effective use in the heat pump.

Heating elements are not fully accessible for inspection. Heating elements have a manufacturer's warranty of 5-10 years, which corresponds to design life. Check the heating elements during annual service.

For systems equipped with a humidifier for wintertime use, proper maintenance is essential for years of service and for proper operation. The humidifier should be emptied, disinfected with household bleach, and thoroughly dried before the cooling season starts. This can be done at the end of the heating season in any case, whether there is air conditioning or not.

The age of the heating system is an approximation and the accuracy of this estimate is not assured.

A heat pump should not be operated in the heating mode when the outside temperature is more than 60°F or in the cooling mode when the outside temperature is less than 60 °F as a rule, to prevent damage, but check with the manufacturer's specifications for their advisories.

Electric Resistance baseboard and fan assisted wall heaters- Caution advised at baseboard electric heaters, where surface temperatures can exceed 200°F. Do not use electrical receptacles installed over electric baseboard heaters. In accordance with many manufacturers' instructions, this is to reduce the likelihood of cords contacting the heater, a fire hazard. Keep curtains and other combustibles away, give heaters plenty of room. Do not block with furniture.

Electric heaters are an expensive way to heat a house but these are frequently zoned so you can heat only occupied areas.

These heaters do not have a long service life, expect 10 years of so, after that, these are unreliable, and expect to replace them.

Thermostats located on walls are more desirable than knobs on the heaters. Thermostats should not be located on outside walls or cold drafts in the walls may produce inaccurate readings.

Electric resistance heaters give off EMFs (Electro-Magnetic Frequency Field). This is excluded from our inspection. For further information contact manufacturers of equipment for health risks.

OIL as fuel- See note #5 in [General Notes](#) section of report. Underground (fuel or other) Storage Tanks are specifically excluded from the inspection. No investigation was conducted to locate USTs, which may or may not be present. You should undertake a separate investigation whether or not we report on the presence or absence, which should include a property tank sweep. Older and even newer homes, especially if an old home was demolished and replaced in whole or in part, may have buried underground oil tank(s) or an interior tank.

ASBESTOS- SACM – **Suspected Asbestos Containing Material-** See note #5 in [General Notes](#) section of report. Pre-1986 boilers and furnaces contain internal asbestos components, such as in combustion chamber and/or on the burner shield, or on furnace cement on the chimney and connector, on flex or vibration ducts, within ductwork, on humidifiers, some of which are in the ductwork, on duct seams and the ductwork itself under slabs (Transite) and chimneys. Removal of an old boiler or heating system and components such as ductwork and piping with SACM and surrounding pipe insulation can cause a major fiber release when improperly removed by heating contractors. The unit should only be removed after stripping the SACM. Steam and water heating pipes commonly have asbestos containing pipe insulation (lagging) in both sleeve and castable forms. Asbestos on pipes and ducts can be hidden in floors and walls.

E. AIR CONDITIONING- Evenness or adequacy of cooling, distribution balance, or ability to cool certain areas or to your needs is not determined by this inspection. Check air filter(s) monthly during operation and renew or clean as required. Systems should be checked and serviced every spring to avoid costly repairs. Return duct gaps draw in unwanted dust heat, cold, and moisture from the attic/basement area(s) for distribution throughout the house. Leaking ducts can waste 20%-30% of the system capacity as conditioned air leaks out and unconditioned air is drawn into the return ducts. All ducts should be sealed tightly. Older systems (>10 yrs.) have higher energy usage. Many of the older models are operating at only a six or seven SEER, which can be very costly to operate, especially at today's higher utility rates. The minimum efficiency standard in 1992 was 10 SEER, and 13 SEER in 2006. Many newer units also now come with a 10-year warranty on the system compressor. Production or importation of the CFC chemical used as coolant has been banned since 1995 in accordance with an international treaty aimed at preserving the ozone layer of the earth. Air conditioners that lose their CFC refrigerant may have to be modified to accept CFC substitutes- or be replaced with costly newer models.

F. FIREPLACE(s)- wood solid fuel burning appliances, and or decorative gas appliances- Contact tel. (301)-963-6900 for a list of certified chimney sweeps. If have Internet access, log on to www.chimneys.com and csia.com (chimney safety) for chimneys, fireplaces and stoves. Full flue interiors are not observed nor inspected. Drafts are not checked nor assured.

Wood- Wood fireplaces and stoves are not operated and not checked for function. Wood fires are neither ignited nor extinguished. The chimney and fireplace should be professionally inspected and, if necessary cleaned prior to each heating season as a minimum. The exact cleaning schedule is determined by frequency of use and wood type burned. A sturdy screen should be used when burning. Only wood should be burned- paper or pine boughs can float out of the chimney and ignite the roof or the neighbor's home. Flammable liquids should never be used in a fireplace. Make sure fires are completely out and the embers are dead before closing any damper to prevent smoke and carbon monoxide back up into the house. Make sure dampers are fully closed when not in use to prevent animal and water entry. Open damper before use.

