

Article 15-2 - Indiana Mobile Structures Code

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Rule 2. Indiana Mobile Structures Code

675 IAC 15-2-1 Title, classification, availability, and applicability of rule

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 1. (a) This rule (675 IAC 15-2) shall be known as the Indiana Mobile Structures Code and is classified as a building safety standard. Wherever the term “this code” is used throughout this rule (675 IAC 15-2) it shall mean the Indiana mobile structures code (675 IAC 15-2).

(b) This rule (675 IAC 15-2) is available for purchase from the Indiana Department of Fire Prevention and Building Safety, 1099 North Meridian Street, Suite 900, Indianapolis, Indiana 46204.

(c) The application of this rule (675 IAC 15-2) shall be as required by Table 1A (675 IAC 15-1-8 [675 IAC 15-1-8 was repealed filed Sep 13, 1988, 2:33 p.m.: 12 IR 334. See 675 IAC 15-1-8.1.J). (Fire Prevention and Building Safety Commission; 675 IAC 15-2-1; filed Mar 25, 1986, 1:44 pm: 9 IR 1979, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-2 Definitions

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 2. The following definitions are common to all sections of this rule (675 IAC 15-2). Additional definitions, applicable to the individual sections, are contained in each section.

“Add-a-room” means a mobile structure of one or more rooms intended to be added to an existing dwelling unit.

“Center” means the midpoint between the right and left side of a mobile structure.

“Certified” means “listed” as defined herein.

“Combustible material” means materials made of, or surfaced with, wood, compressed paper, plant fibers, or other material that will ignite and burn. These materials shall be considered as combustible even though flameproofed, fire-retardant treated, or plastered.

“Dwelling unit” means a single unit providing complete independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

“Labeled” means equipment or materials to which has been attached a label, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling is indicated compliance with nationally recognized standards or tests to determine suitable usage in a specified manner.

“Length” means the distance measured from the tip of the coupler to the part farthest to the rear.

“Listed” means equipment or materials included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

“Manufactured home construction and safety standard” means standard for the construction, design and performance of a manufactured home. This standard is set forth in the Code of Federal Regulations, Title 24, Part 3280, 3282, 3283, and 42 USC 5401. ET SEQ, as mandated in the United States of America and as administrated by the United States Department of Housing and Urban Development.

“Mobile structure” means a factory assembled structure or structures equipped with the necessary service connections and made so as to be readily movable as a unit or units on its (their) own running gear and designed to be with or without a permanent foundation. Mobile structure does not include manufactured homes.

The phrase “without a permanent foundation” indicates that the support system is constructed with the intent that the mobile structure placed thereon will be moved from time to time at the convenience of the owner.

“Mobile system commercial” means a mobile structure for commercial use consisting of multi-wide configuration of units.

“Mobile system commercial transitory” means a mobile structure for commercial use consisting of a single wide configuration. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-2; filed Mar 25, 1986, 1:44 pm: 9 IR 1979, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-3 Source of design and construction standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 3. Much of the material in 675 IAC 15-2-3–675 IAC 15-2-31 has been taken from, or is based on, nationally recognized standards for construction. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-3; filed Mar 25, 1986, 1:44 pm: 9 IR 1980, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-4 Scope of design and construction standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 4. (a) The provisions of 675 IAC 15-2-3–675 IAC 15-2-31 cover the minimum requirements for materials, products, equipment and workmanship needed to assure that the mobile structure will provide (1) the structural strength and rigidity, (2) the protection against corrosion, decay, insects and other similar destructive forces, (3) reasonable protection against the hazards of fire and windstorm, (4) resistance to the elements and (5) durability and economy of maintenance for its intended use.

(b) Wherever other rules of the commission and the provisions of 675 IAC 15-2-3–675 IAC 15-2-31 differ, the requirements of the latter shall apply. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-4; filed Mar 25, 1986, 1:44 pm: 9 IR 1980, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-5 Basic principles of design and construction

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 5. The following principles are given as basic goals in the construction of mobile structures, which also serve as guidelines for the understanding of the provisions of 675 IAC 15-2-3–675 IAC 15-2-31. These principles serve to define the intent of the provisions of 675 IAC 15-2-3–675 IAC 15-2-31 when considerations arise which are not covered in the balance of the text.

Principle No. 1. To provide safe, healthful facilities.

Principle No. 2. To provide structural strength and rigidity sufficient for design loads, both in transit and on site.

Principle No. 3. To provide adequate running gear and coupling for safe transportation of the mobile structure.

Principle No. 4. To provide equipment designed and installed for safety of operation, ease of service, and adequate for the intended use.

Principle No. 5. To provide installed materials of adequate specification to resist deterioration.

Principle No. 6. To provide against the entrance of water and winds at all joints, connections, and openings in exterior surfaces.

Principle No. 7. To provide arrangement of habitable spaces for health and safety. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-5; filed Mar 25, 1986, 1:44 pm: 9 IR 1980, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-6 Definitions for design and construction

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 6. The following definitions are applicable to 675 IAC 15-2-3–675 IAC 15-2-31.

“Dead load” means the weight of all permanent construction including walls, floors, roofs, partitions, and fixed service equipment.

“Diagonal tie” means any tiedown designed to resist lateral or shear forces and which may secondarily resist uplift and overturning forces.

“Gross floor area” means all space, wall to wall, including recess entries and areas under built-in vanities and similar furniture. Where ceiling height is less than that specified in 675 IAC 15-2-22, the floor area under such ceilings shall not be included.

“Ground anchor” means any device at the mobile structure site designed for the purpose of securing a mobile structure to the ground.

“Habitable room” means a room or enclosed floor space arranged for living, eating, food preparation, or sleeping purposes (not including bathrooms, toilet compartments, laundries, pantries, foyers, hallways, and other accessory floor spaces).

“Interior finish” means the surface material of walls, fixed or movable partitions, ceilings and other exposed interior surfaces affixed to the mobile structure including any material such as paint. Interior finish does not include decorations or furnishings which are not affixed to the mobile structure.

“Live load” means the weight superimposed by the use and occupancy of the mobile structure including wind load and snow load, but not including dead load.

“Tiedown” means any device designed for the purpose to anchor a mobile structure to ground anchors.

“Wind load” means the lateral or vertical pressure or uplift on the mobile structure due to wind blowing in any direction. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-6; filed Mar 25, 1986, 1:44 pm: 9 IR 1981, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-7 General design and construction requirements

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 7. (a) Minimum requirements. The design and construction of a mobile structure shall conform to the provisions of this code. For any size, weight, or quality of material modified by the terms of “minimum”, “not less than”, “at least”, and similar expressions are minimum standards. The manufacturer or installer may exceed these requirements provided such deviation does not result in any inferior installation or defeat the purpose and intent of this code.

(b) Construction. All construction methods shall be in conformance with accepted engineering practices to insure durable, usable, and safe structure. Exposed metal structural members shall be protected to resist corrosion.

(c) Structural analysis. The strength and rigidity of the component parts and the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions that occur on site.

(d) Structural requirements. Each mobile structure shall be designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this structure and shall be capable of transmitting these loads to stabilizing devices without causing an unsafe deformation or abnormal internal movement of the structure or its structural parts.

(e) Allowable design stress. The design stresses of all materials shall conform to accepted engineering practice. The use of materials not identified as to strength or stress grade shall be limited to the minimum allowable stresses under accepted engineering practice. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-7; filed Mar 25, 1986, 1:44 pm: 9 IR 1981, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-8 Design dead loads

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 8. Design dead loads shall be the actual dead load supported by the structural assembly under consideration. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-8; filed Mar 25, 1986, 1:44 pm: 9 IR 1982, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-9 Design live loads

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 9. The design live loads shall be as specified in 675 IAC 15-2-10 and shall be considered to be uniformly distributed. The roof live load shall not be considered as acting simultaneously with the wind load. The roof and floor live loads shall not be considered as resisting the overturning moment due to wind. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-9; filed Mar 25, 1986, 1:44 pm; 9 IR 1982, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-10 Wind, roof, and snow loads

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 10. (a) Wind Loads. Mobile structures shall be designed for the following wind loads:

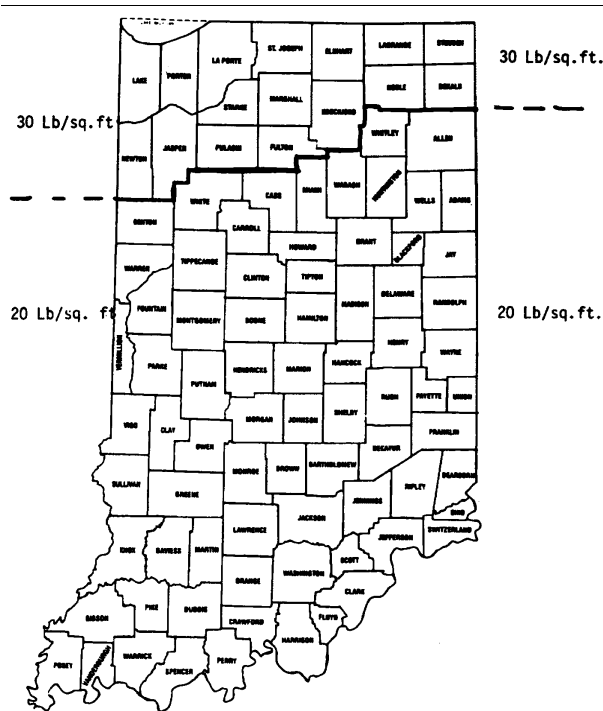
Horizontal 15 lb/sq. ft.
Vertical Upward 9 lb/sq. ft.

Vertical Downward (See Roof Loads, (b) below)

(b) Roof Loads. Flat, curved and pitched roofs shall be designed to resist the following live loads, applied downward on the horizontal projection:

North Zone 30 lb/sq. ft.
Middle Zone 20 lb/sq. ft.

(c) Required Snow Load



(*Fire Prevention and Building Safety Commission; 675 IAC 15-2-10; filed Mar 25, 1986, 1:44 pm; 9 IR 1982, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-11 Fastening of structural systems

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 11. Roof framing shall be securely fastened to wall framing, walls to floor structure, and floor structure to chassis, to secure and maintain continuity between the roof and floor and chassis, so as to resist wind overturning

and sliding as imposed by design loads in 675 IAC 15-2-10(b). Directions for anchorage shall accompany all mobile structures. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-11; filed Mar 25, 1986, 1:44 pm: 9 IR 1983, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-12 Walls

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 12. (a) The walls shall be of sufficient strength to withstand the load requirements as defined in 675 IAC 15-2-10 without exceeding the deflections as specified in 675 IAC 15-2-14. The connections between the bearing walls, floors, and roof framework members shall be fabricated in such a manner as to provide support for the material used to enclose the mobile structure and to provide for transfer of all lateral and vertical loads to the floor and chassis.

(b) Drilling or Notching of Wood Wall Structural Members. Except where substantiated by engineering design, studs shall not be notched or drilled in the middle one-third (1/3) of their length.

(c) Interior Walls. Interior walls shall be constructed with structural capacity adequate for the intended purpose and shall be capable of resisting a horizontal load of not less than five (5) pounds per square foot.

(d) Firestopping. Firestopping shall be provided in mobile structures to cut off all concealed draft openings in all stud walls and partitions, including furred spaces, so placed that the maximum vertical dimension of any concealed space is not over ten feet (10'). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-12; filed Mar 25, 1986, 1:44 pm: 9 IR 1983, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-13 Floors

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 13. (a) Floor assemblies shall be designed in accordance with accepted engineering practice to support a minimum uniform live load of forty (40) pounds per square foot plus the dead load of the materials. In addition (but not simultaneously), floors shall be able to support a two hundred (200) pound concentrated load on a two inch (2") diameter disc at the most critical location with a maximum deflection not to exceed one-eighth inch (1/8") relative to floor framing. Perimeter joists of more than six inches (6") depth shall be stabilized against overturning from superimposed loads as follows: at ends by solid blocking not less than two inch (2") thickness by full depth of joist, or by connecting to a continuous header not less than two inch (2") thickness and not less than the depth of the joist with connecting device; at eight feet (8') maximum intermediate spacing by solid blocking or by wood cross-bridging of not less than one inch (1") by three inches (3"), approved metal cross-bridging or by other approved methods.

(b) Wood floors or subfloors in kitchens, bathrooms (including toilet compartments), laundry rooms, water heater compartments, and any other areas subject to excessive moisture shall be moisture resistant or shall be made moisture resistant by sealing or by an overlay of nonabsorbent material applied with water-resistant adhesive.

(c) Carpeting shall not be used under a heat-producing appliance unless the appliance is listed for such use.

(d) Drilling or Notching of Wood Joist Structural Members. Except where substantiated by engineering design, notches on the ends of joists shall not exceed one-fourth (1/4) the joist depth. Holes bored in joists shall not be within two inches (2") of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third (1/3) the depth of the joist. Notches in the top or bottom of the joists shall not exceed one-sixth (1/6) the depth and shall not be located in the middle third of the span. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-13; filed Mar 25, 1986, 1:44 pm: 9 IR 1984, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-14 Design load deflection

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 14. When a structural assembly is subjected to total design live loads, the deflection for structural framing members shall not exceed the following:

Floor	L/240
Roof and Ceiling	L/180

Headers, Beams, Girders L/180 (Vertical Loads Only)

Where L = the clear span between supports or two times the length of a cantilever.
(Fire Prevention and Building Safety Commission; 675 IAC 15-2-14; filed Mar 25, 1986, 1:44 pm: 9 IR 1984, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-15 Structural load tests

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 15. Structural assemblies or subassemblies that are tested shall sustain the design dead load plus the superimposed design live load equal to 1.75 times the required live load for a period of twelve (12) hours without failure, unless otherwise specified herein. Failure shall be considered rupture, fracture or residual deflection which is greater than the limits set in 675 IAC 15-2-14. An assembly or subassembly to be tested shall be representative of the minimum quality of materials of the group of assemblies or subassemblies as ordinarily manufactured. Each test assembly, component or subassembly shall be identified as to type and quality or grade of material. Structural load tests or other tests based on nationally recognized standards may be approved. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-15; filed Mar 25, 1986, 1:44 pm: 9 IR 1984, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-16 Weather resistance

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 16. Exterior covering shall be of moisture and weather resistive materials attached with corrosion resistant fasteners to resist wind and rain. Metal coverings shall be of corrosion resistant materials. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-16; filed Mar 25, 1986, 1:44 pm: 9 IR 1985, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-17 Condensation resistance for residential systems

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 17. Spaces within outside walls and ceilings shall be ventilated and/or shall be provided with corrosion resistant vapor type barriers on the warm side of the walls and ceilings or other means shall be used to avoid condensation with these spaces. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-17; filed Mar 25, 1986, 1:44 pm: 9 IR 1985, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-18 Interior walls, partitions, and ceilings

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 18. The interior finish of rooms and hallways (not serving as an exit for an occupancy load of thirty (30) or more), enclosures for furnaces and water heaters (including doors) shall be of materials whose flame spread classification shall not exceed two hundred (200).

EXCEPTION: Moldings, trim, cabinets, splash panels and doors that close openings that do not exceed twenty-one (21) square feet.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-18; filed Mar 25, 1986, 1:44 pm: 9 IR 1985, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-19 Rodent resistance

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 19. Exterior surfaces shall be sealed to resist the entrance of rodents. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-19; filed Mar 25, 1986, 1:44 pm; 9 IR 1985, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-20 Heat loss; mobile system

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 20. (a) The total calculated heat loss of the unit at the outdoor design temperature shall not exceed forty (40) Btu/hour/square feet of the total floor area or 275 Btu/hour/lineal foot of the perimeter of the space to be heated to 70° F, whichever is greater. The minimum total resistance value (R), excluding framing, windows and doors shall not be less than:

Wall	11.0
Ceiling	19.0
Floor	10.0

(b) "R" values and "U" factors shall be calculated as outlined in the latest edition of the Indiana Energy Conservation Code (675 IAC 19).

(c) Framing Heat Loss. In the absence of specific data, for the purpose of heat loss calculations, the following framing areas shall be assumed:

Wall	20% of net wall area
Ceiling	5% of total ceiling area
Floor	10% of net floor area

(d) Infiltration Heat Loss. Infiltration heat loss shall be determined as outlined in the Indiana Energy Conservation Code (675 IAC 19).

Outside Design Temperature Degrees F	Infiltration Allowance Btu/hr
40	3330
30	4440
20	5550
10	6660
0	7770
minus 10	8880
minus 20	9990
minus 30	11100
minus 40	12210

(e) Duct Heat Loss. The supply duct heat loss shall be calculated separately using the actual duct surface area and the actual thickness of insulation between the duct and outside of the mobile structure. If there is an air space of one-half inch (1/2") or less, the heat duct shall be assumed in contact with the insulation. If there is an air space of over one-half inch (1/2") between the duct and the insulation, no special heat loss need be calculated if the cavity in which the duct is located is assumed to be at 70° F. The average temperature inside the supply duct shall be assumed to be at least 130° F for the purpose of calculation.

(f) The wall, roof and floor assembly R values are typical and are not intended to be all inclusive. Other assemblies may be used provided documentation is submitted indicating overall equivalent thermal transmittance for the structure. Such documentation shall be consistent with accepted engineering practice. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-20; filed Mar 25, 1986, 1:44 pm; 9 IR 1985, eff Jun 15, 1986; filed Sep 19, 1986, 9:15 am; 10 IR 236; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-21 Design considerations

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 21. Light and Ventilation. Adequate provisions shall be made for light and ventilation in accordance with the following:

(a) Occupied Rooms. Occupied rooms shall be provided with exterior windows or doors having a total glazed area of not less than eight percent (8%) of the gross floor area. An area equivalent to not less than four percent (4%) of the gross floor area shall be available for unobstructed ventilation. Glazed areas need not be openable where a mechanical ventilation system is provided and is capable of producing a change of air in the room(s) every thirty (30) minutes with not less than one-fifth (1/5) of the air supply taken from outside the mobile structure.

EXCEPTIONS: 1. Mechanical ventilation may be used for commercial applications when the ventilation is a minimum of five (5) cubic feet per minute or fifteen (15) cubic feet per minute, per occupant.

2. Kitchens may be provided with artificial light and mechanical ventilation capable of producing a change of air in the room every thirty (30) minutes. Windows and doors used for light or ventilation shall open directly to the outside of the structure.

3. Adequate artificial light may be provided in commercial structures.

(b) Toilet Compartments. Each toilet compartment shall be provided with artificial light and, be provided with external windows or doors having not less than one and one-half (1 1/2) square feet of fully openable glazed area, except where a mechanical ventilation system is provided capable of producing a change of air every fifteen (15) minutes. Any mechanical ventilation system shall exhaust directly to the outside of the mobile structure. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-21; filed Mar 25, 1986, 1:44 pm: 9 IR 1985, eff Jun 15, 1986; filed Sep 19, 1986, 9:15 am: 10 IR 237; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-22 Ceiling height

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 22. Every habitable room shall have a minimum ceiling height of not less than seven feet (7') in at least fifty percent (50%) of its required area with no portion of the required area less than five feet (5') in height. Hallways shall have a minimum ceiling height of six feet and six inches (6' 6"). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-22; filed Mar 25, 1986, 1:44 pm: 9 IR 1986, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-23 Exits

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 23. (a) Mobile System—Commercial Structures shall conform to the Indiana Building Code (675 IAC 13-2 [675 IAC 13-2 was repealed filed Feb 15, 1989, 5:00 p.m.: 12 IR 1552, eff Apr 3, 1989.]) for exiting, and to the Indiana Handicapped Accessibility Code (675 IAC 13-4 [675 IAC 13-4 was repealed filed Dec 15, 1989, 5:05 p.m.: 13 IR 896.]).

