

Factory-Built Housing: Setup Requirements

Building Department Guide [V08.26.22]

The intent of this guide is to provide a broad overview of the hookup requirements for factory-built housing located in the City of Missoula as it pertains to the Building Department (only). This is not an exhaustive guide; additional information may be required depending on the project. See also 'Additional Requirements' below.

Which permits are required to hookup factory-built housing?

Below is a list of permits commonly required when installing factory-built housing.

- ☐ **Electrical Permit:** Required to install a new service or to connect the unit to power.
- ☐ **Mechanical Permit:** Required if there are gas lines involved in the hookup.
- ☐ **Plumbing Permit:** For connection to city water and sewer.
- ☐ **Building Permit:** A building permit is required for all associated egress decks, stairs, landings etc. or other freestanding structures over 200 SF. Free standing structures over 120 SF require a zoning compliance permit.
- ☐ **Moving Permit:** A permit is required to move the home if it will impact the flow of traffic in any way, block streets, weave in between stoplights, or if any traffic control is needed. If that is the case, the structural mover needs to email coordinators@ci.missoula.mt.us to get a moving permit prior to transporting the structure in city limits. The purpose of this permit is to coordinate with emergency services.

How do I schedule an inspection or pull a permit?

Apply for permit by visiting the City of Missoula's [Permits and Licensing Portal](#). The City of Missoula Permit Coordinators can assist with permit application questions. They can be reached at (406) 552-6060 or coordinators@ci.missoula.mt.us. After a permit is issued, inspections can be scheduled by texting the word SCHEDULE to (888) 413-4439. [\[View IVR inspection codes\]](#).

BUILDING INSPECTION CHECKLIST

Pass the 'Final Building Inspection' to receive a *Certificate of Occupancy* and move into the home.

TIPS for passing the *Final Building Inspection*

- ☐ **Manufactured Homes:** Upload a copy of the [HUD Foundation Certificate](#) to the permit record (under docs/attachments) for the city inspector to verify at the final inspection. **Modular homes:** These homes will need to have previously passed a city inspection on the footings and foundation (prior to pouring).
- ☐ Permanent address numbers need to be installed and clearly visible from the street. Address identification characters shall contrast with their background, be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches in height with a stroke width of not less than 0.5 inch. [IRC 319.1].
- ☐ Inspector will verify there is a code compliant path of egress from the inside to the outside of the home. Make sure permanent, code compliant steps/landings etc. are installed at all exits.
- ☐ Final inspections on all mechanical, electrical, and plumbing inspections must be scheduled and passed before scheduling the final building inspection.
- ☐ Inspectors will look for compliance with the fire separation requirements and any additional decks/stairs etc.

PLUMBING INSPECTION CHECKLIST

- ☐ **Sewer hookup** - The mobile home drain must be connected to an approved sewer inlet with minimum schedule 40 PVC or ABS pipe. Proper fittings, connectors, solvents, and glues must be used. All piping must be leak-free. The drain connector must have a minimum slope of ¼" per foot. An accessible cleanout must be installed in the drain piping below the mobile home. All unused openings must be capped. [UPC 305; 719]
- ☐ **Hangers and Supports** – Schedule 40 PVC or ABS pipe must be supported at minimum 4' intervals. All piping must be supported in such a manner as to maintain its alignment and prevent sagging. Hangers and supports shall be of sufficient strength to support the weight of the pipe and its contents. Piping cannot be blocked from the ground due to settling and the freeze/thaw shifting of soils.

ELECTRICAL INSPECTION CHECKLIST

Services

- ☐ Electrical permits are required before starting the installation. Proper permits may be obtained online via the city of Missoula Citizen Portal.
- ☐ Rating - Mobile home service equipment shall be rated at not less than 100 amps and must have provisions for permanent feeders (hard-wired). [NEC 550.32-C]
- ☐ Over-Current Protection – Manufactured home feeders shall contain over-current protection in accordance with the manufactured home listing. A single disconnecting means is also required inside the manufactured home at the distribution panel location. The exterior and interior over-current protection must match in terms of amperage. [NEC 550.11 (A)]
- ☐ Location – Manufactured home service equipment shall be located adjacent to the manufactured home, but not on or in it, unless the manufactured home is located on a permanent foundation. This equipment must be readily accessible, in sight from and not more than 50' from the manufactured home which it serves. [NEC 550.32; ARM 24.301.411(1)(b)] All service equipment must be weatherproof and approved for exterior locations. [NEC 312.2 (A)]
- ☐ Height – Exterior manufactured home service disconnecting means must be between 2' and 6'7" from finished grade. [NEC 550.32 (F)]
- ☐ Condition – Unused openings in exterior service equipment and interior distribution panel equipment must be effectively closed by the use of approved blanks, plugs, etc. to provide protection equal to the wall of the equipment. [NEC 110.12 (A)]

