

# **Scheduling Residential Inspections**

Knox County Code Administration & Inspection

Phone: (865) 215-2325

Fax: (865) 215-4255

When each phase of your building is ready for inspection, contact the codes office at (865) 215-2325 to schedule. *Note: Call 24 to 48 hours in advance to schedule inspections.*

## **GENERAL REQUIREMENTS FOR INSPECTIONS**

This is a summarized version of a few of the code requirements. The 2006 International Residential code and the 2006 International Building code.

### **FOOTINGS – FIRST INSPECTION**

Footings are inspected before the concrete is poured. All grade stakes, bulkheads and reinforcing, if required, must be installed before inspection.

1. Must be a minimum of 8x16, 8x20 for 12” block, footings should always be installed according to approved drawings.
2. If there is rock, it should be cut down 6” to 8” below bottom of footing. Fill back with #57 stone. Then use 2 #5 or 3 #4 rebar installed 10 feet minimum on each side of rock.
3. All footings that are backfilled with flowable fill and must have a minimum of 2 #5 or 3 #4 rebar continuous. Minimum width of 24” required. A State of Tennessee licensed architect or engineer letter of approval is an acceptable alternate.
4. All setbacks from property line must be met for that zone.
5. Monolithic slabs must be formed and ready to pour. Must have rebar and wire already installed. The bottom of all footings must be a minimum of 12” below grade.
6. Erosion control.
7. Permit number, lot number, and address posted.

**FRAMING – SECOND INSPECTION**  
**Plumbing & Mechanical Rough In**

This is the rough in inspection on framing, plumbing, foundation walls, mechanical and gas. This inspection is done before any insulation, sheetrock or siding is installed.

1. Check for lintels over all openings with 4” minimum bearing on each end, general construction, cracks and size of blocks in relation to backfill depth. An 8” block can have 4 feet of unbalanced backfill. A 12” block can have 6 feet of unbalanced backfill. A concrete filled 12” block can have 8 feet of unbalanced backfill. A concrete filled 8” block with #4 rebar 2 feet on center can have 7 feet of unbalanced backfill. An engineer must design all walls with more than 8 feet of backfill.
2. Must install lintels at HVAC openings.
3. All masonry must be supported by masonry, concrete or steel or per the adopted code.
4. The unsupported height of masonry piers shall not exceed 4 times their least dimension if hollow and 10 times their least dimension if filled solid. All piers over 10 times their least dimension must be designed by an architect or engineer.
5. Crawl space ventilation shall be 1 square foot of vent per 150 square feet of floor area. This may be reduced to 1 square foot vent per 1500 square feet floor area if a poly vapor barrier is installed. There shall be one vent within 3 feet of each corner.
6. Check nailing requirements for studs, sill plates, ceiling joists, floor joists, rafters, ledgers, sheathing, etc.
7. When you have a truss girder, there must be direct bearing support at least the same width as truss girder, beam, etc. installed and carried down to the foundation.
8. Roof and floor trusses must sit on the designed bearing points.
9. Cut or modified trusses must have a letter from truss manufacturer or licensed architect or engineer submitted to our office detailing how repairs were made.
10. All floor joists, roof trusses, floor trusses and any other load carrying members must have direct bearing support. A 2x2 ledger strip nailed with 3-16d nails at each joist etc, or a structural hanger or a drop girder if so designed.
11. When notching a wall stud exceeding 25%, or a hole exceeds 40%, a stud bracket must be installed.
12. When drilling or notching top plate over 50%, a 24 gauge steel plate spanning notch must be installed with 4-16d nails at each end.

