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Items in black font had been reviewed by the standards of practice subcommittee. Items in red are recent submissions that have not been reviewed by the sub committee. Items highlighted in yellow have been reviewed by the sub committee and have been found to be in need of adjustment or wordsmithing.

Comments, questions or items for inclusion can be emailed to:

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All comments and submissions become the property of the Texas Real Estate Commission.

Thank you for your interest and involvement in this process.

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§535.227. Standards of Practice: General Provisions

(a) Definitions.

(1) Accessible – In the reasonable judgment of the inspector, capable of being approached, entered, or viewed without:

(A) undue hazard to the inspector;

Commentary -- Nothing in the standards of practice is to be construed as instructions to an inspector that the inspector must take unnecessary risks. There are risks involved in any activity and some of the items required for inspection by these standards of practice involve significant risk. There are also conditions that may be encountered during the course of an inspection that impose an unusual or extraordinary risk. The inspector is required to use their own judgment to determine if the risk level is too great for that individual inspector. If the inspector determines a hazard to be too great to allow the inspection of a part, component or system, the inspector must follow the requirements of the Departure Provision.

(B) moving furnishings or large, heavy, or fragile objects;

Commentary -- During the course of an inspection, it is not uncommon to encounter obstructions blocking access to various components of the residence. It is not the responsibility of the inspector to determine the weight of the object, the contents or value of the item. It is for the individual inspector to determine if an object can be reasonably or safely moved. If the inspector determines that an item cannot be reasonably or safely moved, the inspector must follow the requirements of the Departure Provision.

(C) using specialized tools or procedures;

Commentary -- The Standards of Practice describe the minimum level of inspection service acceptable for the consumers of the State of Texas. How the inspector performs these inspection services and what tools the inspector uses to accomplish the requirements of the Standards of Practice are, except where specific tools are described or referenced, left to the determination of the individual inspector.

(D) disassembling items other than covers or panels intended to be removed for inspection;

Commentary -- The standards of practice dictate that panels provided for observation of items required for inspection by the standards of practice be opened. These panels include access panels for bathtub drains, hydro therapy bathtub pumps and motors, dishwasher pumps, motors, water supply pipes and electrical components, the electrical components of water heaters and central heaters and the dead fronts on main disconnects, gutters, panel boards and equipment disconnects, and lighting fixture switches and electrical wall receptacles, etc. It is not intended that all junction or appliance boxes be opened or that the interiors of the junction and appliance boxes be inspected. Opening of covers and panels should be made without defacing the property or damaging otherwise sound surfaces other than minor damages to painted surfaces.

(E) damaging property; or

Commentary -- This is intended to mean that the inspector will not intentionally cause damage to sound surfaces. Probing areas that appeared decayed to determine the extent of the decay shall not be construed as causing damage to sound surfaces. It is expected that the inspector will remedy any damages caused accidentally.

(F) using a ladder for portions of the inspection other than the roof or attic space

Commentary -- The inspector is not required to carry a variety of sizes of ladders. The inspector is required to carry a ladder of sufficient length to reach the level of a first story above grade roof for a majority of the substantially completed residential improvements to real property up to four dwelling units in their area.

(2) Chapter 1102 – Texas Occupations Code, Chapter 1102

(3) Cosmetic – Related only to appearance or aesthetics, and not related to structural performance, operability, or water penetration

Commentary -- To prevent this section from being misunderstood, materials on a dwelling must be inspected for the function they perform. For example, a single wythe brick veneer wall is not a structural component of a dwelling unit. However, the failure to properly install, flash and drain a single wythe brick veneer wall can allow water penetration into the wall system. The presence of water in the wall system can cause the brick to effloresce, crack, craze, spall and disintegrate. It can cause metal components such as lintels and brick ties to corrode and fail. Water penetration may also cause insulating materials to lose their effectiveness, can allow interior wall coverings and wall framing materials to deteriorate and can provide the moisture necessary to allow the growth of microbial organisms. While the brick veneer may not be a component that directly affects structural performance, defects in the brick and in its installation can have great and grave repercussions on the performance and longevity of the dwelling.

(4) Deficiency – A condition that, in the inspector's reasonable opinion, adversely and materially affects the performance of a system or component or constitutes a hazard to life, limb, or property as specified by these standards of practice. General deficiencies include but are not limited to inoperability, material distress, water penetration, damage, deterioration, missing parts, and unsuitable installation

(5) Deficient – Reported as having one or more deficiencies

(6) Inspect – To look at and examine accessible items, parts, systems, or components and report observed deficiencies

(7) Performance – Achievement of an operation, function, or configuration consistent with accepted industry practice

Commentary -- "Industry" practice should not be confused with "local" practices. "Industry" practice, for the purposes of the standards of Practice, means compliance with accepted and published industry standards such as manufacturer's installation instructions or industry association installation or maintenance requirements. An installation is common to a certain location but, the installation cannot be confirmed by

industry associations, manufacturer's installation instructions or model buildings codes, is not acceptable for the purposes of these standards of Practice.

(8) Report – To provide the inspector's opinions and findings on the standard inspection report form

Commentary -- The inspector is required to use the standard inspection report form REI 7A-1. This form is to be completed as per rules §535.222 - 223.

(9) Specialized tools – Tools such as thermal imaging equipment, moisture meters, gas leak detection equipment, environmental testing equipment and devices, elevation determination devices, and ladders capable of reaching surfaces over one story above ground surfaces

Commentary -- The inspector is free to determine which tools are necessary to achieve compliance with the standards of practice. This is a short list of specialized tools but should not be considered a set or all inclusive list. The inspector is not required to employ the use of any specialized tools or procedures to complete their inspection. The inspector is expected to use a flashlight, ladder and ordinary hand tools to perform the minimum level inspection as set forth by the standards of practice.

(10) Specialized procedures – Procedures such as environmental testing, elevation measurement, and any method employing destructive testing that damages otherwise sound materials or finishes

(11) Standards of practice – §§535.227-535.233 of this title

Commentary -- For the purpose of this commentary, the Standards of Practice will be referred to as The Standards.

(b) Scope.

(1) These standards of practice define the minimum levels of inspection required for substantially completed residential improvements to real property up to four dwelling units. A real estate inspection is a limited visual survey and basic operation of the systems and components of a building using normal controls and does not require the use of specialized tools or procedures. The purpose of the inspection is to provide the client with information regarding the general condition of the residence at the time of inspection. The inspector may provide a higher level of inspection performance than required by these standards of practice and may inspect parts, components, and systems in addition to those described by the standards of practice.

Commentary -- The primary purpose of a pre-purchase real estate inspection is to provide a consumer as much information as possible, within the limitations of a visual inspection, so that the consumer can make an informed purchase. The inspector is encouraged to provide as much information as the inspector deems necessary for the client to understand the nature and importance of the items noted as deficient in the report. While the inspector must perform each inspection to the minimum levels prescribed by the standards of Practice, or the inspector must follow the provisions of the Departure Provision, nothing in the rules of the Texas Real Estate Commission or

the intent of Chapter 1102 of the Texas Occupations Code are intended to limit the level of service provided by the inspector.

(2) General Requirements. The inspector shall:

(A) operate fixed or installed equipment and appliances listed herein in at least one mode with ordinary controls at typical settings;

Commentary -- The inspector is expected to operate appliances in the manner in which the appliance was intended to operate. Except where specified in these standards of practice, the inspector is only required to show that the appliance or device operates. The inspector is not required to operate these appliances in all modes of operation. Should the appliance fail to operate or should be appliance break when tested or inspected by the inspector, the inspector is not at fault for the failure of the appliance. Should the inspector choose to operate the appliance in a manner other than the common usage of the appliance and the appliance fails, the inspector may be liable for having caused damage to the appliance. For example, should the inspector choose to jump the low voltage system to operate the central heater while the inspector is in the attic and the inspector causes damage to the heater from improperly jumping the low voltage system, the inspector may be liable for the damages to the appliance.

(B) visually inspect accessible systems or components from near proximity to the systems and components, and from the interior of the attic and crawl spaces; and

Commentary -- "Near proximity" means as close to a part, component or system as possible under the circumstances encountered or necessary to properly perform an inspection under the rules of the Standards of Practice or, if access to a part, component or system is obstructed or partially obstructed or if a hazard to the inspector limits access to a part, component or system. "Near proximity" means as close to the part, component or system as safely possible. If the inspector cannot get close or near enough to a part, component or system to properly inspect the part, component or system in compliance with the requirements of the standards of practice, the inspector shall follow the requirements of the Departure Provision.

(C) complete the standard inspection report form as required by §§535.222 and 535.223 of this title.

Commentary -- The report is required to be written. The report shall include all the items specifically noted for reporting in the standards of Practice, all items deficient in the opinion of the inspector, all items deficient in fact, and all items required for notification under the Departure Provision. Sufficient information, in the opinion of the inspector, should be provided so that the consumer can understand the information contained in the report.

(3) General limitations. The inspector is not required to:

(A) inspect:

- (i) items other than those listed herein;
- (ii) elevators;
- (iii) detached structures, decks, docks, fences, or waterfront structures or equipment;
- (iv) anything buried, hidden, latent, or concealed; or

Commentary -- In occupied dwelling units, some defects may not be visible due to the presence of furniture, furnishings and personal property. The inspector should notify the consumer that defects or items that could not be viewed due to the presence of the furniture, furnishings or personal property were not inspected, were not considered in the rendering of the opinions stated in the report and are excluded from the inspection. It is up to the inspector to document the presence of the items that obscure the inspector's vision should questions about certain conditions arise in the future. As a reminder, these are general limitations and that there will be specific requirements for inspection of items within the standards that will supersede the general limitations.

(v) automated or programmable control systems, automatic shut-off, photoelectric sensors, timers, clocks, metering devices, signal lights, lightning arrestor system, remote controls, security or data distribution systems, or solar panels;

(B) report:

(i) past repairs that appear to be effective and workmanlike;

Commentary -- The inspector should take into consideration what, if any, structural defect or water penetration issue may have caused the repairs to be made. If the repair was related to structural deficiencies or water penetration, the inspector should attempt to determine if the actual deficiency or water penetration point(s) was repaired. Many repairs are made solely for cosmetic reasons. Since it is often not possible for an inspector to determine the reason for the repair, it is generally recognized that repairs that are effective and workmanlike are indicative that the defect was repaired. Inspections are not primarily intended to identify items that are deficient and not to anticipate future problems.

(ii) cosmetic or aesthetic conditions; or

(iii) wear and tear from ordinary use;

Commentary -- Ordinary wear and tear also includes wear and tear from continued occupancy and from changes in occupancy that occur after the date and time of the inspection.

(C) determine:

(i) insurability, warrantability, suitability, adequacy, capacity, reliability, marketability, operating costs, recalls, counterfeit products, life expectancy, age, energy efficiency, vapor barriers, thermostatic operation, code compliance, utility sources, or manufacturer or regulatory requirements except as specifically required by these standards;

Commentary -- The Scope of an inspection is not to determine insurability or warrantability of any given item within the standards. The standards were not intended to comply with the requirements of the Texas Department of Insurance, home warranty company guidelines or any other insurance or warranty guidelines or requirements. The Standards are not a check for code compliance. Though some items required to be inspected by the standards are code related items, those items are required to be inspected because they are considered to be safety related. Examples of such are GFCIs, AFCIs and elevated water heaters in garages. It is not rational to expect any one

person to potentially know all known codes violations, recalls, regulatory agencies, defects, installation requirements, load and sizing requirements, etc...

