

## GENERAL REQUIREMENTS

**317.5 Maintenance equipment.** Fueled equipment stored on roofs and used for the care and maintenance of vegetation on roofs shall be stored in accordance with Section 313.

### SECTION 318 LAUNDRY CARTS

**318.1 Laundry carts with a capacity of 1 cubic yard or more.** Laundry carts with an individual capacity of 1 cubic yard [200 gallons (0.76 m<sup>3</sup>)] or more, used in laundries within Group B, E, F-1, I, M and R-1 occupancies, shall be constructed of noncombustible materials or materials having a peak rate of heat release not exceeding 300 kW/m<sup>2</sup> at a flux of 50 kW/m<sup>2</sup> where tested in a horizontal orientation in accordance with ASTM E1354.

#### Exceptions:

1. Laundry carts in areas protected by an *approved automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1.
2. Laundry carts in coin-operated laundries.

### SECTION 319 MOBILE FOOD UNITS

**User note:** This new section to the 2022 edition of the *Oregon Fire Code* addresses the fire and life safety issues associated with *mobile food units*. In addition, it provides requirements for hazards related to *food cart pods*, which are mostly unique to Oregon.

LP-gas containers filled on-site are inherently more dangerous than those filled at a permitted filling location. Because flammable vapors are released as a routine part of the filling process, more strict regulations apply to propane containers filled at *food cart pods*.

Permits are available in Section 105 for local fire department adoption. Operational permits could include those for LP-gas, open burning or flames, outdoor assembly events, or the *mobile food units* themselves. Plan review for *food cart pod* site plans should be considered. Plan review is already required by the Oregon Health Authority in OAR 333-162-0920 for health-related requirements.

It is recommended that local jurisdictions honor other issued operational permits in their area using a regional cooperative agreement.

Construction permits for *automatic fire-extinguishing systems*, *gas detection* or LP-gas are authorized to be issued by the *fire code official* in accordance with Sections 105.6 and 106. *Building officials* do not issue permits for items inside *mobile food units*.

In accordance with OAR 333-162-0920, *mobile food units* that operate on a fixed route must provide an itinerary to the authority having jurisdiction. *Mobile food units* operating at a specific location or multiple locations shall also provide a list of those locations.

Early cooperation and coordination are essential during plan review as *mobile food units* are also permitted through the Oregon Department of Human Services and the local health authority.

**319.1 General.** Mobile food units that are equipped with appliances that produce smoke or grease-laden vapors shall comply with this section.

**319.1.1 Scope.** The provisions of this section shall govern the use and maintenance of *mobile food units* and *food cart pods*, along with the conditions of fire hazards on the premises. *Mobile food units* include, but are not limited to, self-propelled vehicles, trailered units, sheds or other roofed enclosures not requiring a building permit or otherwise regulated by this code. Where applicable, *food service structures* shall also comply with OAR Chapter 918 Division 674 for specific use prefabricated structures.

**319.1.2 Intent.** This section is intended to provide a minimum degree of fire and life safety to individuals in and around *mobile food units* built or maintained prior to and after the adoption of this section.

**319.1.3 Compliance.** The requirements contained herein apply to both new and existing *mobile food units* and *food cart pods*. For existing units or pods, when in the opinion of the *fire code official* strict conformance with this section is not practical or poses an undue hardship, the owner may request an extension of time by submitting a systematic plan of correction. The *fire code official* may reject the request and plan of correction, require amendments to the plan or accept it. All new and existing *mobile food units* and *food cart pods*, including those with a plan of correction, are to be in compliance with this section by January 1, 2025.

**319.2 Mobile food units.** General precautions shall be provided in accordance with Sections 319.2.1 through 319.2.18.4.

**319.2.1 Permits required.** Operational and construction permits shall be in accordance with Sections 105.1.1 and 105.1.2.

**319.2.2 Fire department access.** *Mobile food units* shall not block *fire apparatus access roads*, *fire lanes*, fire hydrants or other *fire appliances*.

