

# Western Washtenaw Construction Authority

Manchester, City of Manchester, Freedom and Bridgewater Townships

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## RESIDENTIAL CODE INFORMATION

*The following represents areas of common questions and violations of the 2015 Michigan Residential code. This is not intended to be inclusive but aid to the builder so as to alleviate problems in the field. Other code sections may or may not apply.*

**Building, Plumbing, Electrical, and Mechanical work must meet the current appropriate codes for the type of work. The code takes precedence over any omission on the plans.**

### **APPROVED PLANS MUST BE ON SITE AT ALL TIMES FOR INSPECTIONS** **LEGIABLE ADDRESS MUST BE POSTED**

**R302.6 Attached garages:** With living space above, a 5/8 type x drywall on ceiling and common walls and ½ inch drywall on balance of walls are required. Where there is not living space above, or where the garage is less than 3 ft. from the house, ½ in. drywall separation is required from floor to roof boards. A 1 3/8 in. solid core wood or a hollow metal door shall be used. May not pass through a bedroom. There shall be no other openings from the garage to the house.

**302.10.1 Kraft faced insulation** shall be protected with a thermal barrier (commonly drywall) and may not be left exposed.

**R305.1** Min ceiling height over plumbing fixtures is 6 ft. 8 in.

**R308** Safety glazing: within 24 in. of a door, above a tub or shower, in a stairway enclosure, windows greater than 9 sq. ft. and within 18 in. of the floor. (other cases apply also)

**R310.1 Egress windows:** Every room used for sleeping and basements shall have a window that meets egress requirements. (1) Net clear opening 5.7 sq. ft., (2) 20 in. clear width, (3) 24 in. clear height, (4) Clear opening not greater than 44 in. above floor, (5) Where Windows sills are located above or below 44" of the ground window may be reduced to 5.0 sq. ft. Window panels may not be removed to meet egress. Basement windows more than 44 in. below grade shall have a stairway or ladder from a minimum 3 ft. x 3 ft. window well. All basements shall have an egress window or door.

**311.2 Doors:** One 3 ft. x 6 ft 8 in. side-swinging door shall be provided that does not lead through the garage. All other doors shall be at least 24 in. in width. Doors may not swing out over a step or stairs. (except storm doors) All exterior doors shall have a landing on the exterior side of the doorway at least 36 in. in the direction of travel. (Except where there are 2 or fewer risers.)

**311.7 Treads and risers.** Risers shall not be greater than 8 1/4in. Open risers shall not have openings greater than 4in. where guards would be required. Tread shall be min. 9 in. measured from nosing to nosing. Where less than 11 in. tread nosing's are required. Nosing shall be ¾ in. to 1¼ in. in addition to the tread measurement. There shall not be variation exceeding 3/8 in. in riser height nor tread depth. Stairways at doors shall be measured from the top of the threshold.

**R 311.7.5 Stairway with winders** shall have a tread depth of not less than 10 in. at a point not more than 12 in. (measured from nosing to nosing) where the tread is narrower and the min. tread depth shall not be less than 6 in. The treads shall be of equal width and symmetrical.

**R 311.7.8 Graspable handrails** are required on all stairs with 4 or more risers. They shall be continuous without interruption by newel posts or other obstructions, located between 34 –38 in. above nosing and the ends shall return to the wall. Handrails, which form part of a guardrail, shall be 34- 38 in. above step nosing. Clearance between wall and handrail shall not be less than 1 ½ in. Graspable handrails shall consist of a cross section of at least 1 ¼ in. and not greater than 2 ¼ in. and a perimeter dimension of not less than 4 in. and not greater than 6 ¼ in. Handrails shaped like 2 x4 or 2 x 6 with a perimeter greater than 6 ¼ in. shall have a groove on both sides not less than 5/16 in. deep starting ¾ in. from the top of the railing.

**R 312 Guardrails** are required on any exterior walking surface over 30in. from floor or grade. Openings in guards shall be designed such that a 4 in. ball will not pass through the guard at any point including open treads. Residential guards shall be 36 in. in height minimum from the finished floor or stairway nosing. Guards shall be provided at any window where the window sill is greater than 72 in. above grade and is less than 24 in. above the finished floor.

