



Hardin County

Planning and Development Commission

Building Code Clarification Handout, #2015, June 2015

FINAL INSPECTIONS CHECKLIST OF SINGLE & TWO FAMILY DWELLINGS

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The following building code requirements are the current and most common minimum code standards, as taken from the IRC Code 2012, required for an Occupancy Permit in One and Two family dwellings, and based on Kentucky Amendments to the **2013 Kentucky Residential Code, Second Edition, February 2014**.

Disclaimer: This is not a listing of all code sections involving building or utilities which involve this subject, but only the sections most often questioned. Refer to the 2013 Kentucky Residential Code book for information not listed in this handout and for other requirements of the building code.

Final Inspection Checklist of Single and Two Family Dwelling

The following is a listing of common code requirements the building inspector will be looking for in order to complete a Final Inspection and approve the home to be later issued an Occupancy Permit which will indicate it is in substantial compliance with the current Kentucky Residential Code. Each home is different and the more complex the home is the more code requirements apply. This is not a replacement for the homeowner or builder to keep from reading the building code to complete other requirements which may apply to this structure. Other code violations may be listed by the building inspector at the time of final inspection. Hardin County is in a Seismic Design Category B (**Figure R301.2(2)**).

A. Special Conditions:

1. **Permits posted on site.** All required inspections completed and signed off as approved. Previous footing inspections and framing inspections correction lists completed. Permit must be placed on the site of the work where it is visible from the street. (**R105.7**). Permit must remain posted until occupancy permit has been issued. All building permit fees, inspection fees and re-inspection fees must have been paid and up-to-date.
2. **Floodplain management.** All requirements of the state and local flood plain management program for Hardin County must have been installed and completed, and verified and signed off as required by the state and by the Hardin County Engineer office. This may require the completion of an Elevation Certificate. (**R106.1.3**).
3. **Planning & Zoning Requirements completed.** All on-site and off-site development associated with the structure must be completed and the structure is ready for occupancy or its intended use. (HCDGS)
4. **Driveway Encroachment Permit.** The road tile at new driveway entrance has been properly sized and installed and is being maintained and the ends are clear and fully operational.(Hardin County Road Department Requirement)
5. **Storm Water Runoff Ordinances and Erosion Prevention and Sediment Control Ordinances.** There must be at least 50 lf long by 20 lf wide of graveled driveway entrance onto site and installed as described as a stabilized construction entrance. Where needed, the silt fences are installed and being maintained until grass is fully established on bare yard/lot areas, fully established meaning at least 70% stabilization coverage (utilizing mats), are visible. (**Storm Water Runoff Ordinances and Erosion Prevention and Sediment Control Ordinances**).

Other Inspection Related Information:

6. **Access required to project is to be furnished by Owner** (**R109.3**), Owner required to call for inspections.

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- It shall be the duty of the permit holder to provide access to and means for inspection of such work for the required inspections. It shall be the duty of the permit holder or their agent to notify the building official that such work is ready for inspection.
- Inspections are scheduled Monday through Friday by contacting the Hardin County Planning & Development Commission at (270) 769-5479 before 4:00 PM on the previous day before the inspection is needed. The homeowner is responsible for calling to request the inspection.
- Provide the name the permit was issued in and the street location of the project, or the lot number and subdivision name and the phone number of a contact person when calling in for inspections.
- If the inspector needs to return to the site for the same inspection, a minimum \$50.00 Reinspection fee is required to be paid before the Reinspection can be scheduled.
- No Reinspection on the same phase of construction shall be done in the same 24-hour period.

B. Exterior of House or Structure:

1. **House numbers must be installed.** Approved address numbers 4 inch high minimum shall be installed for all new buildings in such a position as to be clearly visible and legible from the street or road fronting the property. (R319.1)
2. **Site Grading. Drainage.** Storm water shall be diverted to an approved drainage ditch or swale or other approved point of collection so as not to create a hazard. Lots shall be graded to drain surface away from foundation walls. The grade shall fall at a minimum of 6 inches within the first 10 feet. (R401.3) The 2012 IRC allows an exception for situations in which the building is close to the property line or if there are physical barriers preventing a positive slope for 10ft. In those cases, the **impervious surfaces** can have a 2% slope to a swale (R401.3 Exception).
3. **Earth Clearance maintained.** Final Six inches of earth clearance is maintained below exterior wood siding on house. Wood siding, sheathing, wall framing closer than 6 inches to soil must be pressure preservative treated. Exterior finish backfilling and final grading shall have been completed.
4. **Seeding and Strawing required.** All bare ground lot areas shall be seeded with grass and covered with straw to prevent runoff until the grass takes hold. (Hardin County Storm Water Runoff Ordinances). All drainage ditches are maintained in grass or are rock lined and being maintained as was originally intended.
5. **Retaining Walls.** Foundation and retaining walls must be completed and constructed to meet the requirements of (R404) Kentucky Amendments.
6. **Guards at Retaining Walls.** Where retaining walls with differences in grade level on either side of the wall is in excess of 30 inches and are located closer than 3 feet to a walk, designated walking path or driveway on the high side, such retaining walls shall be provided with guards that are constructed in accordance with Section R312.1.2 and R312.3. (Kentucky Amendments)
7. **Roof drainage** must discharge at least five feet from foundation walls or to an approved drain system if soils are expansive or collapsible. (R801.3). Concrete & CMU foundations enclosing habitable or usable space below grade require foundation and downspout drainage (R405.1) Foundation drainage tiles, gravel or crushed stone drains, perforated pipe with holes down or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. (R405.1).
8. **Termite Treatment Required. Protection from subterranean termites shall have been completed** using a method in compliance with Sections R318.1; R318.3. Provide documentation in writing indicating and confirming the type of treatment provided. (Section R320). Termite Infestation Probability Map. Table R301.2(1). All counties in Kentucky are deemed to be “Moderate to Heavy” for likelihood of damage from termite infestation. There has been a history of local subterranean termite damage. Shields placed on top of an exterior foundation wall are permitted to be used only if in combination with another method of protection. (R318.3) Barriers) (*typically chemical termiticide treatment*).
9. **Intake /Exhaust Master Vents (grilled diffusers) visible from exterior. Bathroom exhaust fans required.** Bathrooms without openable windows are required to have mechanical ventilation (exhaust fans). The venting must

