Housing Inspection Presentation

May 26, 2010

Today's Topics

- Inspection Overview
- Inspector's Qualifications
- Hurricane Damage Inspection
- Progress Inspections
- Completed Home Inspections
- Common New Construction Defects

Inspection Overview

- Most homes being reconstructed or rehabbed require multiple inspections by certified code inspectors, usually from the city's code enforcement. However, homes located outside the city limits, in rural areas, not covered by municipal or county inspections, should have similar inspections performed by contracted inspectors.
- Builders also must conduct quality control inspections at all stages of construction, and administrators need to inspect periodically as well.

Inspection Overview

- The standard home inspection includes the following:
  - The heating and central air conditioning (HVAC) system
  - Interior plumbing and electrical systems
  - The roof, attic and visible insulation
  - Walls, ceilings, floors, windows and doors
  - Foundation, basement and structural components
- These inspections will note:
  - Safety issues and major or minor defects
  - Items that need replacement and which should be repaired or serviced
  - Items that are suitable for now but that should be monitored closely

Inspector Qualifications

- Minimum qualifications should include the following knowledge, skills, and abilities:
  - Two years experience in housing inspections.
  - Have current home inspection license or certification.
  - Knowledge of construction criteria such as plumbing, roofing, carpentry, air conditioning.
  - Working knowledge of IRC and IBC Construction Codes.
  - Ability to determine acceptability of work completed by builders.
  - Skill in identifying a problem, determining potential causes, and identifying and recommending appropriate remedies.

Inspections to Assess Hurricane Damage

During a hurricane, homes may be damaged or destroyed by high winds and water damage. Debris can break windows and doors, allowing high winds inside the home. In extreme storms, the force of the wind alone can cause weak places in a home to fail.

- The main areas that should be checked for damage—the roof, windows, doors, and if there is one, garage door.

Inspections to Assess Hurricane Damage

- Look for obvious signs of damage:
  - Check roof for damage or missing shingles.
  - Check foundation, chimney and roof for cracks.
  - Check for leaks and water damage; if there was flooding, check for signs of possible mold.
  - Check windows & doors to make sure that all parts are secure and that there are no broken components or window panes.
  - If there is a garage, check for damage in and around it, including the actual garage door.

Progress Inspections for Single or Multifamily Homes

- Construction Progress Inspections, aka Phased Inspections:
  - A construction progress inspection allows an inspector to become the “eyes of the homeowner” through a series of inspections that occur during different stages of the construction process of their new home.

Progress Inspections for Single or Multifamily Homes

- Construction Progress Inspections (continued):
  - Typically, these inspections are performed at the following stages:
    1. Foundation form work before concrete placement
    2. After installation of support posts, beams and floor joists
    3. After installation of all rough framing, rough electrical wiring, heating/cooling duct work and the building's sanitary pipe drainage and potable water supply systems
    4. Exterior siding(s) including roof coverings
    5. Final "walk-through" inspection checking all visually accessible systems and components such as heating/cooling, electrical and plumbing systems including safety items such as smoke detectors, stairs, handrails and guard railings, compliance with emergency-egress requirements, and proper installation of safety/tempered glazing within hazardous areas.

Progress Inspections for Single or Multifamily Homes

- **Site:**
  - Look for trip hazards in the yard:
    - Large rocks, lumber, uprooted trees, pieces of pipe or metal, other construction debris, etc.
  - If it has rained in the last 24 hours there should be no more than 1 inch of standing water anywhere on the site.
    - If the site is dry (no recent rain), are there deep depressions that look like they would hold water after a rain?
  - There should be absolutely no construction debris left on the site.
  - Always keep an eye out for downed power lines.
  - Watch out for snakes!!!

Progress Inspections for Single or Multifamily Homes

- **Slab Foundation:**
  - Are the post-tension cables or rebar in the sides of the foundations still visible?
    - They should be covered with plaster/stucco/mortar.
  - Is the floor of the house flat and smooth or is it noticeably wavy?

Progress Inspections for Single or Multifamily Homes

- **Slab Foundation (Continued):**
  - Are the outside lines of the foundation straight? Are there any places where the concrete form “blew out”?
    - When this occurs you will see a large blob or bulge in the foundation on one side in one place.
  - When inside the house, does it look like moisture is coming up through the foundation?
    - This would indicate that the builder did not place plastic vapor barrier under the foundation as required.

Progress Inspections for Single or Multifamily Homes

- **Pier and Beam Foundation:**
  - Is the floor of the house flat and smooth or is it noticeably wavy?
  - Are the outside lines of the foundation straight?
  - The piers should be placed on solid concrete footings, not just sitting in or on the ground.
  - There should be no evidence of water pooling under the foundation. If so, is it from rain or leaking plumbing?
  - Do the piers of the foundation look sturdy and intact?
  - Is the floor inside the house overly “bouncy”? Pier and beam floors will not feel as solid as concrete but should not feel overly “bouncy”. This would indicate inadequate support of the floor.

Progress Inspections for Single or Multifamily Homes

- **Framing:**
  - Assuming the rough framing is visible, does it all appear to be straight and plumb? Walls, ceilings, floors? Are there badly aligned framing members that will distort or cause the finished wall to show bulging after installation?
  - Is the lumber badly warped, bowed, cracked, gouged or otherwise damaged?
  - Is the builder using pressure treated lumber for the sill plate? (Sill plate is the part of the wall touching the floor.)
  - In windstorm areas, is the builder installing required hurricane bracing: metal ties from the sill plate to the studs, the studs to the top plate and the top plate to the ceiling joists?