**319.2.3 Address.** The address of the current operational location shall be posted and accessible to all employees.

**319.2.4 Separation.** *Mobile food units* shall be separated from buildings or structures, combustible materials except *approved* furniture, vehicles and other cooking operations by a minimum of 5 feet (1524 mm), or as *approved* by the *fire code official*. Sufficient space to allow for timely egress from *mobile food units* shall be provided in the event of fire or natural disaster.

**319.2.5 Indoor Use.** Generator use and cooking operations shall be prohibited where *mobile food units* are located inside a building unless *approved* by the *building official*.

**319.2.6 Generators.** Generators shall not be refueled while in operation. They shall not be operated in an enclosed area.

**319.2.6.1 Portable generators.** *Portable generators* shall be in accordance with Section 1204. *Portable generators* shall be positioned so that the exhaust is at

least 5 feet (1524 mm) in any direction away from any openings, air intakes or means of egress or from any building, structure or vehicle. A *listed* portable fire extinguisher complying with Section 906 with a minimum rating of 2-A:20-B:C shall be provided not more than 50 feet (15 240 mm) from the *portable generator*.

**319.2.6.2 Vehicle-mounted generators.** Vehicle-mounted generators shall be installed, used and maintained in accordance with their *listing* and the manufacturer's instructions.

**319.2.7 Exits.** *Means of egress* must be kept clear of any obstructions. A second *exit* or appropriately sized customer service window should be provided if cooking equipment is located between a work area and the primary *exit*.

**319.2.8 Electrical.** Electrical equipment and wiring shall be in accordance with Section 603.

**319.2.9 Heating appliances.** Heaters and heating appliances shall comply with Sections 603.4, 603.9 and 605.5 through 605.7.

**319.2.10 Exhaust hood.** Cooking equipment that produces smoke or grease-laden vapors shall be provided with a kitchen exhaust hood in accordance with Section 606.

**319.2.11 Fire protection.** Fire protection shall be provided in accordance with Sections 319.2.11.1 through 319.2.11.4.

**319.2.11.1 Fire protection for cooking equipment.** Cooking equipment shall be protected by automatic fire-extinguishing systems in accordance with Section 904.13.

**319.2.11.2 Fire extinguisher.** Portable fire extinguishers shall be provided in accordance with Section 906.4.

**319.2.11.3 Vehicles in transit.** A means shall be provided to ensure *mobile food units* preparing for transit secure all deep fat fryers in accordance with Section 319.2.11.4 and disarm the *automatic fire-extinguishing system* where required by the system manufacturer recommendations. Upon arrival at a new location, a means shall be provided to ensure employees verify the business address in case of emergency and where applicable, rearm the *automatic fire-extinguishing system*.

**319.2.11.4 Deep fat fryers.** Deep fat fryers shall comply with NFPA 96 and shall have a lid over the oil vat that can be secured to prevent the spillage of cooking oil during transit. This lid shall be secured at all times when the vehicle is in motion.

**319.2.12 Cooking oil storage.** Cooking oil storage shall be provided in accordance with Sections 319.2.12.1 through 319.2.12.5.2. Outdoor cooking oil storage shall be in accordance with Section 319.3.6.

**319.2.12.1 Cooking oil storage containers.** Cooking oil storage containers within *mobile food units* shall have a maximum aggregate volume not more than 120

gallons (454 L), and shall be stored in such a way as to not be toppled or damaged during transport.

**319.2.12.2 Cooking oil storage tanks.** Cooking oil storage tanks within *mobile food units* shall comply with Sections 319.2.12.2.1 through 319.2.12.2.2.

**319.2.12.2.1 Metallic storage tanks.** Metallic cooking oil storage tanks shall be *listed* in accordance with UL 80 or UL 142, and shall be installed in accordance with the tank manufacturer's instructions.