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be taken through the roof or through a wall or soffit and be terminated on the exterior with a protective grilled diffuser, visible from the exterior. (IMC 501.3), (Table IMC 403.3). Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous.

10. **Dryer vent discharge to exterior of building must be visible**, and it must be equipped with an approved backdraft damper. The clothes dryer exhaust system is required to be roughed-in in accordance with Sections 504.6 and 504.6.1. (IMC 1502.2 and IMC 504.6). Solid metal aluminum piping 4" diameter required including deducting 5' for each 90 degree elbow and deducting 2.5' for each 45 degree elbow, and including the total length of the pipe remaining shall not exceed a maximum length of 25 lineal feet. Installed at a slope to provide positive drainage to the termination and shall not permit the collection of condensate. M1502.4.1.1.
11. **Removal of debris.** The under floor grade shall be cleaned of all vegetation and organic material. All wood forms used for placing concrete shall be removed. (R408.5) All wood forms and other construction materials shall be removed from site before a building is occupied or used for any purpose. (Hardin County Landfill Ordinances)
12. **The weep holes located in bottom row of masonry exterior walls above flashing and above finished grade level**, must have been installed in the outside wythe of masonry walls, be a minimum 3/16" dia. holes, and located immediately above flashing, at a maximum spacing of 33" o.c. (R703.7.5, R703.7.6 and R703.8). *General Masonry Construction.* Include required veneer metal wall ties tying masonry to wall framing (maximum spacing of 24" o.c., both horizontal and vertical spacing), required steel lintels over openings in masonry walls, and required flashings to prevent water damage to interior walls.
13. **Access Opening to Crawlspace.** An access opening 18" high by 24" wide shall be provided to the under-floor space. (R408.4) This door shall be a hinged type with a latch, or an approved manufactured crawlspace access opening with a latch. *The access panel cannot be fixed where tools are required to remove the panel.* See Section M306.4 for access requirements where mechanical equipment has been installed under dwelling or structure.
14. **All required exterior exits, stairs, guardrails, handrails, landings and decks (R311.7) shall be complete.** Check with inspectors on handrail requirements. Refer to Building Code Clarification Handout, Deck and Stair Guide, and to all the code sections named in it. *Note: Interior stairways, landings, guardrails, handrails, nosing profile, headroom, and construction requirements, etc. are same as exterior. Exception: Interior stairs protected from the weather are not required to be constructed of pressure-preservative treated lumber unless they are installed in direct contact with concrete.*
15. **Materials.** (R504.3) All exterior framing materials including sleepers, joists, blocking and plywood subflooring, shall be pressure-preservative treated and dried after treatment in accordance with AWPA U1 and shall bear the label of an accredited agency.
16. **Decks.** (R502.3.2) The design live load shall not exceed 40 PSF and the design dead load shall not exceed 20 pounds per square foot. Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads as applicable. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. (Combination through bolts or lag screws is the acceptable fastener method.) Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members, connections to exterior walls or other framing members, shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.4 acting on the cantilevered portion of the deck. Do not exceed 24 inch maximum cantilever overhang length. Placement of lag screws or bolts in deck ledgers shall be placed 2 inches in from the bottom or top of the deck ledgers and between 2 and 5 inches in from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger. (R507.2.1)
17. **Alternate deck ledger connections.** Deck ledgers shall not be supported on stone or masonry veneer unless specifically designed by a design professional. (R507.3.2)

