

3.12 Mobile, Transportable, and Relocatable Units

Appendix material, which appears in shaded boxes at the bottom of the page, is advisory only.

1 General Considerations

1.1 Applicability

1.1.1 Unit Types

This section applies to mobile, transportable, and relocatable structures, as defined below. The size of these units limits occupancy, thereby minimizing hazards and allowing for less stringent standards. Needed community services can therefore be provided at an affordable cost.

1.1.1.1 Mobile unit. A mobile unit is any pre-manufactured structure, trailer, or self-propelled unit equipped with a chassis on wheels and intended to provide shared medical services to the community on a temporary basis.

- (1) These units are typically no larger than 8 feet wide by 48 feet long (2.44 meters by 14.63 meters).
- (2) Some units are equipped with expanding walls.
- (3) Typically these units are designed to be moved on a daily basis.

1.1.1.2 Transportable unit. A transportable unit is any pre-manufactured structure or trailer equipped with a chassis on wheels that is intended to provide shared medical services to the community on an extended temporary basis.

- (1) The units are typically no larger than 12 feet wide by 60 feet long (3.66 meters by 18.29 meters).
- (2) The units are designed to be moved periodically, depending on need.

1.1.1.3 Relocatable unit. A relocatable unit is any structure not on wheels that is built to be relocated at any time and to provide medical services. These structures vary in size.

*1.1.2 Standards

1.1.2.1 Meeting all provisions of Sections 2 through 5 of Chapter 3.1 (Diagnostic and Treatment Locations, Service Areas, Administrative and Public Areas, and Construction Standards) for general outpatient facilities is desirable, but limited size and resources may preclude satisfying any but the basic minimums described.

1.1.2.2 The classifications of these facilities shall be Business Occupancy as listed in the building codes and NFPA 101, Life Safety Code.

1.1.3 Maximum Size

These facilities shall be defined as space and equipment for services provided by four or fewer workers at any one time.

1.2 Site

1.2.1 Location

1.2.1.1 Access for the unit to arrive shall be taken into consideration for site planning. Turning radius of the vehicles, slopes of the approach (6 percent maximum), and existing conditions shall be addressed.

1.2.1.2 Consideration shall be given to location of the unit so that diesel exhaust of the tractor and/or unit generator is kept away from the fresh air intake of the facility.

1.2.2 Facility Access

Each site shall provide access to the unit for wheelchair/stretcher patients.

1.2.3 Environmental Standards

All mobile, transportable, and relocatable units shall be sited in full compliance with such federal, state, and

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A1.1.2 When invasive procedures are performed in mobile, relocatable, or transportable units, the standard of care and the environment of care should be at least as safe as a hospital or outpatient facility in which similar procedures are performed.

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local environmental laws and regulations as may apply; for example, those listed in Section 1.3-4.

*1.2.4 Utility Requirements

1.2.4.1 Sites shall be provided with properly sized power, including emergency power, water, waste, telephone, and fire alarm connections, as required by local and state building codes.

1.2.4.2 Adequate protection shall be provided for utility hook-ups, cables, and wires by concealing them in conduits, burying them underground, or installing them overhead.

1.2.5 Foundation

***1.2.5.1** Sites shall have level concrete pads or piers and be designed for the structural loads of the facility. Construction of pads shall meet local, state, and seismic codes.

1.2.5.2 Each facility shall provide a means of preventing unit movement, either by blocking the wheels or by providing pad anchors.

1.2.6 Parking and Drop-off Zones

Sites shall provide hazard-free drop-off zones and adequate parking for patients. (See also 3.12-3.1.1.)

1.2.7 MRI Unit Site Considerations

1.2.7.1 Gauss fields of various strengths generated by magnetic resonance imaging (MRI) units shall be considered; both for the environmental effects on (interference with) the integrity of the scan, and for the potentially adverse effects of the field on adjacent electrical and/or magnetic devices and materials. Radio frequency interference shall be considered when planning a site.

1.2.7.2 Sites utilizing MRI systems shall consider providing adequate access for cryogen-servicing of the magnet. Cryogen dewars are of substantial weight and size.

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A1.2.4 It is recommended that each site requiring water and waste services to the unit provide a means of freeze protection in geographic areas where freezing temperatures occur.

A1.2.5.1 Concrete-filled steel pipe bollards are recommended for protection of the facility and the unit.

2 Diagnostic and Treatment Locations

2.1 Mobile Units

2.1.1 Hand-Washing Stations

2.1.1.1 Noninvasive procedure locations. Mobile units where noninvasive procedures are performed shall be provided with hand-washing stations unless each site can provide hand-washing stations within 25 feet (7.47 meters) of the unit.

2.1.1.2 Invasive procedure locations. When invasive procedures are performed in a mobile unit, all units shall be provided with hand-washing stations.

2.2 Transportable Units

Transportable units shall be provided with hand-washing stations.