(ii) the presence or absence of pests, termites, or other wood-destroying insects or organisms;

(iii) the presence, absence, or risk of asbestos, lead-based paint, mold, mildew, or any other environmental hazard, environmental pathogen, carcinogen, toxin, mycotoxin, pollutant, fungal presence or activity, or poison; or

(iv) types of wood or preservative treatment and fastener compatibility;

Commentary -- Certain types of inspections require special licenses such as wood-destroying insects (Department of Agriculture), asbestos, lead-based paint and mold (Texas Department of Health Services). Such inspections are not a part of a home inspection but are considered to be separate services. Though an inspector may reference in a home inspection report substances that appear like mold or asbestos, to do an inspection for those substances requires separate reports with guidelines from those governing agencies.

(D) anticipate future events or conditions, including but not limited to:

(i) decay, deterioration, or damage that may occur after the inspection;

Commentary -- The inspector does not have the care, custody or control of the house at any time prior to, during or after the inspection. Events, damage, deterioration or mechanical failures, damages caused by others, repairs performed that cause damage to the structure, failure of repaired item to perform or hazardous conditions that are created by any repairs, action or inaction, etc. that occur after the inspection has ended are not the responsibility of the inspector. The only exceptions to this concept are if the inspector caused the damage to occur. For example, if the inspector left the oven operating, left a door unlocked, etc., the inspector may be liable for damages or expenses incurred as the result of the actions or inactions of the inspector.

(ii) deficiencies from abuse, misuse or lack of use,

Commentary -- All systems and components in a dwelling unit are made to operate or to perform some task. Lack of use can cause damage or failure of components as easily as damage or failure from overuse. There should be no expectation on the part of the consumer that parts, components or systems will continue to operate in the same manner as they operated during the inspection if the dwelling unit is left vacant for any length of time.

(iii) changes in performance of any part, component, or system due to changes in use or occupancy;

Commentary -- It is the responsibility of the inspector to provide sufficient documentation of the condition of the dwelling unit based on the present condition, occupancy and working under current use and habits of the current occupants of the dwelling. However, defects, deficiencies or damaged areas that were concealed or covered by the furniture, furnishings, art work, effects, other ornamental objects or clothing, etc, of the seller that were discovered when the seller vacated the property should be reported to the buyer via an updated seller's disclosure statement. The inspector is not required to anticipate the possibility of damage in areas that are obscured from observation.

(iv) the consequences of the inspection or its effects on current or future buyers and sellers;

Commentary -- The inspector should render their opinions or findings of fact based solely on the evidence found during the inspection, not on the consequences of those opinions on the consumer, the seller or the real estate agents involved.

(v) common household accidents, personal injury, or death;

Commentary – While the Standards include some life safety items, the Standards do not include all possible life safety items and do not contemplate ordinary household accidents such as, but not limited to, slipping in a bathtub or shower, tripping, falls, burns from cooking or from fires in a fireplace, nor do the standards anticipate damage from Acts of God.

(vi) the presence of water penetration(s); or

Commentary -- Water penetration to the interior of a dwelling unit is going to occur at some point in time in the vast majority of structures. It is not part of the inspection for the inspector to anticipate when or how such an event will occur. The inspector's responsibility is limited by the standards of practice to the discovery of accessible and visible indications of water penetration at the time of the inspection. It is the inspector's responsibility to provide sufficient documentation of the condition of the building at the time of the inspection.

(vii) future performance of any item;

Commentary -- All structural components, electrical components, plumbing components, mechanical equipment, ducting, insulation, etc. have economic and actual service life limitations. These life durations vary between individual components. The economic and actual service life limitations cannot be anticipated by a visual inspection or, in many cases, by an intensive investigation of the part, component or system. The actual performance of any part, component or system at the time of the inspection does not predict continued performance of that part, component or system. It is the responsibility of the individual inspector to provide adequate documentation of the operation of the part, component or system at the time of the inspection.

(E) operate shut-off, safety, stop, pressure, or pressure-regulating valves or items requiring the use of codes, keys, combinations, or similar devices;

Commentary -- The inspector is not required to operate valves of any type unless specifically required by the standards. As per the standards, an inspector should not damage or deface the property during the course of an inspection. It is an acknowledged fact that valves that have not been operated for a period of time have a high probability of failure due to the lack of use or operation.

(F) designate conditions as safe;

Commentary -- It is also not the responsibility of the inspector to designate an item as unsafe. Except in the specific instances that the standards of practice require inspection

and reporting of safety concerns or conditions, the inspector has no obligation to report safe or unsafe conditions. To make such a requirement would lead to an endless list and would require the inspector to make judgments of the client's clumsiness or deftness. It is not rational to expect any one person to know all potential safety hazards for any given, component, event or individual.

(E) recommend or provide engineering, architectural, appraisal, mitigation, physical surveying, realty, or other specialist services;

(F) review historical records, installation instructions, repair plans, cost estimates, disclosure documents, or other reports;

(G) verify sizing, efficiency, or adequacy of the ground surface drainage system;

Commentary -- No matter the historical performance of a ground drainage system, no one can predict the magnitude of the next rainfall or the period of time over which the rain will fall. No inspector can accurately predict the effects of the increases in construction and ground coverage on ground surface drainage systems. While each inspector is required to inspect a structure for evidence of past incidents of ground water penetration, no inspector can accurately future incidents of ground water penetration.

(H) operate recirculation or sump pumps;

(I) remedy conditions preventing inspection of any item;

Commentary -- Sometimes an inspector encounters conditions which prevent an inspection from taking place. He may find for example that the water heater is enclosed inside an exterior closet that has been secured shut with numerous wood screws. The inspector is not required to remove the screws and unfasten the secured covering in order to access the water heater. He may find that the electrical panel box has been partially covered with shelves holding stored items. The inspector is not required to move the items and shelves in order for the panel box cover to be accessed. When conditions prevent inspection of any item required to be inspected by these Standards, the inspector must follow the provisions of the Departure Provision.

(J) apply open flame to operate any appliance;

Commentary -- The inspector is not required to apply an open flame to any appliance to check for operation of the equipment. The inspector is not required to light pilots or use a lighter to initiate the operation of an inspected component.

(K) turn on decommissioned equipment, systems, or utility services; or

Commentary -- An inspector should assume that a decommissioned piece of equipment was turned off for a reason and may constitute a safety hazard to the property or to the inspector to re-commission it. The inspector is required to follow the provisions of the departure provision.

(L) provide repair cost estimates, recommendations, or re-inspection services.

Commentary -- It is the responsibility of the inspector to document the condition of the property as it was found to be at the time of the inspection. It is not the responsibility of the inspector to tell the seller or the buyer how to correct items noted as deficient or to provide follow-up services to guarantee repairs are made correctly.

(4) In the event of a conflict between specific provisions and general provisions in the standards of practice, specific provisions shall take precedence.

Commentary -- Example 1: Under (Scope) General Limitations, an inspector is not required to report past repairs that appear to be effective and workmanlike, yet under (e) Roof Covering Materials, the inspector shall report evidence of previous repairs to roof covering materials, flashing details, skylights, and other roof penetrations.

Example 2: Under General Limitations, The inspector is not required to: (E) operate shut-off, safety, stop, pressure, or pressure-regulating valves, yet under (C) Water heaters, The inspector shall report as deficient a temperature and pressure relief valve that: (I) does not operate manually.

(5) Departure.

(A) An inspector may depart from the standards of practice only if the requirements of subparagraph (B) are met, and:

(i) the inspector and client agree the item is not to be inspected;

Commentary -- For example, a client may inform an inspector that the kitchen appliances are to be replaced and that the appliances need not be inspected; or that a professional roofer is going to inspect the roof or that a HVAC technician is to inspect the HVAC equipment. If the client instructs the inspector that the inspector need not inspect these type items, the inspector does not have to perform those inspections. The inspector is required to follow the provisions of the departure provision.

(ii) the inspector is not qualified to inspect the item;

Commentary -- Mechanical equipment changes constantly and there may be systems or equipment present in a residence that the inspector is not familiar with. Should the inspector not have knowledge of the proper or safe operation of a part, component or system, the inspector should not attempt to perform an inspection on that part, component or system. The inspector is required to follow the provisions of the departure provision.

(iii) conditions beyond the control of the inspector reasonably prevent inspection of an item;

Commentary -- Frequently an inspector will encounter conditions which prevent the inspection of parts, components or systems from taking place. These conditions can be almost anything and may be subject to change with time. Should the inspector determine that a condition exists that prevents the inspection of an item or items, it is up to the inspector to document that condition so that the inspector can defend his decision. Examples of such conditions are: Limited access because of stored items, wet / steep roof, rainy / wet surfaces on the exterior, a large threatening dog in the back yard, attic spaces that appear difficult to enter, exposed wiring connections at the attic entrance, wasp nests in panel boxes. When these or similar conditions are encountered, the

inspector must make the appropriate notation in the report stating the reason the part component or system was not inspected. The inspector is required to follow the provisions of the departure provision.



(iv) the item is a common element of a multi-family development and is not in physical contact with the unit being inspected, such as the foundation under another building or a part of the foundation under another unit in the same building;

Commentary -- The inspector is only required to inspect the components of common elements that comprise the residence being inspected. For example, if the residence is a townhouse that is on the same foundation with a number of other townhouse units, the inspector would only be required to inspect the portions of the foundation, the cladding systems, the attic, the roof structure and roof covering materials that make up the residence being inspected. The portions of the foundation, the cladding systems, the attic, the roof structure and the roof covering materials that make up other residential units do not have to be inspected. The inspector would not normally have access to the interiors of the other residential units in any event. The inspector is required to make the appropriate notation clearly stating that the inspection was limited only to those components that make up the residential unit that was inspected in the report.

(v) the inspector reasonably determines that conditions or materials are hazardous to the health or safety of the inspector; or

Commentary -- Nothing in the standards or in the rules of the Texas Real Estate Commission requires an inspector to expose himself to dangerous or hazardous or unsanitary conditions. Should such a condition(s) be encountered, the inspector is required to inform the client of the hazard at the earliest practical opportunity. The inspector is required to make the appropriate notation clearly stating what hazardous or unsafe or unsanitary condition was encountered and to note what parts, components or systems were not inspected as a result of the unsafe condition in the report.

Example: An inspector who is in the attic determines that the footing is dangerous for him to proceed any further without raising the risk of his stepping through the ceiling, he should not try and walk further into that section of the attic. He must state in the report the reason that section of the attic was not inspected.

(vi) the inspector reasonably determines that actions of the inspector may cause damage to the property.

Commentary -- When the performance of an inspection of a part, component or system would require the inspector to damage sound materials, the inspector should not cause damage the property. Should such a condition(s) be encountered, the inspector is required to inform the client of the hazard at the earliest practical opportunity. The inspector is required to make the appropriate notation clearly stating what components of the dwelling unit would have been damaged and to note what parts, components or systems were not inspected as a result of the condition in the report.

Some inspectors have used this concept to cover such things as giving the inspector full immunity from walking the surface of a roof under the theory that walking any roof surface damages the roof covering material. While this may be true in theory, there may be no measurable diminution in the service life of the roof covering material from the inspector walking the surface of the roof covering material. If the inspector is not familiar with how to walk certain roof surfaces, such as a tile roofing system, without damaging the material, the inspector should follow the departure provision in notifying the consumer that the roof was not walked. This section is not to be construed as a blanket exclusion from inspecting certain components required for inspection by these standards of practice.