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18. **Allowable Joist Spans.** (R502.3) Spans for floor joists shall be in accordance with Tables R502.3.1(1) and R502.3.1(2). The design live load shall not exceed 40 psf and the design dead load shall not exceed 10 psf. (All beams and joist size and span must meet minimum requirements listed in the building code.)
19. **Sleeping areas and attic joists.** (R502.3.1) Table R502.3.1(1) shall be used to determine the max. allowable span of floor joists that support sleeping areas and attics that are accessed by means of a fixed stairway in accordance with Section R311.7 provided that the design live load does not exceed 30 PSF and the design live load does not exceed 20 PSF.
20. **Stairways. Width.** (R311.7.1) Stairways shall not be less than **36 inches in clear width** at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4.5 inches on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31.5 inches where a handrail is installed on one side and no less than 27 inches where handrails are provided on both sides.
21. **Attachment.** Exterior landings, decks, balconies and similar facilities shall be positively anchored (Attachment shall not be accomplished by use of nails or toenails subject to withdrawal) (R311.5.1). **Example: use joist hangers, stair stringers, etc.**
22. **Stairways. Treads and Risers.** (R311.7). The maximum riser height shall be **8 ¼ inches** (R311.7.5.1 KY Amendments) and the minimum tread depth shall be **9 inches** (R311.5.3.2 KY Amendments) (**plus the required ¾ inch but not more than 1 ¼ inch nosing profile**). The riser height shall be measured vertically between leading edges of the adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of the adjacent treads and at a right angle to the tread's leading edge. The walking surface of treads and landings of a stairway shall be sloped no steeper than one unit vertical in 48 units horizontal (2 percent slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch. (R311.7.5.2 KY Amendments)
23. **Stairway nosing profile.** (R311.7.5.3) A nosing not less than ¾ inch but not more than 1 ¼ inches shall be provided on stairways with solid risers.
 - Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch-diameter sphere.
 - Exceptions: 1. A nosing is not required where the tread depth is a minimum of eleven inches. 2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches or less.
24. **Stairway Headroom.** (R311.7.2). The minimum headroom in all parts of the stairway shall be not less than 6'-8" measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform.
25. **Stairway Winders.** (R311.7.5.2.1). Winders are permitted, provided that the width of the tread at a point not more than 12 inches from the side where the treads are narrower is not less than 10 inches and the minimum width of any tread is not less than 6 inches. The continuous handrail required by Section R315.1 shall be located on the side where the tread is narrower.
26. **Spiral stairways.** (R311.7.10.1) The minimum width shall be 26 inches with each tread having a 7 ½ inches minimum tread depth at 12 inches from the narrower edge. All treads shall be identical, and the rise shall be no more than 9 ½ inches. A minimum headroom of 6 feet 6 inches shall be provided.
27. **Stairway Handrails.** (R311.7.8) Handrails having minimum heights of 34" and maximum heights of 38", measured vertically from the nosing of the treads, shall be provided on at least one side of stairways **with 4 or more risers**.
28. **Continuity. Handrails Required.** (R311.7.8.2) **Handrails shall be provided on at least one side of each continuous run of treads or flight.** All required handrails shall be continually graspable the full length of the stairs with four (4) or more risers from a point directly above the top riser of a flight to a point directly above the lowest riser

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of the flight. Handrails adjacent to a wall shall have a space of not less than 1 ½ inch measured between the wall and the handrail.

- 29. Handrail Ends shall be returned** or shall terminate in newel posts or safety terminals. Exceptions: 1. Handrails shall be permitted to be interrupted by a newel post at a turn. 2. The use of a volute, turnout, or starting easing shall be allowed over the lowest tread. (R311.7.8.1) When handrail fittings or bendings are used to provide continuous transition between flights, transitions at winder treads, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height. (R311.7.8.1.2)
- 30. Handrail Grip Size.** (R311.7.8.3) The handgrip portion of handrails shall have a circular cross section of 1 ¼ inches minimum to 2 5/8 inches maximum.
- Other handrail shapes, including those complying with Figure 315.2 (A-F), that provide an equivalent grasping surface are permissible. (2 x4 lumber not approved).
 - Edges shall have a minimum radius of 1/8 inch.
- 31. Stair Handrails.** (R311.7.8.2) Stair handrails shall be permitted to be discontinuous between the top and the bottom of a flight of stairs where the ends of the discontinued rail are returned to a wall or post (e.g. returned ends) and the maximum distance between the ends of discontinued rails is not greater than 4 inches.
- 32. Guards Required.** (R312.1). Porches, balconies, or raised floor surfaces (decks, landings), located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height.
- Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads.
 - Porches and decks which are enclosed with insect screening shall be equipped with guards where the walking surface is located more than 30 inches above the floor or grade below.
- 33. Guard Opening Limitations.** (R312.1.3) Required guards on open sides of stairways, raised floor areas, decks, balconies and porches shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 inches in diameter. Exception: 1. Openings for required guards on the sides of stair treads shall not allow a sphere 4 3/8 inches in diameter to pass through. Exception: 2. The triangular openings formed by the stair riser, stair tread, and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches cannot pass through.
- 34. Landings.** (R311.7.6) **There shall be a floor or landing at the top and bottom of each stairway.** There shall be a floor or landing or stairs on each side of each exterior door. The floor or landing at a door shall not be more than 1.5 inches lower than the top of the threshold.
- Exception: 1.** Other than the required exit door, where the vertical elevation measured between the interior finish floor and the exterior finish grade, patio or deck does not exceed 30 inches, a landing is not required for the exterior side of the door provided the door, other than an exterior storm or screen door, does not swing over the stairway. (R311.3.2 KY Amendments)
- Exception: 2.** The landing at an exterior doorway shall not be more than 8 ¼ inches below the top of the threshold, provided the door other than an exterior storm or screen door, does not swing over the landing. Required egress doors shall have landings. (R311.3.1 KY Amendments)
- 35. Landing Size.** (R311.1 and 2) The width of each landing shall not be less than the stairway or door served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel. A floor or landing is required on each side of each required egress door and top and bottom of stairs. The floor or landing at the door shall not be more than 1.5 inches below top of threshold. (R311.4.3 KY Amendments). **The landing** shall be permitted to have a slope not to exceed 0.25 units vertical in 12 units horizontal. Floor or landing maximum 1 ½ inches below door threshold. (R311.3.1).
- 36. Pressure preservative treated wood floors on ground.** (R317.1). Pressure-preservative treated-wood basement floors and floors on ground shall be designed to withstand axial forces and bending moments resulting from lateral soil pressures at the base of the exterior walls and floor live and dead loads. Floor framing shall be designed to meet joist deflection requirements in accordance with Section R502.

