IAC Cite	NFPA 70 (NEC) Cite	Modified Language	Final Language
675 IAC 17-1.9-3	90.2 (C)	Installations Covered. This code covers **— within or on Class 1 or Class 2 structures, including industrialized building systems, and other premises wiring covered by rules of the Commission in this title —** the installation and removal of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cable for the following: (1) Public and private premises, including buildings, structures, mobile homes, recreational vehicles, and floating buildings (2) Yards, lots, parking lots, carnivals, and industrial substations (3) Installations of conductors and equipment that connect to the supply of electricity (4) Installations used by the electric utility, such as office buildings, warehouses, garages, machine shops, and recreational buildings, that are not an integral part of a generating plant, substation, or control center (5) Installations supplying shore power to ships and watercraft in marinas and boatyards, including monitoring of leakage current (6) Installations used to export electric power from vehicles to premises wiring or for bidirectional current flow	Installations Covered. This code covers — within or on Class 1 or Class 2 structures, including industrialized building systems, and other premises wiring covered by rules of the Commission in this title — the installation and removal of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cable for the following: (1) Public and private premises, including buildings, structures, mobile homes, recreational vehicles, and floating buildings (2) Yards, lots, parking lots, carnivals, and industrial substations (3) Installations of conductors and equipment that connect to the supply of electricity (4) Installations used by the electric utility, such as office buildings, warehouses, garages, machine shops, and recreational buildings, that are not an integral part of a generating plant, substation, or control center (5) Installations supplying shore power to ships and watercraft in marinas and boatyards, including monitoring of leakage current (6) Installations used to export electric power from vehicles to premises wiring or for bidirectional current flow

		(7) Class 1 and Class 2 structures covered by the Indiana Residential Code shall be made to comply with the provisions of this code in its entirety, or the electrical provisions of the Indiana Residential Code in its entirety (675 IAC 14).	(7) Class 1 and Class 2 structures covered by the Indiana Residential Code shall be made to comply with the provisions of this code in its entirety, or the electrical provisions of the Indiana Residential Code in its entirety (675 IAC 14).
675 IAC 17-1.9-3	90.2 (D)	Installations Not Covered. This *Code* does not cover the following: (1) Installations in ships, watercraft other than floating buildings, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles Informational Note: Although the scope of this *Code* indicates that the *Code* does not cover installations in ships, portions of this *Code* are incorporated by reference into Title 46, Code of Federal Regulations, Parts 110-113. (2) Installations underground in mines and self-propelled mobile surface mining machinery and its attendant electrical trailing cable (3) Installations of railways for generation, transformation, transmission, energy storage, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communications purposes (4) Installations of communications equipment under the exclusive control of	Installations Not Covered. This *Code* does not cover the following: (1) Installations in ships, watercraft other than floating buildings, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles Informational Note: Although the scope of this *Code* indicates that the *Code* does not cover installations in ships, portions of this *Code* are incorporated by reference into Title 46, Code of Federal Regulations, Parts 110-113. (2) Installations underground in mines and self-propelled mobile surface mining machinery and its attendant electrical trailing cable (3) Installations of railways for generation, transformation, transmission, energy storage, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communications purposes (4) Installations of communications equipment under the exclusive control of communications

		communications utilities located outdoors or in building spaces used exclusively for such installations ~~(5) Installations under the exclusive control of an electric utility where such installations~~ ~~a. Consist of service drops or service laterals, and associated metering, or~~ ~~b. Are on property owned or leased by the electric utility for the purpose of communications, metering, generation, control, transformation, transmission, energy storage, or distribution of electric energy, or~~ ~~c. Are located in legally established easements or rights-of-way, or~~ ~~d. Are located by other written agreements either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations. These written agreements shall be limited to installations for the purpose of communications, metering, generation, control, transformation, transmission, energy storage, or distribution of electric energy where legally established~~ ~~easements or rights-of-way cannot be obtained. These installations shall be limited to federal lands, Native American reservations through the U.S. Department of the Interior Bureau of Indian Affairs, military bases, lands controlled by~~	utilities located outdoors or in building spaces used exclusively for such installations (5) Installations, including associated lighting under the exclusive control of electric utilities for the purpose of communication, or metering; or for the generation, control, transformation, transmission, energy storage, and distribution of electric energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors on private property by established rights such as easements. (6) Installations of electrical wiring, equipment, and devices, factory installed in manufactured homes under the authority of the U.S. Department of Housing and Urban Development (HUD).

		~~port authorities and state agencies and departments, and lands owned by rail roads.~~ ~~Informational Note to (4) and (5): Examples of utilities may include those entities that are typically designated or recognized by governmental law or regulation by public service/utility commissions and that install, operate, and maintain electric supply (such as generation, transmission, or distribution systems) or communications systems (such as telephone, CATV, Internet, satellite, or data services). Utilities may be subject to compliance with codes and standards covering their regulated activities as adopted under governmental law or regulation. Additional information can be found through consultation with the appropriate governmental bodies, such as state regulatory commissions, the Federal Energy Regulatory Commission, and the Federal Communications Commission.~~ **(5) Installations, including associated lighting under the exclusive control of electric utilities for the purpose of communication, or metering; or for the generation, control, transformation, transmission, energy storage, and distribution of electric energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or**	

		on public highways, streets, roads, etc., or outdoors on private property by established rights such as easements. **(6) Installations of electrical wiring, equipment, and devices, factory installed in manufactured homes under the authority of the U.S. Department of Housing and Urban Development (HUD).**	
675 IAC 17-1.9-4	90.4	Enforcement. ~~(A) Application. This *Code* is intended to be suitable for mandatory application by governmental bodies that exercise legal jurisdiction over electrical installations, including signaling and communications systems, and for use by insurance inspectors.~~ ~~(B) Interpretations. The authority having jurisdiction for enforcement of the Code has the responsibility for making interpretations of the rules, for deciding on the approval of equipment and materials, and for granting the special permission contemplated in a number of the rules.~~ ~~(C) Specific Requirements and Alternative Methods. By special permission, the authority having jurisdiction may waive specific requirements in this *Code* or permit alternative methods where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety.~~ ~~(D) New Products, Constructions, or Materials. This *Code* may require new~~	Enforcement. Enforcement of this code, variance application and procedures, and the consideration of alternative methods or materials are covered by provisions of the Indiana Code and 675 IAC 12.