Progress Inspections for Single or Multifamily Homes

- **Framing (continued):**
  - Are nail stops being used where plumbing or electrical wiring passes through a structural member (wall stud, top plate)?
  - Are appropriate anchoring devices seen on plumbing stub outs? Has the plumber firmly attached the plumbing to the wall where it leaves the wall?
  - Is (4 inch thick) insulation being installed in the walls? Is it put in correctly, without being compacted and has it been cut neatly around electric boxes instead of being smashed into place?

Progress Inspections for Single or Multifamily Homes

- **Framing (continued):**
  - Has ceiling duct work been hung neatly? Are there areas of flexible ducting that are collapsed or flattened from incorrect installation? Are there any holes or connections that are not fully taped?
  - Is a minimum of (6 inches thick) insulation being put into the ceilings?
  - Have walls been properly braced at corners with sheets of plywood or 1X4 lumber or metal Tstraps that have been “let-in” to the joists?
  - Has bracing been installed for accessibility grab bars in bathrooms?

Progress Inspections for Single or Multifamily Homes

- **Electrical:**
  - If electrical wiring is visible, is it sound?
    - Any tears in the insulation?
    - Any places were two ends of wiring were “wire-nutted” together outside of an approved electrical box?
    - Is the wiring properly fastened to studs and other framing members?
  - Is the breaker box mounted straight and neat?
  - Are the other electrical boxes mounted straight and neat?

Progress Inspections for Single or Multifamily Homes

- **Exterior Walls:**
  - Are the outside walls of the house straight and plumb (level up and down)?
  - Has the siding been installed level and parallel to itself?
  - Is the trim around windows, doors and roof straight and neat?
  - Are all cracks between sides and ends of trim boards, windows, doors, and the ends of individual pieces of siding caulked?

Completed Single or Multifamily Home Inspections

- Inspections for single or multifamily homes are almost identical.
- Inspections for multifamily homes need to separate the building into individual units to make any problems easily identifiable.
- Completed Home Inspections and Progress Inspections are very similar as well, the main difference being that the home is completed and less access is available for inspection of the completed homes.

Completed Single or Multifamily Home Inspections

- **Slab Foundations:**
  - The same guidelines that apply to "Progress Inspections" regarding slab foundations also apply to “Completed Construction”

Completed Single or Multifamily Home Inspections

- **Inside the House: Walls, Floor, Ceilings**
  - Is all of the paint and trim work neat? All nail heads and cracks in trim filled? No drips on floors or other inappropriate surfaces?
  - Paint used for trim typically has a high gloss finish.
  - Are there any large bulges, nail pops or lack of perpendicular and straight lines?
  - Do you see evidence of water stains or water intrusion on any of these surfaces?

Completed Single or Multifamily Home Inspections

- **Inside the House: Plumbing**
  - Check under the sink for water leaks from shut off valves and P-traps.
  - Check toilets for leaks from the tank, bowl, or the shutoff valve.
  - Are tub or sink faucets dripping?
  - Do the toilets flush properly? Is the toilet solid and stable?
  - Are there any septic odors in the house?
  - The water spout on the bath tub should not move or allow water penetration to the wall.

Completed Single or Multifamily Home Inspections

- **Pier and Beam Foundations:**
  - The same guidelines that apply to "Progress Inspections" regarding pier and beam foundations also apply to “Completed Construction”
- **Framing**
  - The same guidelines that apply to "Progress Inspections" regarding framing also apply to “Completed Construction

Completed Single or Multifamily Home Inspections

- **Exterior Walls:**
  - The same guidelines that apply to "Progress Inspections" regarding exterior walls also apply to “Completed Construction”
- **Electrical**
  - The same guidelines that apply to "Progress Inspections" regarding electrical also apply to “Completed Construction”

Completed Single or Multifamily Home Inspections

- **Roof:**
  - Are all of the eves of the house relatively straight?
  - Are there any shingles missing or torn? Are the rows of shingles straight and flat?
  - Are there any nails or other fasteners visible?
  - Are all of the penetrations through the roof shingled and flashed correctly?
  - Do the shingles overhang the edges of the roof all the way around, forming a drip edge?
  - If the house has gutters, are they sloped towards the downspouts?
    - If it is raining, are they leaking noticeably?

Common Defects Found in New Homes

- **Problems With Plumbing**
  - This is due to the fact that most plumbing is checked only by turning the water on and off or by flushing a toilet.
- **Wiring Issues**
  - Because most of the wiring is behind the wall, it can be difficult to tell whether or not all the wiring in a home is in good condition.

Common Defects Found in New Homes

- **Windows**
  - Windows are usually just checked by being opened and closed. They are not checked for drafts. Even new windows can be improperly installed, which can lead to high heating and cooling bills or possible storm damage.
- **Problems With Heating Or Air Conditioning**
  - Depending on the time of year that a new home is inspected, there could be undiagnosed problems with the heating system or air conditioning system. If the home is inspected in the summer, there could be problems with the heating system that are not noticeable. The same goes for the air conditioning system if the home is inspected during the winter.

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