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- 37. Protection against decay. (R317).** Fasteners for pressure preservative treated wood shall be of hot-dipped galvanized steel, stainless steel, silicon bronze or copper. Exception: ½ inch diameter or greater steel bolts. Exception: Fasteners other than nails and timber rivets shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B695, Class 55, minimum.
- 38. Attachment of decks or porches. (R311.5.1)** Required exterior egress balconies (*example: decks or porches*), exterior exit stairways and similar means of egress components shall be positively anchored to the primary structure to resist both vertical and lateral forces. Such attachment shall not be accomplished by use of toenails or nails subject to withdrawal. (*Use lag screws or combination through bolts approved for use with pressure treated wood*).
- 39. Exterior safe entrance required.** At least one required egress door must be completed and contain a safe entrance into the structure without passing through an attached garage. (R311.2). The required exit door is a minimum 32" wide side-hinged door. The minimum clear height of the door opening shall be 78". All doors required to be keyless operation from interior.
- 40. Emergency escape windows under decks and porches (R310.5)** are allowed provided the location of the deck allows the emergency escape window to be fully opened and provides a path not less than 36 inches in height to yard or court.
- 41. Attic vents.** Attic vents must have been installed in the correct amount needed and are operating properly and are not obstructed. (R806).
- 42. Crawlspace area.** Foundation vents in and unobstructed – adequate amount. Underfloor area must be free of ponding water. (R408.2) One vent opening within 3 feet of each corner. The minimum area to be 1 SF of vent per 150 SF of floor area. Exception: A reduction to 1 SF of vent per 1500 SF of under-floor area is approved where the ground surface is covered with an approved Class 1 vapor retarder and the required vent openings are placed to provide cross ventilation of the space.
- 43. Finished grade of under-floor area. (R408.6)** The finished grade may be located at the bottom of the footings; however, where there is evidence that the groundwater table can rise to within 6 inches of the finished floor at the building perimeter or where there is evidence that surface water does not readily drain from the building site, the grade in the under-floor space shall be as high as the outside finished grade, *unless an approved drainage system is provided*.
- 44. Underfloor Central Forced-Air Furnace (M1305.1.4)**
- Appliance shall be located on a slab a minimum of 3 inches above grade.(M1305.1.4.1)
 - Appliances supported from the ground shall be level and firmly supported on a concrete slab or other approved material above the adjoining ground.(1305.1.4.1)
 - Appliances suspended from the floor shall have a clearance of not less than 6 inches from the ground. (1305.1.4.2)
 - Passageway – 22" wide and 30" high, nor more than 20 lf when measured along the centerline of the passageway from the opening to the appliance. (1305.1.4)
 - A level service space at least 30 inches wide by 30 inches deep shall be present at the front or service-side of the appliance. (1305.1.4)
 - If the depth of the passageway or the service space exceeds 12 inches below the adjoining grade, the walls of the passageway shall be lined with concrete or masonry extending 4 inches above the adjoining grade. (1305.1.4)
 - The rough-framed access opening shall be a minimum of 22 inches by 30 inches where the dimensions are large enough to remove the largest appliance. (1305.1.4)
 - Excavations for appliance installations shall extend to a depth of 6 inches below the appliance and 12 inches on all sides, except that the control side shall have a clearance of 30 inches. (1305.1.4.2)
 - Electrical Requirements. A Luminaire controlled by a switch located at the required passageway opening and a receptacle outlet shall be installed at or near the appliance location in accordance with Chapter 38. (M1305.1.4.3) A receptacle required within 25 feet and not on the appliance circuit.
- 45. Crawlspace Areas: Soil clearance to untreated wood joists:** minimum 18 inches. Soil clearance to untreated wood beams: minimum 12inches. (R317.1).

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46. **Concrete or masonry foundation wall to extend 6 inches above exterior finished grade**, 4 inches OK if masonry veneer. (R404.1.6).

C. Two-Family Dwellings

47. 2-Family Dwellings requires 1-hour rated construction at common walls & floor/ceiling (R302.3.).
- Exception: A one-half hour rated construction is approved when automatic sprinkler system is present (R302.3.1).
48. A 1-hour rated floor/ceiling assembly must extend to exterior walls (R317).
49. Need not extend through attic if ceilings 5/8 Type X gypsum board & an attic draft stop constructed per (R302.3.2)
50. The structural framing supporting the ceiling shall also be protected by ½” gypsum board or equivalent. (R302.3.2).
51. One-Hour rated wall assemblies shall extend to underside of roof sheathing. (R302.3). Fire resistance rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall.
52. Gypboard on frame supporting the ceiling & attic is draftstopped when greater than 1,000 SF (open web trusses or ceiling is suspended from floor framing) (R302.12).

