

ORANGE COUNTY INSPECTIONS
LIST OF REQUIRED INSPECTIONS FOR RESIDENTIAL
CONSTRUCTION

This information is intended to give guidance to the homeowner/ builder regarding required inspections for single-family residential construction. This is not intended to be an all-inclusive list of code requirements. To request an inspection, please call 245-2600.

- *Approved plans are required for all inspections*
- *Footprint must match plans; any changes will require approval from Planning, Environmental Health, and Building Inspections*
- *Site must be accessible by vehicle and address posted.*

FOOTING INSPECTION

- Clear of water, debris, roots, and loose soil.
- Bulkheads and grade stakes in place.
- Rebar in place (if required).
- All corners/sides squared.
- Portable toilet on site (not required for manufactured homes)
- Bottom of footings relatively flat and level
- Soil bearing report from engineer for Superior Walls may be required
- Engineer design required when rock is encountered or unusual soil conditions.

SAW SERVICE INSPECTION

- All receptacles GFI protected
- Ground rod driven
- Pole braced in two directions is recommended

PROJECTION INSPECTION

- Minimum footing projection for foundation wall is two inches
- Piers located in middle third of footing
- Maximum projection equals depth of footing
- Mortar joint thickness
- Bolt placement
- Pier size and heights
- Crawlspace ventilation
- Access opening
- Solid cap for piers

FOUNDATION/FLOOR FRAMING INSPECTION

- Crawlspace graded
- Crawlspace and foundation drains installed per code and terminated separately
- Damp-proofing and foundation drain
- Floor framing complete **without plywood deck**
- Termite treatment
- Crawlspace ventilation
- If closed crawlspace, must be sloped to one or more drains
- Closed crawlspaces require protection from moisture during construction, it is recommended that poly be installed and a dehumidifier be used as soon as roof is dried in.

WATERPROOFING INSPECTION

- Required for all basement walls including Superior Walls **before backfill**
- Required for closed crawlspaces; sacrificial poly must be installed as soon as house is dried in
- Foundation drain installed per code

BASEMENT FOUNDATION INSPECTION

- Design required for poured in place concrete
- Wall forms and steel inspected before placing concrete
- Design required for masonry foundation, based on soil type and height of backfill. See IRC Tb. R404.1.1 (1) for design requirements. Orange County soil classification is typically CL
- Layout design and manufacturer's installation manual required for Superior Walls

Basement Foundation Inspection – continued

- All required reinforcement must be inspected before pouring walls and filling block**

SLAB INSPECTION – GARAGE/PORCH/BASEMENT

- Expansion joint-if required
- Stone base-when required
- Reinforcement if required
- Thickened areas for bearing walls or point loads
- Poly in place
- Galvanized flashing between concrete and any framing
- Garage slabs must have expansion joint or chalked lines to verify slope
- Strings pulled to verify depth of pour
- All form work in place
- Termite treatment

ELECTRIC ROUGH INSPECTION

- All concealed wiring installed per NEC
- All pre-drywall fixtures installed
- Ground and switch joints made up in all boxes
- Metal boxes grounded
- Nail plates installed

PLUMBING ROUGH INSPECTION

- All drainage, waste, and vent piping installed per IPC and tested with air (5psi) or with water (36 inches above highest fixture)
- Water lines installed per IPC and tested to 100 PSI
- Tub/showers installed and tested
- Shower panning installed and tested
- 2x4 exterior walls must be furred out or use 2x6 studs when washer standpipe traps are installed so that full depth insulation can be installed
- Water heater pans piped to exterior
- Nail plates installed

GAS PIPING TEST/ROUGH

- All gas piping installed, tested, and labeled if required
- All CSST piping installed and tested per manual and code
- CSST must be electrically bonded per manufacturer's installation instructions

MECHANICAL ROUGH IN

- All boots and ductwork above first floor installed and sealed with mastic, caulk, or approved tape.
- Line sets and condensate piping installed for air handler installed above first floor
- Returns installed
- Air handlers must be installed within 20 feet of attic or crawlspace access
- Factory fireplaces with vents or chimneys installed per manufacturer's installation instructions; **instructions must be with appliance**
- Dryer vent installed
- Duct insulation requirements:
 - R-8 – supply ducts installed in unconditioned spaces
 - R-4 – required for returns in unconditioned attics or outside
 - R-2 – required for returns in other unconditioned spaces

MASONRY FIREPLACE INSPECTION

- Completion of hearth and chimney to first flue properly sized for hearth opening and height of chimney
- Hearth extension properly sized
- Hearth extension cannot be supported by framing
- Clearances from hearth and chimney to combustibles

PRE BRICK VENEER (May require more than one inspection)