(b) Mobile homes shall have a minimum of two exterior doors located remote from each other and so arranged as to provide a means of unobstructed travel to the outside of the mobile structure.

(c) Exterior doors shall be constructed for exterior use and in no case provide less than a twenty-eight inch (28") wide clear opening. Each swinging exterior door shall have a key-operated lock that has a deadlocking latch. A deadlock with a passage set installed below the deadlock may be used as an acceptable alternate for each exterior door. The locking mechanism of the lock shall be engaged or disengaged by the use of a lever, knob, button, handle, or other device from which egress is to be made when the mobile structure is occupied. Locks shall not require the use of a key for operation from the inside.

(d) Interior Privacy. Each mobile structure interior door, when provided with a privacy lock, shall have a privacy lock that has an emergency release on the outside to permit entry when lock has been locked by a locking knob, button, or other locking device on the inside.

(e) Interior Passage. Interior doors having passage hardware without a privacy lock, or with a privacy lock not engaged, shall open from either side by a single movement of the hardware mechanism in any direction. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-23; filed Mar 25, 1986, 1:44 pm: 9 IR 1986, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-24 Room and hallway sizes

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 24. (a) Every mobile structure used for living or sleeping purposes shall have at least one habitable room with not less than one hundred fifty (150) square feet of gross floor area. Rooms designed for sleeping purposes shall have a minimum gross square foot floor area as follows:

One Person	50
Two persons	70
Each person in excess of two	50

(b) No habitable room, except a kitchen, shall be less than five feet (5') in any clear horizontal dimension.

(c) Each toilet compartment shall be a minimum of thirty inches (30") in width and have at least twenty-one inches (21") of clear space in front of each toilet.

(d) Hallways shall have a minimum horizontal dimension of twenty-eight inches (28"). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-24; filed Mar 25, 1986, 1:44 pm: 9 IR 1986, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-25 Glass and glazed openings

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 25. Glass and glazed openings shall conform to the Indiana Building Code (675 IAC 13-2 [675 IAC 13-2 was repealed filed Feb 15, 1989, 5:00 p.m.: 12 IR 1552, eff Apr 3, 1989.]). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-25; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-26 Smoke detectors

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 26. At least one (1) listed smoke detector (which may be a single station alarm device) shall be installed in each mobile structure containing habitable room(s).

NOTE: A "smoke detector" is a device which detects visible or invisible particles of combustion. A single station alarm device is an assembly incorporating a detector and an alarm sounding device in one unit.

Detectors shall operate from an AC, or combination AC/battery power source. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-26; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-27 Smoke detector locations

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 27. Smoke detector(s) shall be located outside of bedrooms, in a hallway or space communicating thereto, on or near the ceiling and shall be installed in accordance with the manufacturer's instructions. Mobile structures having bedrooms separated by any one or combination of common use areas, such as kitchen, dining room, living room, or family room (but not bathroom or utility room), shall have at least two (2) detectors. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-27; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-28 Alarm sounding devices

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 28. (a) Every smoke-detecting device shall cause the operation of an alarm signaling device or devices which shall be clearly audible in all bedrooms with all intervening doors closed.

(b) All alarm sounding devices shall be rated not less than eighty-five (85) decibels at ten feet (10'). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-28; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-29 Detector trouble signals

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 29. Detectors shall have an audible trouble signal on failure of the light source, but such failure shall not cause an alarm. Audible trouble signals shall be designed to operate at least every minute for seven consecutive days. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-29; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-30 Testing detectors

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 30. The mobile structure manufacturer shall provide instructions supplied by the device manufacturer for the periodic testing of the detector(s). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-30; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-31 In-transit design requirements

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 31. (a) Scope. This section covers the general requirements for designing the mobile chassis to fully withstand the adverse effect of transportation shock and vibration without degradation of the integrated structure or of its component parts and the specific requirements pertaining to the transportation system and its relationship to the structure.

(b) Definitions. "Chassis" means the entire transportation system comprising the following subsystems: drawbar and coupling mechanism, frame, running gear assembly and lights.

"Drawbar and Coupling Mechanism" means the rigid assembly (usually an "A" frame), upon which is mounted a coupling mechanism, which connects the mobile structure's frame to the towing vehicle.

"Frame" means the fabricated rigid substructure which provides considerable support to the affixed mobile structure both during transport and on-site; and also provides a platform for securement of the running gear assembly, and drawbar and coupling mechanism.

"Running Gear Assembly" means the subsystem consisting of suspension springs, axles, bearings, wheels, hubs, tires, and brakes, with their related hardware.

"Highway," includes all roads and streets to be legally used in transporting the mobile structure.

"Length," for purposes of transportation only, means the distance from the extreme front of the mobile structure to the extreme rear, including the drawbar and coupling mechanism, but not including expandable features that do not project from the body during transportation.

(c) General requirements for designing the structure to withstand transportation shock and vibration.

The cumulative effects of highway transportation shock and vibration upon a mobile structure may result in incremental degradation of its designed performance in terms of providing a safe, healthy and durable structure. Therefore, the mobile structure shall be designed, in terms of its structural, plumbing, mechanical and electrical systems, to fully withstand such transportation forces during its intended life.

Particular attention shall be given to maintaining watertight integrity and conserving energy by assuring that structural components in the roof and walls (and their interfaces with vents, windows, doors, etc.) are capable of resisting highway shock and vibration forces during primary and subsequent secondary transportation moves.

In place of an engineering analysis, either of the following may be accepted:

(1) documented technical data of suitable highway tests which were conducted to simulate transportation loads and conditions; or

(2) acceptable documented evidence of actual transportation experience which meets the intent of this section.

(d) Specific requirements for designing the transportation system.

General. The entire system (frame, drawbar and coupling mechanism, running gear assembly, and lights) shall be designed and constructed as an integrated, balanced and durable unit which is safe and suitable for its specified use during the intended life of the mobile structure. In operation, the transportation system (supporting the mobile structure and its contents) shall effectively respond to the control of the towing vehicle in terms of tracking and braking, while traveling at applicable highway speeds and in normal highway traffic conditions.

Specific requirements. The drawbar shall be constructed of sufficient strength, rigidity and durability to safely withstand those dynamic forces experienced during highway transportation. It shall be securely fastened to the mobile structure frame by either a continuous weld or by bolting.

The coupling mechanism (which is usually of the socket type) shall be securely fastened to the drawbar in such a manner as to assure safe and effective transfer of the maximum loads, including dynamic loads, between the mobile structure and the hitch-assembly of the towing vehicle. The coupling shall be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. The coupling shall be so designed that it can be disconnected regardless of the angle of the mobile structure to the towing vehicle. With the mobile structure parked on level ground, the center of the socket of the coupler shall not be less than twenty inches (20") nor more than twenty-six inches (26") from ground level.

The chassis, in conjunction with the mobile structure, shall be designed and constructed to effectively sustain the designed loads consisting of the dead load plus a minimum of three (3) pounds per square foot floor load (example: free-standing range, refrigerator, and loose furniture), and the superimposed dynamic load resulting from highway movement but shall not be required to exceed twice the dead load. The integrated design shall be capable of insuring rigidity and structural integrity of the complete mobile structure and to insure against deformation of structural or finish members during the intended life of the structure.

The running gear assembly, as part of the chassis, shall be designed to perform, as a balanced system, in order to effectively sustain the designed loads set forth in this section and to provide for durable dependable safe mobility of the mobile structure. It shall be designed to accept shock and vibration, both from the highway and the towing vehicle and effectively dampen these forces so as to protect the mobile structure from damage and fatigue. Its components shall be designed to facilitate routine maintenance, inspection and replacement.

Location of the running gear assembly shall be determined by documented engineering analysis, taking into account the gross weight (including all contents), total length of the mobile structure, the necessary coupling hitch weight, span distance, and turning radius. The coupling weight shall not be less than twelve percent (12%) nor more than twenty-five percent (25%) of the gross weight.

Spring assemblies (springs, hangers, shackles, bushings and mounting bolts) shall be capable of withstanding all the design loads as outlined in this section without exceeding maximum allowable stresses for design spring assembly life as recommended by the spring assembly manufacturer. The capacity of the spring system shall assure, that under maximum operating load conditions, sufficient clearance shall be maintained between the tire and mobile structure frame or structure to permit unimpeded wheel movement and for changing tires.

Axles, and their connecting hardware, shall be capable of withstanding all of the design loads outlined in this section without exceeding maximum allowable stresses for design axle life as recommended by the axle manufacturer. The number of axles required to provide a safe tow and good ride characteristics shall be determined and documented by engineering analysis. Those alternatives listed in this section may be accepted in place of such an analysis.

Hubs and bearings shall meet the requirements of this section and good engineering practice. Both of these components shall be accessible for inspection, routine maintenance and replacement of parts.

Tires, wheels and rims shall meet the requirements of this section. Tires shall be selected for anticipated usage.

The number, type, size and design of brake assemblies required to assist the towing vehicle in providing effective control and stopping of the mobile structure shall be determined and documented by engineering analysis. Those alternatives listed in this section may be accepted in place of such an analysis.

Brakes on the towing vehicle and the mobile structure shall be capable of assuring that the maximum stopping distance from an initial velocity of twenty (20) miles per hour does not exceed forty feet (40').

Highway safety electrical lights and associated wiring shall conform to applicable federal requirements in terms of location and performance. The manufacturer shall have the option of meeting this requirement by utilizing a temporary light/wiring harness provided by the mobile structure transportation carrier. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-31; filed Mar 25, 1986, 1:44 pm: 9 IR 1987, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 32. (a) The provisions of 675 IAC 15-2-32–675 IAC 15-2-70 cover the plumbing materials, fixtures, fittings and equipment installed within or on mobile structures.

(b) Wherever the rules of the commission or other nationally recognized standards for plumbing materials, fixtures, fittings and equipment and the provisions of 675 IAC 15-2-32–675 IAC 15-2-70 differ, the requirements of the latter shall apply. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-32; filed Mar 25, 1986, 1:44 pm: 9 IR 1989, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-33 Basic principles of plumbing standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 33. The following principles are given as basic goals in environmental sanitation, worthy of accomplishment through properly designed, acceptably installed, and adequately maintained plumbing systems. The results desired and necessary to protect the health of the public are the same everywhere. Furthermore, as unforeseen situations arise that are not specifically covered in this part, the principles may serve to define the intent.

Principle No. 1. Plumbing fixtures, devices, and appurtenances shall be supplied with water in sufficient volume and at pressures adequate to enable them to function satisfactorily and without undue noise under all normal conditions of use.

Principle No. 2. Plumbing shall be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

Principle No. 3. Devices for heating and storing water shall be so designed and installed as to prevent dangers from contamination or explosion through overheating.

Principle No. 4. Plumbing fixtures shall be made of smooth non-absorbent material, shall be free from concealed surfaces that may foul and shall be located in ventilated enclosures.

Principle No. 5. The plumbing system shall be of durable material, free from defective workmanship, and so designed and constructed as to give satisfactory service for its reasonable life expectancy.

Principle No. 6. Each fixture directly connected to the drainage system shall be installed with a water seal trap.

Principle No. 7. The drainage system shall be designed to provide an adequate circulation of air in all piping with no danger of siphonage, aspiration, or forcing of trap seals under conditions of ordinary use.

Principle No. 8. The plumbing system shall be subjected to tests that will effectively disclose all leaks and defects in the work, which must then be repaired.

Principle No. 9. Toilets shall not be located in a room or compartment that is not properly lighted and ventilated.

Principle No. 10. All plumbing fixtures shall be so installed with regard to spacing as to be reasonably accessible for their intended use. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-33; filed Mar 25, 1986, 1:44 pm: 9 IR 1989, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-34 Definitions for plumbing standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 34. The following definitions are applicable to the provisions of 675 IAC 15-2-32–675 IAC 15-2-70:

“Air gap (water distribution system)” means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, water supplied appliance, or other device and the flood level rim of the receptacle.

“Anti-siphon trap vent device” means a device which automatically opens to admit air to a fixture drain above the connection of the trap arm so as to prevent siphonage, and closes tightly when the pressure within the drainage system is equal to or greater than atmospheric pressure so as to prevent the escape of gases from the drainage system into the mobile structure.

“Backflow” means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended sources.

“Backflow connection” means any arrangement whereby backflow can occur.

“Backflow preventer” means a device or means to prevent backflow.

“Branch” means any part of the piping system other than a riser, main or stack.

“Common vent” means a vent connecting at the junction of fixture drains and serving as a vent for more than one (1) fixture.

“Continuous vent” means a vertical vent that is a continuation of the drain to which it connects.

“Continuous waste” means a drain from two (2) or more fixtures connected to a single trap.

“Critical level” means the C-L or C/L marking on a backflow prevention device or vacuum breaker is a point established by the testing laboratory (usually stamped on the device by the manufacturer) which determines the minimum elevation above the flood level rim of the fixture or receptacle served on which the device may be installed. When a backflow prevention device does not bear a critical level marking, the bottom of the vacuum breaker, combination valve, or of any such approved or listed device shall constitute the critical level.

“Cross connection” means any physical connection or arrangement between two (2) otherwise separate systems or sources, one of which contains potable water and the other either water, steam, gas, chemical or unknown or questionable materials whereby there may be a flow from one (1) system or source to the other, the direction of flow depending on the pressure differential between the two (2) systems.

“Developed length” means that length of pipe measured along the center line of the pipe and fittings.

“Diameter” means the nominal (inside) diameter designated commercially, unless specifically stated otherwise.

“Drain” means a pipe that carries waste, water, or water-borne wastes in a drainage system.

“Drain connector” means the removable extension, consisting of all pipes, fittings and appurtenances, from the drain outlet to the drain inlet serving the mobile structure.

“Drain outlet” means the lowest end of the main or secondary drain to which a sewer connection is made.

“Drainage system” means all piping within or attached to the structure that conveys sewage or other liquid waste to the drain outlet, not including the drain connector.

“Fixture drain” means the drain from the trap of a fixture to the junction of that drain with any other drain pipe.

“Fixture supply” means the water supply pipe connecting a fixture to a branch water supply pipe or directly to a main water supply pipe.

“Flood level” means the level in the receptacle over which water would overflow to the outside of the receptacle.

“Flooded” means the condition which results when the liquid in a container or receptacle rises to the flood-level.

“Flush tank” means that portion of a toilet that is designed to contain sufficient water to adequately flush the fixture.

“Flush valve” means a device located at the bottom of a flush tank for flushing a toilet.

“Flushometer valve” means a device which discharges a predetermined quantity of water to a fixture for flushing purposes and is closed by direct water pressure.

“Grade” means the fall (slope) of a pipe in reference to a horizontal plane expressed in inches per foot length.

“Horizontal branch” means a drain pipe extending laterally, which receives the discharge from one or more fixture drains and connects to the main drain.

“Horizontal pipe” means any pipe or fitting which makes an angle of more than forty-five degrees (45°) with the vertical.

“Individual vent” means a pipe or anti-siphon trap vent device installed to vent a fixture drain.

“Inlet coupling” means the terminal end of the water system to which the water service connection is attached. It may be a swivel fitting or threaded pipe end.

“Main” means the principal artery of the system to which branches may be connected.

“Main drain” means the lowest pipe of a drainage system which receives sewage from all the fixtures within a mobile structure and conducts these wastes to the drain outlet.

“Main vent” means the principal artery of the venting system to which vent branches may be connected.

“Offset” means a combination of pipe and/or fittings that brings one section of the pipe out of line but into a line parallel with the other section.

“Pitch”. (See “grade”.)

“Plumbing fixtures” means receptacles, devices, or appliances which are supplied with water or which receive liquid-borne wastes for discharge into the drainage system.

“Plumbing system” includes the water supply and distribution pipes; plumbing fixture and traps; soil, waste, and vent pipes; and water-treating or water using equipment.

“Primary vent”. (See “main vent”.)

“Relief vent” means an auxiliary vent which permits additional circulation of air in or between drainage and vent systems.

“Secondary vent” means any vent other than the main vent or those serving each toilet.

“Sewage” means any liquid waste containing animal or vegetable matter in suspension or solution, and may include liquids containing chemicals in solution.

“Siphonage” means the loss of water seal from fixture traps resulting from partial vacuum in the drainage system which may be of either of the following two types, or a combination of the two: (a) Self-siphonage resulting from vacuum in a fixture drain generated solely by the discharge of the fixture served by that drain, or, (b) induced siphonage resulting from vacuum in the drainage system generated by the discharge of one (1) or more fixtures other than the one under observation.

“Toilet–mechanical seal” means a toilet fitted with water-flushing device and mechanically sealed trap.

“Toilet–recirculating chemical” means a self-contained, circulating toilet in which the waste is chemically treated.

“Trap” means a fitting or device designed and constructed to provide a liquid seal that will prevent the back passage of air without materially affecting the flow of liquid waste through it.

“Trap arm” means that portion of a fixture drain between a trap and its vent.

“Vacuum breaker”. (See “backflow preventer”.)

“Vent caps” means a device or fitting which protects the vent pipe from foreign substances with an opening to the atmosphere equal to the area of the vent it serves.

“Vent system” means that part of a piping installation which provides circulation of air within a drainage system.

“Vertical pipe” means any pipe or fitting which makes an angle of forty-five degrees (45°) or less with the vertical.

“Water connection” means the fitting or point of connection for the mobile structure water distribution system designed for connection to a water supply.

“Water connector” means the removable extension connecting the mobile structure distribution system to the water supply.

“Water distribution system” means the potable water piping within or permanently attached to the mobile structure.

“Wet vent” means a vent which also serves as a drain for one or more fixtures.

“Wet vent drainage system” means a specially designed system of drain piping that also vents one or more plumbing fixtures by means of a common waste and vent pipe. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-34; filed Mar 25, 1986, 1:44 pm; 9 IR 1990, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-35 General plumbing requirements

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 35. (a) Minimum Requirements. Any plumbing system installed in a mobile structure shall conform, at least, with the provisions of this section. Requirements for any size, weight, or quality of material modified by the terms “minimum”, “not less than”, “at least”, and similar expressions are “minimum standards”.

(b) Connection to Drainage System. All plumbing, fixtures, drains, appurtenances, and appliances designed or used to receive or discharge liquid waste or sewage shall be connected to the mobile structure drainage system in a manner provided by this code.

(c) Workmanship. All design, construction, and workmanship shall be in conformance with accepted engineering practices and shall be of such character as to secure the results sought to be obtained by this code.

(d) Components. Plumbing materials, devices, fixtures, fittings, equipment, appliances, and accessories intended for use in or attached to a mobile structure shall be listed or certified by an approved listing agency.

(e) Prohibited fittings and practices are as follows:

(1) Drainage or vent piping shall not be drilled and tapped for the purpose of making connections.

(2) Except as specifically provided elsewhere in this code, vent pipes shall not be used as waste or drain pipes.