D. Energy Code Requirements.

53. **The required energy code requirements yellow sticker must be completed and signed off** and be installed in the inside door of the main electrical panel. The insulation thickness and R-ratings used for walls, attic ceilings, floors, and crawl spaces shall be as established in the *International Energy Conservation Code 2009*. The minimum thickness accepted are as follows: Roof/ceiling (attic): R-38; Frame Walls: R-13; Mass Walls: R-5; Floor over outdoor air or unconditioned spaces: R-19; Slab edge width R-10/Depth 2 ft.; Crawl Space wall: R-10; and Basement Wall: R-10/ R-13 if cavity insulation. Fenestrations (windows and glazed doors) 0.40 maximum U-value. (Table N1102.1) (Section N1102). Energy features as required on plans: a. Exterior doors and windows weather-stripped; b. insulation certificate complete, signed off by installer/builder, and located in electric main panel box inside of the door cover.
54. **Underfloor insulation must be properly installed and supported.** (RN1102.6) Under-Floor between floor joists insulation: R-19. *Held in place by hangers or netting if fiberglass. Sprayed in place shall be as per manufacturers requirements.* This applies to all floors over outdoor air or unconditioned spaces. (Section N1102) This applies to basement ceilings when the basement is not finished and not conditioned with heat or heat and air conditioning. (Section N1102).
55. **Crawlspace walls insulation: R-10.** Interior R-10 where directly attached to crawlspace concrete or masonry wall; R-13 required when installed in a framed wall cavity in a crawlspace. (Table N1102.1).
56. **Basements Walls:** Exterior R-5 insulation board, protected as required by manufacturer. Basement Walls Interior R-4 where directly attached to basement concrete or masonry wall; R-13 required when installed in a framed wall cavity. All interior basement walls which adjoin an unheated area of the basement must be insulated to R-13. (Section N1102). When a basement is conditioned (provided with heat or heat and air conditioning) even though it is not framed out and dry walled it must still have R-4 insulation fixed to the exterior walls. (Table N1102.1).
57. **Mass walls:** R-5 insulation value required. Mass walls shall be considered walls of concrete block, concrete insulated concrete form (ICF), masonry cavity, brick (other than brick veneer), earth (adobe, compressed earth block, rammed earth) and solid timber/logs. The provisions of Section N1102.1 for mass walls shall be applicable when at least 50 percent of the required insulation R-value is on the exterior of, or integral to the wall. (N1102.2.3 2009 IRC Commentary).

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58. **Roof / ceiling insulation:** R-38. (Section N1102) If insulation contains a vapor retarder, the retarder is installed on the warm-in-winter side of the ceiling. (R806.2).
59. **Frame Walls Exterior or adjoining interior Unconditioned room spaces:** R-13. (Table N1102.1 Kentucky Amendments).
60. **Slab on Grade. Slab edge insulation R-4 for a depth of 2 feet.** (Table N1102.1 Kentucky Amendments) Insulation extending under the slab or insulation extending out from the building shall be protected by pavement or by a minimum of 10" depth of soil. (N1102.2.7). R-5 shall be added to the required slab edge R-values for heated slabs.
61. **Windows and doors glass (fenestration): maximum U.40.** If the u-value sticker on your windows exceeds U.40 the windows do not meet code, is not approved and will prevent the issuance of an occupancy permit. (Section N1102).

[E. Utilities Final Inspections Required:](#)

62. **Plumbing Contractors and inspections.** All plumbing installations shall be performed under the supervision of a Kentucky Licensed Master Plumber according to law and shall be licensed and approved by the state plumbing inspector prior to usage pursuant to KRS Chapter 318 and 815 KAR Chapter 20. The current governing code is the *Kentucky Plumbing Code*. The code official may require proof of licensure when making inspections. Locally the inspections can be set up by calling (270-769-3071). The green Final inspection sticker must be clearly visible on site, usually on the hot water heater, prior to requesting a final inspection. (R101.7). Potable water must be provided to the dwelling. If well or treatment system, all installations must be complete.
63. **Propane gas installations and natural gas installations** must be installed, inspected and approved by the authority having jurisdiction. (City of Elizabethtown, Louisville Gas & Electric) for natural gas. Installation per the current **International Fuel Gas Code** for other installations.
64. **The septic tank system must be inspected and approved**, with a green sticker clearly visible), by the Environmental Services Office through the local health department. *Absence of sticker requires written verification from environmentalist office that the septic system has been approved prior to requesting a final inspection for building occupancy. (270-769-0312).*
65. **The electrical wiring and associated electrical systems** in this project shall be performed by licensed electricians according to law and shall be inspected by a certified electrical inspector pursuant to KRS 227.489 and KAR 35:015. The code official may require proof of licensure when making inspections. The current governing code is the *NEC 2014 NFPA 70 National Electrical Code*. The electrical inspections rough-in, temporary-on-main (yellow sticker), and final are arranged through this office. The approved rough-in sticker (red-orange) must be clearly visible on the site prior to requesting a framing inspection and the approved final electrical sticker (green) left by the electrical inspector, David Veirs, must be present in the building at time of Final Inspection request for Certificate of Occupancy at completion of this project. **A brief listing of common, but not all, items checked for:** Electric service panel dressed out and grounded – breakers permanently identified as to circuits they control. Subpanels have neutrals and grounds isolated. GFCI receptacles installed in bathroom, garage and exterior grade access plugs, and within six feet of kitchen sink. Plugs and switches installed with face plate on. All light fixtures installed. Electric Clothes dryer power outlets must be installed and approved with cover plate on. Check for 18 inch clearances for closet light fixtures to closet shelf. The kitchen must have sink and electrical plugs installed. Provisions for stove must be present either as a capped off gas line or a 220 volt electric outlet installed in wall. If stove is to be wired directly, it shall be hooked up for inspection. All lights must be installed at any exterior exit.
66. **The mechanical systems (heating, ventilation and air conditioning) installed in this project** must meet the minimum requirements set out in the *2012 International Mechanical Code*. Bathroom Exhaust fans are required to vent directly to the outside and must pass through the exterior finishes material and is terminated into an appropriately designed protective grille. **Licensed HVAC Contractor Required:** The installation of all Heating, Ventilating and Air Conditioning Systems (HVAC), whether in existing or new building construction shall be performed by a **Licensed Master HVAC Contractor**. Heat is required in habitable rooms to maintain a minimum of 68 degrees at 3 feet above the floor. The approved rough-in mechanical sticker (green) must be clearly visible on the site prior to requesting a framing inspection and the approved final mechanical sticker (green) left by the state mechanical inspector, Don Davis or Danny Allen, must be present in the building at time of Final Inspection request for Certificate of Occupancy at completion of this project.