Feeders

- ☐ Feeder must be properly sized according to the Manufacture nameplate on the manufactured home [NEC 550.11-D]
- ☐ Cords (Older Homes Only) – Mobile Homes manufactured in 1972 or before and not rated at more than 50 amps may use a factory-made power supply cord with an integral, molded cap. After-factory or replaced caps will not be allowed. Total cord length must be between 21' and 36'. [NEC 550.10 (B, C, D)]
- ☐ Conductors – All manufactured home service feeder conductors shall consist of four (4) continuous, insulated, color-coded conductors, one of which shall be an insulated grounding conductor. All underground conductors must be type U.S.E. URD or XHHW. Splices are not allowed. [NEC 550.33 (A)]
- ☐ Conductor Sizing - The following table may be used for sizing feeders: [NEC 310.15(B)(6) and NEC 310.12] *See Table 1.*
- ☐ Conduit – All homes manufactured *after* 1972 must be permanently connected by means of a metal raceway or rigid non-metallic conduit from the disconnecting means in the mobile home through the underside of the mobile home to the proper burial depths and continuing up from the burial trench to the mobile home service equipment. Conduit must be installed with the proper fittings, bushings, glue, etc. [NEC 550.10 (I) (2)]
- ☐ Burial Depth – The below burial depths must be maintained between the manufactured home and the manufactured home service equipment: [NEC Table 300.5] **Do not fill trench until inspection is approved.** *See Table 2.*
- ☐ Under Chassis Wiring – Under chassis wiring must be protected as a wet location. [NEC 550.14 H]
- ☐ Exterior Receptacles – Manufactured homes must contain an exterior accessible 125-volt ground fault circuit-interrupter type receptacle outlet. This receptacle may be located either on the mobile home or at the service equipment location. All exterior receptacles must be protected from weather or have a listed weatherproof cover. [NEC 550.32 (D,E)]

Grounding

- ☐ Electrodes – All mobile home service equipment must be grounded. This is normally done with two 5/8" diameter x 8' long copper ground rods driven into the earth to a depth of not less than 8'. The ground rods must be separated from each other by a distance of at least 6'. [NEC 250.52 (A)(5b)] Connected to the Service disconnect's grounding bar.
- ☐ Electrode conductors – The grounding electrode conductor must be continuous copper (no splices allowed) and protected from the physical damage. 100-amp services must be no smaller than #8 wire; 150 to 200 amp must be no smaller than #6 wire. [NEC 250.64 (B),(C); Table 250.66]

(Grounding Continued)

- ☐ Main bonding – The neutral conductor must be electrically isolated from the grounding conductors and equipment enclosures at all points other than the exterior service equipment. [NEC 550.16 (A)] A bonding jumper, sized the same as the grounding electrode conductor above, shall be used to connect the equipment grounding conductor to the neutral conductor at the first disconnecting means (main exterior service equipment closest to the mobile home). [NEC 250.28]

Associated Electrical Tables

Table 1:

Conductor Size (Hot-Hot-Neutral-Ground) (AWG or kcmil)		
Service Rating (Amps)	Aluminum*	Copper
100	#2 - #2 - #4 - #6	#4 - #4 - #6 - #8
150	2/0 - 2/0 - 1/0 - #4	#1 - #1 - #2 - #6
200	4/0 - 4/0 - 2/0 - #2	2/0 - 2/0 - 1/0 - #4

*Aluminum conductors must be coated with an approved antioxidant conducting paste at all connection points.

Table 2:

Conduit	Depth
Direct Buried Cable*	24"
PVC Conduit*	18"
Rigid Metal Conduit	6"
Intermediate Metal Conduit	6"

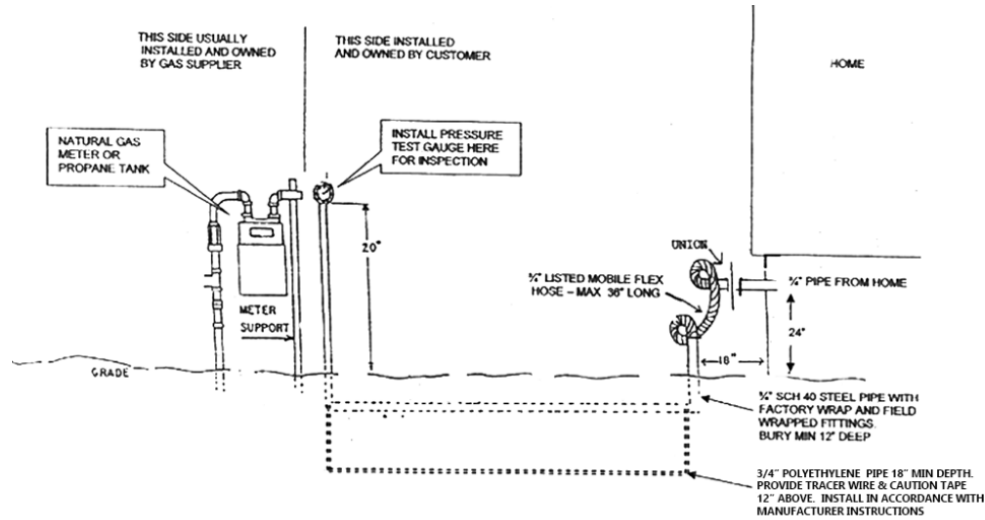
(When approved for direct burial)

*PVC conduit may be schedule 40 under the mobile home chassis above grade where exposed to physical schedule 80 is required. PVC conduits must be rated for electrical use (gray in color). Plumbing pipe (white) will not be allowed. Direct buried cable must be protected in conduit to a depth of 24".