(3) Fittings, connections, devices, or methods of installation that obstruct or retard the flow of sewage, or air in the drainage or venting systems in an amount greater than the normal frictional resistance to flow shall not be used unless their use is acceptable in this code or their use is approved as having a desirable and acceptable function of ultimate benefit to the proper and continued functioning of the plumbing system.

(4) Cracks, holes, or other imperfections in materials shall not be concealed by welding, brazing, or soldering or by paint, wax, tar, or other leak-sealing or repairing agents.

(5) Piping, fixtures or equipment shall be located so as not to interfere with the normal use or with the normal operation and use of windows, doors or other required facilities.

(6) Galvanized pipe shall not be bent or welded.

(f) Alignment of Fittings. All valves, pipes, and fittings shall be installed in correct relationship to the direction of flows. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-35; filed Mar 25, 1986, 1:44 pm: 9 IR 1991, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-36 Protection of plumbing system

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 36. (a) Cutting Structural Members. Structural members shall not be unnecessarily or carelessly weakened by cutting or notching.

NOTE: See 675 IAC 15-2-12(b) and 675 IAC 15-2-13(d).

(b) Exposed Piping. All piping, pipe threads, hangers, and supports exposed to the weather, water, mud, and road hazard, and subject to damage therefrom, shall be painted, coated, wrapped, or otherwise protected from deterioration.

(c) Road Damage. Pipes, supports, drains, outlets, or drain hoses shall be insulated or protected to prevent freezing, under normal occupancy.

(d) Rodent Resistance. All exterior openings around piping and equipment shall be sealed to resist the entrance of rodents. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-36; filed Mar 25, 1986, 1:44 pm: 9 IR 1992, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-37 Material standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 37. (a) Minimum Standards. Materials, fixtures, or devices used or entering into the construction of plumbing systems in any mobile structure shall be free from defects and shall conform to approved standards.

(b) Specific Usage. Each of the following sections indicates specifically the type of material presently permitted for use in the various parts of the plumbing system. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-37; filed Mar 25, 1986, 1:44 pm: 9 IR 1992, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-38 Joints and connections

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 38. Tightness. Joints and connections in the plumbing system shall be gastight and watertight for the pressures required under testing procedures.

(a) Assembling of Pipe. All joints and connections shall be correctly assembled for tightness. Pipe threads shall be fully engaged with the threads of the fitting. Plastic pipe and copper tubing shall be inserted to the full depth of the solder cup or welding sockets of each fitting. Pipe threads and slip joints shall not be wrapped with string, paper, putty, or similar fillers.

(b) Threaded Joints. Threads for screw pipe and fittings shall conform to the approved or listed standard. Pipe ends shall be reamed out to size of bore. All burrs, chips, cutting oil and foreign matter shall be removed. Pipe joint cement or thread lubricant shall be of approved type and applied to make threads only.

(c) Solder Joints. Solder joints for tubing shall be made with approved or listed solder type fittings. Surfaces to be soldered shall be cleaned bright. The joints shall be properly fluxed with noncorrosive paste type flux and made with approved or listed fifty-fifty (50-50) solder or an approved solder having a higher melting temperature.

(d) Plastic Pipe, Fittings and Joints. Plastic pipe and fittings shall be joined by installation methods recommended by the manufacturer or by a recognized approved or listed standard.

(e) Union Joints. Metal unions shall have metal-to-metal ground seats.

(f) Flared Joints. Flared joints for soft-copper water tubing shall be made with listed fittings. The tubing shall be expanded with a proper flaring tool.

(g) Cast Iron Soil Pipe Joints. Approved or listed cast iron pipe may be joined as follows:

(1) Approved or listed hubless pipe as per the manufacturer's recommendation.

(2) Hub and plain-end soil pipe may be joined by compression fittings per the manufacturer's recommendation.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-38; filed Mar 25, 1986, 1:44 pm: 9 IR 1992, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-39 Traps

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 39. (a) Traps Required. Each plumbing fixture, except listed toilets shall be separately trapped by approved water seal "P" traps. All traps shall be effectively vented.

(b) Dual Fixtures. A two-compartment sink, two single sinks, two lavatories, or a single sink and a single lavatory with waste outlets not more than thirty inches (30") apart and in the same room and flood level rims at the same level may be connected to one "P" trap and may be considered as a single fixture for the purpose of drainage and vent requirements.

(c) Prohibited Traps. A trap which depends for its seal upon concealed interior partitions shall not be used. Full "S" traps, bell traps, drum traps, crown-vented traps, and running traps are prohibited. Fixtures shall not be double-trapped.

(d) Material and Design. Each trap shall be self-cleaning with a smooth and uniform interior waterway. Traps shall be manufactured of cast iron, cast brass, or drawn brass tubing of not less than No. 20 Brown and Sharpe gauge, or approved or listed material. Union joints for a trap shall be beaded to provide a shoulder for the union nut. Each trap shall have the manufacturer's name stamped or cast in the body of the trap, and each trap shall show the gauge of the tubing.

(e) Trap Seal. Each "P" trap shall have a water seal of not less than two inches (2") and not more than four inches (4") and shall be set true to its seal.

(f) Size. Traps shall be not less than one and one-fourth inches (1 1/4") in diameter. A trap shall not be larger than the waste pipe to which it is connected.

(g) Location. Each trap shall be located as close to its vent and to its fixture outlet as structural conditions will permit.

(h) Length of Tailpiece. The vertical distance from a trap to the fixture outlet shall not exceed twenty-four inches (24").

(i) Installation shall be as follows:

(1) Grade of Trap Arm. The piping between a "P" trap and the fixture tee or the vented waste line shall be graded one-fourth inch (1/4") per foot towards the vent and in no event shall have a slope greater than its diameter. The vent opening at fixture tees shall not be below the weir of the "P" trap outlet.

(2) Trap Arm Offset. The piping between the "P" trap and vent may change direction or be offset horizontally with the equivalent of no more than one hundred eighty degrees (180°).

(3) Concealed Traps. Traps with mechanical joints shall be accessible for repair and inspection.

(4) Removability of Traps, Etc. Traps shall be designed and installed so the "U" bend is removable without removing the strainers from the fixture. Continuous waste and tailpieces which are permanently attached to the "U" bend shall also be removable without removing the strainer from the fixture.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-39; filed Mar 25, 1986, 1:44 pm: 9 IR 1993, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-40 Cleanouts

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 40. (a) Location of cleanout fittings shall be as follows:

(1) Cleanouts shall be installed if the drainage system cannot be cleaned through fixtures, drains, or vents. Cleanouts shall also be provided when fittings of more than forty-five degrees (45°) are used to affect an offset except where long turn ells are used which provide sufficient "sweep" for cleaning.

(2) A full size cleanout shall be installed at the upper end of any section of drain piping which does not have the required minimum slope of one-fourth inch (1/4") per foot grade.

(3) A cleaning tool shall not be required to pass through more than three hundred sixty degrees (360°) of fittings, excluding removable "P" traps, to reach any part of the drainage system.

(b) Cleanouts shall be accessible through an unobstructed minimum clearance of twelve inches (12") directly in front of the opening. Each cleanout fitting shall open in a direction opposite to the flow or at right angles to the pipe. Concealed cleanouts that are not provided with access covers shall be extended to a point above the floor or outside of the mobile structure, with pipe and fittings installed as required, for drainage piping without sags and pockets.

(c) Material. Plugs and caps shall be brass or approved or listed plastic, with screw pipe threads.

(d) Design. Cleanout plugs shall have raised heads except that plugs at floor level shall have counter-sunk slots. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-40; filed Mar 25, 1986, 1:44 pm: 9 IR 1993, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-41 Fixtures and connections

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 41. (a) Quality of Fixtures. Plumbing fixtures shall have smooth impervious finishes, be free from defects and concealed fouling surfaces, be capable of resisting road shock and vibration, and shall conform in quality and design to approved standards.

(b) Strainers. The waste outlet of all plumbing fixtures, other than toilets, shall be equipped with a drain fitting that will provide an adequate unobstructed waterway.

(c) Fixture Connections. Fixture tailpieces and continuous wastes in exposed or accessible locations shall be not less than No. 20 Brown and Sharpe gage seamless drawn-brass tubing or other approved pipe or tubing materials. Inaccessible fixture connections shall be constructed according to the requirements for drainage piping. Each fixture tailpiece, continuous waste, or waste and overflow shall be not less than one and one-half inches (1 1/2") for sinks of two (2) or more compartments, dishwashers, clothes washing machines, laundry tubs, bathtubs, and not less than one and one-fourth inches (1 1/4") for lavatories and single compartment sinks having a two inch (2") maximum drain opening.

(d) Concealed Connections. Concealed connections shall be provided with adequately sized unobstructed access panels and shall be accessible for inspection and repair.

(e) Directional Fitting. An approved or listed "Y" or other directional-type branch fitting shall be installed in every tailpiece or continuous waste that receives the discharge from food waste disposal units, dishwashing, or other force-discharge fixture or appliance. (See 675 IAC 15-2-42(c)(2)). The installation of fixtures shall conform to the following:

(1) Floor outlet or floor mounted fixtures shall be secured to the drainage connection and to the floor when so designed, by screws or bolts of copper, brass or other corrosion-resistant material.

(2) Wall hung fixtures shall be rigidly supported so that strain is not transmitted to the plumbing system.

(3) Where fixtures come in contact with walls or floors, the joint shall be watertight.

(4) Plumbing fixtures shall be functionally accessible.

(5) The center line of water closets shall be not less than fifteen inches (15") from adjacent walls or partitions.

(6) The location of piping, fixtures or equipment shall not interfere with the operation of windows or doors.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-41; filed Mar 25, 1986, 1:44 pm: 9 IR 1994, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-42 Toilets; shower compartments; dishwashers; washing machines

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 42. (a) Toilets shall be as follows:

(1) Each toilet shall be designed and manufactured according to approved standards and shall be equipped with a water flushing device capable of adequately flushing and cleaning the bowl at each operation of the flushing mechanism.

(2) Toilet flushing devices shall be designed to replace the water seal in the bowl after each operation. Flush valves, flushometer valves, and ball cocks shall operate automatically to shut off at the end of each flush or when the tank is filled to operating capacity.

(3) Flush tanks shall be fitted with an overflow pipe large enough to prevent flooding at the maximum flow rate of the ball cock. Overflow pipes shall discharge into the toilet, through the tank.

(4) Toilets that have fouling surfaces that are not thoroughly washed at each discharge shall be prohibited. Any toilet that might permit the contents of the bowl to be siphoned back into the water system shall be prohibited.

(5) Floor Connection. Toilets shall be securely bolted to an approved flange or other approved fitting which is secured to the floor by means of corrosion-resistant plated screws. The bolts shall be of solid brass or other corrosion-resistant material and shall be not less than one-fourth inch (1/4") in diameter. A watertight seal shall be made between the toilet and flange or other approved fitting by use of a gasket or sealing compound. (See 675 IAC 15-2-13(b).)

(6) Recirculating or mechanical seal toilets may provide for storage of liquid waste and body waste as an integral part of the unit. When a mechanical seal toilet does not contain storage for the retention of liquid waste and body waste it shall be connected to an approved waste holding tank.

(7) Floor or Tank Connections. Toilets, when directly connected to a waste holding tank shall be securely bolted to either the tank or the floor by means of an approved closet flange or other approved fitting. Bolts and screws when used shall be of brass or other noncorrosive material and shall not be less than one-fourth inch (1/4") in diameter. A watertight seal shall be made between the toilet and flange or other approved fittings by the use of a gasket or sealing compound.

(b) Shower compartments shall be as follows:

(1) Each compartment stall shall be provided with an approved watertight receptor with sides and back extending one inch (1") above the finished dam or threshold. In no case shall the depth of a shower receptor be less than two inches (2") or more than nine inches (9") measured from the top of the finished dam or threshold to the top of the drain. The wall area shall be constructed of smooth, noncorrosive, and nonabsorbent waterproof materials to a height not less than six feet (6') above the compartment floor level. Such walls shall form a watertight joint with each other and with the receptor or shower floor. The floor of the compartment shall slope uniformly to the drain at not less than one-fourth inch (1/4") nor more than one-half inch (1/2") per foot. Minimum of nine hundred (900) square inches (thirty inches (30") minimum diameter circle) in floor area.

(2) The joint around the drain connection shall be made watertight by a flange, clamping ring, or other approved listed means.

(3) Shower doors and tub and shower enclosures shall be constructed so as to be waterproof and, if glazed, glazing shall comply with the Indiana Building Code (675 IAC 13-2 [675 IAC 13-2 was repealed filed Feb 15, 1989, 5:00 p.m.: 12 IR 1552, eff Apr 3, 1989.]).

(4) Prefabricated plumbing fixtures shall be approved or listed and shall comply with all applicable requirements relating to such fixtures.

(c) Dishwashing machines shall be as follows:

(1) Dishwashing machines shall not be directly connected to any waste piping, but shall discharge its waste through a fixed air gap installed above the machine. The drain connection from the air gap may connect to an individual trap, to a directional fitting installed in the sink tailpiece, or to the opening provided on the inlet side of a food waste disposal unit.

(2) Drain from a dishwashing machine shall not be connected to a sink tailpiece, continuous waste line, or trap on the discharge side of a food waste disposal unit.

(d) Clothes washing machines shall be as follows:

(1) Clothes washing machines shall drain either into a properly vented trap into a laundry tub tailpiece with watertight connections, into an open standpipe receptor, or over the rim of a laundry tub.

(2) Standpipes shall be one and one-half inches (1 1/2"), minimum, nominal iron pipe size, or one and one-half inches (1 1/2") outside diameter nominal brass tubing not less than No. 20 Brown and Sharpe gauge or one and one-half inches (1 1/2") approved plastic. Receptors shall discharge into a vented trap or shall be connected to a laundry tub tailpiece by means of an approved or listed directional fitting. Each standpipe shall extend not less than eighteen inches (18") or more than thirty inches (30") above its trap and shall terminate in an accessible location no lower than the top of clothes washing machine.

(3) Clothes washing machine drains shall not be connected to the tailpiece, continuous waste, or trap of any sink or dishwashing machine.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-42; filed Mar 25, 1986, 1:44 pm: 9 IR 1994, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-43 Installation of fixtures

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 43. (a) Access. Each plumbing fixture shall be located and installed in a manner to provide easy access for cleaning and repair.

(b) Alignment. Fixtures shall be set level and in true alignment with adjacent walls. Where practical, piping from fixtures shall extend to nearest wall.

(c) Brackets. Wall-hung fixtures shall be rigidly attached to walls by metal brackets or supports without any strain being transmitted to the piping connections. Flush tanks shall be securely fastened to toilets or to the wall with corrosive-resistant materials.

(d) Centerline of water closet shall not be less than fifteen inches (15") from adjacent wall or partition. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-43; filed Mar 25, 1986, 1:44 pm: 9 IR 1995, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-44 Piping strains and stresses

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 44. Piping in a plumbing system shall be installed without undue strains and stresses, and provision shall be made for expansion, contraction, and structural settlement. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-44; filed Mar 25, 1986, 1:44 pm: 9 IR 1996, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-45 Piping supports

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 45. Piping shall be secured at sufficiently close intervals to keep the pipe in alignment and carry the weight of the pipe and contents. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-45; filed Mar 25, 1986, 1:44 pm: 9 IR 1996, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-46 Hangers and anchors

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 46. (a) Hangers and anchors shall be of sufficient strength to support their proportional share of the pipe alignments and prevent rattling.

(b) Piping shall be securely attached to the structure by proper hangers, clamps, or brackets which provide protection against motion, vibration, road shock, torque in the chassis, or other unusual conditions. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-46; filed Mar 25, 1986, 1:44 pm: 9 IR 1996, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-47 Water supply piping; hot water supply system

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 47. (a) Supply Piping. Piping systems shall be sized to provide an adequate quantity of water to each plumbing fixture at a flow rate sufficient to keep the fixture in a clean and sanitary condition without any danger of backflow or siphonage (see Table 1B in 675 IAC 15-2-52(a)).

(b) Hot Water Supply. Each mobile system dwelling unit shall be equipped with a kitchen sink, bathtub or shower and shall be provided with a hot water supply system including a water heater. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-47; filed Mar 25, 1986, 1:44 pm: 9 IR 1996, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-48 Water connections and outlets

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 48. (a) Water Connection. Each mobile structure with a water distribution system shall be equipped with a three-fourths inch (3/4") threaded inlet connection. This connection shall be tagged or marked "fresh water connection". A matching cap or plug shall be provided to seal the water inlet when it is not in use, and shall be permanently attached to the mobile structure or water supply piping.

When a mobile structure includes expandable rooms or is composed of two (2) or more units, fittings or connectors designed for such purpose shall be provided to connect any water piping. When not connected, the water piping shall be protected by means of matching caps or plugs in accordance with section 675 IAC 15-2-87(b).

(b) Prohibited connections shall be as follows:

(1) The installation of potable water supply piping, fixture or appliance connections shall be made in a manner to preclude the possibility of backflow.

(2) No part of the water system shall be connected to any drainage or vent piping.

(c) Rim Outlets. The outlets of faucets, spouts, and similar devices shall be spaced at least one inch (1") above the flood level of the fixture.

(d) Appliance Connections. Water supplies connected to clothes washing or dish washing machines shall be protected by an approved or listed fixed air gap provided within the appliance by the manufacturer.

(e) Flushometer Valves or Manually Operated Flush Valves. An approved or listed vacuum breaker shall be installed and maintained in the water supply line on the discharge side of a toilet flushometer valve or manually operated flush valve. Vacuum breakers shall have a minimum clearance of six inches (6") above the flood level of the fixture to the critical level mark unless otherwise permitted in their approval.

(f) Flush Tanks. Toilet flush tanks shall be equipped with an approved anti-siphon ball cock which shall be installed and maintained with its outlet or critical level mark not less than one inch (1") above the full opening of the overflow pipe. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-48; filed Mar 25, 1986, 1:44 pm: 9 IR 1996, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-49 Water heaters; relief valves; prohibited location

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 49. Relief valves shall be as follows:

(1) All water heaters shall be installed with approved and listed fully automatic valve or valves designed to provide temperature and pressure relief.

(2) Any temperature relief valve or combined pressure and temperature relief valve installed shall have the temperature sensing element immersed in the hottest water within the upper six inches (6") of the tank. It shall be set to start relieving at a pressure of one hundred fifty (150) psi or the rated working pressure of the tank whichever is lower and at or below a water temperature of 210°.

(3) Relief valves shall be provided with full-sized drains which shall be directed downward and discharge beneath the mobile structure. Drain lines shall be of a material listed for hot water distribution and shall drain fully by gravity, shall not be trapped, and shall not have their outlets threaded.

(4) Prohibited Location. Water heaters depending on combustion of fuel, shall not be installed in sleeping rooms, bathrooms/restrooms, closets.

(*Fire Prevention and Building Safety Commission; 675 IAC 15-2-49; filed Mar 25, 1986, 1:44 pm: 9 IR 1997, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-50 Material standards for water piping and fittings

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 50. (a) Piping Material. Water pipe shall be of standard weight brass, galvanized steel, Type K, L, or M copper tubing, approved or listed plastic, or other approved or listed material.

Plastic Piping. All plastic water piping and fittings in mobile structures must be approved or listed for use with hot water.