FINAL INSPECTIONS CHECKLIST OF SINGLE & TWO FAMILY DWELLINGS

F. Interior of House or Structure:

- 67. The following room finishes and other items listed are exempt from permit and are not inspected** or regulated by the building code: 1-story detached accessory buildings less than 200 sq. ft. in size; fences less in height than 7'; retaining walls less than 4 ft. in height from bottom of footing to top of wall with no surcharge; sidewalks and driveways on grade; finish work (painting, papering, tiling, carpeting, cabinets, countertops); pre-fab above ground pools less than 24 inches in depth; playground equipment for a 1 & 2 family dwelling; and exterior wall awnings, decks not exceeding 200 sf in area that are not more than 30" above grade at any point, are not attached to a dwelling and do not serve the required exit door by Section R311.4. (Section R105).
- 68. All required interior exits, stairs, guardrails, handrails, landings, porches and decks (R311) shall be complete.** Check with inspectors on handrail requirements. Also refer to Building Code Clarification Handout, Deck and Stair Guide, and to all the code sections named within it.
- 69. Ceiling Height. (R305) Habitable rooms, hallways, corridors, bathrooms, toilet rooms and basements shall have a ceiling height of not less than 7 feet.** The measurement is from the finished floor to the lowest projection from the ceiling.
- Exceptions:**
- Beams and girders** spaced not more than 4' on center may project not more than 6" below the required ceiling height.
 - Ceilings in basements without habitable spaces** minimum height 6 feet 8 inches above finished floor and beams, girders, ducts or other obstructions no less than 6 feet 4 inches of finished floor.
 - For rooms with sloped ceilings**, at least 50% of required floor area of room, 7 foot min. height; and no portion of the required floor area less than 5 feet ceiling height.
 - Bathrooms** shall have a minimum ceiling height of 6' – 8" over the fixture and at the front clearance areas for fixtures as shown in Figure R307.1 Minimum Fixture Clearances. A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6'-8" above a minimum area of 30" by 30" at the showerhead.
- 70. Hallways. (R311.6)** The minimum width of a hallway shall be not less than 3 feet.
- 71. Bathroom exhaust fans required. Intake /Exhaust Master Vents (grilled diffusers) visible from exterior.** Bathrooms without openable windows are required to have mechanical ventilation (exhaust fans). The venting must be taken through the roof or through a wall or soffit and be terminated on the exterior with a protective grilled diffuser, visible from the exterior. (IMC 501.3), (Table IMC 403.3). (Table IMC 403.3). Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous.
- 72. Illumination at Stairs. (R311.7.9)** All stairs shall be provided with illumination in accordance with Section R311.7.9.
- 73. Chimneys, Fireplaces, and woodstoves** must be installed, including hearth, combustion air ducts, and metal or glass doors. If a free standing fireplace is installed, support box and hearth must be installed. A spark arrestor must be installed on the chimney. Proper clearance above roof ridge two feet higher at ridge or ten feet away from roof deck. Manufacturer's installation instructions must be on site for inspection. Installer and homeowner responsible for checking clearances from combustibles on these installations, per the specific requirements of the manufacturer's specifications. Refer to KRC Chapter 10 for details.
- 74. Foam Plastic. (R316.)** Foam plastic shall be separated from the interior of a building by an approved thermal barrier of minimum ½ inch gypsum wallboard or an approved finish material equivalent to a thermal barrier material that will limit the average temperature rise of the unexposed surface to no more than 250 degrees F, for 15 minutes of fire exposure, while complying with the time-temperature conditions of ASTM E-119, and as specifically described in R316.4 and R316.5 The gypsum board shall be installed using a mechanical fastening system in accordance with Table R702.3.5. *[This applies to the foam left exposed in basements, crawl spaces, etc. of ICF (insulated concrete form) walls, as well as pink board and blue board foam board sheathing exposed on the inside of the exterior walls and attics of houses.]*