2.3 Relocatable Units

2.3.1 Seismic and Structural Requirements

2.3.1.1 Seismic force resistance for relocatable units shall comply with Section 1.1-5 and shall be given an importance factor of one when applied to the seismic design formulas.

2.3.1.2 These units shall meet the structural requirements of local and state building codes.

2.3.2 Hand-Washing Stations

Relocatable units shall be provided with hand-washing stations.

2.4 Support Areas for Mobile, Transportable, and Relocatable Facilities

2.4.1 Cryogenic Equipment and Supply Storage

Storage for dewars, which are of substantial weight and size, shall be included in space planning.

3 Administrative and Public Areas

3.1 Public Areas

*3.1.1 Entrance

Patient protection from the elements during transport to and from the mobile unit shall be provided.

3.1.1.1 Use of means other than covered walkways shall be permitted to protect patients from the elements.

3.1.1.2 Snow shall be kept clear of pathways to and from the mobile unit. Effective means of abating ice shall be used when conditions exist.

3.1.2 Public Waiting Area

The facility shall provide waiting space for patient privacy as close to the unit docking area as possible.

3.1.3 Toilets

The facility shall provide patient/staff toilets as close to the unit docking area as possible.

4 Construction Standards

4.1 Design and Construction Standards

4.1.1 Applicable Codes

Existing facilities shall comply with applicable requirements of the Existing Business Occupancies chapter of NFPA 101, Life Safety Code. Where patients incapable of self-preservation are receiving inhalation anesthesia, the Existing Ambulatory Health Care Occupancies chapter of NFPA 101 shall apply.

4.1.2 Radiation Protection

Radiation protection for x-ray and gamma ray installations shall be in accordance with NCRP reports 49 and 91 in addition to all applicable local and state requirements.

4.2 General Standards for Details and Finishes for Unit Construction

Requirements below apply to all units unless otherwise noted:

4.2.1 Details

4.2.1.1 Doors

- (1) Horizontal sliding doors and power-operated doors shall comply with NFPA 101.
- (2) Units shall be permitted a single means of egress as permitted by NFPA 101.
- (3) All glazing in doors shall be safety or wire glass.

4.2.1.2 Stairs

- (1) Stairs for mobile and transportable units shall be in accordance with Table 3.12-1.
- (2) There shall be no variation exceeding 3/16 inch (4.76 millimeters) in depth of adjacent treads or in the height of adjacent risers, and the tolerance between the largest and smallest tread shall not exceed 3/8 inch (9.52 millimeters) in any flight.

Exception: Where the bottom riser adjoins a public way, walk, or driveway having an established grade and serving as a landing, a variation in height of not more than 3 inches (7.62 centimeters) in every 3 feet (91.44 centimeters) and fraction of thereafter is permitted. Adjustable legs at the bottom of the stair assembly shall be permitted to allow for grade differences.

- (3) Stairs and landings for relocatable units shall comply with NFPA 101.
- (4) Handrails shall be provided on at least one side.
- (5) Handrails shall be installed and constructed in accordance with NFPA 101, with the following exception: Provided the distance from grade to unit floor height is not greater than 4 feet 5 inches (1.35 meters), one intermediate handrail with a clear distance between rails of 19 inches (48.26 centimeters) maximum shall be permitted. (This exception is not applicable to existing units having a floor height of 5 feet 3 inches, or 1.60 meters, maximum.)

4.2.2 Finishes

4.2.2.1 Interior finish materials

- (1) Interior finish materials shall be class A as defined in NFPA 101.

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A3.1.1 It is recommended that each site provide a covered walkway or enclosure to ensure patient safety from the outside elements. Protecting the patient from dust and wind also needs to be considered.

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- (2) Textile materials having a napped, tufted, looped, woven, nonwoven, or similar surface shall be permitted on walls and ceilings provided such materials have a class A rating and rooms or areas are protected by automatic extinguishment or sprinkler system.
- (3) Fire-retardant coatings shall be permitted in accordance with NFPA 101.
- (4) Curtains and draperies shall be noncombustible or flame retardant and shall pass both the large- and small-scale tests required by NFPA 101.

5 Building Systems

5.1 Plumbing

5.1.1 Plumbing and Other Piping Systems

Plumbing and other piping systems shall be installed in accordance with applicable model plumbing codes, unless specified herein.

5.1.1.1 Plumbing vents

- (1) Mobile units. Venting through the roof shall not be required for mobile units requiring sinks. Waste lines shall be permitted to be vented through the sidewalls or other acceptable locations.
- (2) Transportable and relocatable units. These shall be vented through the roof per model plumbing codes.

5.1.1.2 Water supply connection. Backflow prevention shall be installed at the point of water connection on the unit.

5.1.1.3 Waste connection. All waste lines shall be designed and constructed to discharge into the facility sanitary sewage system.

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A5.3.1.3 Data processing and/or automated laboratory or diagnostic equipment, if provided, may require safeguards from power line disturbances.

5.1.2 Medical Gas and Vacuum Systems

Medical gases and suction systems, if installed, shall be in accordance with NFPA 99.