(b) Fittings. Appropriate fittings shall be used for all changes in size and where pipes are joined. The material and design of fittings shall conform to the type of piping used.

(1) Fittings for screw piping shall be standard and weight galvanized iron for galvanized iron and steel pipe, and of brass for brass piping. They shall be installed where required for change in direction, reduction of size, or where pipes are joined together.

(2) Fittings for copper tubing shall be cast brass or drawn copper (sweat soldered) or shall be listed or approved fittings for the purpose intended.

(c) Prohibited Material. Used piping materials shall not be permitted. Pipe dope, solder flux, oils, solvents, chemicals, or other substances that are toxic, corrosive, or otherwise detrimental to the water system shall not be used. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-50; filed Mar 25, 1986, 1:44 pm: 9 IR 1997, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-51 Installation of piping

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 51. (a) Minimum Requirement. All piping equipment, appurtenances, and devices shall be installed in workmanlike manner and shall conform with the provisions and intent of this code.

(b) Screw pipe. Iron pipe-size brass or galvanized iron or steel pipe and fittings shall be joined with approved or listed standard pipe threads fully engaged in the fittings. Pipe ends shall be reamed to the full bore of the pipe. Pipe-joint compound shall be insoluble in water, shall be nontoxic and shall be applied to male threads only.

(c) Solder Fittings. Joints in copper water tube shall be made by the appropriate use of approved cast brass or wrought copper fittings, properly soldered together. The surface to be soldered shall be thoroughly cleaned bright by mechanical means. The joints shall be properly fluxed and made with approved solder.

(d) Flared Fittings. A flaring tool shall be used to shape ends of flared tubing to match the flare of fittings.

(e) Plastic Pipe and Fittings. Plastic pipe and fittings shall be joined by installation methods recommended by the manufacturer or by an approved standard. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-51; filed Mar 25, 1986, 1:44 pm: 9 IR 1997, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-52 Size of water supply piping

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 52. (a) Minimum Size. The size of water supply piping and branch lines shall not be not less than sizes shown in Table 1B, as follows:

TABLE 1B
Minimum [*sic.*] Size Tubing and Pipe for Water
Distribution Systems

Number of Fixtures	Tubing (Nominal)		Pipe
	Dia. (Inches)	Outer Dia. (Inches)	Iron Pipe Size (Inches)
1	1/4*	3/8	1/2
2	3/8	1/2	1/2
3	1/2	5/8	1/2
4	1/2	5/8	1/2
5 or more	3/4	7/8	3/4

*6 feet maximum length.

Exception: Three-eighths inch (3/8") nominal diameter or one-half inch (1/2") optional diameter size for clothes washing or dishwashing machines, unless larger size is recommended by the fixture manufacturer.

One-half inch (1/2") nominal diameter or five-eighths inch (5/8") optional diameter minimum size for flushometer or metering tube valves unless otherwise specified in their listing.

No galvanized screw piping shall be less than one-half inch (1/2") iron pipe size.

(b) Sizing Procedure. Both hot and cold water systems shall be computed by the following method:

(1) Size of Branch. Start at the remote outlet on any branch of the hot or cold water piping and progressively count towards the water service connection, computing the total number of fixtures supplied along each section of piping. Where branches are joined together, the number of fixtures on each branch shall be totalled so that no fixture is

counted twice. Following down the left-hand column of Table 1B, in (a) above, a corresponding number of fixtures will be found. The required pipe or tubing size is indicated in the other columns on the same line.

(2) A water heater, food waste disposal unit, evaporative cooler or ice maker shall not be counted as a water-using fixture when computing pipe sizes.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-52; filed Mar 25, 1986, 1:44 pm: 9 IR 1997, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-53 Drainage systems; materials

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 53. (a) Pipe. Drainage piping shall be standard weight steel, wrought iron, brass, copper tube DWV, listed plastic, cast iron, or other approved or listed materials. Drainage piping shall be designed to provide for one-fourth inch (1/4") per foot grade in horizontal piping.

EXCEPTION: Horizontal drainage piping may have a uniform slope of not less than one-eighth (1/8) of an inch per foot or one (1) percent toward the point of disposal provided accessible cleanouts are installed per Section 40 of this code.

(b) Fittings. Drainage fittings shall be recessed drainage pattern with smooth interior waterways of the same diameter as piping and shall be of a material conforming to the type of piping used. Fittings for screw pipe shall be cast iron, malleable iron, brass, or listed plastic with standard pipe threads. Fittings for copper tubing shall be cast brass or wrought copper. Socket-type fittings for plastic piping shall comply with listed standards. Brass or bronze adapter or wrought copper fittings shall be used to join copper tubing to the threaded pipe. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-53; filed Mar 25, 1986, 1:44 pm: 9 IR 1998, eff Jun 15, 1986; filed Sep 19, 1986, 9:15 am: 10 IR 237; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-54 Drain outlets

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 54. (a) Clearance from Drain Outlet. The drain outlet shall be provided with a minimum clearance of three inches (3") in any direction from all parts of the structure or appurtenances and with not less than eighteen inches (18") unrestricted clearance directly in front of the drain outlet.

(b) Drain Connector. The drain connector shall not be smaller than the piping to which it is connected and shall be equipped with a watertight cap or plug matching the drain outlet. The cap or plug shall be permanently attached to the mobile structure or drain outlet.

(c) The drain outlet and drain connector shall not be less than three inches (3") inside diameter.

(d) Preassembly of Drain Lines. Drain lines, provided by the manufacturer located under the mobile structure designed to bring the drain system to one distribution point and which may be damaged in transit, must be designed for proper site assembly. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-54; filed Mar 25, 1986, 1:44 pm: 9 IR 1998, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-55 Drain connections

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 55. (a) Fixture Connections. Drainage piping shall be provided with approved or listed inlet fittings for fixture connections, correctly located according to the size and type of fixture to be connected.

(b) Toilet Connection. The drain connection for each toilet shall be three inches (3") minimum inside diameter and shall be fitted with an iron, brass, or listed plastic floor flange adaptor ring securely screwed, soldered or otherwise permanently attached to the drain piping, in an approved manner and securely fastened to the floor. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-55; filed Mar 25, 1986, 1:44 pm: 9 IR 1998, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-56 Size of drainage piping

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 56. Fixture Load. Except as provided by 675 IAC 15-2-52, drain pipe sizes shall be determined by the type of fixture and the total number connected to each drain.

(1) Fixture Unit. A one and one-half inch (1 1/2") minimum diameter piping shall be required for one (1) and not more than three (3) individually vented fixtures.

(2) Fixture Unit. A two inch (2") minimum diameter piping shall be required for four (4) or more fixtures individually vented.

(3) A three inch (3") minimum diameter piping shall be required for toilets.

(4) When a combination of two (2) or more water closets, sinks, showers, urinals, or clothes washing equipment are installed, the Indiana plumbing code shall apply for mobile system-commercial transitory plumbing systems. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-56; filed Mar 25, 1986, 1:44 pm: 9 IR 1999, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-57 Wet-vented drainage system

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 57. (a) A common vent may be used for two (2) fixtures set on the same floor level but connecting at different levels in the stack, provided the vertical drain is one pipe diameter larger than the upper fixture drain but in no case smaller than the lower fixture drain, whichever is the larger.

(b) Length of Trap Arm. Fixture traps shall be located within the distance given in Table 2B, in 675 IAC 15-2-62. Not more than one (1) trap shall connect to a trap arm. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-57; filed Mar 25, 1986, 1:44 pm: 9 IR 1999, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-58 Offsets and branch fittings

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 58. (a) Changes in Direction. Changes in direction of drainage piping shall be made by the appropriate use of approved or listed fittings, and shall be of the following angles: 1/32 bend, 1/16 bend, 1/8 bend, 1/6 bend, or 1/4 bend; or other approved or listed fittings or combination of fittings with equivalent radius or sweep.

(b) Horizontal to Vertical. Horizontal drainage lines, connecting with a vertical pipe shall enter through 1/8 bend "Y" branches, 1/6 bend "Y" branches, long-turn "TY" branches, sanitary "T" branches, or other approved or listed fittings, or combination of fittings having equivalent sweep. Fittings having more than one (1) branch at the same level shall not be used, unless the fitting is constructed so that the discharge from any one (1) branch cannot readily enter any other branch. However, a double sanitary "T" may be used when the drain line is increased not less than two (2) pipe sizes.

(c) Horizontal to Horizontal and Vertical to Horizontal. Horizontal drainage lines connecting with other horizontal drainage lines or vertical drainage lines connected with horizontal drainage lines shall enter through 1/8 bend degree "Y" branches, long-turn "TY" branches, or other approved or listed fittings or combination of fittings having equivalent sweep. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-58; filed Mar 25, 1986, 1:44 pm: 9 IR 1999, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-59 Grade of horizontal drainage piping

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 59. Except for fixture connections on the inlet side of the trap, horizontal drainage piping shall be run in practical alignment and have a uniform grade of not less than one-fourth inch (1/4") per foot toward the mobile structure drain outlet. Where it is impractical, due to the structural features or arrangement of any mobile structure, to obtain a grade of one-fourth inch (1/4") per foot, the pipe or piping may have a grade of not less than one-eighth inch (1/8") per foot, when a full size cleanout is installed at the upper end. *(Fire Prevention and Building Safety*

Commission; 675 IAC 15-2-59; filed Mar 25, 1986, 1:44 pm; 9 IR 1999, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-60 Vent piping and fittings

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 60. (a) Each plumbing fixture trap shall be protected against siphonage and back pressure, and air circulation shall be ensured throughout all parts of the drainage system by means of vents installed in accordance with the requirements of this section and as otherwise required by this code. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-60; filed Mar 25, 1986, 1:44 pm; 9 IR 1999, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-61 Material standards for vent piping and fittings

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 61. (a) Pipe. Vent piping shall be standard weight steel, wrought iron, brass, copper tube DWV, listed plastic cast iron or other approved or listed materials.

(b) Fittings. Appropriate fittings shall be used for all changes in direction or size and where pipes are joined. The material and design of vent fittings shall conform to the type of piping used.

(1) Fittings for screw pipe shall be cast iron, malleable iron, plastic, or brass, with standard pipe threads.

(2) Fittings for copper tubing shall be cast brass or wrought copper.

(3) Fittings for plastic piping shall be of appropriate material and made to approved or applicable standards.

(4) Brass adaptor fittings or wrought copper shall be used to join copper tubing to threaded pipe.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-61; filed Mar 25, 1986, 1:44 pm; 9 IR 2000, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-62 Size of vent piping

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 62. (a) Main Vent. The drain piping for each toilet shall be vented by a one and one-half inch (1 1/2") minimum diameter vent connected to the main drain by one of the following methods:

(1) A one and one-half inch (1 1/2") diameter (min.) individual vent pipe or equivalent directly connected to the toilet drain and extended undiminished outside through the roof.

(2) A one and one-half inch (1 1/2") diameter (min.) continuous vent or equivalent indirectly connected to the toilet drain piping through a two inch (2") wet-vented drain that carries the waste of not more than one (1) fixture.

(3) Two (2) or more vented drains when at least one is wet-vented, or two inch (2") diameter (minimum), and each drain is separately connected to the main drain.

(b) Individual Vents. Unless protected with an anti-siphon trap vent device, each individually vented fixture with a one and one-half inch (1 1/2") or smaller trap shall be provided with a vent pipe equivalent in area to a one and one-fourth inch (1 1/4") nominal pipe size. The main vent, toilet vent and relief vent, and the continuous vent of wet-vented systems shall have an area equivalent to a one and one-half inch (1 1/2") nominal pipe size.

(c) Common Vent. When two fixture traps located within the distance allowed from their vent have their trap arms connected separately at the same level into an approved double fitting, an individual vent pipe may serve as a common vent without any increase in size.

(d) Intersecting Vents. Where two (2) or more vent pipes are joined together no increase in size shall be required; however, the largest vent pipe shall extend full size through the roof.

(e) Distance of fixture trap from vent shall not exceed the values given in Table 2B, below.

(f) When a combination of two (2) or more water closets, sinks, showers, urinals, or clothes washing equipment are installed the Indiana plumbing code (675 IAC 16-1 [675 IAC 16-1 was repealed filed Sep 22, 1988, 2:35 p.m.: 12 IR 341, eff Jan 2, 1989. See 675 IAC 16-1.2.]) shall apply for mobile system—commercial transitory.

TABLE 2B

Maximum Distance of Fixture Trap from Vent

Size of Fixture Drain (Inches)	Distance Trap to Vent
1 1/4	4 feet 6 inches
1 1/2	5 feet 0 inches
2	5 feet 0 inches
3	6 feet 0 inches

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-62; filed Mar 25, 1986, 1:44 pm; 9 IR 2000, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-63 Anti-siphon trap vent

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 63. (a) Anti-Siphon Trap Devices. Where an anti-siphon trap vent device is used as a secondary vent, it shall be installed in accordance with the conditions of its listing and shall be accessible. The lowest point of the valve seal when in the normally closed position shall not be less than six inches (6") above the flood level of the fixture. The toilet shall be vented in accordance with 675 IAC 15-2-62. Only anti-siphon trap vent devices which have been approved shall be installed.

(b) Not more than two (2) fixtures individually protected by anti-siphon trap vent devices shall be drained by a common one and one-half inch (1 1/2") drain.

(c) Three (3) or more fixtures individually protected by anti-siphon trap vent devices shall be drained by a common two inch (2") drain. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-63; filed Mar 25, 1986, 1:44 pm; 9 IR 2000, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-64 Horizontal vent connections and grade

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 64. (a) Horizontal Vents. Each vent shall extend vertically from its fixture "T" above the extreme flood level of the fixture it is venting before offsetting horizontally or being connected with any other vent pipe. Vents for horizontal drains shall connect above the centerline of the drain piping ahead of the trap.

(b) Grade. Vents shall be designed to drain back to the drainage system by gravity. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-64; filed Mar 25, 1986, 1:44 pm; 9 IR 2001, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-65 Vent terminal

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 65. (a) Roof Extension. Each vent pipe shall extend through its flashing and terminate vertically, undiminished in size not less than two inches (2") above the roof. Vent openings shall not be less than three feet, zero inches (3' 0") away from any motor-driven air intake that opens into habitable areas.

(b) Flashing. The opening around each vent pipe shall be made watertight by an adequate flashing or flashing materials. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-65; filed Mar 25, 1986, 1:44 pm; 9 IR 2001, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-66 Vent caps

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 66. Vent caps, if provided, shall be of the removable type (without removing the flashing from the roof where it is required to perform tests required by 675 IAC 15-2-68) or when the vent is used as a clean out. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-66; filed Mar 25, 1986, 1:44 pm; 9 IR 2001, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-67 Water pressure tests

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 67. Water System. All water piping in the water distribution systems shall be subjected to a pressure test. The test shall be made by subjecting the system to air or water at fifty (50) psi for fifteen (15) minutes without loss of pressure. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-67; filed Mar 25, 1986, 1:44 pm: 9 IR 2001, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-68 Waste and vent system tests

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 68. The waste and vent system shall be tested by one (1) of the three (3) following alternate methods for evidence or indication of leakage.

(1) Water Test. Before plumbing fixtures are connected, all of the openings into the piping shall be plugged and the entire piping system subjected to a static water test for fifteen (15) minutes by filling it with water to the top of the highest vent opening. There shall be no evidence of leakage.

(2) Air Test. After all fixtures have been installed, the traps filled with water and the remaining openings securely plugged, the entire system shall be subjected to a two inch (2") (manometer) water column air pressure test. If the system loses pressure, leaks may be located with smoke pumped into the system, or with soap suds spread on the exterior of the piping (Bubble Test).

(3) Flood Level Test. The mobile structure shall be in a level position, all fixtures shall be connected, and the entire system shall be filled with water to the rim of the toilet bowl. (Tub and shower drains shall be plugged.) After all trapped air has been released, the test shall be sustained for not less than fifteen (15) minutes without evidence of leaks. Then the system shall be unplugged and emptied. The waste piping above the level of the toilet bowl shall then be tested and show no indication of leakage when the high fixtures are filled with water and emptied simultaneously to obtain the maximum possible flow in the drain piping. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-68; filed Mar 25, 1986, 1:44 pm: 9 IR 2001, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-69 Fixture tests

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 69. The plumbing fixtures and connections shall be subjected to a slow test by filling them with water and checking for leaks and retarded flow while they are being emptied. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-69; filed Mar 25, 1986, 1:44 pm: 9 IR 2001, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-70 Shower compartment tests

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 70. Nonmetallic shower compartments and receptors shall be tested for leaks prior to being covered by finish material. Each pan shall be filled with water to the top of the dam for not less than fifteen (15) minutes. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-70; filed Mar 25, 1986, 1:44 pm: 9 IR 2002, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-71 Scope of heating, cooling, and fuel-burning system standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 71. (a) The provisions of 675 IAC 15-2-71–675 IAC 15-2-87 cover the heating, cooling, and fuel burning systems and equipment installed within or on mobile structures except for commercial mobile structures which shall

conform to the Indiana mechanical code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]).

(b) Wherever rules of the commission and the provisions of 675 IAC 15-2-71–675 IAC 15-2-87 differ, the requirements of the provisions of 675 IAC 15-2-71–675 IAC 15-2-87 shall apply. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-71; filed Mar 25, 1986, 1:44 pm; 9 IR 2002, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-72 Definitions for heating, cooling, and fuel-burning systems

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 72. The following definitions are common to the provisions of 675 IAC 15-2-71–675 IAC 15-2-87.

“Accessible” means having access to a fixture, connection, appliance or equipment, but which may require the removal of an access panel, door or similar obstruction without removing permanent construction.

“Air duct” means conduits or passageways for conveying air to or from heating, cooling, air conditioning or ventilation equipment, but not including the plenum.

“Automatic pump (oil lifter)” means a pump, not an integral part of the oil-burning appliance, that automatically pumps oil from the supply tank and delivers the oil by gravity under a constant head to an oil-burning appliance.

“British thermal unit (BTU)” means the quantity of heat required to raise the temperature of one (1) pound of water one (1) degree Fahrenheit.

“BTU/H” means british thermal units per hour.

“Burner” means a device for the final conveyance of fuel or a mixture of fuel and air to the combustion zone.

“Class 0 air ducts” means ducts of materials and connectors having a fire-hazard classification of zero.

“Class 1 air ducts” means ducts of materials and connectors having a flame-spread rating of not over twenty-five (25) without evidence of continued progressive combustion and a smoke-developed rating of not over fifty (50).*

“Class 2 air ducts” means ducts of materials and connectors having a flame-spread rating of not over fifty (50) without evidence of continued progressive combustion and a smoke-developed rating of not over fifty (50) for the inside surface and not over one hundred (100) for the outside surface.*

*Flame-spread and smoke developed ratings are measured as specified in the Indiana Flammable and Combustible Liquids and Gases Code (675 IAC 22-1).

“Clearance” means the distance between the appliance, chimney, vent, chimney or vent connector or plenum and the nearest surface.

“Connector-gas appliance” means a flexible or semi-rigid connector listed as required by the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]) and used to convey fuel gas, three feet (3') or less in length (six feet (6') or less for gas ranges), between a gas outlet and a gas appliance in the same room with the outlet.

“Factory-built fireplace” means a hearth, fire chamber and chimney assembly composed of listed factory-built components assembled in accordance with the terms of listing to form a complete fireplace.