FINAL INSPECTIONS CHECKLIST OF SINGLE & TWO FAMILY DWELLINGS

- **Masonry or Concrete Walls.** The thermal barrier is not required in a masonry or concrete wall, floor or roof when the foam plastic insulation is separated from the interior of the building by a minimum 1-inch thickness of masonry or concrete. (R316.5.1)
- **Roofing.** (R316.5.2.) The thermal barrier is not required when the foam plastic in a roof assembly or under a roof covering is separated from the interior of a building by tongue-and-groove wood planks or wood structural panel sheathing in accordance with Section R803, not less than 15/32 inch thick bonded with exterior glue, and installed to provide adequate edge support (blocking when edges do not occur over framing members, tongue and groove joints or equivalent). Also the flame spread rating of the foam plastic used must comply with the requirements of Section R316.3, but the smoke developed rating for roof applications of the foam plastic is not limited.
- **Attics.** (R316.5.3) The thermal barrier is not required where attic access is required by R807.1 and where the space is entered only for service of utilities (attics containing mechanical equipment, electrical wiring, fans, plumbing, gas or electric furnaces, hot water heaters, etc.) and when the foam plastic insulation is protected against ignition **using one of the following ignition barrier materials:** 1.5” thick mineral fiber insulation; 0.25 inch thick wood structural panels; 0.375 inch thick particleboard; 0.25 inch hardboard; 0.375 inch gypsum board, or corrosion-resistant steel having a base metal thickness of 0.016 inch. The attic space cannot be used for storage. **The above ignition barrier is not required when the foam plastic insulation has been tested in accordance with R316.6.**
- **Crawl spaces.** (R316.5.4) The thermal barrier specified in Section R316.4 is not required where crawlspace access is required by Section R408.4 (access shall be provided to all under-floor spaces) and entry is only for service of utilities, and the foam plastic insulation is protected against ignition **using one of the following ignition barrier materials:** 1 ½ inch mineral fiber insulation, ¼ inch wood structural panel, 3/8 inch particleboard, ¼ inch hardboard, 3/8 inch gypsum wallboard, or 0.0160 inch corrosion-resistant steel.
- **Specific Approval.** (R316.6) Foam plastic not meeting the requirements of Sections R316.3 through R316.5 shall be specifically approved on the basis of one of the following: NFPA 286 with the acceptance criteria of Section R302.9.4, FM4880, UL 1040 or UL 1715, or fire tests related to actual end-use configurations. There are two ways to show code compliance under this section. The first method is to provide the actual test report that contains a description of the assembly and test results showing that the foam plastic, in the end-use application, has passed the test. The second method is to obtain from the ICC-ES, an Evaluation Report that covers the end-use application.

G. Windows and Doors

75. **Glazed openings** (Windows & doors with glass) are required to be greater than 8% of floor area. (R308.1).
76. **Glazing. Glass in Windows & Doors.** (R308.) For detailed requirements on when tempered (safety) glass is required in windows and doors, skylights, and at hazardous locations ask for the handout *Windows and Doors - Safety Glazing, 2008.007* from our office.
77. **Window Glazing (Glass) in Fixed Panels:** (R308.4.3) Safety glazing (tempered glass) shall be required when the following conditions exist:
- a. With panes exceeding nine square feet, AND
 - b. Where the lowest edge is less than 18 inches off the floor, AND
 - c. Where the top edge is greater than 36 inches above the floor, AND
 - d. The walking surface is within 36 inches of glazing.
- Safety glazing is required EXCEPT when the glazing is protected by a 1 ½ inch minimum high horizontal bar located 36 inches above the walking surface. The bar must be capable of withstanding a horizontal load of 50 lbs. /linear foot without contacting the glass.
78. **Emergency Escape and Rescue Openings.** (R310.1) Every sleeping room shall have at least one operable emergency and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. (Ky. Amendments).

FINAL INSPECTIONS CHECKLIST OF SINGLE & TWO FAMILY DWELLINGS

1. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches above the floor.
 2. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3.
 3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside.
 4. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.
 5. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.
79. **Minimum opening area. (R310.1.1)** All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet. Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet.
- **Minimum opening height.** The minimum net clear opening height shall be 24 inches. (R310.1.2) *The minimum height is based on the height necessary to admit a firefighter with full rescue equipment including breathing apparatus.*
 - **Minimum opening width.** The minimum net clear opening width shall be 20 inches. (R310.1.3) *The minimum width is based on 2 criteria: the width necessary to place a ladder within the window opening and the width necessary to admit a firefighter with full rescue equipment including breathing apparatus.*
80. **Operational constraints.** These egress window openings shall be operational from the inside of the room without the use of keys, tools or special knowledge. (R310.1.4)
81. **Door (at interior stair only)** may open at but not swing over the top step. (R311).
82. **Smoke Alarms. (R314.1)** All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning equipment provisions of the NFPA 72.
83. **Location of Smoke Alarms. (R314.3)** Smoke alarms shall be installed and working in the following locations: 1. In each sleeping room. 2. Outside each sleeping area in the immediate vicinity of the bedrooms. 3. On each additional story of the dwelling, including basements, but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels.; 4. When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all the alarms in the individual unit.
84. **Smoke Alarms: Power Source. (R314.4)** Required Smoke alarms shall receive their primary power from the building wiring... and when the power is interrupted, shall receive power from a battery. (Table IMC 403.3). *Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous.*
85. **Carbon Monoxide Alarms and Detectors (R315.1)** required outside each separate sleeping area in new dwellings with fuel fired appliances or with attached garages.
86. **Carbon Monoxide Alarms where required in existing dwellings. (R315.3)** Where work requiring a permit occurs in existing dwellings that have attached garages or within which fuel fired appliances exist, the permitting authority shall inform the owner/occupant that carbon monoxide alarms shall be provided in accordance with Section R315.1

H. Attics

87. **Attic access opening required.** Attic access opening shall be properly sized: 22 inches by 30 inches. (807.1) When at least 30 SF of the attic area has a clear height of over 30", attic access is required. The opening must be located readily accessible in ceiling of room, in hallway ceiling, or other readily accessible location (not blocked or obstructed, such as above a closet shelf). (R807.1).