**R 314 Smoke alarms** shall be hard wired, interconnected, and have a battery back up. Smoke alarms are required in the following locations. (1) Inside each bedroom, (2) In the immediate vicinity outside of the bedroom, (3) In each story including basement. When remodeling, smoke detectors shall be installed throughout to meet code above (unless wall or ceiling finish must be removed)

**R315.1 Carbon Monoxide Detectors:** Shall be installed in a home that has fuel fired appliances, or an attached garage in each separate sleeping area in the immediate vicinity of the bedrooms.

**R316.1 Foam plastic:** Foam plastic shall not be left exposed and shall be separated from the interior of the house by an approved thermal barrier.

**602.6.1 Drilling or notching** of the top plate more than 50% shall be reinforced by a galvanized metal strap 1 ½” wide with not less than 8 – 16D nails on each side. Holes in studs shall not be greater than 60% of the stud and be greater than 5/8” from the edge of the stud. In load bearing studs 40% - 60% of the stud may be drilled provided the stud is doubled and not more than 2 successive doubled studs are drilled. (Stud shoes is permitted when installed in accordance with manufacturer’s directions. Holes in all joists shall be located more than 2 in. away from the edge of the joist.

**602.8 Fire blocking:** Fire blocking shall be provided between horizontal (floor joist) and vertical (wall stud) spaces. Soffits, dropped ceilings, wall cavities greater than 10 ft. in height, stairways, ceiling and floor openings, and concealed sleeper spaces require fire blocking. Provide fire blocking in concealed horizontal spaces greater than 10 ft. in width.

**Window Sills:** Where the operable portion of the window is greater than 72 in. above grade and the interior opening is less than 24 in. above the finished floor, a guard shall be placed so that a 4 in. ball will not pass through.

**703.2** All exterior walls shall resist the intrusion of water by an approved means. 1-15# felt, Tyvek or other approved paper shall be applied under sidings and be properly flashed shingle fashion.

**E3609.6 Water and gas line bonding:** All water lines and metallic gas lines shall be bonded.

**E3902.5 Basement Receptacles:** All 15A and 20A receptacles in unfinished basement shall be GFCI protection.

**2605 Plumbing support:** plumbing shall be supported as per table p2605.1, Pipe shall be supported under stacks. Tub and shower spouts shall be supported.

**2708.4 Shower Control Valves:** Shall limit the high-water temperature to 120 degrees F.

## Inspection Schedule

Site must be clearly and visibly marked with address and owner's and contractor's names prior to any inspections being done. A re-inspection fee and/or failed inspections may result from not posting address.

### Building Inspections

**Footings:** After holes are dug, forms are set and ready for concrete. All footings shall be 42 in. deep. Footings for decks and garages must be inspected. Footings shall not be placed over disturbed soil. Jumps in elevation must be vertical. Weep tile connections through footings must be in place. Rebar shall be placed so that it has a minimum 2 in. concrete cover. Footings placed on disturbed soils or concrete that has been poured without an inspection will require a third party registered State of Michigan Engineer's report. Concrete encased electrode inspection in footing before concrete is poured.

**Foundation Wall Inspection/Rebar:** Must be reinforced in accordance to sec R 404 and inspected

**Backfill:** After damp proofing is completed with drain tile and 6 in. of pea stone over the tile and above the top of the footing. A sock type tile or a filter fabric over the stone must be used. Anchor bolts or straps shall be in place. Organic debris (straw, etc.) removed from backfill area. Exterior insulation shall be in place. Access to hole must be provided. The drain tile shall follow the damp proofing.

**Subsoil:** Before basement floor is placed. Posts installed and centered on footings, 4 in. pea stone or washed gravel floor base or sand leveled and vapor barrier installed. 2 ft. of insulation at walkout walls with slab isolated from the exterior by insulation. Interior drain tile shall be installed and run to a sump crock or to daylight. Provisions for radon reduction shall be installed.