Example: A panel box cover is stuck to the wall paper on the edges. If the inspector believes that to remove the cover would tear / damage the wall paper, the inspector is permitted to leave it in place and not remove it. The inspector then must state in the report the reason that the cover was not removed.

(B) If a part, component, or system required for inspection is not inspected, the inspector shall:

(i) advise the client at the earliest practical opportunity that the part, component, or system will not be inspected; and

Commentary -- The "earliest practical time" may vary depending on the circumstance. Generally it means when it is discovered that a part, component, system or area cannot be inspected. For example, it should be clear when the property to be inspected is approached that the roof surface can or cannot be accessed. It may be clear that a crawl space can or cannot be accessed. If the client is present, the client should be informed at that time that the roof will not be inspected from the surface of the roof or that the crawl space will not be inspected from the interior of the crawlspace. When conditions are discovered that would cause the inspector to make use of this Departure Provision, these conditions should be reported as soon a reasonably possible. For example, the determination that there are areas of the attic that cannot be accessed should not cause the inspector to leave the attic to inform the consumer of the inaccessible attic areas. It is sufficient that the client be informed after the inspector exits the attic but before the inspector leaves the property, if the client is present. If the client is not present, the inspector should inform the client of the items that could not be inspected as required by the standards of Practice as soon as reasonably possible. That may be when the report is delivered to the consumer. The inspector should realize that the consumer has a limited period of time in which to perform due diligence on the dwelling unit. The intent of this Departure Provision is to provide the consumer with as much time as possible to have all the parts, components and systems inspected prior to the termination of the

option period. The inspector is required to follow the provisions of the departure provision.

(ii) make an appropriate notation on the inspection report form, clearly stating the reason the part, component, or system was not inspected.

Commentary -- The notation of the reason a part, component of system was not inspected in accordance with the Standards must be specific and clear in the report. It should also be clearly stated in the report which parts, components and systems were not inspected when the Departure provision is used.

(C) If the inspector routinely departs from inspection of a part, system, or component, the earliest practical opportunity for the notice required by this subsection is the first contact with the prospect and the inspector has reason to believe that the property being inspected has the part, system, or component the inspector routinely does not inspect.

Commentary -- Nothing in the Standards require an inspector to put himself in a position of unacceptable risk to that individual inspector. It is clearly realized that different inspectors have different levels of tolerance for heights, for the use of ladders, and from exposure to live electrical components, etc. This provision of the Departure Provision recognizes those facts and creates a system by which the consumer can be informed that there are limitations, for whatever reason, beyond which an inspector will not venture. However, the concern of the Texas Real Estate Commission is that the consumer has the time necessary to perform the due diligence necessary for the consumer to make an informed choice. It is the requirement of this section that an inspector who does not perform certain tasks, such as climbing ladders, walking roof surfaces, walking through or crawling attic spaces, entering crawl spaces under houses, removing covers from panel boxes, electrical cabinets, etc. inform the consumer or the consumer's representative at first contact. This often means when the consumer or the consumer's representative calls, emails or otherwise contacts the inspector to arrange for inspection services. It is expected that the inspector respect the need of the consumer to have the opportunity to complete their due diligence investigations during the limited time period afforded by the option period.

(c) Enforcement. Failure to comply with the standards of practice is grounds for disciplinary action as prescribed by Chapter 1102.

§535.228. Standards of Practice: Minimum Inspection Requirements for Structural Systems

(a) Foundations. The inspector shall:

(1) inspect slab surfaces, foundation framing components, subflooring, and related structural components;

(2) report:

(A) the type of foundation(s); and

Commentary -- While the inspector is required to note the type of foundation in the report, there are conditions under which the inspector may not be able to determine the exact type of foundation employed. For example, what appears to be a concrete slab on grade may be a concrete slab supported on drilled and under reamed concrete piers. It

is advisable that the inspector reports what the foundation “appeared” to be unless the inspector is sure of the exact composition of the foundation.

(B) the vantage point from which the crawl space was inspected; and

Commentary -- The intention of this requirement is that the inspector will enter and crawl the under floor areas of an above ground foundation system. The inspector is required to state in the report where he was when he viewed the foundation framing components and other parts, components and systems contained in the under floor or crawl space area.

Commentary – Many crawl spaces are too low to the ground to enter. Others have obstructions or other conditions that prevent parts of the crawl space from being entered. If the crawl space was entered, then that must be stated on the report. If the crawl space was not entered, then the inspector must describe in the report the place from which the crawl space and its components were viewed.

(3) generally report present and visible indications used to render the opinion of adverse performance, such as:

Commentary -- In the event of the finding of adverse foundation performance, the purpose of this section is to require the inspector to make sufficient notations in the report that will inform the consumer that the inspector was aware that these types of deficiencies were present in the dwelling unit and that the inspector took these items into account when the inspector formed his opinion concerning the performance of the foundation. There is no intention that the inspector report all items noted in the house in the report.

Commentary -- If in the opinion of the inspector, the foundation has adverse performance, he is to render that as his opinion and state in the report what evidence he found that led him to that conclusion. Though he is not required to provide in the report an exhaustive list of adverse performance indicators, he is required to provide examples of these indicators such as concrete cracks, brick cracks and out of square doors. He may choose to recommend that the client have the foundation further evaluated by a structural engineer.

- (A) open or offset concrete cracks;
 - (B) binding, out-of-square, non-latching, warped, or twisted doors or frames;
 - (C) framing or frieze board separations;
 - (D) out-of-square wall openings or separations at wall openings or between the cladding and window/door frames;
 - (E) sloping floors, countertops, cabinet doors, or window/door casings;
 - (F) wall, floor, or ceiling cracks;
 - (G) rotating, buckling, cracking, or deflecting masonry cladding;
 - (H) separation of walls from ceilings or floors; and
 - (I) soil erosion, subsidence or shrinkage adjacent to the foundation and differential movement of abutting flatwork such as walkways, driveways, and patios;
- (4) report as Deficient:
- (A) exposed or damaged reinforcement;

Commentary -- The purpose of reporting exposed reinforcement is so that the reinforcement can be cleaned and covered. As the reinforcing rods rust, the material expands which causes damage to the concrete. The purpose of covering the reinforcing material is to slow the rate of progression of the rust and to slow the rate of damage to the concrete foundation.

(B) a crawl space that does not appear to be adequately ventilated;

Commentary -- There is no expectation that the inspector will measure the ventilation openings in the chain wall and the square footage of the crawl space to determine if the sizing of the ventilation openings conforms to the requirements of the model building codes. The inspector should inspect the condition of the crawl space and its components to determine if the amount of air flow through the crawl space appears adequate, or if the crawl space does not appear to be adequately ventilated resulting in conditions such as excessive moisture or wood rot on the surface of the understructure members. (suggested for addition to the existing paragraph)

(C) crawl space drainage that does not appear to be adequate;

(D) deteriorated materials;

(E) damaged beams, joists, bridging, blocking, piers, posts, pilings, or subfloor;

(F) non-supporting piers, posts, pilings, columns, beams, sills, or joists; and

(G) damaged retaining walls related to foundation performance; and

Commentary -- The inspector must use reasonable judgment in determining whether a retaining wall is close enough to the foundation to affect the performance of the foundation.

(H) render a written opinion as to the performance of the foundation.

Commentary -- The intent of this section is that the inspector state clearly in the report that the foundation does not require remedial leveling or stabilizing procedures or that the foundation requires remedial leveling or stabilizing procedures in the opinion of the inspector. This section also covers any deficiencies to under floor foundation framing and support components. The inspector is to make general notes of any damage to the super structure as required by item (3) of this section. The inspector shall then make a clear statement of their opinion of the need for remedial leveling or stabilization. The inspector can make as many statements justifying his opinion as the inspector desires. The inspector can make such comments as 'although indications of differential movements were noted, the degree of differential movements were not to the extent to warrant remedial leveling procedures in my opinion'. The inspector may note, in this or in any other section, that other professionals, tradesmen or lay persons may reach a different conclusion and that the consumer may seek as many opinions as necessary for the consumer to make an informed decision as to the condition of the dwelling unit. This requirement is no different than in any other section of the standards of practice. The inspector is required to observe the various parts, components and systems and to make a judgment as to whether there are deficiencies in those parts, components or systems.

Commentary -- It is not enough to simply check the "Inspected" box on the report. If in the opinion of the inspector, the foundation is not in need of repair or stabilization, and is

functioning properly, he must make some such statement in the report. On the other hand, if in the opinion of the inspector, the foundation is in need of repair or stabilization, he must make some such statement in the report along with some of the adverse performance indicators that the inspector found.

(b) Specific limitations for foundations. The inspector is not required to:

- (1) enter a crawlspace or any area where headroom is less than 18 inches or the access opening is less than 24 inches wide and 18 inches high;
- (2) provide an exhaustive list of indicators of possible adverse performance; or
- (3) inspect retaining walls not related to foundation performance.

(c) Grading and drainage. The inspector shall report as Deficient:

- (1) improper or inadequate grading around the foundation (including flatwork);

Commentary -- In many areas there is not enough ground clearance above the street to allow for the amount of slope required by the model building codes. In older dwelling units, it may not be possible to provide the slope required for drainage around a foundation by the model building codes. Older dwelling units can be examined for indications of water penetration or for indications of differential foundation movement or loss of support for the foundation caused by inadequate drainage. The consumer should be made aware if there are limitations in the areas surrounding the dwelling unit to provide adequate drainage in the inspector's opinion.

- (2) erosion;
- (3) water ponding; and

Commentary -- While water may not be standing in these depressions, the depressions often create trip hazards around the foundation. The inspector is not required to inspect the entire lot for water ponding or for trip hazards in the yards however; such defects near the foundation should be reported.



- (4) deficiencies in installed gutter and downspout systems.

(d) Specific limitations for grading and drainage. The inspector is not required to:

- (1) inspect flatwork or detention/retention ponds (except as related to slope and drainage);
- (2) determine area hydrology or the presence of underground water; or
- (3) determine the efficiency or operation of underground or surface drainage systems.

(e) Roof covering materials. The inspector shall:

- (1) inspect the roof covering materials from the surface of the roof;
- (2) report:
 - (A) type of roof covering(s);
 - (B) vantage point from where the roof was inspected

Commentary – It is the intent that the inspector walk the roof if in his opinion he can do so safely and without causing significant damage to the roof. If in the opinion of the inspector he cannot safely access the roof or if in doing so would cause significant damage to the roof, he must state in the report from what area the roof was inspected such as from the edge of the roof on a ladder or from the ground. The intent is to protect the consumer from having unrealistic expectations of how thoroughly a roof can be examined from other than the surface of the roof. As a note, minor granular loss is not considered to be significant damage.

- (C) any levels or surfaces that were not accessed;

Commentary – Even if the inspector can access some areas of the roof, there may be areas that are not accessible due to conditions such as a steep pitch, roof height or wet surfaces, etc. Those areas that were not accessible must be specifically noted in the report. In complying with the Departure provision, the inspector must also make the appropriate notation in the report stating the reason that section of the roof was not inspected.

- (D) evidence of previous repairs to roof covering materials, flashing details, skylights, and other roof penetrations; and

Commentary -- The reason for this requirement is that when a section of the roof has been repaired previously, it is more likely to leak again than those sections that have not been repaired and the buyer should be notified of that history so that he may question the reasons for the repairs and so that he may monitor it after the purchase.