FINAL INSPECTIONS CHECKLIST OF SINGLE & TWO FAMILY DWELLINGS

88. Appliances in Attic.

- Opening large enough to remove a furnace or other piece of mechanical appliance installed in attic. (M1305.1.3).
- Solid floor min 24in wide from entrance to appliance (1305.1, 1). Max 20ft from access opening to appliance (1305.1.3)
- Passageway <-6ft high OK for [50ft] (unlimited)length (1305.1)
- Min 30in x 30in level platform required for service access (1305.1.3)
- Platform not required if service possible from access opening (1305.1.3)
- Luminaire & receptacle outlet near appliance (1305.1.3.1)
- Switch for Luminaire at passageway entrance (1305,1,3,1)

89. Attics with limited storage must have been completed per requirements of (Table R301.5). Attic spaces served by a fixed stair shall be designed to support the minimum live load specified for sleeping rooms (30 lb. live load minimum).

90. Water heater located in attic – pan with a minimum two inch curb. Drain line run to exterior of structure terminates six inches above grade. Installation as per Kentucky Plumbing Code.

I. Garages and Carports

91. Carports. (R309)

- Carports shall be open on at least two sides.
- Carport floor surfaces shall be of approved noncombustible material
- Carports not open on at least 2 sides shall be considered a garage and shall comply with the provisions of the section for garages.
- Exception. Asphalt floor surfaces shall be permitted at ground level in carports.
- The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

92. Garages. (R302.5)

- Openings from a private garage into a room used for sleeping are not permitted.
- Other openings between the garage and residence shall be equipped with solid wood doors, 1 3/8" thick, solid or honeycomb core steel doors not less than 1 3/8" thick, or 20 minute fire-rated doors.

93. Garage exterior walls less than 3 feet from property line required to have one-hour construction. (R302).

94. Garages: Duct Penetration. (R302.5.2) Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gage sheet steel or other approved material and shall have no openings into the garage.

95. Garages: Other Penetrations. (R302.5.3) Penetrations through the separation required in Section R309.2 shall be protected by filling the opening around the penetrating item with approved material to resist the free passage of flame and products of combustion. (E.g. fire-rated caulk).

96. Hot water heaters and furnaces located in garages must be protected from impact by vehicles by means of steel barrier bolted to floor and located near the appliance. (1307.3.1) Any flame or sparking device must be located greater than 18 inches above the floor. (M1307.3)

97. Garages: Separation Required. (R302) The garage shall be separated from the residence and its attic area by not less than ½ inch gypsum board applied to the garage side.

- Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8" Type X gypsum board.
- Where the separation is a floor ceiling assembly the structure supporting the separation shall also be protected by not less than ½ inch gypsum board.

FINAL INSPECTIONS CHECKLIST OF SINGLE & TWO FAMILY DWELLINGS

- Garages located not less than 3 feet from a dwelling unit on the same lot shall be protected with not less than ½ inch gypsum board applied to the interior side of exterior walls that are within this area.

98. **Garages: Floor Surface. (R309.3)** Garage floor surfaces shall be of approved noncombustible material (example: concrete). The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

J. Basements

99. **Drilling and Notching of Sawn Lumber. (R502.8.1)** Notches in solid lumber joists, rafters, and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the member and shall not be located in the middle one-third of the span.

- Notches at the ends of the members shall not exceed one-fourth the depth of the member.
- The tension side of members 4 inches or greater in nominal thickness shall not be notched except at the ends of the members.

100. **Holes Bored in Sawn Lumber. (R502.8.1)** The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2 inches to the top or bottom of the member, or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches to the notch.

101. **Under Stair Protection. (R302.7)** Enclosed accessible space under stairs shall have walls, under stair surface, and any soffits protected on the enclosed side with ½ inch gypsum board. *If the area under the stairs is not enclosed, is left open to the rest of the room, not walled in, the under stair protection is only required under the slanted stringers area.*

102. **Floor framing. Floor/ceiling draftstopped if greater than 1000 sq. ft. using open web trusses. (302.12)** Check for this in either the crawlspace or in the ceiling of the basement.

103. **Bulkhead Enclosure Stairways. (R310.3)** Stairways serving bulkhead enclosures, not part of the required building egress, providing direct access from the outside grade level to the basement. The bulkhead enclosure with the door panels in the fully open position shall provide the minimum net clear opening of 5.7 SF and clear opening height of 24" and clear opening width of 20" as required in Sections R310.1.1 thru R310.1.4.

104. **Basement Sleeping Rooms.** Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. **(Ky. Amendments). (R310.1)**

105. **Hot water heater** must be installed and ready to operate, including pressure relief valve. Pressure relief valve piping to be hard drawn copper or galvanized steel, and terminating downward not more than two feet nor less than six inches above grade at exterior. Hot water heater to be secured to wall frame. (Seismic zones only). Installation shall be as per requirements of the *Kentucky Plumbing Code*. Proper combustion air openings must be provided for fuel fired hot water heaters.

106. **Shut-off for main water line** (per *Kentucky Plumbing Code*), this must be checked by the plumbing inspector; and main gas line must be installed at house entry of these systems and this must be checked by the natural gas inspector.

107. **All natural gas, propane gas, and fuel oil appliances and equipment** (also including manufactured gas fireplace units) subject to the *2009 NFPA 54 National Fuel Gas Code* shall be installed checked and approved by the person installing the appliance or system, or possibly by the fuel supplier upon request. The building inspector does not check these installations.