		~~products, constructions, or materials that may not yet be available at the time the *Code* is adopted. In such event, the authority having jurisdiction may permit the use of the products, constructions, or materials that comply with the most recent previous edition of this *Code* adopted by the jurisdiction.~~ ~~Informational Note: See Informative Annex H, Administration and Enforcement, for a model of guidelines that can be used to create an electrical inspection and enforcement program and to adopt *NFPA 70, National Electrical Code.*~~ **Enforcement of this code, variance application and procedures, and the consideration of alternative methods or materials are covered by provisions of the Indiana Code and 675 IAC 12.**	
675 IAC 17-1.9-5	90.8	~~Wiring Planning. (A) Future Expansion and Convenience. Plans and specifications that provide ample space in raceways, spare raceways, and additional spaces allow for future increases in electric power and communications circuits. Distribution centers located in readily accessible locations provide convenience and safety of operation.~~ ~~(B) Number of Circuits in Enclosures. It is elsewhere provided in this *Code* that the number of circuits confined in a single enclosure be varyingly restricted. Limiting the~~	

		~~number of circuits in a single enclosure minimizes the effects from a short circuit or ground fault.~~	
675 IAC 17-1.9-6	Article 100	~~**Approved.** Acceptable to the authority having jurisdiction. (CMP-1)~~ **APPROVED. Acceptance by the AUTHORITY HAVING JURISDICTION by one of the following methods:** **(1) investigation or tests conducted by recognized authorities; or** **(2) investigation or tests conducted by technical or scientific organizations; or** **(3) accepted principles**. **The investigation, tests, or principles shall establish that the materials, equipment, and types of construction are safe for their intended purpose.**	APPROVED. Acceptance by the AUTHORITY HAVING JURISDICTION by one of the following methods: (1) investigation or tests conducted by recognized authorities; or (2) investigation or tests conducted by technical or scientific organizations; or (3) accepted principles. The investigation, tests, or principles shall establish that the materials, equipment, and types of construction are safe for their intended purpose.
675 IAC 17-1.9-6	Article 100	~~Authority having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure. (CMP-1)~~ ~~Informational Note: The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such~~	AUTHORITY HAVING JURISDICTION means the Indiana Department of Homeland Security, the local building official as authorized under IC 36-7-2, or the local fire department as authorized under IC 36-8-17. Informational Note: The AHJ in the NEC is equivalent to CODE OFFICIAL under 675 IAC 13 and 675 IAC 22.

		~~as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.~~ **AUTHORITY HAVING JURISDICTION means the Indiana Department of Homeland Security, the local building official as authorized under IC 36-7-2, or the local fire department as authorized under IC 36-8-17. Informational Note: The AHJ in the NEC is equivalent to CODE OFFICIAL under 675 IAC 13 and 675 IAC 22.**	
675 IAC 17-1.9-6	Article 100	Battery. ~~A single cell or a group of cells connected together electrically in series, in parallel, or a combination of both. (CMP-13)~~ **See Indiana Code 22-14-8-3.**	Battery. See Indiana Code 22-14-8-3.
675 IAC 17-1.9-6	Article 100	Dwelling Unit. A single unit, providing complete and independent living facilities for one or more persons, including permanent provisions for living, sleeping, **eating**, cooking, and sanitation. (CMP-2)	Dwelling Unit. A single unit, providing complete and independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. (CMP-2)

675 IAC 17-1.9-6	Article 100	Labeled. ~~Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials,~~ ~~and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner. (CMP-1)~~ ~~Informational Note: If a listed product is of such a size, shape, material, or surface texture that it is not possible to apply legibly the complete label to the product, the complete label may appear on the smallest container in which the product is packaged.~~ **Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.**	Labeled. Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

675 IAC 17-1.9-6	Article 100	Listed. ~~Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose. (CMP-1)~~ ~~Informational Note: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. Use of the system employed by the listing organization allows the authority having jurisdiction to identify a listed product.~~ **Equipment, materials, products or services included in a list that is concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.**	Listed. Equipment, materials, products or services included in a list that is concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

675 IAC 17-1.9-6	Article 100	Pool. ~~Manufactured or field-constructed equipment designed to contain water on a permanent or semipermanent basis and used for swimming, wading, immersion, or therapeutic purposes. (680) (CMP-17)~~ **Manufactured or field-constructed equipment designed to contain water on a permanent or semipermanent basis and used by persons for swimming, wading, immersion, or therapeutic purposes, but not including bodies of water incorporated as part of an industrial process or lakes, lagoons, surf parks, or other natural and man-made bodies of water that may incorporate swimming and swimming area. Informational Note: Natural and man-made bodies of water, which includes lakes, lagoons, surf parks, or other similar bodies of water, are addressed in Article 682.**	Pool. Manufactured or field-constructed equipment designed to contain water on a permanent or semipermanent basis and used by persons for swimming, wading, immersion, or therapeutic purposes, but not including bodies of water incorporated as part of an industrial process or lakes, lagoons, surf parks, or other natural and man-made bodies of water that may incorporate swimming and swimming area. Informational Note: Natural and man-made bodies of water, which includes lakes, lagoons, surf parks, or other similar bodies of water, are addressed in Article 682.
675 IAC 17-1.9-6	Article 100	Special Permission. ~~The written consent of the authority having jurisdiction. (CMP-1)~~ **A variance granted pursuant to IC 22-13-2.**	Special Permission. A variance granted pursuant to IC 22-13-2.
675 IAC 17-1.9-7	110.15	High-Leg Marking. On a 4-wire, delta connected system where the midpoint of one phase winding is grounded, only the conductor or busbar having the higher phase voltage to ground shall be durably and permanently marked by an outer finish that is orange in color or by other effective means. Such identification shall be placed at each point on the system where a connection is	High-Leg Marking. On a 4-wire, delta connected system where the midpoint of one phase winding is grounded, only the conductor or busbar having the higher phase voltage to ground shall be durably and permanently marked by an outer finish that is orange in color or by other effective means. Such identification shall be placed at each point on the system