- (E) evidence of water penetration; and
- (3) report as Deficient:
 - (A) a roof covering that is not appropriate for the slope of the roof;

Commentary -- While there are general requirements that provide for minimum slopes for the use of certain roof covering materials, there are exceptions. There are roofing felts made that allow the use of composition shingles on slopes as low as 1 in 12. The inspector may choose to question the use of certain materials on low sloped roofs rather than to report the use of a roof covering material on a low sloped roof as improper as a fact.

- (B) deficiencies in:
 - (i) fastening of roof covering material, as determined by a random sampling;

Commentary -- Fastening of the roof covering materials may include fasteners and the sealing of composition shingles to each other. Fasteners on composition shingles are required to be located below the sealing adhesive strip and the ends of the shingles are supposed to have fasteners at about one inch from each end of the shingle. These

February 7, 2009

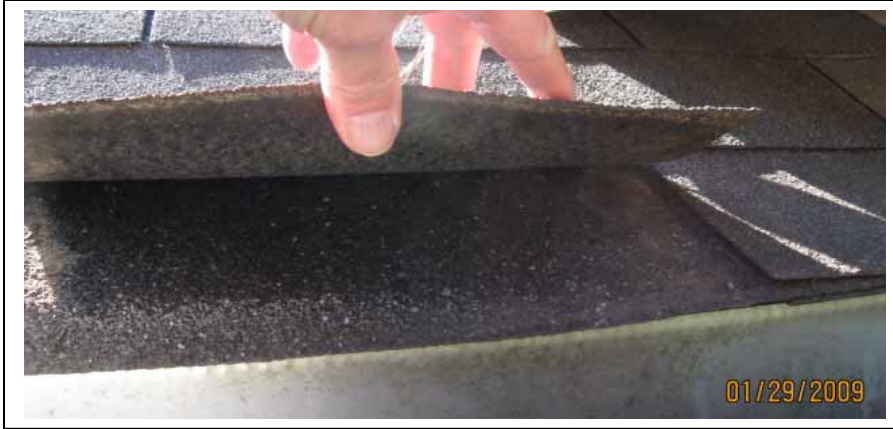
fasteners, if properly located, can be seen by raising the edges of the shingles without damaging the sealing of the shingles. According to industry publications, the sealing of the shingles to each other is as important, or more important, than the location and number of fasteners. A random number of composition shingles should be checked to see that the shingles are sealed.



Shingles not properly nailed or bonded



Starter course improperly installed



Improperly installed starter course



Missing and improperly installed roofing felt

(ii) roof covering materials;



Water standing on a low sloped roof

(iii) flashing details;

Commentary -- Some types of flashing are used almost exclusively in some areas of the State even though the type of flashing used violates the requirements of the model building codes and the shingle manufacturer's installation instructions. These flashing materials are often said to have been approved by the "building official". Often the "building official" quoted is an inspector or engineer generally employed by builders. The model building codes describe under what conditions a building official may approve alternate methods and materials. Often these alternate flashing systems do not meet the requirements of the code for approval as an alternate method and the code states that manufacturer requirements supersede the requirements of the building code. In any event, if the inspector is required to defend his opinion, the inspector should be aware of published, non-biased publications or the requirements of the manufacturer to help defend his opinion.

- (iv) skylights; and
- (v) other roof penetrations.
- (g) Specific limitations for roof covering. The inspector is not required to:
 - (1) determine the remaining life expectancy of the roof covering;
 - (2) inspect the roof from the roof level if, in the inspector's reasonable judgment, the inspector cannot safely reach or stay on the roof or significant damage to the roof covering materials may result from walking on the roof;

Commentary -- This section implies that if in the inspector's reasonable judgment, the inspector can safely reach or stay on the roof or that significant damage to the roof covering materials would not result from walking on the roof, then the inspector is expected to walk the roof to inspect it (minor granular loss is not considered to be significant damage).

- (3) determine the number of layers of roof covering material;
- (4) identify latent hail damage; or
- (5) provide an exhaustive list of locations of water penetrations or previous repairs.

Commentary -- If it is determined by the inspector that the roof had experienced water penetration in numerous areas or that previous repairs had taken place in numerous areas, then the inspector is not required to provide a complete list of all of those areas. He may instead, provide a summary statement describing the roof as having experienced water penetration "in numerous areas" or having been repaired in "several areas" or simply provide examples.

- (g) Roof structure and attic. The inspector shall:
 - (1) report:
 - (A) the vantage point from which the attic space was inspected;

Commentary -- It is the intent of these standards that the inspector enter the attic and that the inspector view the various components that form the attic structure or that are contained in the attic from as near to the parts and components as possible whether the attic is floored or not. If the attic cannot be entered, the inspector is required to state where the inspector was when the interior of the attic was viewed. The inspector is required to follow the provisions of the departure provision.

Questions about requirements to enter and traverse un-floored attic areas. Referred to full committee.

(B) the presence of and approximate average depth of attic insulation and thickness of vertical insulation, when visible; and

(C) evidence of water penetration; and

(2) report as Deficient:

(A) attic space that does not appear to be adequately ventilated;

Commentary -- There is no expectation that the inspector will measure the ventilation openings in the soffit and roof openings and the volume of the attic space to determine if the sizing of the ventilation openings conforms to the requirements of the model building codes. The inspector should determine from observation if the amount of air flow through the attic space appears adequate in the reasonable opinion of the inspector.

(B) deficiencies in installed framing members and decking;

Commentary -- The intent is that deficiencies are to be reported. The lumber used to frame older homes was generally more rigid and stronger than lumber milled today. It is unlikely that lumber used in joists and rafters in older homes will conform to current building code or span table requirements. It should be understood that older lumber likely had greater spanning and load transferring capabilities than modern lumber of the same dimensions and grade. The question the inspector must answer is not if older lumber meets the requirements of current span tables but if the framing materials are performing without visible evidence of deflections in excess of those allowed. Allowable deflection ratios have been fairly uniform a long period of time. It is the deflections or obvious damage to framing members that determine the need of notation in the inspectors report. Purlins are not required to be installed to support rafters. Purlins are allowed to be used if the designer decides to use smaller dimension or lower grade lumber. Rafter ties are required to form a continuous tie between the bottoms of the rafters across or as near to the floor of the attic as possible when the joists are perpendicular to the rafters. Rafter ties prevent the exterior walls from rotating out from the house from the loads imposed by the roof. Collar ties are high wind load members. Collar ties prevent the framing from separating in high wind loads.

Commentary -- The intent here is that the inspector report on deficiencies. Most older homes were built with a heavier grade lumber than recently built homes. If an older home has no apparent deficiencies, but was not built with purlins, the lack of purlins does not need to be reported because it did not result in a deficiency. On the other hand, if the roof had sags, and if in the opinion of the inspector those sags were caused by the lack of proper bracing with purlins, then that would be noted in the report as a deficiency.



Improperly sloped struts and improperly installed purlin



(C) deflections or depressions in the roof surface as related to the adverse performance of the framing and the roof deck;

Commentary -- Allowable deflections are noted in span tables published in the model building codes and in span tables published by the lumber mills. While the inspector is not expected to measure the actual deflections in the roof decks, the inspector is expected to understand why deflections are important and is expected to make a reasonable effort to determine if deflections in excess of those allowed by the span tables exist. Excessive deflections can often be seen by aligning the drip edge with the ridge of the roof.





Visible Deflections in the roof Decks

(D) missing insulation;

(E) deficiencies in attic access ladder and access opening; and

(F) deficiencies in attic ventilators.

(h) Specific limitations for roof structure and attic. The inspector is not required to:

(1) enter attics or unfinished spaces where openings are less than 22 inches by 30 inches or headroom is less than 30 inches;

Commentary -- These measurements are somewhat arbitrary. An attic opening may be larger than this designated size and yet still be too small for a particular inspector to pass through. Regardless of the opening size, if an inspector does not enter an attic or unfinished space, the inspector must still state the reason in the report.

(2) operate powered ventilators; or

Commentary -- 1) While the inspector is not required to operate powered ventilators An inspector is not required to adjust power vent thermostats in order to turn them on. If an

attic is warm and the power vent is not running, it should be assumed that it is nonfunctional.

2) Often, the thermostat for an attic power vent fan is not accessible. If the thermostat is not accessible for adjustment and the fan is not operating, the inspector should note that the fan was not operating and that the thermostat could not be adjusted.

Commentary – Many times when an inspector enters the attic, he finds that the power vent is not operating. If an inspector is able to access the thermostat and turn it to its lowest setting, and yet that did not activate the motor, the inspector would still not be able to say for certain that it was nonfunctional because many times the temperature of the attic air may be lower than the lowest setting on the thermostat. Therefore an inspector is not required to turn on powered ventilators.

End of review 12/9/2008

- (3) provide an exhaustive list of locations of water penetrations.
 - (a) The inspector may provide a summary statement describing the problem(s) or situation(s).
 - (b) The inspector may note that water penetration was noted in areas 'such as' or the inspector may choose to make a short list of water penetration locations followed by an 'etc'.
- (i) Interior walls, ceilings, floors, and doors. The inspector shall:
 - (1) report evidence of water penetration; and

The inspector is not required to report the presence of microbial organic growths however, the presence of microbial organic growths often indicate the presence of water penetration. While the inspector is not required to report or attempt to identify the type of the microbial organic growth or to determine if the dwelling unit is a "sick building", the inspector is required to identify the presence of water penetration.

- (2) report as Deficient:
 - (A) doors and hardware that do not operate properly;
 - (B) deficiencies related to structural performance or water penetration; and



(C) lack of fire separation between the garage and the residence and its attic space.

(j) Specific limitation for interior walls, doors, ceilings, and floors. The inspector is not required to:

- (1) report cosmetic damage or the condition of floor, wall, or ceiling coverings; paints, stains, or other surface coatings; cabinets; or countertops, or
- (2) provide an exhaustive list of locations of water penetrations.

(k) Exterior walls, doors, and windows. The inspector shall:

- (1) report evidence of water penetration; and
- (2) report as Deficient:
 - (A) the lack of functional emergency escape and rescue openings in all sleeping rooms;

While specifications on the sizing of emergency escape and rescue openings may be obtained from such publications as the International Residential Code, the inspector should be aware of the general requirements and the intent of providing emergency escape routes from sleeping rooms regardless of the code requirements in effect at the time of the construction of the house. While an inspector cannot mandate changes to the structure, the inspector can make the consumer aware of an inherently hazardous condition.

(B) the lack of a solid wood door not less than 1-3/8 inches in thickness, a solid or honeycomb core steel door not less than 1-3/8 inches thick, or a 20-minute fire-rated door between the residence and an attached garage;

(C) missing or damaged screens;

(D) deficiencies related to structural performance or water penetration; and

The proper installation of flashing, seals and drains for cladding systems have become more important with the increasing of the tightness of the building envelop to reduce air infiltration. There are a number of sources that provide information to the inspector as to the type of flashings, seals and drain openings, the location of these components and their purpose. Some of these publications contain photographs and/or drawings that assist the inspector in understanding these concepts and components. Some publications provide information on how water penetration and transference of water vapor occur and the consequences of water intrusion. These publications include such

publications and industry resources as the International Residential Code, the commentary to the International Residential Code, the American Society for Testing and Materials, section seven of the technical notes in the website of the Brick Industry Association, Inc. (www.bia.net), information from the "build a better home" articles on the website of the American Plywood Association, Inc. (www.apawood.net), best practices for flashing details at Owens Corning's Cultured Stone website (www.culturedstone.com), etc.