13. All cut joists or rafters, etc, must be braced to adequately support loads imposed if cut in excess of code provisions. Never cut or notch in middle third of span.
14. Fire stopping shall be provided between stories, between top story and roof space, in chimney chases at each floor level, etc, as listed in the code.
15. Structures built with truss-joist, micro-lam, or LVL headers must be installed per manufacturer's instructions.
16. Stairs must have 6 foot 8 inch minimum head clearance. Maximum riser 8 ¼ inches, minimum tread 9 inches.
17. Rafters of an intersecting gable roof must sit on a valley plate or structural wood blocks can be installed on the underside of the roof sheathing to support the rafters. Rafters can not sit on the roof sheathing only.
18. All plumbing must be installed by the code and all plumbing materials and appliances must also be installed per manufacturer's instructions.
19. Test water supply piping with working pressure or 75PSI air.
20. Test drainage, waste, and vent piping with 5PSI air or fill with water.
21. Sanitary or vent tee's can only be used for venting or from horizontal to vertical only.
22. Copper or plastic water piping must be hung every 6 feet. Drainage waste and vent PVC pipe must be hung every 4 feet.
23. 2-inch and smaller drainpipe must slope ¼ inch per foot minimum. Drain pipe larger than 2 inches must slope 1/8 inch per foot minimum.
24. All buildings must have at least one 3-inch vent through the roof. All fixtures must be vented in some way as per the code.
25. Water piping coming to the house, must be ¾ inch minimum. Hot or cold water piping must be ¾ inch minimum and can branch off to a maximum of 3 fixtures on ½ inch.
26. All mechanical materials and equipment must be installed per the code and manufacturers instructions.
27. Verify bedroom window sizes are large enough for secondary emergency egress. 5 square foot net clear opening for windows with sills  $\leq$  44 inches above grade, 5 ½ square feet for all other bedroom windows.

## FINAL INSPECTION

The house must be completed and have the final inspection approved before moving in. Occupying the building before passing final inspection is a violation of state and local laws.

1. Structure should be completed according to your approved plans.
2. Structure must have final electrical approval by state inspector.
3. Guardrails on decks, stairs, porches, or balconies 30 inches or more above grade must be 36 inches minimum height and have intermediate rails, which will not pass a 6-inch ball.
4. Stairs must have a handrail if total rise is 30 inches or more. Handrail height shall be 30 inches to 38 inches above the nose of the tread.
5. A minimum 3' x 3' landing shall be required on each side of an egress door. The landing at the exterior of an exterior door shall be not more than 8 ½ inches below the top of the threshold.
6. Smoke detectors must be installed in each sleeping area, outside each sleeping area in the immediate vicinity of the bedrooms, in the garage, and on each level of dwellings including basements and cellars. They must be series wired electric with a battery backup should be installed 4 inches to 12 inches from all corners of ceilings and walls and according to manufacturers instructions.
7. Garages must have a minimum of ½ inch gypsum board installed on the wall joining the residence and on the ceiling. All penetrations must be sealed. Attic access in garage shall be covered with ½ inch gypsum or 2 coats of fire retardant paint.
8. All fireplaces must have an outside air supply for combustion.
9. Enclosed accessible space under stairs shall have walls and ceiling protected with ½ inch gypsum board.
10. All mechanical materials and equipment must be installed per the code and manufacturers instructions.
11. Manufacturers instructions must be on site for the inspection and be left on site for the life of the house.
12. Items of extreme importance include: Combustion air requirements for gas equipment, clearance to combustibles, clearance to equipment, proper venting of equipment and proper gas pipe sizing.
13. Outside decks must be built with pressure treated or rot resistant materials.

14. #2 pine deck joist spans are as follows:

- 2x6 @ 16" centers – 9'-9"
- 2x6 @ 24" centers – 8'-6"
- 2x8 @ 16" centers – 12'-10"
- 2x8 @ 24" centers – 11'-0"
- 2x10 @ 16" centers – 16'-1"
- 2x10 @ 24" centers – 13'-2"
- 2x12 @ 16" centers – 18'-10"
- 2x12 @ 24" centers – 15'-4"

15. A single 2x can be used for a header joist up to 4 feet maximum. This must be the same size as the floor joist.

16. Headers over 4 feet must be doubled.

17. Decks 30 inches or more above grade must have a guardrail 36 inch height minimum and intermediate rails which will not pass a 6 inch ball.

18. All floor joists to header connections must have direct bearing support, 2x2 ledgers nailed with 3-16d nails at each joist, approved hangers or a drop girder.

19. Decks higher than 8 feet must have 4x6 or larger posts.