**319.2.12.2.2 Nonmetallic storage tanks.** Nonmetallic cooking oil storage tanks shall be installed in accordance with the tank manufacturer's instructions and shall comply with both of the following:

1. Tanks shall be *listed* for use with cooking oil, including maximum temperature to which the tank will be exposed during use.
2. Tank capacity shall not exceed 200 gallons (757 L) per tank.

**319.2.12.3 Cooking oil storage system components.** Metallic and nonmetallic cooking oil storage system components shall include, but are not limited to, piping, connections, fittings, valves, tubing, hose, pumps, vents and other related components used for the transfer of cooking oil.

**319.2.12.4 Design criteria.** The design, fabrication and assembly of system components shall be suitable for the working pressures, temperatures and structural stresses to be encountered by the components.

**319.2.12.5 Tank venting.** Normal and emergency venting shall be provided for cooking oil storage tanks.

**319.2.12.5.1 Normal vents.** Normal vents shall be located above the maximum normal liquid line, and shall have a minimum effective area not smaller than the largest filling or withdrawal connection. Normal vents are not required to vent to the exterior.

**319.2.12.5.2 Emergency vents.** Emergency relief vents shall be located above the maximum normal liquid line, and shall be in the form of a device or devices that will relieve excessive internal pressure caused by an exposure fire. For nonmetallic tanks, the emergency relief vent shall be allowed to be in the form of construction. Emergency vents are not required to discharge to the exterior.

**319.2.13 Appliance connection to fuel supply piping.** Gas cooking appliances shall be secured in place and connected to fuel-supply piping with an appliance connector *labeled* in compliance with ANSI Z21.69/CSA 6.16 for moveable gas appliances. The connector installation shall be configured in accordance with the manufacturer's installation instructions. Movement of appliances shall be limited by restraining devices installed in accordance with the connector and appliance manufacturer's instructions.

**319.2.14 LP-gas systems.** All LP-gas containers and systems installed on *mobile food units* that are not filled at

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a *food cart pod* shall comply with Chapter 61 and Sections 319.2.14.1 through 319.2.14.6.

**319.2.14.1 Annual inspection.** LP-gas containers installed on the vehicle and fuel gas piping systems shall be inspected annually as outlined in Section 319.2.18.3.

**319.2.14.2 Maximum aggregate volume.** The maximum aggregate capacity of LP-gas containers transported on the vehicle and used to fuel cooking appliances only shall not exceed 200 pounds (91 kg) propane capacity.

**319.2.14.3 Protection of container.** LP-gas containers installed on the vehicle shall be securely mounted and restrained to prevent movement.

**319.2.14.4 LP-gas container construction.** LP-gas containers shall be manufactured in compliance with the requirements of NFPA 58. The installation of LP-gas systems on vehicles shall comply with NFPA 58, Section 6.26.

**319.2.14.5 Protection of system piping.** LP-gas system piping, including valves and fittings, shall be adequately protected to prevent tampering, impact damage, and damage from vibration.

**319.2.14.6 LP-gas alarms.** A *listed* LP-gas alarm shall be installed within the vehicle in the vicinity of LP-gas system components, in accordance with the manufacturer's instructions.

**319.2.15 CNG systems.** Where CNG systems provide fuel for cooking appliances, such systems shall comply with Sections 319.2.15.1 through 319.2.15.4.

**319.2.15.1 CNG containers supplying only cooking fuel.** CNG containers installed solely to provide fuel for cooking purposes shall be in accordance with Sections 319.2.15.1.1 through 319.2.15.1.3.

**319.2.15.1.1 Maximum aggregate volume.** The maximum aggregate capacity of CNG containers transported on the vehicle shall not exceed 1,300 pounds (590 kg) water capacity.

**319.2.15.1.2 Protection of container.** CNG containers shall be securely mounted and restrained to prevent movement. Containers shall not be installed in locations subject to a direct vehicle impact.

**319.2.15.1.3 CNG container construction.** CNG containers shall be an NGV-2 cylinder.

**319.2.15.2 CNG containers supplying transportation and cooking fuel.** Where CNG containers and systems are used to supply fuel for cooking purposes in addition to being used for transportation fuel, the installation shall be in accordance with NFPA 52.