- (E) deficiencies in:
- (i) claddings;
 - (ii) water resistant materials and coatings;
 - (iii) flashing details and terminations;



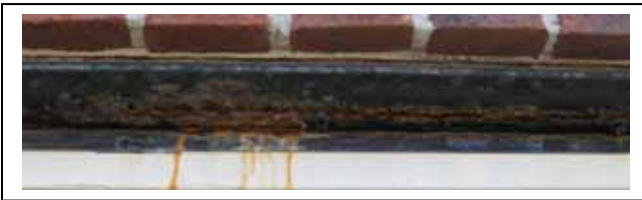
No through wall flashing or drain plane at stucco junction with the brick veneer



No through wall flashing installed. Water resistance depends on mortar joint. This is an improper installation.



No weep screed or drain opening at vertical wall termination above grade for a stucco, stone or synthetic stone cladding system



Overhead garage door lintel damaged by water penetration

(iv) the condition and operation of exterior doors, garage doors, and hardware; and

(v) window operation and components.

(l) Specific limitations for exterior walls, doors, and windows. The inspector is not required to:

(1) report the condition or presence of awnings, shutters, security devices, or systems;

(2) determine the cosmetic condition of paints, stains, or other surface coatings;

or

(3) operate a lock if the key is not available.

(m) Exterior and interior glazing. The inspector shall:

(1) inspect the window and door glazing; and

(2) report as Deficient:

(A) insulated windows that are obviously fogged or display other evidence of broken seals;

(B) deficiencies in glazing, weather stripping, and glazing compound in windows and exterior doors; and



Damaged window glazing strips

(C) the absence of safety glass in hazardous locations.

(n) Specific limitation for exterior and interior glazing. The inspector is not required to:

- (1) exhaustively observe insulated windows for evidence of broken seals;

Commentary: The inspector should visually inspect all accessible windows for lost seals. However, since the evidence of seal problems may vary with temperature and humidity changes, and since preliminary seal problems are often difficult to see, the inspector is not required to dedicate the amount of time it would take to exhaustively analyze every square inch of each window.

- (2) exhaustively observe glazing for identifying labels; or

Commentary: The inspector should try and locate identifying labels on doors as well as on windows which are located in hazardous locations. However, many times the labels have faded or were worn off. As a result, the inspector is not required to dedicate the amount of time it would take to exhaustively analyze every square inch of every pane in each door and window.

- (3) identify specific locations of damage.

(o) Interior and exterior stairways. The inspector shall report as Deficient:

(1) spacing between intermediate balusters, spindles, or rails for steps, stairways, guards, and railings that permit passage of an object greater than 4 inches in diameter, except that on the open side of the staircase treads, spheres less than 4-3/8 inches in diameter may pass through the guard rail balusters or spindles; and



- (2) deficiencies in steps, stairways, landings, guardrails, and handrails.

Information on the specifications for stairways can be found in the IRC and at www.stairways.org.



(p) Specific limitation for stairways. The inspector is not required to exhaustively measure every stairway component.

(q) Fireplace and chimney. The inspector shall report as Deficient:

- (1) built-up creosote in visible areas of the firebox and flue;
- (2) the presence of combustible materials in near proximity to the firebox opening;
- (3) the absence of fireblocking at the attic penetration of the chimney flue, where accessible;



- (4) an inoperative circulating fan; and
- (5) deficiencies in the:
 - (A) damper;
 - (B) lintel, hearth, hearth extension, and firebox;
 - (C) gas log lighter valve and location;
 - (D) combustion air vents; and

(E) chimney structure, termination, coping, crown, caps, and spark arrestor.



Inadequate clearance above the surface of the roof

- (r) Specific limitations for fireplace and chimney. The inspector is not required to:
 - (1) verify the integrity of the flue;
 - (2) perform a chimney smoke test; or
 - (3) determine the adequacy of the draft.
- (s) Porches, Balconies, Decks, and Carports. The inspector shall:
 - (1) inspect balconies, attached carports, and attached porches and abutting porches, decks, and balconies that are used for ingress and egress; and

Attached or abutting porches or decks is understood to mean a porch or deck that is or can be used as a means of ingress or egress from a dwelling unit.

- (2) report as Deficient:
 - (A) on decks 30 inches or higher above the adjacent grade, spacings between intermediate balusters, spindles, or rails that permit passage of an object greater than four inches in diameter;
 - (B) deficiencies in visible footings, piers, posts, pilings, beams, joists, decking, water proofing at interfaces, flashing, surface coverings, and attachment points of porches, decks, balconies, and carports; and
 - (C) deficiencies in, or absence of required, guardrails and handrails.
- (t) Specific limitation for porches, balconies, decks, and carports. The inspector is not required to:
 - (1) exhaustively measure the porch, balcony, deck, or attached carport components; or

(2) enter any area where headroom is less than 18 inches or the access opening is less than 24 inches wide and 18 inches high.

§535.229. Standards of Practice: Minimum Inspection Requirements for Electrical Systems

(a) Service entrance and panels. The inspector shall report as Deficient:

- (1) a drop, weatherhead, or mast that is not securely fastened to the structure;
- (2) the lack of a grounding electrode system;

Electricity flows on the path of least resistance. In a 240 volt circuit, the path of least resistance is between the two ungrounded (hot) conductors. Since connecting the two ungrounded (hot) conductors completes a 240 volt circuit, there is no need for a grounded (neutral or common) conductor. In a 120 volt circuit, the path of least resistance is between the ungrounded (hot) conductor and the grounded (neutral or common) conductor. Should a fault occur, electricity will seek the next easiest path, preferably a path to the earth. For that reason, an earth grounding system is installed. The resistance in the grounding system to the earth is greater than is the resistance in the completed 240 volt or 120 volt circuits. The resistance is also high enough that the resistance in the grounding circuit to the earth would cause the amperage rating of the overcurrent device to be exceeded, which would cause the overcurrent device to trip. If there is no grounding system to the earth, or the system is not adequate or damaged, there would be no path created for fault current to flow on except between two appliances or through a human being.

- (3) the lack of a grounding electrode conductor;
- (4) the lack of a secure connection to the grounding electrode system;
- (5) deficiencies in the insulation of the service entrance conductors, drip loop, separation of conductors at weatherheads, and clearances;

Insulation is the inhibitor on the electrical circuit. It is the insulation that keeps the electrons corralled and traveling on a track. If there were no insulation, the electricity would be able to seek any path of low resistance that came in contact or were close to the conductor. Holes or damage to the insulation can increase the likelihood of a fault occurring. Heat damage to insulation may indicate excessive amperage flow which could be a fire hazard, etc.

Separation of the conductors is required to ensure that no circuit develops between the conductors due to reduction in thickness of the insulating materials. The separation of the conductors and clearances also includes the support and protection of the conductors. Clearances are provided to prevent incidental contact between electrical conductors and humans. Consideration should be given to the potential reduction in clearances due to increases in loading on the conductors from ice, limbs or other debris. Consideration should also be given to the height and reach of the client.

- (6) electrical cabinets, gutters, meter cans, and panel boards that:
 - (A) are not secured to the structure;

All electrical components must be securely fastened to prevent the conductors from being subjected to physical damage and stress and to protect the conductors and equipment from exposure to the elements. Electrical conductors are not made to resist tensile or shear loads. Damage to the insulation from stress, exposure to water and sunlight can allow a fault to develop.

- (B) are not appropriate for their location;



Fuse box used as a junction box

(C) have deficiencies in clearances and accessibility;

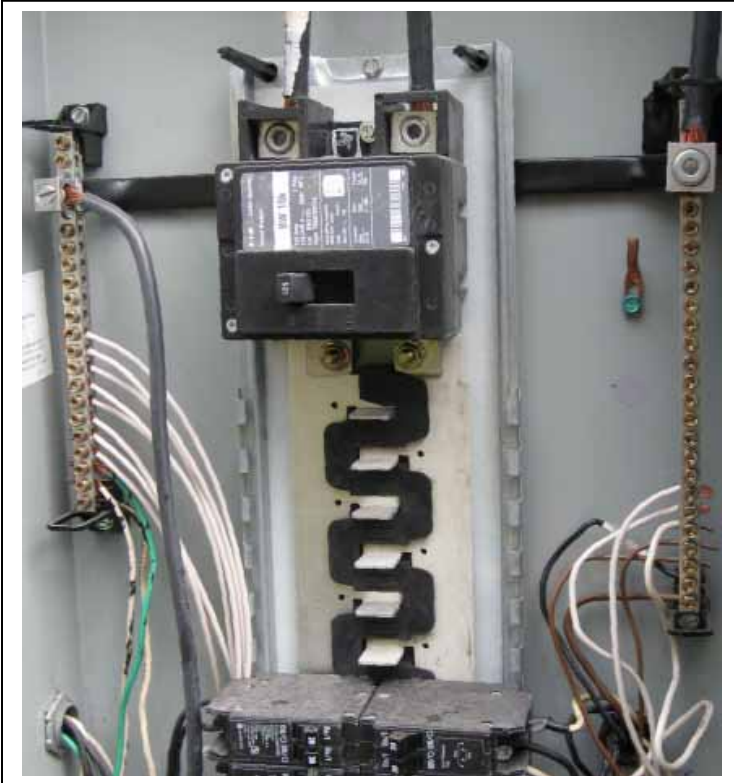
Accessibility, in electricity, means that there is a workspace in front of all electrical equipment and components and that the inspector would be standing on a platform or on the ground when working on the electrical component. This is to provide safety and stability to the inspector. Clearances are required so that the inspector is not likely to come into contact with two energized electrical components or appliances. If the potentials between two components or appliances exist, the inspector may be the medium through which the differing potentials are equalized, which could result a shock to or the electrocution of the inspector. While the National Electric Code and the International Residential Code set minimum clearances for electrical components and equipment, those minimums may not be adequate for the safety of all inspectors. Each inspector should ensure that there is safe access for that inspector to each electrical component.