		made if the grounded conductor is also present. **Informational Note: Some electric utilities require specific colors or marking inside metering equipment and at the service termination.**	where a connection is made if the grounded conductor is also present. Informational Note: Some electric utilities require specific colors or marking inside metering equipment and at the service termination.
675 IAC 17-1.9-8	110.26(A)(1)(b)	(1) Depth of Working Space**.** The depth of the working space in the direction of live parts shall not be less than that specified in Table 110.26(A) (1) unless the requirements of 110.26(A) (1) (a), (A)(l)(b), or (A)(l)(c) are met. Distances shall be measured from the exposed live parts or from the enclosure or opening if the live parts are enclosed. (a) *Dead-Front Assemblies*. Working space shall not be required in the back or sides of assemblies, such as dead-front switchboards, switchgear, or motor control centers, where all connections and all renewable or adjustable parts, such as fuses or switches, are accessible from locations other than the back or sides. Where rear access is required to work on nonelectrical parts on the back of enclosed equipment, a minimum horizontal working space of 762 mm (30 in.) shall be provided. (b) *Low Voltage*. ~~By special permission~~ **When approved**, smaller working spaces shall be permitted where all exposed live parts operate at not greater than 30 volts rms, 42 volts peak, or 60 volts dc.	(1) Depth of Working Space**.** The depth of the working space in the direction of live parts shall not be less than that specified in Table 110.26(A) (1) unless the requirements of 110.26(A) (1) (a), (A)(l)(b), or (A)(l)(c) are met. Distances shall be measured from the exposed live parts or from the enclosure or opening if the live parts are enclosed. (a) *Dead-Front Assemblies*. Working space shall not be required in the back or sides of assemblies, such as dead-front switchboards, switchgear, or motor control centers, where all connections and all renewable or adjustable parts, such as fuses or switches, are accessible from locations other than the back or sides. Where rear access is required to work on nonelectrical parts on the back of enclosed equipment, a minimum horizontal working space of 762 mm (30 in.) shall be provided. (b) *Low Voltage*. When approved, smaller working spaces shall be permitted where all exposed live parts operate at not greater than 30 volts rms, 42 volts peak, or 60 volts dc.

		(c) *Existing Buildings*. In existing buildings where electrical equipment is being replaced, Condition 2 working clearance shall be permitted between dead-front switchboards, switchgear, enclosed panelboards, or motor control centers located across the aisle from each other where conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on both sides of the aisle from being open at the same time and qualified persons who are authorized will service the installation.	(c) *Existing Buildings*. In existing buildings where electrical equipment is being replaced, Condition 2 working clearance shall be permitted between dead-front switchboards, switchgear, enclosed panelboards, or motor control centers located across the aisle from each other where conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on both sides of the aisle from being open at the same time and qualified persons who are authorized will service the installation.
675 IAC 17-1.9-9	210.8 (A)	Dwelling Units. All 125-volt through 250-volt receptacles installed in the following locations and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel: (1) Bathrooms (2) Garages and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use (3) Outdoors (4) Crawl spaces — at or below grade level (5) ~~Basements~~ **Unfinished basements** (6) Kitchens **– where receptacles are installed within 1.8m (6 ft) of the top inside**	Dwelling Units. All 125-volt through 250-volt receptacles installed in the following locations and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel: (1) Bathrooms (2) Garages and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use (3) Outdoors (4) Crawl spaces — at or below grade level (5) Unfinished basements (6) Kitchens – where receptacles are installed within 1.8m (6 ft) of the top inside edge of the bowl of a sink, water faucet, or water source

		edge of the bowl of a sink, water faucet, or water source (7) Areas with sinks and permanent provisions for food preparation, beverage preparation, or cooking (8) Sinks — where receptacles are installed within 1.8 m (6 ft) from the top inside edge of the bowl of the sink (9) Boathouses (10) Bathtubs or shower stalls — where receptacles are installed within 1.8 m (6 ft) of the outside edge of the bathtub or shower stall (11) Laundry areas **– where receptacles are installed within 1.8m (6 ft) of the top inside edge of the bowl of a sink, water faucet, or water source** (12) Indoor damp and wet locations *Exception No. 1: Receptacles that are not readily accessible and are supplied by a branch circuit dedicated to electric snow-melting, deicing, or pipeline and vessel heating equipment shall be permitted to be installed in accordance with 426.28 or 427.22, as applicable.* *Exception No. 2: A receptacle supplying only a permanently installed premises security system shall be permitted to omit ground-fault circuit-interrupter protection.* *Exception No. 3: Listed weight-supporting ceiling receptacles (WSCR) utilized in*	(7) Areas with sinks and permanent provisions for food preparation, beverage preparation, or cooking (8) Sinks — where receptacles are installed within 1.8 m (6 ft) from the top inside edge of the bowl of the sink (9) Boathouses (10) Bathtubs or shower stalls — where receptacles are installed within 1.8 m (6 ft) of the outside edge of the bathtub or shower stall (11) Laundry areas – where receptacles are installed within 1.8m (6 ft) of the top inside edge of the bowl of a sink, water faucet, or water source (12) Indoor damp and wet locations *Exception No. 1: Receptacles that are not readily accessible and are supplied by a branch circuit dedicated to electric snow-melting, deicing, or pipeline and vessel heating equipment shall be permitted to be installed in accordance with 426.28 or 427.22, as applicable.* *Exception No. 2: A receptacle supplying only a permanently installed premises security system shall be permitted to omit ground-fault circuit-interrupter protection.* *Exception No. 3: Listed weight-supporting ceiling receptacles (WSCR) utilized in combination with compatible weight supporting attachment fittings (WSAF) installed for the purpose of supporting a ceiling luminaire*

		combination with compatible weight supporting attachment fittings (WSAF) installed for the purpose of supporting a ceiling luminaire or ceiling-suspended fan shall be permitted to omit ground-fault circuit-interrupter protection. If a general-purpose convenience receptacle is integral to the ceiling luminaire or ceiling-suspended fan, GFCI protection shall be provided. *Exception No. 4: Factory-installed receptacles that are not readily accessible and are mounted internally to bathroom exhaust fan assemblies shall not require GFCI protection unless required by the installation instructions or listing.* Informational Note: Sec 760.41 (B) and 760.121 (B) for power supply requirements for fire alarm systems.	*or ceiling-suspended fan shall be permitted to omit ground-fault circuit-interrupter protection. If a general-purpose convenience receptacle is integral to the ceiling luminaire or ceiling-suspended fan, GFCI protection shall be provided.* *Exception No. 4: Factory-installed receptacles that are not readily accessible and are mounted internally to bathroom exhaust fan assemblies shall not require GFCI protection unless required by the installation instructions or listing.* Informational Note: Sec 760.41 (B) and 760.121 (B) for power supply requirements for fire alarm systems.
675 IAC 17-1.9-10	210.8 (A)(5)	**Moved to section above**	
675 IAC 17-1.9-11	210.8 (F)	Outdoor Outlets. For dwellings, all outdoor outlets, other than those covered in 210.S(A), Exception No. 1, including outlets installed in the following locations, and supplied by single-phase branch circuits rated 150 volts or less to ground, 50 amperes or less, shall be provided with GFCI protection: (1) Garages that have floors located at or below grade level (2) Accessory buildings (3) Boathouses	Outdoor Outlets. For dwellings, all outdoor outlets, other than those covered in 210.S(A), Exception No. 1, including outlets installed in the following locations, and supplied by single-phase branch circuits rated 150 volts or less to ground, 50 amperes or less, shall be provided with GFCI protection: (1) Garages that have floors located at or below grade level (2) Accessory buildings (3) Boathouses