5.2 Heating, Ventilating, and Air-Conditioning Systems

5.2.1 Standards

5.2.1.1 Air-conditioning, heating, ventilating, ductwork, and related equipment shall be installed in accordance with NFPA 90B, Standard for the Installation of Warm Air Heating and Air Conditioning Systems.

5.2.1.2 All other requirements for heating and ventilation systems shall comply with Section 3.1-7.2.

5.3 Electrical Systems

5.3.1 General

5.3.1.1 Applicable standards

- (1) All electrical material and equipment, including conductors, controls, and signaling devices, shall be installed in compliance with applicable sections of NFPA 70 and NFPA 99.
- (2) All electrical material and equipment shall be listed as complying with available standards of listing agencies or other similar established standards where such standards are required.

5.3.1.2 Testing and documentation. The electrical installations, including alarm, nurse call, and communication systems, shall be tested to demonstrate that equipment installation and operation is appropriate and functional. A written record of performance tests on special electrical systems and equipment shall show compliance with applicable codes and standards.

*5.3.1.3 Power disturbance safeguards

5.3.2 Electrical Distribution and Transmission

5.3.2.1 Switchboards

- (1) Location
 - (a) Main switchboards shall be located in an area separate from plumbing and mechanical

equipment and shall be accessible to authorized persons only.

- (b) Switchboards shall be convenient for use and readily accessible for maintenance but away from traffic lanes.
 - (c) Switchboards shall be located in dry, ventilated spaces free of corrosive or explosive fumes, gases, or any flammable material.
- (2) Overload protective devices. These shall operate properly in ambient room temperatures.

5.3.2.2 Panelboards

Panelboards serving normal lighting and appliance circuits shall be located on the same level as the circuits they serve.

5.3.3 Power Generating and Storing Equipment

5.3.3.1 Emergency electrical service. Emergency lighting and power shall be provided for in accordance with NFPA 99, NFPA 101, and NFPA 110.

5.3.4 Lighting

5.3.4.1 General

- (1) Lighting shall be engineered to the specific application.
- (2) Recommended lighting levels for health care facilities developed by the Illuminating Engineering Society of North America (IES) shall be considered. Refer to IES publication RP-29, *Lighting for Hospitals and Health Care Facilities*.
- (3) Consideration shall be given to the special needs of the elderly. Excessive contrast in lighting levels that makes effective sight adaptation difficult shall be minimized. Refer to IES publication, RP-28, *Lighting and the Visual Environment for Senior Living*.
- (4) Approaches to buildings and parking lots and all occupied spaces shall have lighting fixtures that can be illuminated as necessary.

5.3.4.2 Lighting for examination, treatment and trauma rooms. A portable or fixed examination light

shall be provided for examination, treatment, and trauma rooms.

5.3.5 Receptacles (Convenience Outlets)

5.3.5.1 Duplex grounded-type receptacles (convenience outlets) shall be installed in all areas in sufficient quantities for tasks to be performed as needed.

5.3.5.2 Each examination and work table shall have access to a minimum of two duplex receptacles.

5.3.6 Equipment

5.3.6.1 X-ray equipment. Fixed and mobile x-ray equipment installations shall conform to articles 517 and 660 of NFPA 70.

5.3.6.2 Inhalation anesthetizing locations. At inhalation anesthetizing locations, all electrical equipment and devices, receptacles, and wiring shall comply with applicable sections of NFPA 99 and NFPA 70.

5.4 Telecommunications and Information Systems

5.4.1 Locations for terminating telecommunications and information system devices shall be located on the unit that the devices serve and shall be accessible to authorized personnel only.

5.4.2 Special air conditioning and voltage regulation shall be provided when recommended by the manufacturer.

5.5 Electronic Safety and Security

5.5.1 Fire Alarm System

5.5.1.1 The fire alarm system shall be as described in NFPA 101 and, where applicable, NFPA 72.

5.5.1.2 Fire protection equipment

- (1) Manual fire extinguishers shall be provided in accordance with NFPA 101.
- (2) Fire detection, alarm, and communications capabilities shall be installed and connected to facility central alarm system on all new units in accordance with NFPA 101.

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Table 3.12-1
Stair Requirements for Mobile and Transportable Units

	<i>New Units</i>	<i>Existing Units</i>
Minimum width clear of all obstructions, except projections not exceeding 3 1/2 inches (8.89 centimeters) at or below handrail height on each side	2 feet 10 inches (86.36 centimeters)	2 feet 3 inches (68.58 centimeters)
Minimum headroom	6 feet 8 inches (2.03 meters)	6 feet 8 inches (2.03 meters)
Maximum height of risers	9 inches (22.86 centimeters)	9 inches (22.86 centimeters)
Minimum height of risers	4 inches (10.16 centimeters)	4 inches (10.16 centimeters)
Minimum tread depth	9 inches (22.86 centimeters)	7 inches (17.78 centimeters)
Doors opening immediately onto stairs without a landing	No	Yes