“Fireplace stove” means a chimney connected solid fuel-burning stove having listed part of its fire chamber open to the room.

“Fuel gas piping system” means the arrangement of piping, tubing, fittings, connectors, valves and devices designed and intended to supply or control the flow of fuel oil to the appliance(s).

“Gas clothes dryer” means a device used to dry wet laundry by means of heat derived from the combustion of fuel gases. Dryer classifications are as follows:

(1) Type 1. Factory-built package, multiple produced. Primarily used in family living environment. May or may not be coin-operated for public use. Usually the smallest unit physically and in function output.

(2) Type 2. Factory-built package, multiple produced. Used in business with direct intercourse of the function with the public. May or may not be operated by public or hired attendant. May or may not be coin-operated. Not designed for use in individual family living environment. May be small, medium, or large in relative size.

“Gas refrigerator” means a gas-burning appliance which is designed to extract heat from a suitable chamber.

“Gas supply connection” means the terminal end or connection to which a gas supply connector is attached.

“Gas supply connector” means tubing or piping connecting the mobile structure to the gas supply source.

“Gas vents” means factory-built vent piping and vent fittings listed by an approved testing agency, that are assembled and used in accordance with the terms of their listings, for conveying flue gases to the outside atmosphere.

(1) Type B Gas Vent. A gas vent for venting gas appliances with draft hoods and other gas appliances listed for use with Type B Gas Vent.

(2) Type BW Gas Vent. A gas vent for venting listed gas-fired vented wall furnaces.

“Heat producing appliance” means all heating and cooking appliances and all fuel burning appliances.

“Heating appliance” means an appliance for comfort heating of a mobile structure or for water heating.

“Liquefied petroleum gases”, “LPG” and “LP-gas” as used in this code shall mean and include any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them: propane, propylene, butanes (normal butane or isobutane), and butylenes.

“Plenum” means an air compartment which is part of an air-distributing system, to which one (1) or more ducts are connected.

(1) Furnace supply plenum is a plenum attached directly to, or an integral part of, the air supply outlet of the furnace.

(2) Furnace return plenum is a plenum attached directly to, or an integral part of, the return inlet of the furnace.

“Quick-disconnect device” means a hand-operated device which provides a means for connection gas systems and which is equipped with an automatic means to shut off the gas supply when the device is disconnected.

“Readily accessible” means having direct access without the necessity of removing any panel, door, or similar obstruction.

“Roof jack” means that portion of a mobile structure heater flue or vent assembly, including the cap, insulation means, flashing, and ceiling plate, located in and above the roof cavity of a mobile structure.

“Sealed combustion system appliance” means an appliance which by its inherent design is constructed so that all air supplied for combustion, the combustion system of the appliance, and all products of combustion are completely isolated from the atmosphere of the space in which it is installed.

“Water heater” means an appliance for heating water for domestic purposes other than for space heating. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-72; filed Mar 25, 1986, 1:44 pm: 9 IR 2002, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-73 LP-gas systems; service line pressure

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 73. (a) System S shall be of the vapor-withdrawal type.

(b) Gas, at a pressure not over fourteen inches (14") water (one-half (1/2) psi) shall be delivered from the system into the gas supply connection. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-73; filed Mar 25, 1986, 1:44 pm: 9 IR 2003, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-74 LP-gas containers

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 74. (a) Maximum Capacity. No more than two (2) containers having an individual water capacity of not more than one hundred five (105) pounds (approximately forty-five (45) pounds LP-gas capacity), shall be installed on or in a compartment of any mobile structure.

(b) Construction of Containers. Containers shall be constructed and marked in accordance with the Indiana Flammable and Combustible Liquids and Gases Code (675 IAC 22-1).

(c) Location of LP-gas containers and systems shall be as follows:

(1) LP-gas containers shall not be installed, nor shall provisions be made for installing or storing any LP-gas container, event [*sic.*] temporarily, inside any mobile structure except of listed, completely self-contained hand torches, lanterns, or similar equipment with containers having a maximum water capacity of not more than two and one-half (2 1/2) pounds (approximately one (1) pound LP-gas capacity).

(2) Containers, control valves, and regulating equipment, when installed shall be mounted on the hitch of the mobile structure, or installed in a compartment that is vaportight to the inside of the mobile structure and accessible only from the outside. The compartment shall be ventilated at top and bottom to facilitate diffusion of vapors. The compartment shall be ventilated with two vents having an aggregate area of not less than two percent (2%) of the floor area of the compartment and shall open unrestricted to the outside atmosphere. The required vents shall be equally distributed between the floor and ceiling of the compartment. If the lower vent is located in

the access door or wall, the bottom edge of the vent shall be flush with the floor level of the compartment. The top vent shall be located in the access door or wall with the bottom of the vent not more than twelve inches (12") below the ceiling level of the compartment. All vents shall have an unrestricted discharge to the outside atmosphere. Access doors or panels of compartments shall not be equipped with locks or require special tools or knowledge to open.

(3) Permanent and removable fuel containers shall be securely mounted to prevent jarring loose, slipping or rotating and the fastenings shall be designed and construed *[sic.]* to withstand static loading in any direction equal to twice the weight less than four (4) based on the ultimate strength of the material to be used.

(d) LP-gas container valves and accessories shall be as follows:

(1) Valves in the assembly of a two-cylinder system shall be arranged so that replacement of containers can be made without shutting off the flow of gas to the appliance(s). This provision is not to be constructed as requiring an automatic change-over device.

(2) Shutoff valves on the containers shall be protected as follows, in transit, in storage, and while being moved into final utilization:

(A) by setting into a recess of the container to prevent possibility of their being struck if container is dropped upon a flat surface, or,

(B) by ventilated cap or collar, fastened to the container, capable of withstanding a blow from any direction equivalent to that of a thirty (30) pound weight dropped four feet (4'). Construction shall be such that the blow will not be transmitted to the valve.

(3) Regulators shall be connected directly to the container shutoff valve outlets or mounted securely by means of a support bracket and connected to the container shutoff valve or valves with listed high pressure connections. If the container is permanently mounted, the connector shall be as required above or with a listed semi-rigid tubing connector.

(e) LP-gas safety devices shall be as follows:

(1) DOT containers shall be provided with safety relief devices as required by the Indiana Flammable and Combustible Liquid and Gases Code (675 IAC 22-1). Safety relief valves shall have direct communication with the vapor space of the vessel.

(2) The delivery side of the gas pressure regulator shall be equipped with a safety relief device set to discharge at a pressure not less than two (2) times and not more than three (3) times the delivery pressure of the regulator.

(3) Systems mounted on the hitch assembly shall be so located that the discharge from the safety relief devices shall be into the open air and not less than three feet (3') horizontally from any opening into the mobile structure below the level of such discharge.

(4) Safety relief valves located within liquefied petroleum gas container compartments may be less than three feet (3') from openings provided:

(A) the bottom vent of the compartment is at the same level or lower than the bottom of any opening into the vehicle, or,

(B) the compartment is not located on the same wall plane as the opening(s) and is at least two feet (2') horizontally from such openings.

(f) LP-gas system enclosure and mounting shall be as follows:

(1) Housings and enclosures shall be designed to provide proper ventilation at least equivalent to that specified in (c)(2) of this section.

(2) Doors, hoods, domes, or portions of housings and enclosures required to be removed or opened for replacement of containers shall incorporate means for clamping them firmly in place and preventing them from working loose during transit.

(3) Provisions shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit.

(4) Containers shall be mounted on a substantial support or a base secured firmly to the vehicle chassis. Neither the container nor its support shall extend below the mobile structure frame.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-74; filed Mar 25, 1986, 1:44 pm; 9 IR 2003, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-75 Oil tanks

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 75. (a) Installation. Oil tanks and listed automatic pumps (oil filters) installed for gravity flow of oil to heating equipment shall be installed so that the top of the tank is no higher than eight feet (8') above the appliance oil control and the bottom of the tank is not less than eighteen inches (18") above the appliance oil control.

(b) Auxiliary Storage Tank. Oil supply tanks affixed to a mobile structure shall be so located as to require filling and draining from the outside and shall be in a place readily available for inspection. If the fuel supply tank is located in a compartment of a mobile structure and the compartment shall be ventilated at the bottom to permit diffusion of vapors and shall be insulated from the structural members of the body. Tanks so installed shall be provided with an outside fill and vent pipe and an approved liquid level gauge.

(c) Shutoff Valve. A readily accessible, approved manual shutoff valve shall be installed at the outlet of an oil supply tank. The valve shall be installed to close against the supply.

(d) Fuel Oil Filters. All oil tanks, except for integrally mounted tanks, shall be equipped with an approved oil filter or strainer located downstream from the tank shutoff valve. The fuel oil filter or strainer shall contain a sump with a drain for the entrapment of water. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-75; filed Mar 25, 1986, 1:44 pm; 9 IR 2005, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-76 Gas piping systems

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 76. (a) General. The requirements of this section shall govern the installation of all fuel gas piping attached to any mobile structure. Gas delivered into the gas supply system shall be at a pressure not exceeding fourteen inch (14") water column (1/2 psi). None of the requirements listed in this section shall apply to the piping as a part of an appliance.

Rodent Resistance. All exterior openings around piping, ducts, plenums or vents shall be sealed to resist the entrance of rodents.

(b) Materials. All materials used for the installation, extension, alteration, or repair of any gas piping system shall be new and free from defects or internal obstructions. It shall not be permissible to repair defects in gas piping or fittings. Inferior or defective materials shall be removed and replaced with acceptable material. The system shall be made of materials having a melting point of not less than 1,450° F, except as provided in (e).

(1) Steel or wrought-iron pipe shall comply with the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]). Threaded brass pipe in iron pipe sizes may be used. Threaded brass pipe shall comply with the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]).

(2) Fittings for gas piping shall be wrought iron, malleable iron, steel, or brass (containing not more than seventy-five percent (75%) copper).

(3) Copper tubing shall be annealed type, Grade K or L, shall conform to the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]). When used on systems designed for natural gas, such tubing shall be internally tinned.

(4) Steel tubing shall conform to the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]).

(c) Piping Design. Each mobile structure requiring fuel gas for any purpose shall be equipped with a fuel gas piping system that is designed for LP-gas only or with a natural gas piping system acceptable for LP-gas. Where fuel gas piping is to be installed in both portions of an expandable or dual mobile structure, the design and construction of the crossover shall be as follows:

(1) There shall be only one point of crossover which shall be located not more than eighteen inches (18") from either the front or rear wall and shall be readily accessible from the exterior of the mobile structure.

(2) The connector between units shall be a listed type for exterior use, sized in accordance with (d) of this section.

(3) The connection shall be made by a listed "quick disconnect" device which shall be designed to provide a positive seal of the supply side of the gas system when such device is separated.

(4) The flexible connector and "quick disconnect" device shall be provided with protection from mechanical and impact damage and located to minimize the possibility of tampering.

(5) Suitable protective coverings for the "quick disconnect" device, when separated shall be permanently attached to the device or flexible connector.

(6) A three inch by one and three-quarters inch (3" × 1 3/4") minimum size tag made of etched metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.20 inch thick, or other approved

material (e.g., 0.005 inch plastic laminates) shall be permanently attached on the exterior wall adjacent to the access to “quick disconnect” device. Each tag shall be legibly inscribed with the following information using letters no smaller than one-fourth inch (1/4”) high:

Do not Use Tools to Separate the “Quick Disconnect” Device

(d) Gas Pipe Sizing. Gas piping systems shall be sized so that the pressure drop to any appliance inlet connection from any gas supply connection, when all appliances are in operation at maximum capacity, is not more than 0.5 inch water column as determined on the basis of test, or in accordance with Table 3B. The natural gas supply connection(s) shall be not less than the *[sic.]* size of the gas piping but shall not be smaller than three-fourths inch (3/4”) nominal pipe size.

NOTE: For an example of how to determine the required pipe size, see the National Fuel Gas Code NFPA No. 54.

(e) Joints for Gas Pipe. All pipe joints in the piping system, unless welded or brazed, shall be threaded joints that comply with the Indiana Mechanical Code (675 IAC 18-1 *[675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]*). Right and left nipples or couplings shall not be used. Unions, if used shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1000° F.

(f) Joints for Tubing. Joints on tubing shall be made with either a single or double flare of the proper degree, as recommended by the tubing manufacturer, by means of listed gas tubing fittings, or by being brazed with material having a melting point exceeding 1000° F.

(g) Pipe Joint Compound. Screw joints shall be made up tight with listed pipe joint compound, insoluble in liquefied petroleum gas, and shall be applied to the male threads only.

(h) Concealed Tubing. Tubing shall not be run inside walls, floors, partitions, or roofs. Where tubing passes through walls, floors, partitions, roofs, or similar installations, such tubing shall be protected by the use of weather resistant grommets that shall snugly fit both the tubing and the hole through which the tubing passes.

(i) Concealed Joints. Piping or tubing joints shall not be located in any floor, wall partition, or similar concealed construction space.

(j) Location of Gas Supply Connection. (1) For LP-gas only systems the supply connection shall be located at the “A” frame, container recess, or in the rear half of the total length of the mobile structure and within eighteen inches (18”) from the left (road) side wall, and should be as close as possible to a point thirty feet (30’) from the front of the mobile structure.

(2) For combination LP-gas and natural gas systems, the natural gas supply connection shall be located under the rear half of the total length of the mobile structure and within twenty-four inches (24”) of the left (road) side wall and be located as close as possible to a point thirty feet (30’) from the front of the mobile structure. An additional connection, if used, shall be located at the hitch. The system shall be sized to provide adequate capacity from either supply connection for natural gas.

(k) Identification of Gas Supply Connections. Each mobile structure shall have permanently affixed to the exterior skin at or near each gas supply connection or the end of the pipe, a tag of three inches by one and three-quarter inches (3" × 1 3/4") minimum size, made of etched metal-stamped or embossed brass, stainless steel, anodized or alclad aluminum not less than 0.020 inch thick, or other approved material (e.g., 0.005 inch plastic laminates), which reads (as appropriate) in accordance with one of the following label designs depending upon the fuel used. The connector capacity indicated on this tag shall be equal to or greater than the total Btu/h rating of all intended gas appliances.

LP-Gas System
This gas piping system is designed for use of liquefied petroleum gas only.
DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.
CONTAINER SHUTOFF VALVES SHALL BE CLOSED DURING TRANSIT.
When connecting to lot outlet, use a listed gas supply connector for mobile structures rated at

- 100,000 Btuh or more.
- 250,000

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

Combination LP-Gas and Natural Gas System

This gas piping system is designed for use of either liquefied petroleum gas or natural gas.

NOTICE: BEFORE TURNING ON GAS BE CERTAIN APPLIANCES ARE DESIGNED FOR THE GAS CONNECTED AND ARE EQUIPPED WITH CORRECT ORIFICES. SECURELY CAP THIS INLET WHEN NOT CONNECTED FOR USE.

When connecting to lot outlet, use a listed gas supply connector for mobile structures rated at

- 100,000 Btuh or more.
- 250,000

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

TABLE NO. 3B

Maximum Capacity of Different Sizes of Pipe and Tubing in Thousands of Btu's Per Hour of Natural Gas For Gas Pressure of 0.5 Psig or Less and a Maximum Pressure Drop of 1/2 Inch Water Column

I.D.	Iron Pipe Size										O.D.	Tubing									
	Length in Feet											Length in Feet									
3/4"	43	29	24	20	18	16	15	14	13	12	3/8"	27	18	15	13	11	10	9	9	8	8
3/8"	95	65	52	45	40	36	33	31	29	27	1/2"	56	38	31	26	23	21	19	18	17	16
1/2"	175	120	97	82	73	66	61	57	53	50	5/8"	113	78	62	53	47	43	39	37	34	33
3/4"	360	250	200	170	151	138	125	118	110	103	3/4"	197	136	109	93	83	75	69	64	60	57
1"	680	465	375	320	285	260	240	220	215	195	7/8"	280	193	155	132	117	106	98	91	85	81

PART II

Maximum Capacity of Different Sizes of Pipe and Tubing in Thousands of Btu's Per Hour of Undiluted Liquefied Petroleum Gas Based on a Maximum Pressure Drop of 1/2 Inch Water Column

I.D.	Iron Pipe Size										O.D.	Tubing									
	Length in Feet											Length in Feet									
1/4"	67	46	37	31	28	25	23	21	20	19	3/8"	39	26	21	19	-	-	-	-	-	-

3/8"	147	101	81	70	62	56	51	48	45	42	1/2"	92	62	50	41	37	35	31	29	27	26
1/2"	275	189	152	129	114	103	96	89	83	78	5/8"	199	131	107	90	79	72	67	62	59	55
3/4"	567	393	315	267	237	217	196	185	173	162	3/4"	329	216	181	145	131	121	112	104	95	90
1"	1071	732	590	504	448	409	378	346	322	307	7/8"	501	346	277	233	198	187	164	155	146	138

(l) Gas Supply Connectors. LP-Gas. A listed LP-gas flexible connector conforming to the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]) or equal shall be supplied when the fuel gas piping system is designed for the use of LP-gas and cylinder(s) and regulator(s) are supplied.

(m) Appliance Connections. All gas burning appliances shall be connected to the fuel piping. Materials as provided in this section or listed appliance connectors shall be used. Listed appliance connectors when used shall not run through walls, floors, ceilings or partitions. Connectors of aluminum shall not be used outdoors.

Exterior Appliance Connection. A mobile structure containing an LPG or combination LP-natural-gas-system may be provided with a gas outlet to supply exterior appliances when installed in accordance with the following:

- (1) No portion of the completed installation shall project beyond the wall of the mobile structure.
- (2) The outlet shall be provided with an approved "quick disconnect" device, which shall be designed to provide a positive seal on the supply side of the gas system when the appliance is disconnected. A shutoff valve shall be installed immediately upstream of the quick disconnect device. The complete device shall be provided as part of the original installation.
- (3) Protective caps or plugs for the "quick disconnect" device, when disconnected shall be permanently attached to the mobile structure adjacent to the device.
- (4) A tag shall be permanently attached to the outside of the exterior wall of the mobile structure as close as possible to the gas supply connection. The tag shall indicate the type of gas and the Btu/h capacity of the outlet and shall be legibly inscribed as follows:

THIS OUTLET IS DESIGNED FOR USE WITH GAS PORTABLE APPLIANCES WHOSE TOTAL INPUT DO NOT EXCEED _____ BTU/H. REPLACE PROTECTIVE COVERING OVER CONNECTOR WHEN NOT IN USE.

(n) Valves. Shutoff valves used in connection with gas piping shall be of a type designed and listed for use on LP-gas.

A shutoff valve shall be installed in the fuel piping outside of each gas appliance but inside the mobile structure, upstream of the union or connector in addition to any valve on the appliance. The shutoff valve shall be located within six feet (6') of a cooking appliance and within three feet (3') of any other appliance. A shutoff valve may serve more than one (1) appliance if located as required above.

(o) Gas Piping System Openings. All openings in the gas piping system shall be closed gas-tight with threaded pipe plugs or pipe caps.

(p) Electrical Ground. Gas piping shall not be used for an electrical ground.

(q) Couplings. Pipe couplings and unions shall be used to join sections of threaded piping. Right and left nipples or couplings shall not be used.