[Gas Log in Wood fireplace-](#) The gas log installed in the fireplace should be UL listed. Gas fireplace gas log units should meet national safety standards set by the American National Standards Institute (ANSI) or the National Fire Protection Agency (NFPA). Check with the local building department to find out which certifications are required and make sure this is an approved installation. If no information is available, this should be checked by a qualified contractor and the local authorities for conformance to local standards before closing to ensure safe and proper operation.

[Decorative gas appliances \(vented\)-](#) Decorative gas appliances generate combustion gasses, can give off a strong odor of combustion gasses during operation, and are subject to backdrafting. Refer to the manufacturer's instructions. **Note strong warnings regarding CO poisoning.** Note: this type of fireplace can be cold if the chimney chase/fireplace area is not insulated or poorly insulated.

[Decorative gas appliances \(ventless\)-](#) Decorative gas appliances generate combustion gasses which do not vent, can give off a strong odor of combustion gasses during operation, and are subject to backdrafting. Use of gas fired non-venting appliance/heater is potentially unsafe. Refer to the manufacturer's instructions. Commonly a window needs to remain open with use to provide air for operation. This defeats the purpose of providing heat/comfort. **Note strong warnings regarding CO poisoning.** Operation puts excessive moisture into room/house. **Removal and replacement with vented unit for safety and health strongly advised.** Note: this type of fireplace can be cold if the chimney chase/fireplace area is not insulated or poorly insulated.

VIII. INTERIORS & general

A. LIVING ROOM, Dining room, bedrooms, family room, etc.- The problems encountered during the interior room inspection are of a cosmetic nature; such as nail pops, small cracks, and gaps, water stains, peeling paint and wall coverings; and may be costly to correct. Finishes on interior walls, floors, ceilings, and trim are excluded from the inspection, as cosmetic in nature. Nail pops, cracks in finishes, wall nicks and damage will necessitate surface preparation before painting. Carpets and window treatments are not inspected. Recreational facilities are not inspected.

There may be hidden defects under wall-to-wall installed and other carpets, which are not visible. It is unknown what is under installed wall-to-wall carpets, as we do not remove them. There is always a possibility of having stained, warped and damaged wood and other floors. Floors over underhouse garages, on concrete slabs and over crawl spaces are usually colder than other floors.

Ceiling fans are not checked for the installation of the proper electrical box for fan use or for hanger presence. Electrical boxes used at fan outlets are not to be used as the sole support for ceiling fans unless they are specifically listed for the application. The seller is responsible for conformance to standards for quantity, required locations and proper operation of smoke alarms and carbon monoxide detectors. Bare bulbs in closets, where present, should be replaced with globe fixtures or fluorescence lights to prevent fires.

Presence of wall insulation is unknown. Consult with owner if they have any knowledge of wall insulation. Check Seller's disclosure, if one was provided. Pre-1950's houses were not usually insulated at construction. 1950's-1960's vintage houses may or may not have wall insulation or have marginal insulation. 1970's houses may have marginal insulation. Adding blown-in insulation or other wall insulation may be a viable way to reduce energy costs and provide increased comfort (as long as there is no knob and tube wiring within the walls such as in pre 1930 houses- you can check with an electrician first).

Vaulted or cathedral ceilings present heating and cooling difficulties and uniformity, drafts, thermal layering and increased costs, challenges for painting, and light bulb changing.

All windows should be easily opened. Windows should not be painted closed, or difficult to operate and should have adequate counterbalance to keep in open position to allow emergency egress. Bolting windows or installation of bars only with the guidance of the local building and fire departments; this includes basement and bedroom locations.

Interior doors should be easily opened, not stick and have operable knobs or handles to prevent entrapment, critical in emergency egress situations. Hollow/ Masonite doors need stops to prevent puncture damage from adjacent knobs or nicks at solid doors.

Window and door glass should conform to current standards for safety. Advise upgrading to safety glass in all locations where required by current building codes.

Environmental- Identification of hazardous materials and environmental concerns are not part of this inspection. See note #5 in General Note's section of report.

If the owner is offering to leave house paint cans and chemicals, you need to review and if you do not want, they should take them as it is difficult to get rid of paint and chemicals, you cannot place this in the trash. Owners commonly abandon/leave paint and chemicals behind.

IAQ or Indoor Air Quality- The presence and level of concentration of harmful contaminants inside the building are specifically excluded from inspection. Presence of excessive moisture within structure can quickly, or over time lead to growth of microbial contaminants. See #6 in General Notes section of report, and roof, attic heating and cooling sections of the report.