		If equipment supplied by an outlet covered under the requirements of this section is replaced, the outlet shall be supplied with GFCI protection. *Exception No. 1: GFCI protection shall not be required on lighting outlets other than those covered in 210.B(C).* *Exception No. 2: GFC/ protection shall not be required for listed HVAC equipment. ~~This exception shall expire September 1, 2026.~~*	If equipment supplied by an outlet covered under the requirements of this section is replaced, the outlet shall be supplied with GFCI protection. *Exception No. 1: GFCI protection shall not be required on lighting outlets other than those covered in 210.B(C).* *Exception No. 2: GFC/ protection shall not be required for listed HVAC equipment.*
675 IAC 17-1.9-12	210.11 (C)	Dwelling Units. (1) Small-Appliance Branch Circuits. In addition to the number of branch circuits required by other parts of this section, two or more 20-ampere small-appliance branch circuits shall be provided for all receptacle outlets specified by 210.52(B). (2) Laundry Branch Circuits. In addition to the number of branch circuits required by other parts of this section, at least one additional 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s) required by 210.52(F). This circuit shall have no other outlets. (3) Bathroom Branch Circuits**.** In addition to the number of branch circuits required by other parts of this section, one or more 120-volt, 20-ampere branch circuit shall be provided to supply bathroom(s) receptacle outlet(s) required by 210.52(D) and any countertop and similar work surface	Dwelling Units. (1) Small-Appliance Branch Circuits. In addition to the number of branch circuits required by other parts of this section, two or more 20-ampere small-appliance branch circuits shall be provided for all receptacle outlets specified by 210.52(B). (2) Laundry Branch Circuits. In addition to the number of branch circuits required by other parts of this section, at least one additional 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s) required by 210.52(F). This circuit shall have no other outlets. (3) Bathroom Branch Circuits**.** In addition to the number of branch circuits required by other parts of this section, one or more 120-volt, 20-ampere branch circuit shall be provided to supply bathroom(s) receptacle outlet(s) required by 210.52(D) and any countertop and

		receptacle outlets. Such circuits shall have no other outlets. *Exception: Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with 210.23(B)(1) and ~~(A)(2)~~* ***(B)(2)***. (4) Garage Branch Circuits. In addition to the number of branch circuits required by other parts of this section, at least one 120-volt, 20-ampere branch circuit shall be installed to supply receptacle outlets, including those required by 210.52(G)(1) for attached garages and in detached garages with electric power. This circuit shall have no other outlets. Additional branch circuits rated 15 amperes or greater shall be permitted to serve receptacle outlets other than those required by 210.52(G)(1). *Exception No. 1: This circuit shall be permitted to supply outdoor receptacle Outlets.* *Exception No. 2: Where the 20-ampere circuit supplies a single vehicle bay garage, outlets for other equipment within the same garage shall be permitted to be supplied in accordance with 210.23~~(A)(1)~~* ***(B)(1)*** *and ~~(A)(2)~~* ***(B)(2)***.	similar work surface receptacle outlets. Such circuits shall have no other outlets. *Exception: Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with 210.23(B)(1) and (B)(2).* (4) Garage Branch Circuits. In addition to the number of branch circuits required by other parts of this section, at least one 120-volt, 20-ampere branch circuit shall be installed to supply receptacle outlets, including those required by 210.52(G)(1) for attached garages and in detached garages with electric power. This circuit shall have no other outlets. Additional branch circuits rated 15 amperes or greater shall be permitted to serve receptacle outlets other than those required by 210.52(G)(1). *Exception No. 1: This circuit shall be permitted to supply outdoor receptacle Outlets.* *Exception No. 2: Where the 20-ampere circuit supplies a single vehicle bay garage, outlets for other equipment within the same garage shall be permitted to be supplied in accordance with 210.23 (B)(1) and (B)(2).*

675 IAC 17-1.9-13	210.12 (E)	~~Branch Circuit Wiring Extensions, Modifications, or Replacements. If branch-circuit wiring for any of the areas specified in 210.12(B), (C), or (D) is modified, replaced, or extended, the branch circuit shall be protected by one of the following:~~ ~~(1) By any of the means described in 210.12(A)(1) through (A)(6)~~ ~~(2) A listed outlet branch-circuit-type AFCI located at the first receptacle outlet of the existing branch circuit~~ ~~*Exception: AFCI protection shall not be required where the extension of the existing branch-circuit conductors is not more than 1.8 m (6 ft) and does not include any additional outlets or devices, other than splicing devices. This measurement shall not include the conductors inside an enclosure, cabinet, or junction box.*~~	
675 IAC 17-1.9-14	210.52 (G)(1)	Garages. In each attached garage and in each detached garage with electric power, at least one receptacle outlet shall be installed in each vehicle bay and not more than 1.7 m (5½ ft) above the floor. *Exception: ~~Garage spaces not attached to an individual dwelling unit of a multifamily dwelling shall not require a receptacle outlet in each vehicle bay.~~* ***Garage spaces not attached to an individual dwelling unit of a multifamily dwelling through a dedicated***	Garages. In each attached garage and in each detached garage with electric power, at least one receptacle outlet shall be installed in each vehicle bay and not more than 1.7 m (5½ ft) above the floor. *Exception: Garage spaces not attached to an individual dwelling unit of a multifamily dwelling through a dedicated intersecting door shall not require a receptacle outlet in each vehicle bay.*

		intersecting door shall not require a receptacle outlet in each vehicle bay.	
675 IAC 17-1.9-15	210.52 (I)	Foyers. ~~Foyers that are not part of a hallway in accordance with 210.52(H) and that have an area that is greater than 5.6 m^2 (60 ft^2) shall have a receptacle(s) located in each wall space 900 mm (3 ft) or more in width. Doorways, door-side windows that extend to the floor, and similar openings shall not be considered wall space.~~ **Foyers that are not part of a hallway in accordance with 210.52 (H) and that have an area that is greater than 9.3m^2 (100 ft^2) shall have a receptacle(s) located in each wall space that is 1.2 m (4 ft) or more in width. The 1.2 m (4 ft) measurement shall be measured in a straight line. Doorways, door-side windows that extend to the floor, and similar openings shall not be considered as wall space.**	Foyers. Foyers that are not part of a hallway in accordance with 210.52 (H) and that have an area that is greater than 9.3m^2 (100 ft^2) shall have a receptacle(s) located in each wall space that is 1.2 m (4 ft) or more in width. The 1.2 m (4 ft) measurement shall be measured in a straight line. Doorways, door-side windows that extend to the floor, and similar openings shall not be considered as wall space.
675 IAC 17-1.9-16	215.18 (A)	Surge-Protective Device. Where a feeder supplies any of the following, a surge protective device (SPD) shall be installed: ~~(1) Dwelling units~~ (2) Dormitory units (3) Guest rooms and guest suites of hotels and motels (4) Areas of nursing homes and limited-care facilities used exclusively as patient sleeping rooms	Surge-Protective Device. Where a feeder supplies any of the following, a surge protective device (SPD) shall be installed: (2) Dormitory units (3) Guest rooms and guest suites of hotels and motels (4) Areas of nursing homes and limited-care facilities used exclusively as patient sleeping rooms