- OSB, plywood, and fiberboard sheathing must be covered with weather-proof membrane (nailing pattern of structural fiberboard sheathing must be checked before installation of weather proof membrane)
- Flashing for weep holes installed, flashing can be 6 mil poly or galvanized metal or other approved product
Flashing for weep holes is required under windows
- Lintels installed that require bolting or nailing; flashing or weather proof membrane must be installed over top of lintels
Lintels over ten feet must be designed by engineer
- All windows and doors installed and flashed per manufacturer's installation instructions

PRE-SIDING INSPECTION

- Nailing pattern for structural fiberboard sheathing
- Nailing pattern for combination fiberboard and OSB/plywood bracing
- Bracing for garage wing walls
- Weatherproof membrane must be installed under all siding products.
- All windows and doors installed and flashed per manufacturer's installation instructions
- If house or structure is fully sheathed in OSB, nailing pattern inspection not required.

FRAMING INSPECTION

- All trade rough-ins complete
- Roofing complete
- Penetrations fire-stopped and insulation baffles installed
- Safety rails in place on stairs and balconies
- Load bearing conditions supported by structural elements and transferred to the foundation or designed beams
- Engineered and sealed designs for steel, laminated beams, or truss construction (copy of engineering must be in permit box for framing inspection)

INSULATION INSPECTION

- Floors – R-19
- Walls – R-13
- Ceiling – R-30 accepted if full depth over top plate otherwise R-38 will be required; blown insulation in attic requires depth markers
- Closed crawlspaces – R-10 attached to foundation wall (foam must be tested and approved for use in crawlspace). See Sect. 409 of 2006 N.C. Residential Code for other restrictions.
- Orange County strongly recommends that contractors use only Kraft-faced or un-faced insulation. The use of poly as a vapor barrier is not recommended in our climate zone because of the possibility of condensation forming on the back side or “cool” side.
- Other insulation products installed per manufacturer's installation instructions
- Spray foam products should only be installed by certified installers and manufacturer's specifications and installation instructions provided to the inspector
- Insulation baffles installed for ventilation where necessary except for sealed attics where spray foam is used.
- R-values and U-values in compliance with RES-CHECK if applicable

ELECTRIC/PLUMBING TRENCHES

- All waterlines, sewer lines, and electrical wiring underground must be inspected prior to backfill
- All piping must be sleeved and sealed through foundation wall

ELECTRIC/PLUMBING/MECHANICAL IN SLABS

- Any electrical conduit, plumbing, or ductwork in or below slabs must be inspected before slab prep begins. All DWV below slab must be tested with air (5psi) or with water (10 feet head)
- All hydronic piping must be tested and inspected before pouring concrete and remain pressurized during pour
- All piping extending through slab must be sleeved or protected by approved method

GAS PIPING TEST/FINAL

- Final air test on gas piping required
- 2 PSI systems labeled
- Copper tubing used as gas piping must be labeled
- CSST piping tested per manual
- Do not test through regulators.**

MECHANICAL FINAL

- Air handlers and condensers installed; **installation manuals left with air handlers.**
- Gas appliances vented properly; installation manuals provided
- Ductwork, line sets, and condensate piping complete
- Filters installed in returns
- Ducts and returns clean of debris and dust
- Thermostats installed
- Floor registers installed or on site

PLUMBING FINAL

- Fixtures installed & connected to DWV system & water supply
- Fixtures caulked to countertops or floors
- All water heaters located in garages elevated and protected from physical damage; **installation manual must be provided.**
- R6.5 insulation required on waterlines in attics or Garages
- Anti-siphon devices installed on water spigots
- Water heater PRV piped to pan or through an air gap to the outside, pan drain piped to exterior
- Thermal expansion protection and pressure reducing valves installed (public water supplies)
- Water turned on if available.

ELECTRICAL FINAL

- All electrical work complete per NEC
- All electrical components and fixtures UL listed.
- Panels complete, bonded, and labeled
- Copper waterlines bonded
- Well casing bonded
- Ground rod driven and connection to electrode exposed
- Exterior light fixtures caulked to siding
- Receptacles required to be GFI protected must be labeled
- Access provided for whirlpool pump motor

BUILDING FINAL

- All trades complete
- All penetrations sealed
- Decks, stairs, guardrails and handrails complete
- Positive drainage from home
- Six inches clearance from siding to finish grade
- Crawlspace and foundation drains terminated to daylight
- Crawlspace clean and poly installed (sealed or ventilated)
- Sealed crawlspaces complete per approved design or 2009 IRC
- Siding or veneer complete
- Exterior painting and caulking complete
- Garage doors installed; must be rated for 90 MPH
- House numbers posted
- Termite guarantee provided (must have before CO can be issued)
- Zoning final inspection