Asbestos- See note #5 in General Notes section of report. Asbestos containing materials are common in houses built before 1986 and excluded from our inspection; confirmation is only possible with lab testing, which is recommended before closing.

Resilient floor tiles and linoleum can be present at unobserved areas, commonly in the basement, such as under carpets and other floor coverings. VAT (Vinyl Asphalt/Asbestos Tile) typically is 9-Inch square size, but can be other sizes. Acoustic tiles, backing and mastics may contain asbestos fibers. This is excluded from our inspection, confirmation is only possible with lab testing and is advised. Care should be exercised when removing these, have tested first and protect work area as needed.

Acoustic ceiling tiles, sound proofing or other decorative materials may contain asbestos fibers. Care should be exercised when removing these, have lab tested first and protect work area as needed.

Potential Health Hazard and Environmental concern- Presumed Asbestos Containing Material- (PACM)- Wall and ceiling plaster, and or drywall and spackle (**SM/Surfacing Material**) can be present in pre-1980 construction. Pre 1980 plaster is presumed to be an **ACBM (Asbestos Containing Building Material)**. Removal of ACBM and disposal should be performed only by state licensed contractors or a "fiber release episode" can occur. Advise lab testing should you want to remove. Stucco/plaster ceilings and walls (brown coat or plasterboard) or the topcoat of one layer plaster, spackling/patching materials, joint compounds, or wallboard itself may contain traces of asbestos fibers. Care should be exercised (protection) when cutting, drilling, or removal. Try not to disturb plaster, walls, ceilings, and do not allow dust to become airborne. Use a quality respirator with HEPA filters whenever working with these materials.

Caution is advised with thermal insulation, which can include mineral wool, rock wool, and fiberglass, which may contain respirable fibers, some known to cause cancer and other health problems. Do not allow the insulation fibers to become airborne. Use a quality respirator with HEPA filters when working with this or any insulation materials. Before any demolition or repairs, have wall/ceiling or other materials, such as thermal insulation checked for hazardous materials and have remediated / mitigated if found by qualified and licensed professional(s).

Inspector does not detect presence of Chinese Drywall. Accordingly, the issue of Chinese Drywall (and its potential problems) is beyond the scope of the inspection and report.

Pets- Pets can generate allergens in persons sensitive to pet dander, fur, etc. Pets can cause flea infestation in carpets, furniture and house requiring fumigation. Carpeted floors may need removal; hardwood floors may be permanently stained or damaged due to claw marring or urine stains requiring repair, refinishing or replacement. Masonry floor surfaces may require chemical cleaning, neutralizing odors, and the application of a sealer to control odors, especially in areas used as a latrine by pets. Walls, baseboard moldings, duct interiors and electrical outlets can be damaged by canine and feline territorial spraying and may need replacement.

B. BATHS- Keep tub and shower enclosure grout and caulk well maintained to prevent water penetration and leakage into floors, walls and ceilings, causing rot and damage. Exhaust fans are suggested at all baths with showers to discharge heat and high humidity outdoors where not present. Fan ducts should be pitched towards the wall, if possible, and should be thermally insulated to prevent condensation and resulting water damage to ceilings and fan. GFCI outlet receptacles are suggested in all baths as a safety upgrade where not present.

C. KITCHEN- Kitchen appliances, which are not built-in, are not real property, and not included in the inspection. Appliances may be "as is" if they are not permanently installed. Kitchen counters, wall, and base cabinets are checked and are tightly fastened unless noted. The dishwasher's ability to clean dishes is not evaluated as part of the inspection. Dishwashers have a 5-12 year design life, while cooking appliances and refrigerators have a 15-20 year design life. Obtain any warranty information. Partially cycled inspection functional appliances can break down at any time between inspection and closing and should be fully cycled at final walk through. Microwave ovens may or may not be checked for functionality or for microwave leakage. If checked this is done as a courtesy. Operate before closing and check for proper function at your walk through. Mechanical ventilation to exhaust cooking heat, odors and humidity outdoors advised, if not present. Exterior wall caps for vents can leak air and allow bee nesting and drafts in winter. Soiled system internals such as duct and fan components, can collect and subsequently fuel a grease fire, periodic cleaning is recommended. A fire extinguisher required for real estate transactions should be installed by the seller according to state requirements if not present. Ducts, which run through the attic, should be insulated to prevent condensation within duct and consequential water damage.

Stoves- Ovens are checked for function but the ovens may or may not be checked for temperature control accuracy. If not indicated in the report, obtain an oven thermometer and check for this, and adjust as needed, by referring to the appliance service manual.

Tipping stoves safety hazard- Personal injury can be caused by scalding and burns by hot foods and liquids spilling from stovetops or from being crushed by the weight of a stove that has tipped over. Where noted to be absent in the report, an anti-tip bracket should be installed for safety and required by all newer stove installations by the manufacturers.