(D) are missing knockouts; or

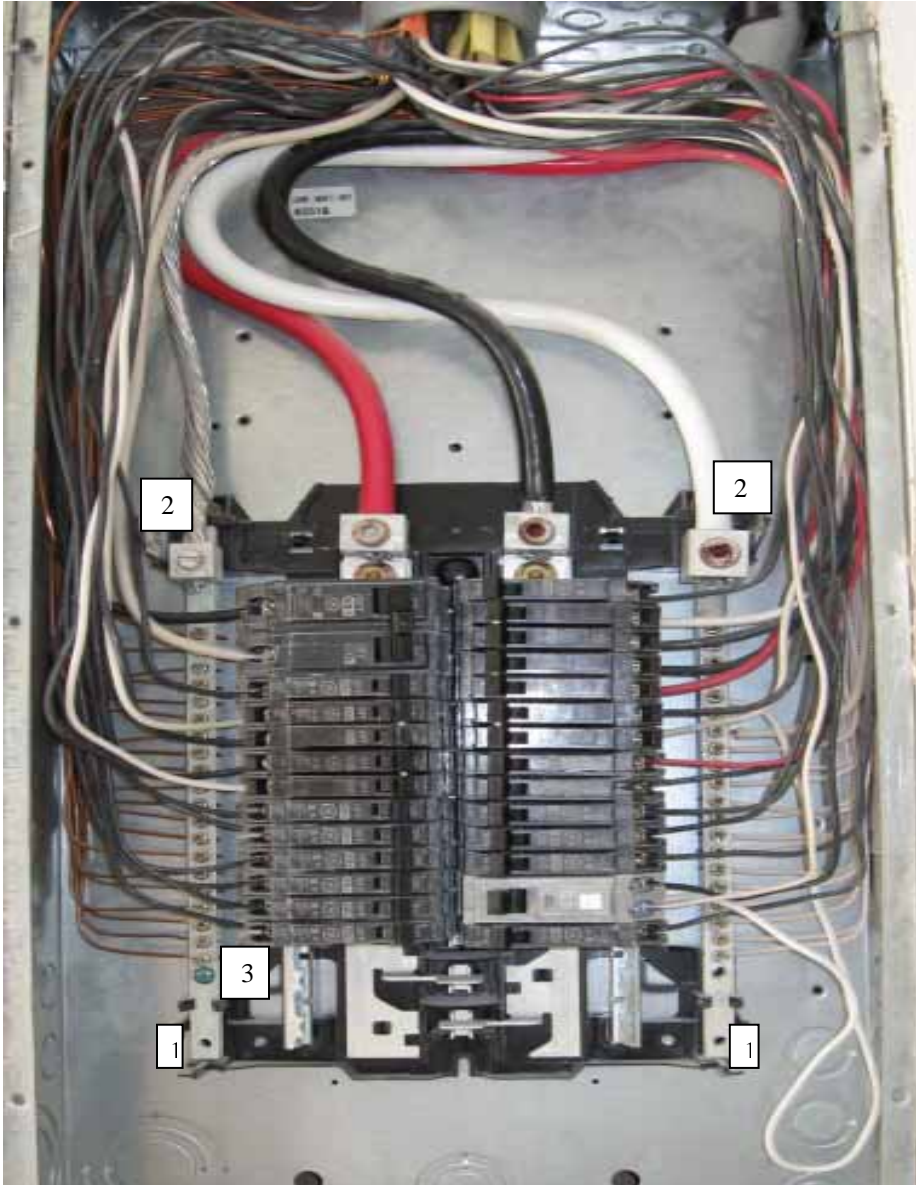
(E) are not bonded and grounded;

Bonding is the equalization of electrical potentials. All materials, appliances and components capable of carrying electrical current, including low voltage systems such as telephone, satellite television and cable television systems, etc. are required to be bonded. Electrical potential can be generated by such things as the flow of water through a metal pipe or the flow of natural gas through a metal pipe. The amount of electrons available from the flow of water through a pipe and the flow of natural gas through a pipe would be different. If there were no bond, an inspector touching the water pipe and also touching a natural gas pipe would become the medium through which the differing amounts of electrical potential would be equalized. Using a human being to equalize potential can result in electrical burns or death. Grounding conductors can be used to

create an electrical bond between appliances but grounding to the earth and bonding are two separate and distinct systems meant to accomplish two entirely different purposes. Metal water pipes can be used as a component of the earth grounding system so long as the connection of the service grounding conductor is within five feet of where the water main pipe enters the structure. There are concerns that, if the connection is further than five feet from where the main pipe enters the structure that sections of plastic pipe could be inserted into the metal piping system, which would break the continuity of the earth grounding component. There is also the concern that minor fault current traveling on the metal water piping system would cause Galvanic action to occur more rapidly causing the premature failure of the metal water piping system.



Panel board bonding bar not attached to the bus bar and the neutrals and grounds are mixed on the bus bars



Properly bonded sub panel (1) bonding bar between the grounded and grounding bus bars removed (2) grounded and grounding conductors completely separated (3) grounding bus bar bonded to the panel housing.

(7) cabinets, disconnects, cutout boxes, and panel boards that do not have dead fronts secured in place with proper fasteners;

(8) conductors not protected from the edges of electrical cabinets, gutters, or cutout boxes;

All metal electrical cabinets, gutters, meter cans, panel boards, pull boxes and junction boxes, etc. are required to be fitted with devices that protect the insulation on the conductor(s) from the metal edges of any openings through the box. This is to prevent the insulation from being abraded, nicked or cut which would result in a fault being created.



(9) trip ties not installed on 240 volt circuits;

Commentary: A bent piece of copper wire is not an appropriate trip tie.

- (10) deficiencies in the type and condition of the wiring in the cutout boxes, cabinets, or gutters;
- (11) deficiencies in the compatibility of overcurrent devices and conductors;
- (12) deficiencies in the overcurrent device and circuit for labeled and listed 240 volt appliances;

The compatibility of the overcurrent devices with the requirements of the equipment and the conductors is very important. For 240 volt appliances, the requirements for the maximum overcurrent protective device and the minimum conductor size are listed on the appliance label or are shown as the kW (kilowatt) rating of the appliance. The minimum circuit ampacity listed on the label is the minimum size of the conductor, according to the amperage rating, provided that the appliance is located at the panel board or fuse box. If the appliance is far away from the panel board or the fuse box, the voltage drop caused by the length of the circuit may cause such an increase in the amperage required to force the voltage over the length of the circuit that the conductor may not be adequate. A larger conductor may need to be installed to diffuse the heat generated by the increased amperage. As mandated by the National Electric Code, voltage is regulated at 120 or 240 for the purposes of calculation only. Actual voltage in a circuit varies constantly. As noted, watts are volts multiplied by Amps. If, for example, an electric oven was rated at 3.4 kW, the amperage would be determined by dividing 3,400 watts (3.4 kW) by 240 volts. This would give us 14.167 Amps. That would mean that the oven could be connected to #14 copper conductors protected by 15 Amp, 240 volt breakers, if the oven was located at the panel board. If the oven was not located at the panel board, the conductors would likely have to be increased in size but the breakers would remain 15 Amp, 240 volt breakers. If the breakers were increased to 20 Amp breakers, then the code would have been violated as well the requirements of Underwriters Laboratory, Inc. Underwriters Laboratory, Inc. certifies that an appliance will operate safely if it is installed according to the labeling instructions of the manufacturer.

LENNOX			
DALLAS, TEXAS			
M/N 13ACC – 060 – 230 – 02			
S/N 5805G07094			
CONTAINS HCFC – 22		DESIGN PRESSURE	
FACTORY CHARGE		HI 278 PSIG	
10 LBS 8 OZS		LO 144 PSIG	
ELECTRICAL RATING		NOMINAL VOLTS: 208/230	
1 PH	60 HZ	MIN 197	MAX 253
COMPRESSOR		FAN MOTOR	
PH	1	PH	1
RLA	28.9	FLA	1.9
LRA	169	HP	1/3
MIN. CKT. AMPACITY AMPERAGE MINIMUM	38.0	MAX FUSE OR CKT. BKR FUSIBLE/COUPE CIRCUIT (NADA PER NEC)	
		60	

<i>Frigidaire</i>			MOD. FEC30SG6BF		
In the USA use on 3 wire 120/240 VAC System			SER. NF70208422		
	LISTED 81M1		TYPE: BP11		
			VOLT	KW	HERTZ
			/ 208	5.30	60
			/ 240	7.10	
ADA	JANVIER JANUARY 2007		MFG ID E94446 PRODUCT CODE B		

- (13) a panel that is installed in a hazardous location, such as a clothes closet, a bathroom, where there are corrosive or easily ignitable materials, or where the panel is exposed to physical damage;

Additional hazards include such things as shock hazards, fumes from gasoline, paints, fertilizers, chlorine, acids, etc. Water or moisture causes rust. Rust, aside from causing the panel board from deteriorating, increases resistance.



- (14) the absence of appropriate connections, such as copper/aluminum-approved devices;
- (15) the absence of anti-oxidants on aluminum conductor terminations;

Aluminum is more resistant to electrical current flow than is copper. Aluminum is about 65% as conductive as copper. All metals oxidize. Aluminum oxide is a worse conductor than is aluminum. The worse the conductor, the more resistance to electrical flow is in the conductor. More resistance in the conductor means that more electrical current is used overcoming the resistance. More electrical current being used means that there is more heat generated by the electrical flow. Additional heat breaks down the insulation on the conductor more quickly and causes additional swelling of the aluminum. This shortens the service life of the conductor. The lack of anti-oxidant materials on aluminum causes electricity to be wasted and increases the cost of the electrical service to the consumer. Copper conductors do not require anti-oxidants as copper oxide is a better conductor than is copper. The use of anti-oxidants on copper conductors would cause increased resistance, heat and electrical costs.

- (16) the lack of a main disconnecting means;
- (17) the lack of arc-fault circuit interrupting devices serving family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas; and
- (18) failure of operation of installed arc-fault circuit interrupter devices.

AFCI's are automatic sensing devices similar in operation to a conventional breaker in that they both disconnect power to a branch circuit although under different conditions. As such, disconnecting power to test an AFCI protected circuit within an occupied home should be done with care and when the service panel is accurately and clearly labeled, in the inspector's reasonable judgment, to identify that specific branch circuit. Disconnecting power to a branch circuit is not recommended where computers, printers, modems, hubs, routers, entertainment or media equipment, security systems, medical equipment or other similar installed electronics containing circuit boards are connected. The reason is that many homes may not be protected by whole house surge protectors or individual surge protectors for electronic equipment, uninterrupted power supply and/or automatic electrical power conditioning and the interruption of power may potentially affect these electronic components and systems when the circuit is re-energized. The inspector is not expected to disconnect, unplug or shut-down any

sensitive electronic equipment or personal property in order to test the AFCI circuit. An AFCI breaker in itself may be considered a testing device as it continually monitors for arc-faults and is UL rated to trip or fail in the open position. Further, in no case should a discovered tripped AFCI breaker be reset until an electrician diagnoses the problem because once it is turned back on, one is reintroducing a hazard into the circuit that may allow dangerous arcing to resume long enough to cause a fire. (However, a "friendly" arc-fault could occur when a plug (or testing device) is pulled from a receptacle, a switch is flipped, or brushes spark in a motor.)

(b) Specific limitations for service entrance and panels. The inspector is not required to:

- (1) determine present or future sufficiency of service capacity amperage, voltage, or the capacity of the electrical system;
- (2) test arc-fault circuit interrupter devices when the property is occupied or damage to personal property may result, in the inspector's reasonable judgment;

Commentary: The inspector is required to report the failure of operation of AFCIs. This can only be accomplished by tripping the test buttons and checking the appropriate rooms to see if power was lost. However, it is recognized that a home owner may have a piece of equipment or device plugged into an AFCI protected receptacle that cannot afford to have power lost without possible damage resulting. Consequently, the inspector is not required to test AFCIs in houses that are occupied or in the inspector's reasonable judgment may cause damage to personal property.

- (3) report the lack of arc-fault circuit interrupter protection when the circuits are in conduit;
- (4) conduct voltage drop calculations;
- (5) determine the accuracy of overcurrent device labeling;
- (6) remove covers where hazardous as judged by the inspector;

Example: If after removing the screws, the cover is stuck in place, the inspector should not use his screw driver to pry the cover off. The inspector should not place his hands, fingers or a tool inside the box opening. The inspector should make the appropriate notation in the report explaining why the cover was not removed.