**319.2.15.3 Protection of system piping.** CNG system piping, including valves and fittings, shall be adequately protected to prevent tampering, impact damage and damage from vibration.

**319.2.15.4 Methane alarms.** A *listed* methane gas alarm shall be installed within the vehicle in accordance with manufacturer's instructions.

**319.2.16 Solid fuel cooking.** Solid fuel cooking operations shall comply with NFPA 96.

**319.2.16.1 Hoods.** Hoods for solid fuel cooking shall be separate from all other exhaust systems and shall comply with NFPA 96, Section 14.3.

**319.2.16.2 Solid fuels.** Solid cooking fuels shall meet, but are not limited to, the following:

**319.2.16.2.1 Fire extinguishers.** Provide a listed 2-A rated water spray fire extinguisher, for use with solid fuels only, or a 1.6-gallon wet chemical fire extinguisher listed for Class K fires in accordance with NFPA 10, with a maximum travel distance of 20 feet (6096 mm) to the appliance.

**319.2.16.2.2 Fuel location.** Solid fuels shall not be stored above any heat-producing appliance or vent or closer than 3 feet (914 mm) to any portion of a solid fuel appliance constructed of metal or to any other cooking appliance that could ignite the fuel.

**319.2.16.2.3 Outdoor storage.** Where required by the *fire code official*, outdoor fuel storage areas shall be protected with a fixed water pipe system with a hose capable of reaching all parts of the area.

**319.2.16.2.4 Fuel separation.** Solid fuel shall be separated from all flammable liquids, all ignition sources, all chemicals, and all food supplies and packaging goods.

**319.2.16.2.5 Ash removal.** Solid fuel, or other obstructions, shall not be stored in the path used for ash removal.

**319.2.16.2.5.1 Frequency.** Ash, cinders and other fire debris shall be removed from the fire-box a minimum of once a day.

**319.2.16.2.5.2 Safety.** Ashes shall be sprayed with water from a nozzle that cannot produce a straight stream before removal. A heavy metal container with a cover shall be provided for the removal of ash.

**319.2.17 Carbon monoxide alarms.** An *approved carbon monoxide alarm* shall be installed where generators are used or mobile cooking operations are performed in an enclosed area.

**319.2.18 Inspection, testing and maintenance.** Inspection, testing and maintenance of systems on *mobile food units* shall be in accordance with Sections 319.2.18.1 through 319.2.18.4.

**319.2.18.1 Exhaust system.** The exhaust system, including hood, grease-removal devices, fans, ducts and other appurtenances, shall be inspected and cleaned in accordance with Section 606.3.

**319.2.18.2 Fire protection systems and devices.** *Fire protection systems* and devices shall be maintained in accordance with Sections 606.3.4 and 901.6.

**319.2.18.3 Fuel gas systems.** Department of Transportation (DOTn) LP-gas containers installed on the vehicle shall be requalified by volumetric expansion testing or replaced every 5–12 years in conformance with 49 CFR Parts 180.205(d) and 180.209, and fuel-gas piping systems shall be inspected annually by an *approved* inspection agency or a company that is registered with the US Department of Transportation to requalify LP-gas cylinders, to ensure that system components are free from damage, suitable for the intended service and not subject to leaking. CNG containers shall be inspected every 3 years in a qualified service facility. CNG containers shall not be used past their expiration date as listed on the manufacturer's container label. Upon satisfactory inspection, the *approved* inspection agency shall affix a tag on the fuel gas system or within the vehicle indicating the name of the inspection agency and the date of satisfactory inspection. Reinspection shall occur every time an appliance is replaced or added and if a piping connection is modified in any way. A change in cylinder shall not be considered a piping connection modification.

**319.2.18.4 Out of service.** Without a current satisfactory fuel gas inspection, appliances connected to fuel gas systems in *mobile food units* shall not be permitted to be operated.