675 IAC 17-1.9-17	215.18 (D)	~~Replacement. Where the distribution equipment supplied by the feeder is replaced, all of the requirements of this section shall apply.~~	
675 IAC 17-1.9-18	225.30 (C)	Special Occupancies. ~~By special permission~~ **Where approved**, additional feeders or branch circuits shall be permitted for either of the following: (1) Multiple-occupancy buildings where there is no space available for supply equipment accessible to all occupants (2) A single building or other structure sufficiently large to make two or more supplies necessary	Special Occupancies. Where approved, additional feeders or branch circuits shall be permitted for either of the following: (1) Multiple-occupancy buildings where there is no space available for supply equipment accessible to all occupants (2) A single building or other structure sufficiently large to make two or more supplies necessary
675 IAC 17-1.9-19	225.41	~~Emergency Disconnects. For one-and two-family dwelling units, an emergency disconnecting means shall be installed.~~ ~~(A) General.~~ ~~(1) Location. The disconnecting means shall be installed in a readily accessible outdoor location on or within sight of the dwelling unit.~~ ~~(2) Rating. The disconnecting means shall have a short-circuit current rating equal to or greater than the available fault current.~~ ~~(3) Grouping. If more than one disconnecting means is provided, they shall be grouped.~~ ~~(B) Identification of Other Isolation Disconnects. Where equipment for isolation of other energy source systems is not located adjacent to the emergency disconnect required by this section, a plaque or directory~~	

		~~identifying the location of all equipment for isolation of other energy sources shall be located adjacent to the disconnecting means required by this section.~~ ~~Informational Note: Sec 445.18, 480.7, 705.20, and 706.15 for examples of other energy source system isolation means.~~ ~~(C) Marking. The disconnecting means shall be marked as EMERGENCY DISCONNECT. Markings shall comply with 110.21 (B) and all of the following:~~ ~~(1) The marking or labels shall be located on the outside front of the disconnect enclosure with red background and white text.~~ ~~(2) The letters shall be least 13 mm (½ in.) high.~~	
675 IAC 17-1.9-20	225.42 (D)	~~Replacement. Where the distribution equipment supplied by the feeder is replaced, all of the requirements of this section shall apply.~~	
675 IAC 17-1.9-21	230.2	Number of Services. A building or other structure served shall be supplied by only one service unless permitted in 230.2(A) through (D). For the purpose of 230.40, Exception No. 2 only, underground sets of conductors, 1/0 AWG and larger, running to the same location and connected together at their supply end but not connected together at their load end shall be considered to be supplying one service.	Number of Services. A building or other structure served shall be supplied by only one service unless permitted in 230.2(A) through (D). For the purpose of 230.40, Exception No. 2 only, underground sets of conductors, 1/0 AWG and larger, running to the same location and connected together at their supply end but not connected together at their load end shall be considered to be supplying one service. (A) Special Conditions. Additional services shall be permitted to supply the following:

		(A) Special Conditions. Additional services shall be permitted to supply the following: (1) Fire pumps (2) Emergency systems (3) Legally required standby systems (4) Optional standby systems (5) Interconnected electric power production sources (6) Systems designed for connection to multiple sources of supply for the purpose of enhanced reliability. (B) Special Occupancies. ~~By special permission~~ **When approved**, additional services shall be permitted for either of the following: (1) Multiple-occupancy buildings where there is no available space for service equipment accessible to all occupants (2) A single building or other structure sufficiently large to make two or more services necessary (C) Capacity Requirements. Additional services shall be permitted under any of the following: (1) Where the capacity requirements are in excess of 2000 amperes at a supply voltage of 1000 volts or less (2) Where the load requirements of a single-phase installation are greater than the serving agency normally supplies through one service (3) ~~By special permission~~ **When approved**	(1) Fire pumps (2) Emergency systems (3) Legally required standby systems (4) Optional standby systems (5) Interconnected electric power production sources (6) Systems designed for connection to multiple sources of supply for the purpose of enhanced reliability. (B) Special Occupancies. When approved, additional services shall be permitted for either of the following: (1) Multiple-occupancy buildings where there is no available space for service equipment accessible to all occupants (2) A single building or other structure sufficiently large to make two or more services necessary (C) Capacity Requirements. Additional services shall be permitted under any of the following: (1) Where the capacity requirements are in excess of 2000 amperes at a supply voltage of 1000 volts or less (2) Where the load requirements of a single-phase installation are greater than the serving agency normally supplies through one service (3) When approved (D) Different Characteristics. Additional services shall be permitted for different voltages, frequencies, or phases, or for

		(D) Different Characteristics. Additional services shall be permitted for different voltages, frequencies, or phases, or for different uses, such as for different rate schedules. (E) Identification. Where a building or structure is supplied by more than one service, or any combination of branch circuits, feeders, and services, a permanent plaque or directory shall be installed at each service disconnect location denoting all other services, feeders, and branch circuits supplying that building or structure and the area served by each. See 225.37.	different uses, such as for different rate schedules. (E) Identification. Where a building or structure is supplied by more than one service, or any combination of branch circuits, feeders, and services, a permanent plaque or directory shall be installed at each service disconnect location denoting all other services, feeders, and branch circuits supplying that building or structure and the area served by each. See 225.37.
675 IAC 17-1.9-22	230.67 (D)	~~Replacement. Where service equipment is replaced, all of the requirements of this section shall apply.~~	
675 IAC 17-1.9-23	230.85	~~230.85 Emergency Disconnects. For one- and two-family dwelling units, an emergency disconnecting means shall be installed.~~ ~~(A) General.~~ ~~(1) Location. The disconnecting means shall be installed in a readily accessible outdoor location on or within sight of the dwelling unit.~~ ~~*Exception: Where the requirements of 225.41 are met, this section shall not apply.*~~ ~~(2) Rating. The disconnecting means shall have a short-circuit current rating equal to or greater than the available fault current.~~ ~~(3) Grouping. If more than one disconnecting means is provided, they shall be grouped.~~	

