

# Residential Framing Rough-in Inspection Guideline

This guideline is not to be considered an all-inclusive list of required items Based on the 2021 International Residential Code

All rough framing and masonry shall be completed. All sub trades rough-in work shall be completed. The structure is to be dried in, doors and windows installed, fireplaces, roof flashing and shingles completed. INSULATION NOT TO BE INSTALLED except in concealed areas such as behind showers and cantilevered floors. Sheet rock is not to be stacked against walls. Openings without doors or windows should be weatherproofed

Every structure must have a minimum 3-0 x 6-8 side hinge exit door. Every basement, habitable attic and sleeping room must have an emergency escape and rescue window or door. The bottom window sash must open clear minimum 20 inches wide, minimum 24 inches high, be at least 5.7 net sq feet (821 sq inches), and be within 44 inches of the floor (R310)

Glazing in windows in hazardous locations must be tempered (doors, next to doors, above tubs, in stairwells) (R308.4) Window maximum U Factor 0.30 (Table N1102.1.2)

All structural members, their size, spans and method of attachment shall be in accordance with the IRC. Any alternative material not prescribed in the code must be approved by the Building Official (R301.1.3) Rafter size per Table 802.4 Rafters must not extend below the bottom of the ridge (R802.3)

Cuts, notches and bored holes in laminated veneer lumber, glue laminated members or I Joists are not permitted beyond the manufacturer's installation instructions. Truss members shall not be altered in any way without the written approval of the manufacturer or a design professional. Truss drawings shall be available at the time of inspection. Hurricane clips and roof tie-downs to be installed per manufacturer or as required per R802.11 (R502.8.2 R502.11 R802.10.1)

All load bearing members shall be grade stamped (R602.1)

Any framing member that is cut, bored or notched beyond allowances shall be reinforced (R602.6)

Per the UCC regulation, wall bracing shall be installed per the 2006 IRC R602.10 through R602.11.3. In Seismic Design Category C, let-ins are not permitted on the bottom floor of a two story structure

Attic areas shall be ventilated. A minimum 22 inch x 30 inch access shall be provided to the attic. A larger opening might be required when equipment is located in the attic (R806.1 R807.1 M1305.1.2)

Fire blocking shall be in place (enclosed chases, floor/ceiling penetrations, soffits, stairs and below tubs) ASTM E-136 caulk or other approved material to seal vertical electrical and pipe penetrations and horizontally not to exceed 10 feet (R302.11)

EIFS (stucco) requires a weather resistant membrane between the EIFS and the wall sheathing (R703.9)

Flash porches, windows, doorsills and nailing flanges per manufacturer's instructions. Wall sheathing should be minimum 6 inches above grade (R703.4)

A flight of stairs shall not have a vertical rise of more than 151 inches (12'7") between floor levels or landings (R311.7.3) Maximum rise 8-1/4" Minimum tread 9"

Sill plate anchors to be minimum 1/2" diameter spaced maximum 6' on center. Anchors shall also be placed no less than 3.5" and not more than 12" from the end of each plate section (R403.1.6)

# Residential Electrical Rough-in Inspection Guideline

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The panel box should have neutrals and grounds made up. No breakers required. Service entrance should be installed. Wiring must be run to all locations (R109.2)

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Service loads shall be calculated in accordance with Table E3602.2. Services over 400 Amp shall comply with the 2020 NEC (E3401.3)

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Sub panels must have neutrals isolated from equipment grounds (E3908.6 E3908.7)

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A ground electrode system is required at each structure. All electrodes specified in E3608 that are provided shall be bonded together to form the ground electrode system

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A four wire circuit is required for 240 volt stoves and dryers (NEC250)

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Panel box locations must meet clear space requirement of 30" wide x 36" deep x 6'6" high in front of the panel. Panels cannot be located in a bathroom, clothes closet or over steps

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Receptacle spacing on walls shall not be more than 12 feet apart, must be within 6 feet of a door and on any wall over 2 feet in length (E3901)

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A minimum two 20 amp circuits are required for the kitchen countertop receptacles; no other loads on these circuits allowed. One 20-amp circuit for the laundry and minimum one for the bathrooms. Wiring to be size 12 AWG minimum Kitchen countertop receptacle spacing is basically every 4 feet OC. A receptacle shall be located within 24" of the edge of stoves, sinks and the edge of the countertop. Minimum one receptacle on each island and peninsula (E3703 E3901.4)

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Every habitable room, kitchen, bathroom, basement, accessory area and attached garage shall have at least one wall switch-controlled lighting outlet (E3903)

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Wiring shall be protected from abrasion and damage. Bored holes closer than 1-1/4" to the face of a framing member shall be protected by shield plates (E3802 NEC 300.4)