(r) Hangers and Supports. All gas piping shall be adequately supported or galvanized or equivalently protected metal straps or hangers at intervals of not more than four feet (4'), except where adequate support and protection is provided by structural members. Solid-iron-pipe gas supply connection(s) shall be rigidly anchored to a structural member within six inches (6") of the supply connection(s).

(s) Testing for Leakage. (1) Before Appliances are Connected. Piping systems shall stand a pressure of at least six inches (6") mercury or three (3) PSI gauge for a period of not less than ten (10) minutes without showing any drop in pressure. Pressure shall be measured with a mercury manometer or slope gauge calibrated so as to be read in increments of not greater than one-tenth (1/10) pound, or an equivalent device. The source of pressure shall be isolated before the pressure tests are made. Before a test is begun, the temperature of the ambient air and of the piping shall be approximately the same and constant air temperature be maintained throughout the test.

(2) After appliances are connected, the piping system shall be pressurized to not less than ten inches (10") nor more than fourteen inches (14") water column and the appliance connections tested for leakage with soapy water or bubble solution. (Fire Prevention and Building Safety Commission; 675 IAC 15-2-76; filed Mar 25, 1986, 1:44 pm: 9 IR 2005, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 77. (a) General. The requirements of this section shall govern the installation of all liquid fuel piping attached to any mobile structure. None of the requirements listed in this section shall apply to the piping in the appliance(s).

(b) Materials. All materials used for the installation extension, alteration, or repair, of any oil piping system shall be new and free from defects or internal obstructions. The system shall be made of materials having a melting point of not less than 1450° F., unless otherwise specified in this section. They shall consist of one or more of the materials described in (b)(1) through (b)(4).

(1) Steel or wrought-iron pipe shall comply with the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.J]). Threaded copper or brass pipe in iron pipe sizes may be used.

(2) Fittings for oil piping shall be wrought iron, malleable iron, steel, or brass (containing not more than seventy-five percent (75%) copper).

(3) Copper tubing shall be annealed type, Grade K or L conforming to the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.J]).

(4) Steel tubing shall have a minimum wall thickness of 0.032 inch diameters up to one-half inch (1/2") and 0.049 inch for diameters one-half inch (1/2") and larger. Steel tubing shall be constructed in accordance with the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.J]).

(c) Size of Oil Piping. The minimum size of all fuel oil tank piping connecting outside tanks to the appliance shall be no smaller than three-eighths inch (3/8") OD copper tubing or one-fourth inch (1/4") IPS. If No. 1 fuel oil is used with a listed automatic pump (fuel lifter), copper tubing shall be sized as specified by the pump manufacturer.

(d) Joints for Oil Piping. All pipe joints in the piping system, unless welded or brazed, shall be threaded joints which comply with the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.J]). The material used for brazing pipe connections shall have a melting temperature in excess of 1000° F.

(e) Joints for Tubing. Joints in tubing shall be made with either a single or double flare of the proper degree, as recommended by the tubing manufacturer, by means of listed tubing fittings, or brazed with materials having a melting point in excess of 1000° F.

(f) Pipe Joint Compound. Threaded joints shall be made up tight with listed pipe joint compound which shall be applied to the male threads only.

(g) Couplings. Pipe couplings and unions shall be used to join sections of threaded pipe. Right and left nipples or couplings shall not be used.

(h) Grade of Piping. Fuel oil piping installed in conjunction with gravity feed systems to oil heating equipment shall slope in a gradual rise upward from a central location to both the oil tank and the appliance in order to eliminate air locks.

(i) Strap Hangers. All oil piping shall be equivalently protected metal straps or hangers at intervals of not more than four feet (4'), except where adequate support and protection is provided by structural members. Solid-iron-pipe oil supply connection(s) shall be rigidly anchored to a structural member within six inches (6") of the supply connection(s).

(j) Testing for Leakage. Before setting the system in operation, tank installation and piping shall be checked for oil leaks with fuel oil of the same grade that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-77; filed Mar 25, 1986, 1:44 pm: 9 IR 2008, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-78 General appliance standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 78. (a) Heat-producing appliances and vents, roof jacks and chimneys necessary for their installation in mobile structures shall be listed or certified by a nationally recognized testing agency for use in manufactured homes. Air conditioning units, combination air conditioning and heating units shall be listed or certified by a nationally recognized testing agency for the application for which the unit is intended.

(b) Fuel-burning heat-producing appliances and refrigeration appliances, except ranges and ovens, shall be of the vented type and vented to the outside.

(c) Fuel-burning appliances shall not be converted from one fuel to another fuel unless converted in accordance with the terms of their listing and the appliance manufacturer's instructions.

(d) Gas-fired absorption comfort-cooling units shall meet all the requirements of American National Standard for Gas-Fired Absorption Summer Air Conditions [*sic.*] Appliances.

(e) Mechanical comfort-cooling units shall meet all the requirements of the Standard for Unitary Air Conditioning Equipment.

(f) Direct refrigeration systems serving any air conditioning or comfort-cooling system installed in a mobile structure shall conform to the Indiana Mechanical Code (675 IAC 18-1 [*675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.*]). (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-78; filed Mar 25, 1986, 1:44 pm: 9 IR 2009, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-79 Gas clothes dryers

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 79. (a) Gas clothes dryers shall be exhausted to the outside by a moisture-lint exhaust duct and termination fitting listed or certified as components of the dryer.

(b) A clothes dryer moisture-lint exhaust duct shall not be connected to any other duct, vent or chimney.

(c) The exhaust duct shall not terminate beneath the mobile structure.

(d) Moisture-lint exhaust ducts shall not be connected with sheet metal screws or other fastening devices which extend into the interior of the duct.

(e) Gas Clothes Dryer Stub in Requirements. A mobile structure may be provided with "stubbed in" equipment at the factory to supply a gas clothes dryer for future installation by the owner provided it complies with the following provisions:

(1) The "stubbed in" gas outlet shall be provided with a shutoff valve, the outlet of which is closed by threaded pipe plug or cap.

(2) The "stubbed in" gas outlet shall be permanently labeled to identify it for use only as the supply connection for a gas clothes dryer.

(3) A moisture-lint exhaust duct system shall be roughed in by the manufacturer at the time of original installation.

The moisture-lint exhaust system shall comply with the provisions of (a) through (d).

(*Fire Prevention and Building Safety Commission; 675 IAC 15-2-79; filed Mar 25, 1986, 1:44 pm: 9 IR 2009, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-80 Installation of appliances

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 80. (a) The installation of each appliance shall conform to the terms of its listing and the manufacturer's instructions. The installer shall leave the manufacturer's instructions attached to the appliance. Every appliance shall be secured in place to avoid displacement.

(b) All fuel-burning appliances, except ranges, ovens, illumination appliances, clothes dryers, solid fuel-burning fireplaces and solid fuel-burning fireplace stoves, shall be installed to provide for the complete separation of the combustion system from the interior atmosphere of the mobile structure. Combustion air inlets and flue gas outlets shall be listed or certified as components of the appliance. The required separation may be obtained by:

(1) the installation of direct vent system (sealed combustion system) appliances, or

(2) the installation of appliances within enclosures so as to separate the appliance combustion system and venting system from the interior atmosphere of the mobile structure. There shall not be any door, removable access panel, or other opening into the enclosure from the inside of the mobile structure. Any opening for ducts, piping, wiring, etc., shall be sealed.

(c) A forced air appliance and its return-air system shall be designed and installed so that negative pressure created by the air-circulating fan cannot affect its or another appliance's combustion air supply or act to mix products of combustion with circulating air.

(1) The air circulating fan of a furnace installed in an enclosure with another fuel-burning appliance shall be operable only when any door or panel covering an opening in the furnace fan compartment or in a return air plenum or duct is in the closed position.

NOTE: This does not apply if both appliances are direct vent system (sealed combustion system) appliances.

(2) If a warm air appliance is installed within an enclosure to conform to (b)(2), each warm-air outlet and each return air inlet shall extend to the exterior of the enclosure. Ducts, if used for that purpose, shall not have any opening within the enclosure and shall terminate at a location exterior to the enclosure.

(3) Cooling coils installed as a portion of, or in connection with, any forced-air furnace shall be installed on the downstream side unless the furnace specifically otherwise listed.

(4) A cooling coil shall not be located in the air discharge duct or plenum of any forced-air furnace unless such furnace is listed for use with a cooling coil or listed for operation at not less than 0.5 inch water column external static pressure.

(5) If a cooling coil is installed within a forced-air furnace, the coil shall be listed for use with that furnace in the manner so installed or be approved for such use.

(d) Vertical Clearance Above Gas Cooking Top. Gas ranges shall have a vertical clearance above the cooking top of not less than thirty inches (30") to combustible material or metal cabinets except the clearance may be reduced to not less than twenty-four inches (24") as follows:

(1) the underside of the combustible material or metal cabinet above the cooking top is protected with asbestos millboard at least one-fourth inch (1/4") thick covered with sheet metal not lighter than No. 28 manufacturer's standard gauge, or,

(2) a metal ventilating hood of not lighter than No. 28 manufacturer's standard gauge sheet metal is installed above the cooking top with a clearance of not less than one-fourth inch (1/4") between the cabinet and the hood is at least as wide as the range is and is centered over the range.

(e) Solid fuel-burning factory-built fireplaces and fireplace stoves listed for use in manufactured homes may be installed in mobile structures provided they and their installation conform to (e)(1). A fireplace or fireplace stove shall be considered as a heating facility for determining compliance with 675 IAC 15-2-20.

(1) A solid fuel-burning fireplace or fireplace stove shall be equipped with integral door(s) or shutter(s) designed to close the fireplace or fireplace stove fire chamber opening and shall include complete means for venting through the roof, a combustion air inlet, a hearth extension, and means to securely attach the fireplace or the fireplace stove to the mobile structure. The installation shall conform to the following:

(A) A listed factory-built chimney designed to be attached directly to the fireplace or fireplace stove shall be used. The listed factory-built chimney shall be equipped with and contain as part of its listing a termination device(s) and a spark arrester(s).

(B) A fireplace or fireplace stove, air intake assembly, hearth extension and the chimney shall be installed in accordance with the terms of their listings and their manufacturer's instructions.

(C) The combustion air inlet shall conduct the air directly into the fire chamber and shall be designed to prevent material from the hearth dropping onto the area beneath the mobile structure.

(D) The fireplace or fireplace stove shall not be installed in a sleeping room.

(E) Hearth extension shall be of noncombustible material not less than three-eighths inch (3/8") thick. The hearth shall extend at least sixteen inches (16") in front of and at least eight inches (8") beyond each side of the fireplace or fireplace stove opening. Furthermore the hearth shall extend over the entire surface beneath a fireplace stove and beneath an elevated or overhanging fireplace.

(F) The label on each solid fuel-burning fireplace and solid fuel-burning fireplace stove shall include the following wording: For use with solid fuel only.

(G) The chimney shall extend at least three feet (3') above the part of the roof through which it passes and at least two feet (2') above the highest elevation of any part of the mobile structure within ten feet (10') of the chimney. Portions of the chimney and termination that exceed an elevation of thirteen feet and six inches (13' 6") above ground level may be designed to be removed for transporting the mobile structure.

(2) The venting shall be accomplished by one or more of the following methods:

(A) An integral vent system listed or certified as part of the appliance.

(B) A venting system consisting entirely of listed components, including roof jack, installed in accordance with the terms of the appliance listing and the appliance manufacturer's instructions.

(3) Venting and combustion air systems shall be installed in accordance with the following:

(A) Components shall be securely assembled and properly aligned using the methods shown in the appliance manufacturer's instructions.

(B) Draft hood connectors shall be firmly attached to draft hood outlets or flue collars by sheet metal screws or by equivalent effective mechanical fasteners.

(C) Every joint of a vent, vent connector, exhaust duct and combustion air intake shall be secure and in alignment.

(4) Venting systems shall not terminate underneath a mobile structure.

(5) Venting system terminations shall be not less than three feet (3') from any motor-driven air intake discharging into habitable areas.

(6) The area in which cooking appliances are located shall be ventilated by a metal duct which may be single wall, not less than twelve and one-half (12 1/2) square inches in cross-sectional area (minimum dimension shall be two inches (2")) located above the appliance(s) and terminating outside the mobile structure, or by listed mechanical ventilating equipment discharging outside the structure, that is installed in accordance with the terms of listing and the manufacturer's instructions. Gravity or mechanical ventilation shall be installed within a horizontal distance of not more than ten feet (10') from the vertical front of the appliance(s).

(7) Mechanical ventilation which exhausts directly to the outside atmosphere from the interior space of a structure shall be equipped with an automatic or manual damper. Operating controls shall be provided such that mechanical ventilation can be separately operated without directly energizing other energy consuming devices.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-80; filed Mar 25, 1986, 1:44 pm; 9 IR 2010, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-81 Venting and combustion air systems

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 81. (a) The venting as required by 675 IAC 15-2-78(b) shall be accomplished by one or more of the methods given in (a)(1) and (a)(2) below:

(1) An integral vent system listed or certified as part of the appliance.

(2) A venting system consisting entirely of listed components, including roof jack, installed in accordance with the terms of the appliance listing and the appliance manufacturer's instructions (see 675 IAC 15-2-80(b)).

(b) Venting and combustion air systems shall be installed in accordance with the following:

(1) Components shall be securely assembled and properly aligned using the method shown in the appliance manufacturer's instructions.

(2) Draft hood connectors shall be firmly attached to draft hood outlets of flue collars by sheet metal screws or by an equivalent means.

(3) Every joint of a vent, vent connector, exhaust duct and combustion air intake shall be secure and in alignment.

(c) Venting systems shall not terminate underneath a mobile structure.

(d) Venting system terminations shall be not less than three feet (3') from any motor-driven air intake discharging into habitable areas.

(e) The area in which cooking appliances are located shall be ventilated by a metal duct which may be single wall, not less than 12.5 square inches in cross-sectional area (minimum dimension shall be two inches (2")) located above the appliance(s) and terminating outside the mobile structure, or by listed mechanical ventilating equipment that is installed in accordance with the terms of listing and the manufacturer's instructions. Gravity or mechanical ventilation shall be installed within a horizontal distance of not more than ten feet (10') from the vertical front of the appliance(s). *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-81; filed Mar 25, 1986, 1:44 pm; 9 IR 2012, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-82 Operating instructions

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 82. Operating instructions shall be provided with appliances. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-82; filed Mar 25, 1986, 1:44 pm; 9 IR 2012, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-83 Appliance information

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 83. Information on clearances, input rating, lighting and shutdown shall be attached to the appliances with the same permanence as the nameplate, and so located that it is easily readable when the appliance is properly installed. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-83; filed Mar 25, 1986, 1:44 pm; 9 IR 2012, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-84 Access to appliances

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 84. Every appliance shall be accessible for inspection, service, repair, and replacement without removing permanent construction. Sufficient room shall be available to enable the operator to observe the burner, control, and ignition means while starting the appliance. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-84; filed Mar 25, 1986, 1:44 pm; 9 IR 2012, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-85 Location of appliances

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 85. Heat-producing appliances shall be so located that no doors, drapes, or other such material can be placed or swung closer to the front of the appliance than the clearances specified on the labeled appliances. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-85; filed Mar 25, 1986, 1:44 pm; 9 IR 2012, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-86 Clearances

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 86. Clearances between heat-producing appliances and adjacent surfaces shall not be less than specified in the terms of their listing. Clearance spaces shall be framed in or guarded to prevent creation of storage space within the clearance specified. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-86; filed Mar 25, 1986, 1:44 pm; 9 IR 2012, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-87 Circulating air system

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 87. (a) Supply systems shall be as follows:

(1) Supply ducts and any dampers contained therein shall be made from galvanized steel, tinned steel, or aluminum, or shall be listed Class 0, Class 1, Class 2 air ducts. Class 2 air ducts shall be located at least three feet (3') from the furnace bonnet or plenum. A duct system integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with the following Table No. 4B.

TABLE NO. 4B
Minimum Metal Thickness for Ducts*

Duct Type	Diameter or Width	
	14 inches or less	over 14 inches
Round	0.013 in.	0.016 in.
Enclosed Rectangular	0.013 in.	0.016 in.
Exposed Rectangular	0.016 in.	0.019 in.

*When "nominal" thickness is specified, 0.003 inch shall be added to these "minimum" metal thicknesses.

(2) Sizing of Ducts. Ducts shall be designed so that when a labeled forced-air furnace is installed and operated continually at its normal input rating in the mobile structure, with all registers in full open position, the static pressure measured in the duct plenum shall not exceed that shown in Table No. 4B or exceed that shown on the label of the appliance. When an air-cooler coil is installed between the furnace and the duct plenum, the total static pressure between the furnace and the coil shall not exceed that shown on the label of the furnace. The minimum dimension of any branch duct shall be at least one and one-half inches (1 1/2"), and of any main duct, two and one-half inches (2 1/2").

(3) Airtightness of Supply Duct Systems. A supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least eighty percent (80%) of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed. For the purpose of this subdivision and (b), pressures shall be measured with a water manometer or equivalent device calibrated to read in increments not greater than one-tenth inch (1/10") water column.

TABLE NO. 5B
Maximum Allowable Static Pressures in Supply Duct Systems

Input to Forced-Air Furnace, Btu/hr	External Static Pressure Inches Water Column Measured at the Furnace Outlet	
	Temperature of Outlet Air Determined by Function of Limit Control	
	Above 165° F	165° F or Less
55,000 and under	0.10	0.20
Over 55,000 to 80,000	0.10	0.24
Over 80,000 to 100,000	0.15	0.30

(4) Expandable or Multiple Mobile Structure Connections. An expandable or multiple structure may have ducts of the heating system installed in the various units. The points of connection must be so designed and constructed that when the mobile structure is fully expandable or coupled, the resulting duct joint will conform to the requirements of this section.

(5) Air supply ducts that are not located within the heated side of the mobile structure insulation having an R factor of at least four (4) shall be insulated.

(6) Supply ducts within the mobile structure but not within insulation described in (a)(5) shall be insulated with rigid insulation having a thermal insulation (R) not less than 2.5 or flexible insulation having a thermal insulation (R) not less than three (3) with a continuous vapor barrier having a perm rating of not more than 1.0.

(7) Supply ducts exposed directly to outside air, such as under chassis crossover ducts, shall be insulated with material having a thermal insulation (R) of not less than 4.0 with continuous vapor barrier having a perm rating of not more than 1.0.

(8) Aluminum foil used as a vapor barrier shall be at least two (2) mils in thickness.

(b) Return air systems shall be as follows:

(1) Return Air Openings. Provisions shall be made to permit the return of circulating air from all rooms and living spaces, except toilet room(s) and kitchen, to the circulating air supply inlet of the furnace.

(2) Duct Material. Return ducts and any diverting dampers contained therein shall be in accordance with the following:

(A) Portions of return ducts directly above the heating surfaces, or closer than two (2) feet from the outer jacket or casing of the furnace shall be constructed of metal in accordance with Table No. 4B of this section or shall be listed Class 0 or Class 1 air ducts.

(B) Return ducts, except as required by (a) above, shall be constructed of one inch (1") (nominal) wood boards (flame spread classification of not more than 200), other suitable material no more flammable than one inch (1") board or in accordance with (a).