IX. ATTIC- When accessible, attics are inspected by carefully entering safe to access areas; and viewed with a strong light. Otherwise, attics are viewed with the strong light from openings. Attics are sometimes not accessible due to lack of a suitable opening, storage and or installed shelving in closets or in garages, if attics are unfloored crawlspaces or there are inspector determined hazardous conditions.

Entry- Keep stair hardware tight to prevent collapse for safety, and to prevent personal injury. Check before each use. Only one person at a time should go up or down disappearing stairs.

Thermal Insulation- Insulating the backside of the entry door of the attic can reduce air, heat, and cold transmission. Secure and gasket loosely fitting scuttles hatches and doors. 9-½" to 10" and R-30 at ceilings and 6" at walls and R-19 rating is the attic insulation thickness recommended by current standards. Insulation should fill ceiling cavities for an envelope without voids to prevent heat loss and cold ceiling spots in the winter and hot spots in the summer. Always use a good quality respirator when working with any type of insulation. Maintain proper 3" clearance at the recessed lights and bath fans in accordance with manufacturer's instructions to avoid overheating and fires.

Ventilation- attic and roof underside- Major causes of moisture problems in attics and on roof underside and framing, and ice damming are openings in ceiling and paths for unwanted heated airflow (bypass) from the house, and basements and crawlspaces. Air and moisture should be kept from leaking into the attic. Open chimney chases also allows air leakage into attic with moisture from house and is energy inefficient.

Ventilation is necessary for these reasons: to remove moisture and prevent moisture problems including mold and wood fungus growth; to prevent heat build-up, sheathing and framing rot, to reduce air conditioning costs; prevent ice dams. Shingles last longer over a ventilated attic. Poor ventilation can void a new roof warranty. The presence of excessive moisture from exterior building envelope leakage, including the roof, from condensation, poor ventilation, and insulation installed to roof underside or other cause can quickly lead to the growth of microbial contaminants, including mold. Opening up all areas of noted or suspected occurrence of these conditions noted required before closing; further inspected by specialists advised and repairs/mitigation made as required.

Keep the attic and roof underside well ventilated; reduce air leakage of warm air into the attic to prevent or reduce attic moisture problems and ice damming. The colder the attic in winter, the less melting and refreezing on the roof, reducing chance of having ice dams that can be caused or contributed to by recessed lighting near the roof. Heat generated from these lights melts snow, which then can cause ice dam buildup. One of the ways to avoid this problem is to eliminate recessed light fixtures near the roof and prevent warm air leaks around gaps in drywall, plumbing vents, wiring, attic entry door, electrical boxes, fans and lights and chimneys.

Roof underside ventilation can be compromised at skylights at cathedral ceilings.

See asbestos in Interior section of report. See note #5 in [General Note's](#) section of report.

ICE DAMS- An ice dam is an accumulation of ice at the lower edge of a sloped roof, usually at the gutter. When interior heat melts the snow on the roof, the water will run down and refreeze at the roof's edge, where temperatures are much cooler. Eventually, the ice builds up and blocks water from draining off the roof. This, in turn, forces the water under the roof covering and into your attic or down the inside walls of your house. Once an ice dam forms, the potential damage can be serious. Take these steps now to avoid trouble later:

- Keep the attic well ventilated. The colder the attic, the less melting and refreezing on the roof.
- Keep the attic floor well insulated to minimize the amount of heat rising through the attic from within the house.

This two-step approach decreases the likelihood that ice dams will form or, at least, reduces their size. As an extra precaution against roof leaks in case ice dams do form when you re-roof, install a water-repellent membrane under your roof covering. Unfortunately, ice dams may be unavoidable if your home has recessed lighting near the roof. Heat generated from these lights melts snow, which then contributes to ice dam buildup. The only sure way to avoid this problem is to eliminate recessed light fixtures near the roof.

Whole house fans cause a negative air pressure condition in the house and may cause backdrafting of fireplaces, water heater, gas and oil heating systems and the extinguishing of water heater, and if present, heating system and range oven pilot lights. Soot and odors can also be drawn from fireplace flues (if present) and the heating and water heater chimney flues, and draw in moisture and pollen from outdoors. Whole house fans can significantly disrupt the balance of an operating attic located air conditioner when inadequately sealed duct seams and joints are present. Radon and other soil gases can be drawn in to the house. Whole house fans should only be operated when the exterior moisture is lower than the interior moisture levels. Moisture controllers are advised to prevent operation when conditions are not met. Interior surfaces and furnishings are hygroscopic, absorb/adsorb moisture, and discharge moisture when the air conditioner is finally turned on, making it work substantially harder to cool the interior.

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