- (7) verify the effectiveness of overcurrent devices; or
 - (8) operate overcurrent devices.
- (c) Branch circuits, connected devices, and fixtures. The inspector shall:
- (1) report the type of branch circuit conductors;
 - (2) manually test the accessible smoke alarms by use of the manufacturer's approved test or by the use of canned smoke; and
 - (3) report as Deficient:
 - (A) the lack of ground-fault circuit interrupter protection in all:
 - (i) bathroom receptacles;
 - (ii) garage receptacles;
 - (iii) outdoor receptacles;
 - (iv) crawl space receptacles;
 - (v) unfinished basement receptacles;
 - (vi) kitchen countertop receptacles; and
 - (vii) laundry, utility, and wet bar sink receptacles located within 6 feet of the outside edge of a laundry, utility, or wet bar sink; and

(B) the failure of operation of ground-fault circuit interrupter protection devices;

(C) receptacles that:

- (i) are damaged;
- (ii) are inoperative;
- (iii) have incorrect polarity;
- (iv) are not grounded, if applicable;
- (v) display evidence of arcing or excessive heat;
- (vi) are not securely mounted; or
- (vii) have missing or damaged covers;

(D) switches that:

- (i) are damaged;
- (ii) are inoperative;
- (iii) display evidence of arcing or excessive heat;
- (iv) are not securely mounted; or
- (v) have missing or damaged covers;

(E) deficiencies in or absences of conduit, where applicable;

(F) appliances and metal pipes that are not bonded or grounded;

(G) deficiencies in wiring, wiring terminations, junctions, junction boxes, devices, and fixtures, including improper location;



Lack of an appliance box extender



Properly installed appliance box extender

(H) the lack of equipment disconnects;

(I) the absence of appropriate connections, such as copper/aluminum approved devices, if branch circuit aluminum conductors are discovered in the main or sub-panel based on a random sampling of accessible receptacles and switches;

(J) improper use of extension cords;

(K) deficiencies in smoke alarms that are not connected to a central alarm system; and

(L) the lack of smoke alarms:

(i) in each sleeping room;

(ii) outside each separate sleeping area in the immediate vicinity of the sleeping rooms; and

(iii) on each additional story of the dwelling, including basements but excluding crawl spaces and uninhabitable attics (in dwellings with split levels and without an intervening door between the levels, a smoke alarm installed on the upper level and the adjacent lower level shall suffice provided that the lower level is less than one full story below the upper level).

(d) Specific limitations for branch circuits, connected devices, and fixtures. The inspector is not required to:

(1) inspect low voltage wiring;

(2) disassemble mechanical appliances;

(3) verify the effectiveness of smoke alarms;

(4) verify interconnectivity of smoke alarms

(5) activate smoke alarms that are being actively monitored or require the use of codes; or

(6) verify that smoke alarms are suitable for the hearing-impaired.

§535.230. Standards of Practice: Minimum Inspection Requirements for Heating, Ventilation, and Air Conditioning Systems

(a) Heating equipment. The inspector shall:

(1) report:

(A) the type of heating system(s); and

(B) the energy source(s);

(2) report as Deficient:

(A) an inoperative unit;

(B) deficiencies in the controls and operating components of the system;

(C) the lack of protection from physical damage;

(D) burners, burner ignition devices or heating elements, switches, and thermostats that are not a minimum of 18 inches above the lowest garage floor elevation, unless the unit is listed for garage floor installation;

(E) inappropriate location;

(F) inadequate access and clearances;

(G) deficiencies in mounting and operation of window units; and

(H) deficiencies in thermostats;

(3) in electric units, report as Deficient deficiencies in:

(A) operation of heating elements; and

(B) condition of conductors; and

(4) in gas units, report as Deficient:

(A) gas leaks;

(B) the presence of forced air in the burner compartment;

(C) flame impingement, uplifting flame, improper flame color, or excessive scale buildup;

(D) the lack of a gas shut-off valve; and

- (E) deficiencies in:
 - (i) conditioned, combustion, and dilution air;
 - (ii) gas shut-off valves and locations;
 - (iii) gas connector materials and connections; and



(iv) the vent pipe, draft hood, draft, proximity to combustibles, and vent termination point and clearances.

(b) Cooling equipment other than evaporative coolers. The inspector shall:

- (1) report the type of system(s); and
- (2) report as Deficient:
 - (A) inoperative unit(s);
 - (B) inadequate cooling as demonstrated by its performance in the reasonable judgment of the inspector;

Example: An inspector may test the cooling system to determine the difference between the supply air temperature and the return air temperature at the evaporator coil.

- (C) inadequate access and clearances;
- (D) noticeable vibration of the blower fan or condensing fan;
- (E) deficiencies in the condensate drain and auxiliary/secondary pan and drain system;
 - (F) water in the auxiliary/secondary drain pan;
 - (G) a primary drain pipe that terminates in a sewer vent;
 - (H) missing or deficient refrigerant pipe insulation;
 - (I) dirty evaporator or condensing coils, where accessible;



(J) damaged casings on the coils;

(K) a condensing unit lacking adequate clearances or air circulation or that has deficiencies in the condition of fins, location, levelness, or elevation above ground surfaces;

(L) deficiencies in mounting and operation of window or wall units; and

(M) deficiencies in thermostats.

(c) Evaporative coolers. The inspector shall:

(1) report:

(A) type of system(s) (one- or two-speed);

(B) the type of water supply line; and

(C) winterized units that are drained and shut down; and

(2) report as Deficient:

(A) inoperative units;

(B) inadequate access and clearances;

(C) corrosive and mineral build-up or rust damage/decay at the pump, louvered panels, water trays, exterior housing, or the roof frame;

(D) less than a one-inch air gap between the water discharge at the float and water level in the reservoir;

(E) corrosion, decay, or rust on the pulleys of the motor or blower;

(F) the lack of a damper; and

(G) deficiencies in the:

(i) function of the pump;

(ii) interior housing, the spider tubes, tube clips, bleeder system;

(iii) blower and bearings;

(iv) float bracket;

(v) fan belt;

(vi) evaporative pad(s);

(vii) installation and condition of the legs on the roof rails and fasteners to the roof structure and the unit;

(viii) roof jack; and

(ix) thermostats.

(d) Duct system, chases, and vents. The inspector shall report as Deficient:

(1) damaged ducting or insulation, improper material, or improper routing of ducts;

(2) the absence of air flow at accessible supply registers in the habitable areas of the structure;

(3) improper or inadequate clearance from the earth; and

(4) deficiencies in:

(A) duct fans;

(B) filters;

(C) grills or registers;

(D) the location of return air openings; and

(E) gas piping, sewer vents, electrical wiring, or junction boxes in the duct system, plenum(s), and chase(s).

(e) Specific limitations for the heating equipment, cooling equipment, duct system, chases, and vents. The inspector is not required to:

(1) program digital thermostats or controls;

(2) inspect:

(A) for pressure of the system refrigerant, type of refrigerant, or refrigerant leaks;

(B) winterized evaporative coolers; or

(C) humidifiers, dehumidifiers, air purifiers, motorized dampers, electronic air filters, multi-stage controllers, sequencers, heat reclaimers, wood burning stoves, boilers, oil-fired units, supplemental heating appliances, de-icing provisions, or reversing valves;

- (3) operate:
 - (A) setback features on thermostats or controls;
 - (B) cooling equipment when the outdoor temperature is less than 60 degrees Fahrenheit;
 - (C) radiant heaters, steam heat systems, or unvented gas-fired heating appliances; or
 - (D) heat pumps when temperatures may damage equipment;
- (4) verify:
 - (A) compatibility of components;
 - (B) the accuracy of thermostats; or
 - (C) the integrity of the heat exchanger; or
- (5) determine:
 - (A) sizing, efficiency, or adequacy of the system;
 - (B) uniformity of the supply of conditioned air to the various parts of the structure; or
 - (C) types of materials contained in insulation.

§535.231. Standards of Practice: Minimum Inspection Requirements for Plumbing Systems

(a) Plumbing systems. The inspector shall:

- (1) report:
 - i. static water pressure;
 - ii. location of water meter; and
 - iii. location of main water supply valve; and
- (2) report as Deficient:
 - (1) the presence of active leaks;
 - (2) the lack of fixture shut-off valves;
 - (3) the lack of dielectric unions, when applicable;
 - (4) the lack of back-flow devices, anti-siphon devices, or air gaps at the flow end of fixtures;
 - (5) water pressure below 40 psi or above 80 psi static;
 - (6) the lack of a pressure reducing valve when the water pressure exceeds 80 PSI;
 - (7) the lack of an expansion tank at the water heater(s) when a pressure reducing valve is in place at the water supply line/system; and
 - (8) deficiencies in:
 - (A) water supply pipes and waste pipes;
 - (B) the installation and termination of the vent system;
 - (C) the operation of fixtures and faucets not connected to an appliance;
 - (D) water supply, as determined by viewing functional flow in two fixtures operated simultaneously;
 - (E) functional drainage at fixtures;
 - (F) orientation of hot and cold faucets;
 - (G) installed mechanical drain stops;
 - (H) installation, condition, and operation of commodes;



- (I) fixtures, showers, tubs, and enclosures; and
 - (J) the condition of the gas distribution system.
- (b) Specific limitations for plumbing systems. The inspector is not required to:
- (1) operate any main, branch, or shut-off valves;
 - (2) operate or inspect sump pumps or waste ejector pumps;
 - (3) inspect:
 - (A) any system that has been winterized, shut down or otherwise secured;
 - (B) circulating pumps, free-standing appliances, solar water heating systems, water-conditioning equipment, filter systems, water mains, private water supply systems, water wells, pressure tanks, sprinkler systems, swimming pools, or fire sprinkler systems;
 - (C) the inaccessible gas supply system for leaks;
 - (D) for sewer clean-outs; or
 - (E) for the presence or operation of private sewage disposal systems;
 - (4) determine:
 - (A) quality, potability, or volume of the water supply; or
 - (B) effectiveness of backflow or anti-siphon devices; or
 - (5) verify the functionality of clothes washing drains or floor drains.
- (c) Water heaters. The inspector shall:
- (1) report the energy source;
 - (2) report the capacity of the unit(s);
 - (3) report as Deficient:
 - (A) inoperative unit(s);
 - (B) leaking or corroded fittings or tank(s);
 - (C) broken or missing parts or controls;
 - (D) the lack of a cold water shut-off valve;
 - (E) if applicable, the lack of a pan and drain system and the improper termination of the pan drain line;
 - (F) an unsafe location;
 - (G) burners, burner ignition devices or heating elements, switches, or thermostats that are not a minimum of 18 inches above the lowest garage floor elevation, unless the unit is listed for garage floor installation;
 - (H) inappropriate location;
 - (I) inadequate access and clearances;
 - (J) the lack of protection from physical damage;
 - (K) a temperature and pressure relief valve that:
 - (i) does not operate manually;
 - (ii) leaks;
 - (iii) is damaged;
 - (iv) cannot be tested due to obstructions;
 - (v) is corroded; or

- (vi) is improperly located; and
- (L) temperature and pressure relief valve discharge piping that:
 - (i) lacks gravity drainage;



- (ii) is improperly sized;
 - (iii) has inadequate material; or
 - (iv) lacks proper termination;
 - (3) in electric units, report as Deficient deficiencies in:
 - (A) operation of heating elements; and
 - (B) condition of conductors; and
 - (4) in gas units, report as Deficient:
 - (A) gas leaks;
 - (B) lack of burner shield(s);
 - (C) flame impingement, uplifting flame, improper flame color, or excessive scale build-up;
 - (D) the lack of a gas shut-off valve; and
 - (E) deficiencies in:
 - (i) combustion and dilution air;
 - (ii) gas shut-off valve(s) and location(s);
 - (iii) gas connector materials and connections; and
 - (iv) vent pipe, draft hood, draft, proximity to combustibles, and vent termination point and clearances.
- (d) Specific limitations for water heaters. The inspector is not required to:
 - (1) verify the effectiveness of the temperature and pressure relief valve, discharge piping, or pan drain pipes;
 - (2) operate the temperature and pressure relief valve if the operation of the valve may, in the inspector's reasonable judgment, cause damage to persons or property; or
 - (3) determine the efficiency or adequacy of the unit.
- (e) Hydro-massage therapy equipment. The inspector shall report as Deficient:
 - (1) inoperative unit(s) and controls;
 - (2) the presence of active leaks;
 - (3) inaccessible pump(s) or motor(s);
 - (4) the lack or failure of required ground-fault circuit interrupter protection; and
 - (5) deficiencies in the ports, valves, grates, and covers.
- (f) Specific limitation for hydro-massage therapy equipment. The inspector is not required to determine the adequacy of self-draining features of circulation systems.