(C) The interior of combustible ducts shall be lined with noncombustible material at points where there might be danger from incandescent particles dropped through the register or furnace such as directly under floor registers and the bottom of vertical ducts or directly under furnaces having a bottom return.

(3) Sizing. The cross-sectional areas of the return air duct shall not be less than two (2) square inches for each one thousand (1,000) Btu/hour input rating of the appliance. Dampers shall not be placed in any return air duct, except that a diverting damper may be placed in a combination fresh air intake and return air duct so arranged that the required cross-sectional area will not be reduced at all possible positions of the damper.

(4) Permanent Unclosable Opening. Areas not served by return air ducts or closed off from the return opening of the furnace by doors, sliding partitions or other means shall be provided with permanent unclosable openings in the doors or separating partitions to allow circulated air to return to the furnace. Such openings may be grilled or louvered. The net free area of each opening shall be not less than one (1) square inch for every five (5) square feet of total living area closed off from the furnace by the door or partition serviced by that opening. Undercutting doors connecting the closed-off space may be used as a means of providing return air area. However, in the event that doors are undercut, they shall be undercut a minimum of two inches (2") and not more than two and one-half inches (2 1/2"), and no more than one-half [*sic.*] (1/2") of the free air area so provided shall be counted as return air area.

(c) Joints and Seams. Joints and seams of ducts shall be securely fastened and made substantially airtight. Slip joints shall have a lap of at least one inch (1") and shall be individually fastened. Tape or caulking compound may be used for sealing mechanically secure joints. Where used, tape or caulking compound shall not be subject to deterioration under long exposures to temperatures up to 200° F. and to conditions of high humidity, excessive moisture, or mildew.

(d) Supports. Ducts shall be securely supported.

(e) Registers or Grills. Fittings connecting the registers or grills to the ducts system shall be constructed of metal or material which complies with the requirements of Class 1 or 2 ducts as stated in the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]). Registers or grills shall be constructed of metal or conform with the Indiana Mechanical Code (675 IAC 18-1 [675 IAC 18-1 was repealed filed Oct 28, 1988, 3:00 p.m.: 12 IR 588, eff Jan 2, 1989. See 675 IAC 18-1.3.]).

Floor registers or grills shall resist without structural failure a two hundred (200) pound concentrated load on a two inch (2") diameter disc applied to the most critical area of the exposed face of the register or grill. For this test the register or grill is to be at a temperature of not less than 165° F. and is to be supported in accordance with the manufacturer's instructions. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-87; filed Mar 25, 1986, 1:44 pm: 9 IR 2012, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-88 Scope of electrical standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 88. (a) The provisions of 675 IAC 15-2-88–675 IAC 15-2-104 and Part A of Article 550 of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.].]) cover the electrical conductors of mobile structures.

(b) A mobile structure not intended as a dwelling unit, as for example, equipped for sleeping purposes only, contractor's on-site offices, construction job dormitories, mobile studio dressing rooms, banks, clinics, mobile stores or intended for display or demonstration of merchandise or machinery, shall not be required to meet the provisions of this section pertaining to the number or capacity of circuits required. It shall, however, meet all other applicable requirements of this section if provided with an electrical installation intended to be energized from a 115-volt or 115/230-volt AC power supply system.

(c) The provisions of this section apply to mobile structures intended for connection to a wiring system nominally rated 115/230-volts, 3-wire AC, grounded neutral.

(d) In addition to the requirements of this section and Article 550 of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.].]), the applicable portions of other articles of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.].]) shall be followed covering electrical installations in mobile structures.

EXCEPTION: Wherever the requirements of this section differ from articles other than Article 550 of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.].]), this section and Article 550 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a

rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.] shall apply.
(Fire Prevention and Building Safety Commission; 675 IAC 15-2-88; filed Mar 25, 1986, 1:44 pm: 9 IR 2014, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-89 Definitions for electrical standards

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 89. "Accessible (as applied to equipment)" means admitting close approach because not guarded by locked doors, elevation, or other effective means (see "readily accessible").

"Accessible (as applied to wiring [sic.] methods)" means capable of being removed or exposed without damaging the mobile structure or its finish, or not permanently closed-in by the structure or the finish of the mobile structure (see "concealed" and "exposed").

"Air conditioning or comfort cooling equipment" means all of that equipment intended or installed for the purpose of processing the treatment of air so as to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space.

"Appliance, fixed" means an appliance which is fastened or otherwise secured at a specific location.

"Appliance, portable" means an appliance which is actually moved or can easily be moved from one place to another in normal use.

NOTE: For the purpose of this code use the following major appliances other than built-in are considered portable if cord-connected: refrigerators, gas range equipment, clothes washers, dishwashers without booster heaters, or other similar appliances.

"Appliance, stationary" means an appliance which is not easily moved from one place to another in normal use.

"Attachment plug (plug cap)" means a device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

"Bonding" means the permanent joining of metallic parts to form an electrically conductive path which will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

"Branch circuit" means the circuit conductors between the final over-current device protecting the circuit and the outlet(s).

NOTE: A device not approved for branch circuit protection, such as a thermal cut-out or motor overload protective device, is not considered as the overcurrent device protecting the circuit.

"Branch circuit-appliance" means a branch circuit supplying energy to one or more outlets to which appliances are to be connected; such circuits to have no permanently connected lighting fixtures not a part of an appliance.

"Branch circuit-general purpose" means a branch circuit that supplies a number of outlets for lighting and appliances.

"Cabinet" means an enclosure designed either for surface or flush mounting, and provided with a frame, mat, or trim in which swinging doors are hung.

"Circuit breaker" means a device designed to open and close a circuit by nonautomatic means, and to open the circuit automatically on a predetermined overload of current without injury to itself when properly applied within its rating.

"Concealed" means rendered inaccessible by the structure or finish of the mobile structure. Wires in concealed raceways are considered concealed, even though they may become accessible by withdrawing them. (See "accessible as applied to wiring methods").

"Connector pressure (solderless)" means a device that establishes a connection between two or more conductors or between one or more conductors and a terminal by means of mechanical pressure and without the use of solder.

"Dead front (as applied to switches, circuit-breakers, switchboards, and distribution panelboard)" means so designed, constructed, and installed that no current-carrying parts are normally exposed.

"Demand factor" means the ratio of the maximum demand of a system, or part of a system, to the total connected load of a system, or the part of the system under consideration.

"Device" means a unit of an electrical system that is intended to carry but not utilize electrical energy.

"Disconnecting means" means a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

"Enclosed" means surrounded by a case that will prevent a person from accidentally contacting live parts.

“Equipment” means a general term, including material, fittings, devices, appliances, fixtures, apparatus, and the like used as a part of, or in connection with, an electrical installation.

“Exposed (as applied to live parts)” means capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated (see “accessible” and “concealed”).

“Exposed (as applied to wiring method)” means on or attached to the surface or behind panels designed to allow access (see “accessible as applied to wiring methods”).

“Externally operable” means capable of being operated without exposing the operator to contact with live parts.

“Feeder assembly” means the overhead or underchassis feeder conductors, including the grounding conductor, together with the necessary fittings and equipment, or a power supply cord approved for mobile structure use, designed for the purpose of delivering energy from the source of electrical supply to the distribution panel board within the mobile structure.

“Fitting” means an accessory, such as a locknut, bushing, or other part of a wiring system, that is intended primarily to perform a mechanical rather than an electrical function.

“Ground” means a conducting connection, whether intentional or accidental, between an electrical circuit or equipment and earth, or to some conducting body that serves in place of the earth.

“Grounded” means connected to earth or to some conducting body that serves in place of the earth.

“Grounded conductor” means a system or circuit conductor that is intentionally grounded.

“Grounding conductor” means a conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

“Guarded” means covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats or platforms to remove the likelihood of approach or contact by persons or objects to a point of danger.

“Isolated” means not readily accessible to persons unless special means for access are used.

“Lighting outlet” means an outlet intended for the direct connection of a lampholder, a lighting fixture, or a pendant cord terminating in a lampholder.

“Outlet” means a point on the wiring system at which current is taken to supply utilization equipment.

“Panelboard” means a single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent protective devices, and with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front.

“Raceway” means an enclosed channel designed expressly for holding wires, cables, or busbars with additional functions as permitted in this code.

NOTE: Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible metal conduit, flexible metallic tubing, flexible metal conduit, electrical nonmetallic tubing, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

“Raintight” means so constructed or protected that exposure to a beating rain will not result in the entrance of water under specified test conditions.

“Readily accessible” means capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc. (see “accessible”).

“Receptacle” means a contact device installed at the outlet for the connection of a single attachment plug.

NOTE: A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.

“Receptacle outlet” means an outlet where one or more receptacles are installed.

“Utilization equipment” means equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar purposes.

“Voltage (of a circuit)” means the greatest root-mean-square (effective) difference of potential between any two (2) conductors of the circuit concerned.

NOTE: Some systems, such as three-phase four-wire, and three-wire direct-current may have various circuits of various voltages.

“Weatherproof” means so constructed or protected that exposure to the weather will not interfere with successful operation.

NOTE: Rainproof, raintight, or watertight equipment can fulfill the requirements for weatherproof where varying weather conditions other than wetness, such as snow, ice, dust, or temperature extremes, are not a factor. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-89; filed Mar 25, 1986, 1:44 pm: 9 IR 2015, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-90 Power supply

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 90. (a) The mobile structure service equipment shall be located adjacent to the mobile structure and not mounted in or on the mobile structure. The power supply to the mobile structure shall be a feeder assembly consisting of not more than one (1) mobile home power-supply cord rated fifty (50) amperes, or a permanently installed circuit.

EXCEPTION: A mobile structure that is factory-equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a mobile or manufactured home power-supply cord rated forty (40) amperes.

(b) If the mobile structure has a power-supply cord, it shall be permanently attached to the distribution panelboard or to a junction box permanently connected to the distribution panelboard, with the free end terminating in an attachment plug cap.

(c) Cord with adapters and pigtail ends, extension cord, and similar items shall not be attached to, or shipped with, a mobile structure.

(d) A suitable clamp or the equivalent shall be provided at the distribution panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.

(e) The cord shall be of an approved type with four (4) conductors, one (1) of which shall be identified by a continuous green color or a continuous green color with one (1) or more yellow stripes for use as the grounding conductor.

(f) The attachment plug cap shall be a 3-pole, 4-wire grounding type, rated fifty (50) amperes 125/250 volts with a configuration and intended for use with the fifty (50) ampere, 125/250 receptacle configuration. It shall be molded of butyl rubber, neoprene, or other approved materials which have been found suitable for the purpose and shall be molded to the flexible cord so that it adheres tightly to the cord at the point where the cord enters the attachment-plug cap. If a right angle cap is used, the configuration shall be so oriented that the grounding member is farthest from the cord.

NOTE: Complete details of the 50-ampere cap and receptacle can be found in the Indiana Electrical Code (675 IAC 17-1 [*675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.J.]*).

(g) The overall length of a power-supply cord, measured from the end of the cord including bared leads, to the face of the attachment-plug cap shall not be less than twenty-one feet (21') and shall not exceed thirty-six and one-half feet (36 1/2'). The length of cord from the face of the attachment-plug cap to the point where the cord enters the mobile structure shall not be less than twenty feet (20').

(h) The power-supply cord shall bear the following marking: "For use with mobile homes—40-amperes" or "For use with mobile or manufactured homes—50 amperes."

(i) The point of entrance of the feeder assembly to the mobile structure shall be in the exterior wall, floor, or roof.

(j) Where the calculated load exceeds fifty (50) amperes or where a permanent feeder is used, the supply shall be by means of:

(1) one (1) mast weatherhead installation in accordance with Article 230 of the Indiana Electrical Code (675 IAC 17-1 [*675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.J.]*), containing four (4) continuous insulated, color-coded feeder conductors, one (1) of which shall be an equipment grounding conductor; or

(2) a metal raceway from the disconnecting means in the mobile structure to the underside of the mobile structure with provisions for the attachment of a suitable junction box or fitting to the raceway on the underside of the mobile structure (with or without conductors as in (j)).

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-90; filed Mar 25, 1986, 1:44 p.m.: 9 IR 2017, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-91 Disconnecting means and branch-circuit protective equipment

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 91. (a) The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designed as a distribution panelboard. If a fused distribution panelboard is used, the maximum fuse size for the mains shall be plainly marked with lettering at least one-fourth inch (1/4") high and visible when fuses are changed.

NOTE: See Section 110-22 of the Indiana Electrical Code (675 IAC 17-1 [*675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.]*])

concerning identification of each disconnecting means and service, feeder, or branch circuit at the point where it originated and the type marking needed.

(b) When using plug fuses and fuseholders they shall be tamper-resistant, Type "S", enclosed in deadfront fuse panelboards. Electric distribution panelboard containing circuit breakers shall also be deadfront type.

(c) A single disconnecting means shall be provided in each mobile structure consisting of a circuit breaker, or a switch and fuses and its accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the mobile structure. The main circuit breakers or fuses shall be plainly marked "main". This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding with sufficient terminals for all grounding conductors. The neutral bar termination of the grounded circuit conductors shall be insulated.

(d) The disconnecting equipment shall have a rating suitable for the connected load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of twenty-four inches (24") from the bottom of such equipment to the floor level of the mobile structure. There shall be a label attached to the panelboard stating:

"THIS PANELBOARD SHALL BE CONNECTED BY A FEEDER ASSEMBLY HAVING OVERCURRENT PROTECTION RATED AT NOT MORE THAN _____ AMPERES"

(e) A distribution panelboard main circuit breaker shall be rated fifty (50) amperes and employ a two (2) pole circuit breaker rated forty (40) amperes for a forty (40) ampere supply cord, or fifty (50) amperes for a fifty (50) ampere supply cord. A distribution panelboard employing a disconnect switch and fuses shall employ a single two (2) pole, sixty (60) ampere fuseholder with forty (40) or fifty (50) ampere supply cord, respectively. The outside of the distribution panelboard shall be plainly marked with the fuse size.

(f) The distribution panelboard shall be located in an accessible location. Shall not be located in a bathroom/restroom and shall be permitted to be located just inside a closet entry if the location is such that a clear space of six inches (6") to easily ignitable materials is maintained in front of the distribution panelboard, and the distribution panelboard door can be extended to its full open position (at least ninety (90) degrees). A clear working space at least thirty inches (30") wide and thirty inches (30") in front of the distribution panelboard shall be provided. This space shall extend from floor to the top of the distribution panelboard.

(g) Branch-circuit distribution equipment shall be installed in each mobile structure and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

(h) The branch circuit overcurrent devices shall be rated:

(1) not more than the circuit conductors; and

(2) not more than one hundred fifty percent (150%) of the rating of a single appliance rated thirteen and three-tenths (13.3) amperes or more which is supplied by an individual branch circuit; but

(3) not more than the fuse size marked on the air conditioner or other motor operated appliance.

(i) A fifteen (15) ampere multiple [*sic.*] receptacle shall be acceptable when connected to a twenty (20) ampere laundry circuit.

(j) When circuit breakers are provided for branch-circuit protection, two hundred thirty (230) volt circuits shall be protected by a two (2) pole common or companion trip, or handle-tied paired circuit breakers.

(k) A metal nameplate on the outside adjacent to the feeder assembly entrance shall read:

"This Connection for 120/240 Volt 3-Pole, 4-Wire, 60 Hertz _____ Ampere Supply"

(l) The number of branch circuits required shall be determined in accordance with the following:

(1) Lighting. Based on three (3) watts per square foot times outside dimensions of the mobile structure (hitch excluded) divided by one hundred fifteen (115) volts to determine number of fifteen (15) or twenty (20) ampere lighting area circuits, e.g.:

$$\frac{3 \times \text{Length} \times \text{Width}}{115 \times 15 \text{ (or 20)}} = \begin{array}{l} \text{No. of fifteen (15) or twenty} \\ \text{(20) ampere circuits} \end{array}$$

(2) Small Appliances. For the small appliance load in kitchen, pantry, family room, dining room and breakfast rooms of mobile structures, two (2) or more twenty (20) ampere appliance branch circuits, in addition to the branch circuit specified in (1)(1), shall be provided for all receptacle outlets in these rooms, and such circuits shall have no other outlets. Receptacle outlets supplied by at least two (2) appliance receptacle branch circuits shall be installed in the kitchen.

(3) General Appliances (including furnace, water heater, range, and central or room air conditioner, etc.). There shall be one (1) or more circuits of adequate rating in accordance with the following:

(A) Ampere rating of fixed appliances not over fifty percent (50%) of circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on the same circuit.

(B) For fixed appliances on a circuit without lighting outlets, the sum of rated amperes shall not exceed the branch-circuit rating motor loads or other continuous duty loads shall not exceed eighty percent (80%) of the branch circuit rating.

(C) The rating of a single cord-and-plug-connected appliance on a circuit having no other outlets shall not exceed eighty percent (80%) of the circuit rating.

(D) The rating of range branch circuits shall be based on the range demand as specified for ranges in 675 IAC 15-2-101.

NOTE: For central air conditioning, see Article 440 of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.J.J]).

(E) Laundry Branch Circuits—Dwelling Unit. In addition to the number of branch circuits determined in accordance with above, at least one (1) additional twenty (20) ampere branch circuit provided to supply the laundry receptacle outlet(s) required by Section 210-52(e) of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.J.J]). This circuit shall have no other outlets.

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-91; filed Mar 25, 1986, 1:44 pm: 9 IR 2017, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-92 Receptacle outlets

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 92. (a) All receptacle outlets shall be:

(1) of grounding type;

(2) installed according to Section 210-7 of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.J.J]);

(3) except when supplying specific appliances, be parallel-blade, fifteen (15) ampere, one hundred twenty-five (125) volt, either single or duplex.

(b) There shall be an individual outlet of the grounding type for each cord-connected fixed appliance installed.

(c) Ground Fault Circuit Interrupters. All one hundred twenty (120) volt, single-phase, fifteen (15) and twenty (20) ampere receptacle outlets installed outdoors and in bathrooms, including receptacles in light fixtures, shall have ground-fault circuit protection for personnel. Ground-fault circuit protection for personnel shall be provided for receptacle outlets located adjacent to any lavatory. Feeders supply branch circuits shall be permitted to be protected by a ground-fault circuit-interrupter in lieu of the provision for such interrupters specified herein.

No receptacle shall be required in the area occupied by a toilet, toilet and/or shower, or toilet and tub/shower enclosure area. If a receptacle is installed in such an area, it shall have ground-fault circuit protection for personnel.

EXCEPTION: Restrooms without bathtub facilities.

(d) Required Receptacle Outlets for Residential Structures. Receptacle outlets required in all rooms other than the bath, closet, and hall areas shall be installed so that no point along the floor line is more than six feet (6') measured horizontally from an outlet in that space. Countertops shall have receptacles located every six feet (6'). The continuous measurement of countertop and floor line shall be permitted when measured from the required receptacle in rooms requiring small appliance circuits. Receptacle outlets on small appliance circuits shall not be included in determining the spacing for receptacle outlets of other circuits.

EXCEPTION 1: Where the measured distance is interrupted by an interior doorway, sink, refrigerator, range, oven, or cooktop, an additional receptacle outlet shall be provided when the interrupted space is at least two feet (2') wide at the floor line and at least twelve inches (12") wide at the countertop.