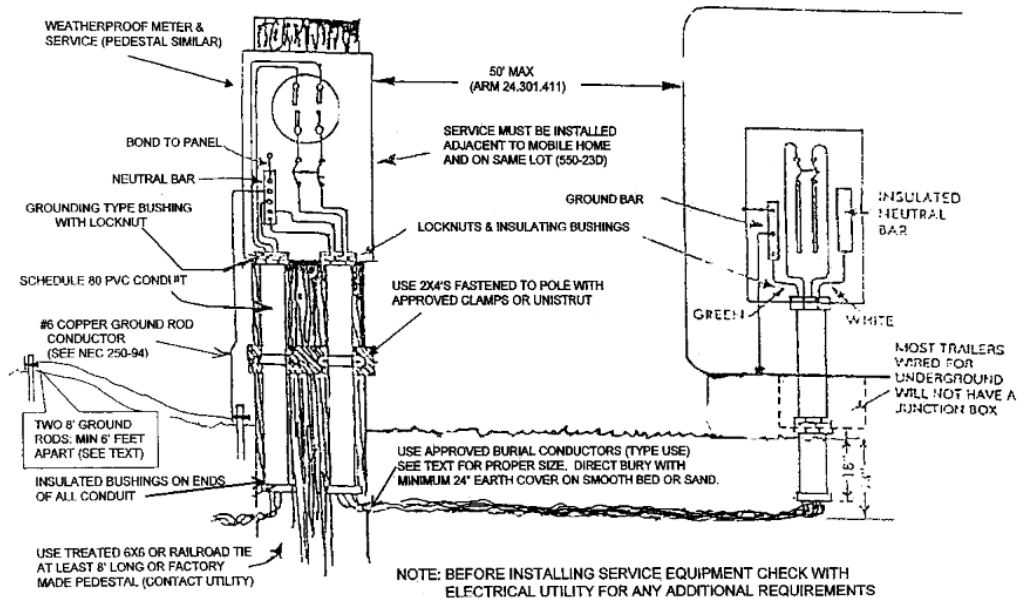
GAS PIPING (MECH) INSPECTION CHECKLIST

- ☐ Piping Material – section [IFGC 403] Joints must be sealed with an approved pipe joint material applied to the male threads. All underground piping must be buried with at least 12" of earth cover and shall be protected by factory coatings and field wrapped fittings and ends at a point of at least 6" above grade. (Other approved types of piping may be used such as CSST, when installed by a certified installer.) Do not bury any underground piping before it is inspected and approved. [IFGC 404.8, 4104.9 & IFGC 404.11.1. thru 404.14]
- ☐ Supporting – Gas piping must be securely strapped to the underside of the mobile at intervals not to exceed 8'. [IFGC 415 & IFGC TABLE 415.1]
- ☐ Flexible Connector – Each mobile home must be connected to any fixed gas piping with an approved mobile home connector, ¾" x 36" long maximum. [IFGC 411]
- ☐ Pressure Test – The following test must be in place at the time of inspection. The pressure test consists of a gauge attached to the gas piping at the point of the meter connection or at the LP gas tank, as to include the underground section of the piping (if any). All interior appliances (range, furnace, water heater, etc.) should have the inlet valves shut off and be disconnected at the union of flexible connector to avoid damage to the appliances. The piping must be pressurized with air to a minimum of 15 PSI for 15 minutes. No drop in pressure is allowed. Gauges may be purchased or obtained from local rental businesses, plumbing or heating contractors. Gauges must be a 0-to-30 POUNDS pound rating maximum. Damaged gauges will not be approved. [IFGC 406.4]
- ☐ The inspection cannot be made until the necessary permit has been obtained. The pressure should hold for several hours or days without a drop in the gauge pressure. If a drop is detected, check for leaks while pressurized with air with a soap and water solution sprayed onto fittings and joints. When the test gauge and pressure test is in place, schedule the inspection. The inspection can normally be done the following business day. The inspector must witness the test.
Note: The gas supplier will not turn on the gas until the electricity has been approved and connected.

GAS LINE CONNECTION AND TEST



TYPICAL UNDERGROUND ELECTRICAL CONNECTION



ADDITIONAL REQUIREMENTS

The following parties have additional requirements related to Cannabis cultivation and extraction.

- ☐ The City of Missoula [Current Planning and Land Use Division](#) has additional requirements in Title 16 and Title 20. They can be reached at (406) 552-6625 or zoningdesk@ci.missoula.mt.us.
- ☐ Apply for permits [online](#). The City of Missoula Permit Coordinators can assist with permit application questions. They can be reached at (406) 552-6060 or coordinators@ci.missoula.mt.us.

RESOURCES

Guide: *Factory-Built Housing Guide (Getting Started)*