		~~(B) Disconnects. Each disconnect shall be one of the following:~~ ~~(1) Service disconnect~~ ~~(2) A meter disconnect integral to the meter mounting equipment not marked as suitable only for use as service equipment installed in accordance with 230.82~~ ~~(3) Other listed disconnect switch or circuit breaker that is marked suitable for use as service equipment, but not marked as suitable only for use as service equipment, installed on the supply side of each service disconnect~~ ~~Informational Note 1: Conductors between the emergency disconnect and the service disconnect in 230.85(2) and 230.85(3) are service conductors.~~ ~~Informational Note 2: Equipment marked "Suitable only for use as service equipment" includes the factory marking "Service Disconnect".~~ ~~(C) Replacement. Where service equipment is replaced, all of the requirements of this section shall apply.~~ ~~*Exception: Where only meter sockets, service entrance conductors, or related raceways and fittings are relaced, the requirements of this section shall not apply.*~~ ~~(D) Identification of Other Isolation Disconnects. Where equipment for isolation of other energy source systems is not located~~	

		~~adjacent to the emergency disconnect required by this section, a plaque or directory identifying the location of all equipment for isolation of other energy sources shall be located adjacent to the disconnecting means required by this section.~~ ~~Informational Note: Sec 445.18, 480.7, 705.20, and 706.15 for examples of other energy source system isolation means.~~ ~~(E) Marking.~~ ~~(1) Marking Text. The disconnecting means shall marked as follows:~~ ~~(1) Service disconnect~~ ~~EMERGENCY DISCONNECT, SERVICE DISCONNECT~~ ~~(2) Meter disconnects installed in accordance with 230.82(3) and marked as follows:~~ ~~EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT~~ ~~(3) Other listed disconnect switches or circuit breakers on the supply side of each service disconnect that are marked suitable for use as service equipment and marked as follows:~~ ~~EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT~~ ~~(2) Marking Location and Size. Markings shall comply with 110.21 (B) and both of the following:~~ ~~(1) The marking or labels shall be located on the outside front of the disconnect enclosure with red background and white text.~~	

		~~(2) The letters shall be at least 13 mm (½ in.) high.~~	
675 IAC 17-1.9-24	250.24	(D) Grounded Conductor Brought to Service Equipment. If an ac system operating at 1000 volts or less is grounded at any point, the grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus. A main bonding jumper shall connect the grounded conductor(s) to each service disconnecting means enclosure. The grounded conductor(s) shall be installed in accordance with 250.24(C)(1) and 250.24(D)(1) through (D)(4). *Exception: If two or more service disconnecting means are located in a single assembly listed for use as service equipment, it shall be permitted to connect the grounded conductor(s) to the assembly common grounded conductor(s) terminal or bus. The assembly shall include a main bonding jumpers for connecting the grounded conductor(s) to the assembly enclosure.* (1) Sizing for a Single Raceway or Cable. The grounded conductor shall not be smaller than specified in Table ~~250.102(C)(1)~~.	(D) Grounded Conductor Brought to Service Equipment. If an ac system operating at 1000 volts or less is grounded at any point, the grounded conductor(s) shall be routed with the ungrounded conductors to each service disconnecting means and shall be connected to each disconnecting means grounded conductor(s) terminal or bus. A main bonding jumper shall connect the grounded conductor(s) to each service disconnecting means enclosure. The grounded conductor(s) shall be installed in accordance with 250.24(C)(1) and 250.24(D)(1) through (D)(4). *Exception: If two or more service disconnecting means are located in a single assembly listed for use as service equipment, it shall be permitted to connect the grounded conductor(s) to the assembly common grounded conductor(s) terminal or bus. The assembly shall include a main bonding jumpers for connecting the grounded conductor(s) to the assembly enclosure.* (1) Sizing for a Single Raceway or Cable. The grounded conductor shall not be smaller than specified in Table.
675 IAC 17-1.9-25	250.52(A)(5)(2)	Rod and Pipe Electrodes. Rod and pipe electrodes shall not be less than 2.44 m (8 ft) in length and consist of the following materials.	Rod and Pipe Electrodes. Rod and pipe electrodes shall not be less than 2.44 m (8 ft) in length and consist of the following materials.

		(1) Grounding electrodes of pipe or conduit shall not be smaller than metric designator 21 (trade size ¾) and, where of steel, shall have the outer surface galvanized or otherwise metal-coated for corrosion protection. (2) ~~Rod-type grounding electrodes of stainless steel and copper or zinc-coated steel shall be at least 15.87 mm (5/8 in.) in diameter, unless listed.~~ **Rod-type grounding electrodes of stainless steel and copper or zinc-coated steel shall be at least 15.87 mm (5/8 in.) in diameter, unless listed and not less than 12.7 mm (1/2 in.) in diameter.**	(1) Grounding electrodes of pipe or conduit shall not be smaller than metric designator 21 (trade size ¾) and, where of steel, shall have the outer surface galvanized or otherwise metal-coated for corrosion protection. (2) Rod-type grounding electrodes of stainless steel and copper or zinc-coated steel shall be at least 15.87 mm (5/8 in.) in diameter, unless listed and not less than 12.7 mm (1/2 in.) in diameter.
675 IAC 17-1.9-26	250.90	General. Bonding shall be provided if necessary to ensure electrical continuity and the capacity to conduct safely any fault current likely to be imposed. **Exception: Small conductive surfaces not likely to become energized, such as short pieces of metallic piping to faucets, drain fittings, towel bars, mirror frames, and similar nonelectrical equipment, shall not be required to be bonded.**	General. Bonding shall be provided if necessary to ensure electrical continuity and the capacity to conduct safely any fault current likely to be imposed. Exception: Small conductive surfaces not likely to become energized, such as short pieces of metallic piping to faucets, drain fittings, towel bars, mirror frames, and similar nonelectrical equipment, shall not be required to be bonded.
675 IAC 17-1.9-27	250.104 (A)(1)	Metal Water Piping. The metal water piping system shall be bonded as required in 250.104(A)(1), (A)(2), or (A)(3). (1) General. Metal water piping system(s) installed in or attached to a building or structure shall be bonded to any of the following: (1) Service equipment enclosure	Metal Water Piping. The metal water piping system shall be bonded as required in 250.104(A)(1), (A)(2), or (A)(3). (1) General. Metal water piping system(s) installed in or attached to a building or structure shall be bonded to any of the following: (1) Service equipment enclosure