**319.3 Food cart pods.** General precautions shall be provided in accordance with applicable portions of Section 319.2 and Sections 319.3.1 through 319.3.10.6.

**319.3.1 Permits.** Operational and construction permits shall be in accordance with Sections 105.1.1 and 105.1.2. Where applicable, construction permits shall also be obtained from the *building official* as required.

**319.3.2 Site plan.** Where required by the *fire code official*, a site plan shall be submitted for each *food cart pod*. The site plan shall be sufficient in detail to indicate: all *mobile food units*, buildings, tents, other structures including awnings, *lot lines*, *public ways*, on-site appurtenances, fire department access, water supply, flammable liquid and cooking oil containers, storage areas including those for solid fuels, garbage and recycling areas, combustible vegetation, outdoor fireplaces, and any other specifications that may be required by the *fire code official*. *Approved* drawings shall be to scale or show required distances.

**319.3.2.1 Separation.** Separation distances shall be in accordance with Section 319.2.4.

**319.3.3 Premises identification.** The address of the premises shall be identified per Section 505.1

**319.3.4 New structures.** The design and construction of new structures or any alterations, additions or changes to

an existing structure shall require a new permit and may require compliance with Section 102.4.

**319.3.5 Combustible materials.** Combustible waste material, vegetation and storage shall be in accordance with Section 304.

**319.3.5.1 Containers.** Combustible rubbish and waste containers near a structure shall be in accordance with Section 304.3. Dumpsters shall be in accordance with Sections 304.3.3 and 304.3.4.

**319.3.6 Used cooking oil.** Outdoor storage tanks or containers for used cooking oil and other Class IIIB liquids shall be in accordance with Section 5704.4. Minimum separation distance of containers shall be 3 feet (914 mm) to a property line, street or public way or in accordance with Section 5704.4.2, whichever is greater. Secondary containment shall be in accordance with Section 5704.4.3.

**319.3.7 Open flames.** *Recreational fires*, outdoor fireplaces and open flames shall be in accordance with Sections 307 and 308.

**319.3.8 Smoking.** The *fire code official* is authorized to order the posting of "No Smoking" signs in accordance with Section 310.

**319.3.9 Special hazard areas.** Portable fire extinguishers complying with Section 906 shall be provided where required by the *fire code official*.

**319.3.10 LP-gas systems.** All LP-gas systems located and filled at *food cart pods*, including vehicle-mounted systems, shall be in compliance with Chapter 61, applicable portions of Section 319.2.14 and Sections 319.3.10.1 through 319.3.10.6.

**319.3.10.1 Construction documents.** Where a single LP-gas container is more than 2,000 gallons in water capacity, the installer shall submit construction documents for such installation in accordance with Section 6101.3.

**319.3.10.2 Ignition sources.** Control of other sources of ignition shall comply with Chapter 3 of this code and Section 6.25 of NFPA 58.

**319.3.10.3 Protection of system piping.** LP-gas system piping, including valves and fittings, shall be adequately protected to prevent tampering, impact damage and damage from vibration.

**319.3.10.4 Protection of container.** LP-gas cylinders and containers shall be installed on a firm level surface, restrained to prevent movement, protected from vehicles and in accordance with Chapter 6 of NFPA 58.

**319.3.10.5 Storage.** Storage of LP-gas containers awaiting use shall comply with Section 6109.

**319.3.10.6 Location of containers filled on-site.** LP-gas containers less than a 125-gallon (473 L) water capacity are allowed without a separation distance to *mobile food units* where in compliance with Items 1, 2

and 3 of this section. LP-gas containers 125 gallons (473 L) and greater shall comply with Chapter 61 and NFPA 58. The following shall apply to above-ground containers installed alongside *mobile food units*:

1. Department of Transportation (DOTn) specification LP-gas containers shall be located and installed so that the discharge from the container pressure relief device is not less than 3 feet (914 mm) horizontally from building or *mobile food unit* openings below the level of such discharge and shall not be beneath buildings or *mobile food units* unless the space is well ventilated to the outside and is not enclosed for more than 50 percent of its perimeter. The discharge from LP-gas container pressure relief devices shall be located not less than 5 feet (1524 mm) from exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.
2. ASME LP-gas containers of less than a 125-gallon (473 L) water capacity shall be located and installed such that the discharge from pressure relief devices shall not terminate in or beneath buildings and *mobile food units* and shall be located not less than 5 feet (1524 mm) horizontally from building openings below the level of such discharge and not less than 5 feet (1524 mm) from exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances or mechanical ventilation air intakes.
3. The filling connection and the vent from liquid-level gauges on either DOTn or ASME LP-gas containers filled at the point of installation shall be not less than 10 feet (3048 mm) from exterior sources of ignition, openings into direct-vent appliances or mechanical ventilation air intakes.

**319.4 Staff training.** Training of new staff shall be provided promptly on entrance to duty and reoccurring training at intervals not exceeding annually in accordance with Sections 401, 403.12 and 406. Records of instruction shall be maintained and made available to the authority having jurisdiction upon request.

**319.4.1 Training.** Staff shall be trained in emergency response procedures, including the following:

1. Proper use of exits and evacuation procedures.
2. Proper use of portable fire extinguishers, extinguishing systems and Type I hoods.
3. Proper method of shutting off fuel sources.
4. Proper procedures for notifying the local fire department or other responders.
5. Proper refueling of portable generators.
6. Proper use of leak detection equipment, LP-gas detectors or carbon monoxide alarms.

7. Properties of flammable and combustible fuels and liquids, including solid fuel, LP-gas and gasoline.
8. Apprised of the requirements of this section, fire hazards related to *mobile food units* and procedures to prevent fires.

### SECTION 320 ADDITIVE MANUFACTURING (3D PRINTING)

**User note:** While currently outside the scope of this new section, 3D printing is also increasingly being utilized in the construction of the structural elements for new buildings, particularly with new homes and the need for more affordable housing. The 2021 *International Residential Code* has responded to this burgeoning industry with the creation of “Appendix AW, 3D Printed Building Construction.” Although not adopted in the 2021 *Oregon Residential Specialty Code*, fire code officials may find local building officials using this appendix as an alternative materials or methods as allowed in ORSC Section R104.11. If applied locally, Appendix AW requires a report that describes the processes, materials and equipment used to meet the safety and performance of traditional construction, and adherence to the conditions of UL 3401, *Outline for 3D Printed Building Construction*. Most important may be the adaption by companies of construction material blends that can influence smoke and flame spread as well as the structural integrity during a fire. Also see “3D Printed Buildings and UL 3401,” <https://code-authorities.ul.com/3d-printed-buildings/>.

**320.1 General.** Additive manufacturing equipment and operations shall comply with Section 320.

**320.1.1 Scope.** Additive manufacturing shall comply with one of the following:

1. Nonindustrial additive manufacturing shall comply with Section 320.2.
2. Industrial additive manufacturing shall comply with Section 320.3.

**320.1.2 Installation, operation and maintenance.** 3D printers and associated additive manufacturing equipment shall be installed, operated and maintained in accordance with this code, the listing and the manufacturer’s instructions.

**320.1.3 Production materials.** Only the production materials *listed* for use with the equipment and included in the manufacturer’s instructions shall be used.

**320.2 Nonindustrial additive manufacturing.** Nonindustrial additive manufacturing equipment and operations shall comply with Sections 320.2.1 and 320.2.2. Additive manufacturing equipment and operations that do not comply with Section 320.2 shall comply with Section 320.3.

**320.2.1 Listing.** 3D printers used in nonindustrial additive manufacturing shall be *listed* and *labeled* in accordance with UL 2011, UL 60950-1 or UL 62368-1. The listing shall also verify:

1. The 3D printers are self-contained and utilize maximum 30-liter prepackaged production materials.