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Bond all metal water pipes (E3609.6) and gas piping likely to become energized (E3609.7 G2411)

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Use UL listed fixtures as designed and tested (ceiling fans, wet and damp locations, recessed can lights, etc.) (E3403.3 E3903)

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Luminaires in clothes closets must meet the required clearances from the luminaire to the nearest point of storage space. Luminaires designed for incandescent lamps must meet the clearance for incandescent luminaires. Inserting a fluorescent or LED lamp in an incandescent luminaire will not reduce the clearance requirement (E4003.12)

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Smoke and carbon monoxide alarm wiring is to be installed. Smoke alarms required in each sleeping room, immediately outside the sleeping area and each floor of the building. Carbon monoxide alarms required immediately outside the sleeping areas. Alarms are to be hardwired, interconnected with battery backup or an approved wireless system. Refer to manufacturer's installation instructions, but generally alarms are to be located within 12 inches of a ceiling and no closer than 3 feet to any source of air movement (returns, registers, ceiling fans, etc.). (R314 and R315)

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# Residential Mechanical Rough-in Inspection Guideline

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Gas piping shall be run to all locations and pressure tested. Test is to be gauged from the location of the meter through the foundation to the location of all appliances. Minimum test pressure is 1-1/2 times the working pressure, but not less than 3 PSI. Test duration is minimum 10 minutes. Mechanical gauges used to measure the pressure shall have a range such that the highest end of the scale is not more than five times the test pressure. (G2417.4)

Appropriate piping materials used (G2414). Properly sized and supported gas piping. No unions, couplings, bushings or flared fittings in concealed locations. Piping through holes in framing members closer than 1-1/2" to the face of the framing member (stud, joist or plate) shall be protected by a metal shield plate. The plate shall extend minimum 2" to the side, above or below the framing member. Some manufacturers require their own strike plates be used as shield plates. Protect piping from corrosion where passing through foundation walls and exposed to interior locations (G2411-G2417 M1308.2)

Fireplaces, vented or unvented, must be installed. If gas is to be used in the fireplace, the gas piping is to be installed and tested (G2417.1)

The vent termination for a mechanical draft system shall not be mounted directly above or within 3 feet horizontally from an oil tank vent or a gas meter and shall not be closer than 3 feet of an interior corner formed by two walls perpendicular to each other (M1804.2.6)

Fuel fired appliances are restricted in sleeping rooms, bathrooms and storage closets. See manufacturer's instructions for exceptions (G2406.2)

Air returns are to be installed. Prohibited in kitchens, bathrooms, garages and within 10 feet of a fuel fired appliance (M1602.2)

Supply boots must be installed and ducts insulated in non-conditioned spaces (N1103.3)

Condensate drain system and HVAC line sets installed (M1411)

Chimneys and vents shall be inspected for proper size and clearances. A mechanical draft venting system shall terminate at least 2 feet higher than any air inlet within 10 feet (G2427.6.4 G2427.6.7)

Clothes dryer exhaust to be roughed in. Maximum length not to exceed 35 feet (G2439.7.4)

Bathrooms and water closet compartments shall have openable windows or exhaust fans (R303.3 M1505.4.4)

# Residential Plumbing Rough-in Inspection Guideline

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Plumbing shall be roughed in to all locations (R109.2)

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Piping shall be supported per P2605.1

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Water hammer arrestors shall be installed in accordance with manufacturer's instructions (2015 IRC P2903.5)

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Drain system fittings used for any change in direction – vertical or horizontal – shall comply with Table P3005.1

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DWV piping to be tested with water with no evidence of leaking. The system shall be filled with water to a point not less than 5 feet higher than the highest fitting connection in the system. Water test duration is 15 minutes. Air test duration is 15 minutes. Piping must conform to one of the standards for ABS plastic, cast iron, PVC plastic or pressure rated pipe. PVC cell-core is not pressure rated pipe (P2503.5.1 P3002.2) Vacuum testing is acceptable for plastic pipe.

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Water supply piping shall be tested and proven to be water tight under a test pressure not less than the system working pressure or by an air test not less than 50 PSI. Test duration is 15 minutes (P2503.7)

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Piping through notches or holes in framing members that is less than 1-1/4" from the face of the framing member shall be protected by steel shield plates. The plates shall extend minimum 2" above sole plates and 2" below top plates (P2603.2)  
Air test not permitted for plastic piping.

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Anti-scald shower valves to be installed (P2708.4)

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Vent terminals to be minimum 6 inches above roof line. Pipe boots to be installed (P3103 P2606.1)

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Vent terminals shall not be less than 4 feet directly below any door or openable window. Vent terminals shall not be within 10 feet horizontally of openings into the building unless the terminal is at least 3 feet higher than the opening (P3103.5)

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