		(2) Grounded conductor at the service (3) Grounding electrode conductor, if of sufficient size (4) One or more grounding electrodes used, if the grounding electrode conductor or bonding jumper to the grounding electrode is of sufficient size The bonding jumper(s) shall be installed in accordance with 250.64(A), (B), and (E). The points of attachment of the bonding jumper(s) shall be accessible. The bonding jumper(s) shall be sized in accordance with Table 250.102(C)(1) except that it shall not be required to be larger than 3/0 copper or 250 kcmil aluminum or copper-clad aluminum and except as permitted in 250.104(A)(2) and (A)(3). **Exception: Small conductive surfaces not likely to become energized, such as short pieces of metallic piping to faucets, metallic fittings on nonmetallic piping, etc. shall not be required to be bonded.** **Informational Note: Isolated sections of metal water piping (such as might be used for a plumbing fixture connection) that are connected to an overall nonmetallic water piping system are not subject to the requirements of 250.104(A). The isolated sections are not a metal water piping system.**	(2) Grounded conductor at the service (3) Grounding electrode conductor, if of sufficient size (4) One or more grounding electrodes used, if the grounding electrode conductor or bonding jumper to the grounding electrode is of sufficient size The bonding jumper(s) shall be installed in accordance with 250.64(A), (B), and (E). The points of attachment of the bonding jumper(s) shall be accessible. The bonding jumper(s) shall be sized in accordance with Table 250.102(C)(1) except that it shall not be required to be larger than 3/0 copper or 250 kcmil aluminum or copper-clad aluminum and except as permitted in 250.104(A)(2) and (A)(3). Exception: Small conductive surfaces not likely to become energized, such as short pieces of metallic piping to faucets, metallic fittings on nonmetallic piping, etc. shall not be required to be bonded. Informational Note: Isolated sections of metal water piping (such as might be used for a plumbing fixture connection) that are connected to an overall nonmetallic water piping system are not subject to the requirements of 250.104(A). The isolated sections are not a metal water piping system.

675 IAC 17-1.9-28	250.110	Equipment Fastened in Place (Fixed) or Connected by Permanent Wiring Methods. Exposed, normally non-current carrying metal parts of fixed equipment supplied by or enclosing conductors or components that are likely to become energized shall be connected to an equipment grounding conductor under any of the following conditions: (1) If within 2.5 m (8 ft) vertically or 1.5 m (5 ft) horizontally of ground or grounded metal objects and subject to contact by persons (2) If located in a wet or damp location and not isolated (3) If in electrical contact with metal (4) If in a hazardous (classified) location (5) If supplied by a wiring method that provides an equipment grounding conductor, except as permitted by 250.86, Exception No. 2, for short sections of metal enclosures (6) If equipment operates with any terminal at over 150 volts to ground *Exception No. 1: ~~If exempted by special permission~~* **Where approved***, the metal frame of electrically heated appliances that have the frame permanently and effectively insulated from ground shall not be required to be grounded.* *Exception No. 2: Distribution apparatus, such as transformer and capacitor cases, mounted on wooden poles at a height exceeding 2.5 m*	Equipment Fastened in Place (Fixed) or Connected by Permanent Wiring Methods. Exposed, normally non-current carrying metal parts of fixed equipment supplied by or enclosing conductors or components that are likely to become energized shall be connected to an equipment grounding conductor under any of the following conditions: (1) If within 2.5 m (8 ft) vertically or 1.5 m (5 ft) horizontally of ground or grounded metal objects and subject to contact by persons (2) If located in a wet or damp location and not isolated (3) If in electrical contact with metal (4) If in a hazardous (classified) location (5) If supplied by a wiring method that provides an equipment grounding conductor, except as permitted by 250.86, Exception No. 2, for short sections of metal enclosures (6) If equipment operates with any terminal at over 150 volts to ground *Exception No. 1: ~~If exempted by special permission~~* Where approved*, the metal frame of electrically heated appliances that have the frame permanently and effectively insulated from ground shall not be required to be grounded.* *Exception No. 2: Distribution apparatus, such as transformer and capacitor cases, mounted on wooden poles at a height exceeding 2.5 m*

		(8 ft) above ground or grade level shall not be required to be grounded. *Exception No. 3: Listed equipment protected by a system of double insulation, or its equivalent, shall not be required to be connected to the equipment grounding conductor: If such a system is employed, the equipment shall be distinctively marked.*	*(8 ft) above ground or grade level shall not be required to be grounded.* *Exception No. 3: Listed equipment protected by a system of double insulation, or its equivalent, shall not be required to be connected to the equipment grounding conductor: If such a system is employed, the equipment shall be distinctively marked.*
675 IAC 17-1.9-29	250.114	Equipment Connected by Cord and Plug. Exposed, normally non-current-carrying metal parts of cord-and-plug-connected equipment shall be connected to the equipment grounding conductor under any of the following conditions: *Exception: Listed tools, listed appliances, and listed equipment covered in 250. 114, list items 2 through 4, shall not be required to be connected to an equipment grounding conductor if protected by a system of double insulation or its equivalent. Double-insulated equipment shall be distinctively market.* (1) In hazardous (classified) locations (2) If operated at over 150 volts to ground *Exception No. 1 to (2): Motors, if guarded, shall not be required to be connected to an equipment grounding conductor.* *Exception No. 2 to (2): Metal frames of electrically heated appliances, ~~exempted by special permission~~ **where approved**, shall not be required to be connected to an*	Equipment Connected by Cord and Plug. Exposed, normally non-current-carrying metal parts of cord-and-plug-connected equipment shall be connected to the equipment grounding conductor under any of the following conditions: *Exception: Listed tools, listed appliances, and listed equipment covered in 250. 114, list items 2 through 4, shall not be required to be connected to an equipment grounding conductor if protected by a system of double insulation or its equivalent. Double-insulated equipment shall be distinctively market.* (1) In hazardous (classified) locations (2) If operated at over 150 volts to ground *Exception No. 1 to (2): Motors, if guarded, shall not be required to be connected to an equipment grounding conductor.* *Exception No. 2 to (2): Metal frames of electrically heated appliances, where approved, shall not be required to be connected to an equipment grounding conductor, in which case the frames shall be*