**Brick Flashing Inspections:** After masonry base course flashing and all door and window flashings are installed and prior to any exterior finish is applied. (Not including roofing)

**Rough Building:** All framing completed. Electrical, mechanical, and plumbing rough inspections ready and/or completed. All portions of the building must be visible. Siding, roofing, windows, and doors may be installed. Engineered floor, roof truss drawings and approved plans must be on site. Any modification to trusses shall have engineering approval. All firestop and draft stop must be installed.

**Insulation:** After insulation is installed and before drywall is installed. Vapor barrier shall be installed on all wall spaces including small spaces. Provide a proper fit in small stud spaces and cut around electrical boxes. Windows and doors insulated. Framing gaps sealed. Items not completed on rough inspection may be inspected at this time. Vapor barrier may not be left exposed in attics, etc. Time spent on good tight insulation will last the life of the house. A certificate of insulation needs to be provided on or before final building inspection.

**Blower Door Test:** This is done by a certified third party.

**Final Building:** When house is completed. Electrical, mechanical and plumbing completed and inspected. All stairways, guardrails and handrails installed. Smoke

detectors interconnected and working. One means of egress must be completed allowing exit to the outside, including steps and/or guardrails and handrails where required (not through garage or sliding door).

### **Electrical Inspections**

**Temporary Service:** Before energized. One GFCI protected outlet required.

**Permanent Service:** Entrance wires run and secured. Panel bonded to ground. Circuits labeled. One GFI outlet installed.

**Underground Electrical:** All conduit or wiring run underground must be visible.

**Rough Electrical:** All concealed wiring run and boxes set. Grounds secured together.

**Final Electrical:** All wiring completed and energized. Gas line and water lines bonded. All devices installed. GFCI outlets installed in kitchen and bathrooms.

### **Mechanical Inspections**

**Rough Mechanical:** All concealed mechanical equipment and ductwork completed. Return air chase on outside walls insulated with approved materials. Bathroom fans installed and vents run to exterior.

**Rough Fireplace:** After fireplace and flue is installed. Any portion of the fireplace not visible shall be required to be made visible.

**Gas piping:** All gas piping must be visible and pressure tested with 40# at time of inspection.

**Underground Piping:** All in-ground ductwork or in-floor hot water heat prior to covering. Tubing for in-floor heat shall be pressurized.

**LP Tank & Line:** Tank set and permanent gas line run 18 in. below grade and visible, protection where coming out of the ground.

**Final Fireplace:** All work on prefab units completed. Instructions on site.

**Final Mechanical:** When all mechanical appliances are connected and operational.

### **Plumbing Inspections**

**Underground Plumbing:** All plumbing run under the basement or buried in the ground inside the house. All lines must be visible. Lines must be air tested.

**Sewer Inspection:** The drain line from the house to septic tank or to main sewer line.

**Shower Pan Insp:** Inspection is prior to tile and other finishes

**Rough Plumbing:** All concealed plumbing (supply and drain with vents) completed and pressure test in place. Shower pans must be inspected prior to covering.

**Final Plumbing:** All plumbing completed and functional. All fixtures installed, connected and operational. Maximum water temperature is 120 degrees.

**City of Manchester – Water & Sewer Inspections:**

**There are 2 separate departments responsible for inspections and both parties MUST do inspections before covering.**

**It is the responsibility of WWCA to do both a sewer inspection and a water line inspection.** Contact our office or visit [freedomtownshipmi.org](http://freedomtownshipmi.org) to download the plumbing application and submit it to our office.

**From cleanout at property line to curb stop:** The Village of Manchester is responsible; please call 734 428-7877 for inspection.

**Bridgewater Township – Water & Sewer Inspections:**

**House to tank:** Responsibility of Western Washtenaw Construction Authority

**Grinder pump installation:** Responsibility of Bridgewater Township.

Contact Dave Faust #517-403-2431

**Requirements for Certificate of Occupancy:** (See CofO requirements list)

- All required inspections completed
- Health department Certificate of Approval issued
- All additional inspection fees paid
- Insulation certificate
- Door Blower Test
- Zoning approval (where required)
- A Temporary CofO may be granted with the Building Official's approval and a fee of \$50.00 paid