§535.232. Standards of Practice: Minimum Inspection Requirements for Appliances

- (a) Dishwasher. The inspector shall report as Deficient:
 - (1) inoperative unit(s);

- (2) rust on the interior of the cabinet or components;
- (3) failure to drain properly;
- (4) the presence of active water leaks; and
- (5) deficiencies in the:
 - (A) door gasket;
 - (B) control and control panels;
 - (C) dish racks;
 - (D) rollers;
 - (E) spray arms;
 - (F) operation of the soap dispenser;
 - (G) door springs;
 - (H) dryer element;
 - (I) door latch and door disconnect;
 - (J) rinse cap;
 - (K) secure mounting of the unit; and
 - (L) backflow prevention.
- (b) Food waste disposer. The inspector shall report as Deficient:
 - (1) inoperative unit(s);
 - (2) unusual sounds or vibration level;
 - (3) the presence of active water leaks; and
 - (4) deficiencies in the:
 - (A) splash guard;
 - (B) grinding components;
 - (C) exterior casing; and
 - (D) secure mounting of the unit.
- (c) Range exhaust vent. The inspector shall report as Deficient:
 - (1) inoperative unit(s);
 - (2) a vent pipe that does not terminate outside the structure, if the unit is not of a re-circulating type or configuration;
 - (3) inadequate vent pipe material;



- (4) unusual sounds or vibration levels from the blower fan(s);
- (5) blower(s) that do not operate at all speeds; and
- (6) deficiencies in the:
 - (A) filter;
 - (B) vent pipe;
 - (C) light and lens;
 - (D) secure mounting of the unit; and
 - (E) switches.

(d) Electric or gas ranges, cooktops, and ovens. The inspector shall report as Deficient:

- (1) inoperative unit(s);
- (2) the lack of a gas shut-off valve;
- (3) gas leaks; and
- (4) deficiencies in the:
 - (A) controls and control panels;
 - (B) thermostat(s) sensor support;
 - (C) glass panels;
 - (D) door gasket(s), hinges, springs, closure, and handles;
 - (E) door latch;
 - (F) heating elements or burners;
 - (G) thermostat accuracy (within 25 degrees at a setting of 350 °F);
 - (H) drip pans;
 - (I) lights and lenses;
 - (J) clearance to combustible material;
 - (K) anti-tip device;
 - (L) gas shut-off valve(s) and location(s);
 - (M) gas connector materials and connections; and
 - (N) secure mounting of the unit.

(e) Microwave oven. The inspector shall:

- (1) inspect built-in units; and
- (2) report as Deficient:
 - (A) inoperative unit(s); and
 - (B) deficiencies in the:
 - (i) controls and control panels;
 - (ii) handles;
 - (iii) the turn table;
 - (iv) interior surfaces;
 - (v) door and door seal;
 - (vi) glass panels;
 - (vii) lights and lenses;
 - (viii) secure mounting of the unit; and
 - (ix) operation, as determined by heating a container of water or with other

means of testing.

(f) Trash compactor. The inspector shall report as Deficient:

- (1) inoperative unit(s);
- (2) unusual sounds or vibration levels; and
- (3) deficiencies in the secure mounting of the unit.

(g) Mechanical exhaust vents and bathroom heaters. The inspector shall report as Deficient:

- (1) inoperative unit(s);
- (2) unusual sounds, speed, and vibration levels;
- (3) vent pipes that do not terminate outside the structure;
- (4) a gas heater that is not vented to the exterior of the structure; and
- (5) the lack of an exhaust ventilator in required areas.

(h) Garage door operators. The inspector shall report as Deficient:

- (1) inoperative unit(s);
- (2) door locks or side ropes that have not been removed or disabled; and
- (3) deficiencies in:
 - (A) installation;

- (B) condition and operation of the garage door operator;
- (C) automatic reversal during the closing cycle;
- (D) electronic sensors;
- (E) the control button; and
- (F) the emergency release components.
- (i) Doorbell and chimes. The inspector shall report as Deficient:
 - (1) inoperable unit(s); and
 - (2) deficiencies in components.
- (j) Dryer vents. The inspector shall report as Deficient:
 - (1) improper routing and length of vent pipe;
 - (2) inadequate vent pipe material;



- (3) improper termination;
- (4) the lack of a dryer vent system when provisions are present for a dryer; and
- (5) damaged or missing exterior cover.
- (k) Specific limitations for appliances. The inspector is not required to:
 - (1) operate or determine the condition of other auxiliary components of inspected items;
 - (2) test for microwave oven radiation leaks;
 - (3) inspect self-cleaning functions;
 - (4) test trash compactor ram pressure; or
 - (5) determine the adequacy of venting systems.

§535.233. Standards of Practice: Minimum Inspection Requirements for Optional Systems. If an inspector agrees to inspect a component described in this section, §535.227 of this title relating to Standards of Practice: General Provisions and the applicable provisions below apply.

- (1) Lawn and garden sprinkler systems. The inspector shall:
 - (A) manually operate all zones or stations on the system; and
 - (B) report as Deficient:
 - (i) surface water leaks;

(ii) the absence or improper installation of anti-siphon devices and backflow preventers;

(iii) the absence of shut-off valves;

(iv) deficiencies in water flow or pressure at the zone heads;

(v) the lack of a rain or freeze sensor;

(vi) deficiencies in the condition of the control box; and

(vii) deficiencies in the operation of each zone, associated valves, and spray head patterns.

(2) Specific limitations for lawn and garden sprinkler systems. The inspector is not required to inspect:

(A) for effective coverage of the sprinkler system;

(B) the automatic function of the timer or control box;

(C) the effectiveness of the rain or freeze sensor; or

(D) sizing and effectiveness of anti-siphon devices or backflow preventers.

(3) Swimming pools, spas, hot tubs, and equipment. The inspector shall:

(A) report the type of construction;

(B) report as Deficient:

(i) a pump motor, blower, or other electrical equipment that lacks bonding;

(ii) the absence of or deficiencies in safety barriers;

(iii) water leaks in above-ground pipes and equipment;

(iv) deficiencies in lighting fixture(s);

(v) the lack or failure of required ground-fault circuit interrupter protection; and

(vi) deficiencies in:

(I) surfaces;

(II) tiles, coping, and decks;

(III) slides, steps, diving boards, handrails, and other equipment;

(IV) drains, skimmers, and valves; and

(V) filters, gauges, pumps, motors, controls, and sweeps; and

(C) when inspecting a pool heater, report deficiencies that these standards of practice require to be reported for the heating system.

(4) Specific limitations for swimming pools, spas, hot tubs, and equipment. The inspector is not required to:

(A) dismantle or otherwise open any components or lines;

(B) operate valves;

(C) uncover or excavate any lines or concealed components of the system or determine the presence of sub-surface leaks;

(D) fill the pool, spa, or hot tub with water;

(E) inspect any system that has been winterized, shut down, or otherwise secured;

(F) determine the presence of sub-surface water tables; or

(G) inspect ancillary equipment such as computer controls, covers, chlorinators or other chemical dispensers, or water ionization devices or conditioners other than required by this section.

(5) Outbuildings. The inspector shall report as Deficient:

(A) the lack of ground-fault circuit interrupter protection in grade-level portions of unfinished accessory buildings used for storage or work areas, boathouses, and boat hoists; and

(B) deficiencies in the structural, electrical, plumbing, heating, ventilation, and cooling systems that these standards of practice require to be reported for the principal structure.

(6) Outdoor cooking equipment. The inspector shall:

- (A) inspect the built-in equipment; and
 - (B) report the energy source; and
 - (C) report as Deficient:
 - (i) inoperative unit(s);
 - (ii) a unit or pedestal that is not stable;
 - (iii) gas leaks; and
 - (iv) deficiencies in:
 - (I) operation;
 - (II) control knobs, handles, burner bars, grills, the box, the rotisserie (if present), and heat diffusion material;
 - (III) gas shut-off valve(s) and location(s); and
 - (IV) gas connector materials and connections.
- (7) Gas supply systems. The inspector shall:
- (A) test gas lines using a local or an industry-accepted procedure; and
 - (B) report as Deficient:
 - (i) leaks; and
 - (ii) deficiencies in the condition and type of gas piping, fittings, and valves.
- (8) Specific limitation for gas lines. The inspector is not required to inspect sacrificial anode bonding or for its existence.
- (9) Private water wells. The inspector shall:
- (A) operate at least two fixtures simultaneously;
 - (B) recommend or arrange to have performed water quality or potability testing;
 - (C) report:
 - (i) the type of pump and storage equipment; and
 - (ii) the proximity of any known septic system; and
 - (D) report as Deficient deficiencies in:
 - (i) water pressure and flow and operation of pressure switches;
 - (ii) the condition of visible and accessible equipment and components; and
 - (iii) the well head, including improper site drainage and clearances.
- (10) Specific limitations for private water wells. The inspector is not required to:
- (A) open, uncover, or remove the pump, heads, screens, lines, or other components or parts of the system;
 - (B) determine the reliability of the water supply or source; or
 - (C) locate or verify underground water leaks.
- (11) Private sewage disposal (septic) systems. The inspector shall:
- (A) report:
 - (i) the type of system;
 - (ii) the location of the drain field; and
 - (iii) the proximity of any known water wells, underground cisterns, water supply lines, bodies of water, sharp slopes or breaks, easement lines, property lines, soil absorption systems, swimming pools, or sprinkler systems; and
 - (B) report as Deficient:
 - (i) visual or olfactory evidence of effluent seepage or flow at the surface of the ground;
 - (ii) inoperative aerators or dosing pumps; and
 - (iii) deficiencies in:
 - (I) accessible or visible components;
 - (II) functional flow;
 - (III) site drainage and clearances around or adjacent to the system; and
 - (IV) the aerobic discharge system.

(12) Specific limitations for individual private sewage disposal (septic) systems. The inspector is not required to:

- (A) excavate or uncover the system or its components;
- (B) determine the size, adequacy, or efficiency of the system; or
- (C) determine the type of construction used.

(13) Whole-house vacuum system. The inspector shall report as Deficient:

- (A) inoperative units;
- (B) deficiencies in the main unit; and
- (C) deficiencies in outlets.

(14) Specific limitations for whole-house vacuum systems. The inspector is not required to:

- (A) inspect the attachments or hoses; or
- (B) verify that accessory components are present.

Other built-in appliances. The inspector shall report deficiencies in condition or operation of other built-in appliances not listed in this section.