EXCEPTION 2: Receptacles concealed by stationary appliances shall not be considered as the required outlets.

EXCEPTION 3: The distance along a floor line occupied by a door opened fully against that space need not be included in establishing the horizontal measurement if the door swing is limited to ninety (90) degrees nominal by the wall space.

EXCEPTION 4: Receptacle requirements for bar-type counters and for fixed room dividers no more than eight feet (8') in length shall be permitted to be provided by a receptacle outlet in the wall at the nearest point where the counter or room divider attaches to the wall.

NOTE: To qualify as a "fixed room divider" the divider cannot be more than eight feet (8') in length nor more than four feet (4') in height and may be attached to a wall at one end only.

(e) Outdoor Receptacle Outlets. At least one (1) receptacle outlet shall be installed outdoors. A receptacle outlet located in a compartment accessible from the outside of the mobile structure shall be considered an outdoor receptacle.

EXCEPTION: Commercial units are not required to have exterior receptacles, but when installed shall conform to this code.

(f) Receptacle Outlets not Permitted. Receptacle outlets shall not be installed in or within reach (thirty inches (30")) of a shower or bathtub space. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-92; filed Mar 25, 1986, 1:44 pm: 9 IR 2019, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-93 Fixtures; appliances

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 93. (a) Electrical materials, devices, appliances, fittings, and other equipment installed, intended for use in, or attached to the mobile structure shall be approved for the application and shall be connected in an approved manner when in service. Facilities shall be provided to securely fasten appliances when the mobile structure is in transit.

(b) Specifically approved pendant-type fixtures or pendant cords shall be permitted in mobile structures.

(c) If a lighting fixture is provided over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type approved for wet locations.

(d) The switch for shower lighting fixtures and exhaust fans located over a tub or in a shower stall shall be located outside the tub or shower space.

(e) Any combustible wall or ceiling finish exposed between the edge of a fixture, canopy, or pan and an outlet box shall be covered with noncombustible material.

(f) Every appliance shall be accessible for inspection, service, repair, or replacement without removal of permanent construction. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-93; filed Mar 25, 1986, 1:44 pm: 9 IR 2020 eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-94 Wiring methods and materials

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 94. (a) Except as specially limited in this section, the wiring methods and materials specified in the Indiana Electrical Code (675 IAC 17-1 [*675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.]*]) shall be used in mobile structures.

(b) Nonmetallic outlet boxes shall be acceptable only with nonmetallic cable.

(c) Nonmetallic cable located fifteen inches (15") or less above the floor, if exposed, shall be protected from physical damage by covering boards, guard strips, or conduit. Cable likely to be damaged by stowage shall be so protected in all cases.

(d) Metal-clad and nonmetallic cables shall be permitted to pass through the centers of the wide side of two inch (2") by four inch (4") studs. However, they shall be protected where they pass through two inch (2") by two inch (2") studs or frames where the cable or armor would be less than one and one-half inches (1 1/2") from the inside or outside surface. Steel plates on each side of the cable, or a tube, with not less than No. 16 MSG wall thickness shall be required to protect the cable. These plates or tubes shall be securely held in place.

(e) Where metallic faceplates are used they shall be effectively grounded.

(f) If a range, clothes dryer, or similar appliance is connected by metal-clad cable or flexible metal conduit, a length of free cable or conduit shall be adequately secured to the wall. A length of not less than three feet (3') of free cable or conduit shall be provided to permit moving the appliance. Type NM or Type SE cable shall not be used to connect a range or dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch-circuit overcurrent protective device and a junction box or range or dryer receptacle.

(g) Threaded rigid metal conduit and intermediate metal conduit shall be provided with locknut inside and outside the box, and conduit bushing shall be used on the inside. Rigid nonmetallic conduit shall be permitted. Inside ends of the conduit shall be reamed.

(h) Switches shall be rated as follows:

(1) For lighting circuits, switches shall have a ten (10) ampere, one hundred twenty/one hundred twenty-five (120/125) volt rating; or higher if needed for the connected load.

(2) For motors or other loads, switches shall have ampere or horsepower ratings, or both, adequate for loads controlled. (An "AC general use" snap switch shall be permitted to control a motor two (2) horsepower or less with full-load current not over eighty percent (80%) of the switch ampere rating.)

(i) At least four inches (4") of free conductor shall be left at each outlet box except where conductors are intended to loop without joints.

(j) Where outdoor or under-chassis line-voltage wiring is exposed to moisture or physical damage, it shall be protected by rigid metal conduit or intermediate metal conduit. The conductors shall be suitable for wet locations.

EXCEPTION: Electrical metallic tubing may be used when closely routed against frames and equipment enclosures.

(k) The cables or conductors shall be Type NMC, TW, or equivalent.

(l) Boxes, Fittings, and Cabinets. Boxes, fittings, and cabinets shall be securely fastened in place and shall be supported from a structural member of the structure either directly or by using a substantial brace.

EXCEPTION: Snap-in type boxes. Boxes provided with special wall or ceiling brackets and wiring devices with integral enclosures, which securely fasten to walls or ceilings and are identified for the use shall be permitted without support from a structural member or brace. The testing and approval shall include the wall and ceiling construction systems for which the boxes and devices are intended to be used.

(m) Outlet boxes shall fit closely to openings in combustible walls and ceilings, and they shall be flush with such surfaces.

(n) Appliances having branch-circuit terminal connections which operate at temperatures higher than 60° C. (140° F.) shall have circuit conductors as described in (n)(1) and (2), below:

(1) Branch-circuit conductors having an insulation suitable for the temperature encountered shall be permitted to run directly to the appliance.

(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connection to a readily accessible outlet box placed at least one foot (1') from the appliance. These conductors shall be in a suitable raceway which shall extend for at least four feet (4').

(o) Component Interconnections. Fittings and connectors which are intended to be concealed at the time of assembly, when tested and approved to applicable standards, shall be permitted for the interconnections of building components. Such fittings and connectors shall be equal to the wiring method employed in insulation, temperature rise, fault-current withstanding, and shall be capable of enduring the vibration and shock occurring in a mobile structure transportation. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-94; filed Mar 25, 1986, 1:44 pm; 9 IR 2020, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 95. General. Grounding of both electrical and nonelectrical metal parts in a mobile structure shall be through connection to a grounding bus in the mobile structure distribution panelboard. The grounding bus shall be grounded through the green-colored conductor in the supply cord or the feeder wiring to the service ground in the service-entrance equipment located adjacent to the mobile structure location. Neither the frame of the mobile structure nor the frame of any appliance shall be connected to the neutral conductor in the mobile structure. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-95; filed Mar 25, 1986, 1:44 pm: 9 IR 2021, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-96 Insulated neutral

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 96. (a) The grounded circuit conductor (neutral) shall be insulated from the grounding conductors and from equipment enclosures and other grounded parts. The grounded (neutral) circuit terminals in the distribution panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the distribution panelboard or in appliances shall be removed and discarded.

(b) Connection of ranges and clothes dryers with one hundred fifteen/two hundred thirty (115/230) volt, three (3) wire ratings shall be made with four (4) conductor cord and three (3) pole, four (4) wire grounding type plugs, or by Type AC metal-clad cable or conductors enclosed in flexible metal conduit. For one hundred fifteen (115) volt rated devices, a three (3) conductor cord and a two (2) pole, three (3) wire grounding type plug shall be permitted. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-96; filed Mar 25, 1986, 1:44 pm: 9 IR 2021, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-97 Equipment grounding

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 97. (a) The green-colored insulated grounding wire in the supply cord or permanent feeder wiring shall be connected to the grounding bus in the distribution panelboard or disconnecting means.

(b) In the electrical system, all exposed metal parts, enclosures, frames, lamp fixture canopies, etc., shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard.

(c) Cord-connected appliances, such as washing machines, clothes dryers, refrigerators, and the electrical system of gas ranges, etc., shall be grounded by means of an approved cord with grounding conductor and grounding-type attachment plug. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-97; filed Mar 25, 1986, 1:44 pm: 9 IR 2021, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-98 Bonding of noncurrent-carrying metal parts

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 98. (a) All exposed noncurrent-carrying metal parts that may become energized shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard. A bonding conductor shall be connected between each distribution and an accessible terminal on the chassis.

(b) Grounding terminals shall be of the solderless type and approved as pressure terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be No. 8 copper minimum, or equal. The bonding conductor shall be routed so as not to be exposed to physical damage.

NOTE: Protection can be afforded by the configuration of the chassis.

(c) Metallic gas, water and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis ((a) of this section) by clamps, solderless connectors, or by suitable ground-type straps.

(d) Any metallic roof and exterior covering shall be considered bonded if (1) the metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners, and (2) if the lower panel of the

metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two (2) metal straps per mobile structure of section at opposite ends. The bonding strap material shall be a minimum of four inches (4") in width of material equivalent to the skin or a material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings such as screws, and starwashers or equivalent. (*Fire Prevention and Building Safety Commission; 675 IAC 15-2-98; filed Mar 25, 1986, 1:44 pm: 9 IR 2022, eff Jun 15, 1986; errata, 9 IR 2931; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-99 Electrical tests

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 99. (a) Dielectric Strength Test. The wiring of each mobile structure shall be subjected to a one (1) minute, nine hundred (900) volt dielectric strength test (with all switches closed) between live parts (including neutral and the mobile structure ground). Alternatively, the test may be performed at one thousand eighty (1080) volts for one (1) second. This test shall be performed after branch circuits are complete and after fixtures or appliances are installed.

EXCEPTION: Fixtures or appliances which are listed shall not be required to withstand the dielectric strength test.

(b) Continuity and Operational Tests and Polarity Checks. Each mobile structure shall be subjected to:

- (1) an electrical continuity test to assure that all exposed electrically conductive parts are properly bonded;
- (2) an electrical operational test to demonstrate that all equipment, except water heaters and electric furnaces, is connected and in working order; and
- (3) electrical polarity checks of permanently wired equipment and receptacle outlets to determine that connections have been properly made.

(*Fire Prevention and Building Safety Commission; 675 IAC 15-2-99; filed Mar 25, 1986, 1:44 pm: 9 IR 2022, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306*)

675 IAC 15-2-100 Load calculations

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 100. (a) The following method shall be employed in computing the supply cord and distribution panelboard load for each feeder assembly for each mobile structure and shall be based on a three (3) wire, one hundred fifteen/two hundred thirty (115/230) volt supply with one hundred fifteen (115) volt loads balanced between the two (2) legs of the three (3) wire system.

(1) Method No. 1; Lighting and Small Appliance Load. Lighting Watts: Length times width of mobile structure (outside dimensions, exclusive of coupler) times three (3) watts per square foot; e.g., Length \times Width \times 3 = _____ lighting watts.

Small Appliance Watts: Number of circuits times one thousand five hundred (1500) volt amperes for each twenty (20) ampere appliance receptacle circuit (see definition of "appliance, small" with note); e.g., Number of circuits \times 1500 = _____ small appliance volt-amperes.

Total lighting watts plus small appliance = _____ total volt-amperes.

First three thousand (3000) total volt-amperes at one hundred percent (100) plus remainder at thirty-five percent (35%) = _____ volt-amperes to be divided by two hundred thirty (230) volts to obtain current (amperes) per leg.

Total load for determining power supply is the summation of:

(A) Lighting and small appliance load is calculated in (a)(1).

(B) Nameplate amperes for motors and heater loads (exhaust fans*, air conditioners*, electric gas, or oil heating.+)

*Omit smaller of these two (2), except include blower motor if used as air-conditioner evaporator motor.

+When an air conditioner is not installed and a forty (40) ampere power supply cord is provided, allow fifteen (15) amperes per leg for air conditioning.

(C) Twenty-five percent (25%) of current of largest motor in item (B) above.

(D) Total of nameplate amperes for: disposal, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units.

Where number of these appliances exceed three (3), use seventy-five percent (75%) of total.

(E) Derive amperes for free-standing range (as distinguished from separate ovens and cooking units) by dividing values below by two hundred thirty (230) volts.

Nameplate Rating	Use
10,000 w × or less	80% of rating
10,001 - 12,500 w	8,000 v-a
12,501 - 13,500 w	8,400 v-a
13,501 - 14,500 w	8,800 v-a
14,501 - 15,500 w	9,200 v-a
15,501 - 16,500 w	9,600 v-a
16,501 - 17,500 w	10,000 v-a

(F) If outlets or circuits are provided for other than factory-installed appliances include the anticipated load.
NOTE: The following example is given to illustrate the application of this Method of Calculation:

EXAMPLE

A mobile structure is 70 × 10 feet and has two (2) portable appliance circuits, a 1000 watt 230 volt heater, a 200 watt 115 volt exhaust fan, a 400 watt 115 volt dishwasher and a 7000 watt electric range.

Lighting and small appliance load.	
Lighting 70 × 10 × 3 =	2100 v-a
Small appliance 1500 × 2 =	3000 v-a
Laundry 1500 × 1 =	<u>1500 v-a</u>
	6600 v-a
1st 3000 at 100%	3000
Remainder (5100 - 3000 = 2000) @ 35%	<u>1260</u>
	4260

$\frac{4260}{230} = 185$ amperes per leg

1000 watt (heater) divided by 230 =	4.4 amp
200 watt (fan) divided by 115 =	1.7 amp
400 watt (dishwasher) divided by 115 =	3.5 amp
7000 watt (range) × .8 divided by 230 =	24.0 amp

	Amperes Per Leg	
	A	B
Lighting and appliances	18.5	18.5
Heater (230 volt)	4	4
Fan (115 volt)	2	—
Dishwasher (115 volt)	—	4
Range	<u>24</u>	<u>24</u>
Totals	48.5	50.5

Based on the higher current calculated for either leg, use one (1) fifty (50) ampere supply cord.

(2) Method No. 2; Optional Method of Calculation for Lighting and Appliance Loads. For mobile structures served by a single three (3) wire one hundred fifteen/two hundred thirty (115/230) volt set of feeder conductors with an ampacity of one hundred (100) or greater, the total load for determining the feeder ampacity may be computed in accordance with Table 100(a)(2) instead of the methods specified in (a)(1). Feeder conductors whose demand load is determined by this optional calculation shall be permitted to have the neutral load determined by section 220-22 of the Indiana Electrical Code (675 IAC 17-1 [675 IAC 17-1 was repealed filed Feb 17, 1987, 3:15 p.m.: 10 IR 1389, eff Mar 1, 1987 [IC 4-22-2-36 suspends the effectiveness of a rule document for thirty (30) days after filing with the secretary of state. LSA Document #86-153 was filed Feb 17, 1987.]). The loads identified in Table 6B, below as “other load” and as “remainder of other load” shall include the following:

- (A) One thousand five hundred (1500) watts for each two (2) wire, twenty (20) ampere small appliance branch circuit and each laundry branch circuit specified.
- (B) Three (3) watts per square foot for general lighting and general-use receptacles.
- (C) The nameplate rating of all fixed appliances, ranges, wall-mounted ovens, counter-mounted cooking units, and including four (4) or more separately controlled space heating units.
- (D) The nameplate ampere of kVA rating of all motors and all low-power factor loads.
- (E) The largest of the following: (i) air-conditioning load; (ii) the sixty-five percent (65%) diversified demand of the central electric space heating load; (iii) the sixty-five percent (65%) diversified [sic.] demand of the load of

less than four (4) separately-controlled electric space heating units; (iv) the connected load of four (4) or more separately controlled electric space heating units.

TABLE 6B
Optional Calculation for Mobile Structures with 100-Amperes or Larger Service

Load (in kW or kVA)	Demand Factor (Percent)
Air-conditioning and cooling, including heat pump compressors	100
Central electric space heating	65
Less than four (4) separately controlled electric space heating units	65
First ten (10) kW of all other load	100
Remainder of other load	40

(Fire Prevention and Building Safety Commission; 675 IAC 15-2-100; filed Mar 25, 1986, 1:44 pm: 9 IR 2022, eff Jun 15, 1986; errata, 9 IR 2931; errata, 9 IR 3093; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)

675 IAC 15-2-101 Interconnection of multiple section mobile residential structures

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 101. (a) Fixed-type Wiring. Approved and listed fixed-type wiring methods shall be used to join portions of a circuit which must be electrically joined which are located in adjacent sections of mobile structures after the structure is installed on its support foundation. The circuits junction shall be accessible for disassembly when the structure is prepared for relocation.

(b) Disconnecting Means. Multiple section mobile structures not having permanently installed feeders, and which are to be moved from one (1) location to another shall be permitted to have disconnecting means with branch-circuit protective equipment in each unit when so located that after assembly or joining together of units, they shall not be interconnected on either the live side or the load side, except that the grounding means shall be electrically interconnected. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-101; filed Mar 25, 1986, 1:44 pm: 9 IR 2024, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-102 Outdoor fixtures, outlets, and appliances

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 102. (a) Outdoor fixtures and equipment shall be approved for outdoor use. Outdoor receptacles or convenience outlets shall be of a gasketed-cover type, for use in wet locations.

(b) Outside Heating and/or Air-Conditioning Equipment. A mobile structure provided with a branch circuit designed to energize heating and/or air-conditioning equipment located outside and mobile structure, other than room air-conditioners, shall have branch-circuit conductors terminate in a listed outlet box, or disconnecting means, located on the outside [*sic.*] of the mobile structure. A label shall be permanently affixed adjacent to the outlet box and contain the following information:

“This connection is for heating and/or air-conditioning equipment. The branch-circuit is rated at not more than _____ amperes, at _____ volts, 60-Hertz, _____ conductor ampacity. A disconnecting means shall be located within sight of the equipment.

The correct voltage and ampere rating shall be given. The tag shall be not less than 0.020 inch, etched brass, stainless steel, anodized or alcad aluminum or equivalent. The tag shall not be less than three inches (3") by one and three-fourths inches (1 3/4") minimum size. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-102; filed Mar 25, 1986, 1:44 pm: 9 IR 2024, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-103 Painting of wiring

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 103. During painting or staining of the mobile structure, it shall be permitted to paint metal raceway (except where grounding continuity would be reduced) or the sheath of the nonmetallic cable. Some arrangement, however, shall be made so that no point shall be applied to the individual wires, as the color coding may be obliterated by the

painting. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-103; filed Mar 25, 1986, 1:44 pm: 9 IR 2024, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

675 IAC 15-2-104 Polarization

Authority: IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15

Sec. 104. (a) The identified (white) conductor shall be employed for grounded circuit conductors only and shall be connected to the identified (white) terminal or lead on receptacle outlets and fixtures. It shall be the unswitched wire in switched circuits, except that a cable containing an identified conductor (white) shall be permitted for single-pole three (3) way or four (4) way switch loops where the connections are made so that the unidentified conductor is the return conductor from the switch to the outlet. Painting of the terminal end of the wire shall not be required.

(b) If the identified (white) conductor of a cable is used for other than grounded conductors or for other than switch loops as explained above (for a two hundred thirty (230) volt circuit, for example), the conductor shall be finished in a color other than white at each outlet where the conductors are visible and accessible.

(c) Green-colored wires or green with yellow stripes shall be used for grounding conductors only. *(Fire Prevention and Building Safety Commission; 675 IAC 15-2-104; filed Mar 25, 1986, 1:44 pm: 9 IR 2024, eff Jun 15, 1986; readopted filed Nov 29, 2001, 12:21 p.m.: 25 IR 1306)*

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