		equipment grounding conductor, in which case the frames shall be permanently and effectively insulated from the ground. (3) In residential occupancies: a. Refrigerators, freezers, icemakers, and air conditioners b. Clothes-washing, clothes-drying, and dish-washing machines; ranges; kitchen waste disposers; information technology equipment; sump pumps; and electrical aquarium equipment c. Hand-held motor-operated tools, stationary and fixed motor-operated tools, and light industrial motor-operated tools d. Motor-operated appliances of the following types: hedge clippers, lawn mowers, snow blowers, and wet scrubbers e. Portable handlamps (4) In other than residential occupancies: a. Refrigerators, freezers, icemakers, and air conditioners b. Clothes-washing, clothes-drying, and dish-washing machines; information technology equipment; sump pumps; and electrical aquarium equipment c. Hand-held motor-operated tools, stationary and fixed motor-operated tools, and light industrial motor-operated tools	*permanently and effectively insulated from the ground*. (3) In residential occupancies: a. Refrigerators, freezers, icemakers, and air conditioners b. Clothes-washing, clothes-drying, and dish-washing machines; ranges; kitchen waste disposers; information technology equipment; sump pumps; and electrical aquarium equipment c. Hand-held motor-operated tools, stationary and fixed motor-operated tools, and light industrial motor-operated tools d. Motor-operated appliances of the following types: hedge clippers, lawn mowers, snow blowers, and wet scrubbers e. Portable handlamps (4) In other than residential occupancies: a. Refrigerators, freezers, icemakers, and air conditioners b. Clothes-washing, clothes-drying, and dish-washing machines; information technology equipment; sump pumps; and electrical aquarium equipment c. Hand-held motor-operated tools, stationary and fixed motor-operated tools, and light industrial motor-operated tools d. Motor-operated appliances of the following types: hedge clippers, lawn mowers, snow blowers, and wet scrubbers e. Portable handlamps

		d. Motor-operated appliances of the following types: hedge clippers, lawn mowers, snow blowers, and wet scrubbers e. Portable handlamps f. Cord-and-plug-connected appliances used in damp or wet locations or by persons standing on the ground, standing on metal floors, or working inside of metal tanks or boilers g. Tools likely to be used in wet or conductive locations *Exception: Tools and portable handlamps and portable luminaires likely to be used in wet or conductive locations shall not be required to be connected to an equipment grounding conductor if supplied through an isolating transformer with an ungrounded secondary of not over 50 volts.*	f. Cord-and-plug-connected appliances used in damp or wet locations or by persons standing on the ground, standing on metal floors, or working inside of metal tanks or boilers g. Tools likely to be used in wet or conductive locations *Exception: Tools and portable handlamps and portable luminaires likely to be used in wet or conductive locations shall not be required to be connected to an equipment grounding conductor if supplied through an isolating transformer with an ungrounded secondary of not over 50 volts.*
675 IAC 17-1.9-30	250.122 (D)(2)	(D) Motor Circuits. Equipment grounding conductors for motor circuits shall be sized in accordance with 250.122(D) (1) or (D) (2). (1) General. The equipment grounding conductor size shall not be smaller than determined by 250.122(A) based on the rating of the branch-circuit short-circuit and ground-fault protective device. (2) Instantaneous-Trip Circuit Breaker and Motor Short-Circuit Protector. If the overcurrent device is an instantaneous-trip	(D) Motor Circuits. Equipment grounding conductors for motor circuits shall be sized in accordance with 250.122(D) (1) or (D) (2). (1) General. The equipment grounding conductor size shall not be smaller than determined by 250.122(A) based on the rating of the branch-circuit short-circuit and ground-fault protective device. (2) Instantaneous-Trip Circuit Breaker and Motor Short-Circuit Protector. If the overcurrent device is an instantaneous-trip

		circuit breaker or a motor short-circuit protector, the equipment grounding conductor shall be sized not smaller than that given by 250.122(A) using the maximum permitted rating of a dual clement time-delay fuse selected for branch-circuit short-circuit and ground-fault protection in accordance with ~~430.52(C)(1), Exception No. 1~~ **430.52 (C)(1)(a)**.	circuit breaker or a motor short-circuit protector, the equipment grounding conductor shall be sized not smaller than that given by 250.122(A) using the maximum permitted rating of a dual clement time-delay fuse selected for branch-circuit short-circuit and ground-fault protection in accordance with 430.52 (C)(1)(a).
675 IAC 17-1.9-31	300.3	Conductors. (A) Single Conductors. Single conductors specified in Table 310.4(1) shall only be permitted where installed as part of a recognized wiring method specified in Chapter 3. *Exception: Individual conductors shall be permitted where installed as separate overhead conductors in accordance with 225.6.* (B) Conductors of the Same Circuit. All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord unless otherwise permitted in accordance with 300.3(B)(1) through (B)(4). (1) Paralleled Installations. Conductors shall be permitted to be run in parallel in accordance with 310.IO(G). The requirement	Conductors. (A) Single Conductors. Single conductors specified in Table 310.4(1) shall only be permitted where installed as part of a recognized wiring method specified in Chapter 3. *Exception: Individual conductors shall be permitted where installed as separate overhead conductors in accordance with 225.6.* (B) Conductors of the Same Circuit. All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway, conduit body, auxiliary gutter, cable tray, cablebus assembly, trench, cable, or cord unless otherwise permitted in accordance with 300.3(B)(1) through (B)(4). (1) Paralleled Installations. Conductors shall be permitted to be run in parallel in accordance with 310.IO(G). The requirement

		to run all circuit conductors within the same raceway, auxiliary gutter, cable tray, trench, cable, or cord shall apply separately to each portion of the paralleled installation, and the equipment grounding conductors shall comply with 250.122. Connections, taps, or extensions made from paralleled conductors shall connect to all conductors of the paralleled set, grounded and ungrounded, as applicable. Parallel runs in cable trays shall comply with 392.20(C). *Exception: Conductors installed in nonmetallic raceways run underground shall be permitted to be arranged as isolated phase, neutral, and grounded conductor installations. The raceways shall be installed in close proximity, and the isolated phase, neutral, and grounded conductors shall comply with 300.20(B).* (2) Grounding and Bonding Conductors. Equipment grounding conductors shall be permitted to be installed outside a raceway or cable assembly in accordance with 250.130(C) for certain existing installations or in accordance with 250.134, Exception No. 2, for dc circuits. Equipment bonding conductors shall be permitted to be installed on the outside of raceways in accordance with 250.102(E). (3) Nonferrous Wiring Methods. Conductors in wiling methods with a nonmetallic or other	to run all circuit conductors within the same raceway, auxiliary gutter, cable tray, trench, cable, or cord shall apply separately to each portion of the paralleled installation, and the equipment grounding conductors shall comply with 250.122. Connections, taps, or extensions made from paralleled conductors shall connect to all conductors of the paralleled set, grounded and ungrounded, as applicable. Parallel runs in cable trays shall comply with 392.20(C). *Exception: Conductors installed in nonmetallic raceways run underground shall be permitted to be arranged as isolated phase, neutral, and grounded conductor installations. The raceways shall be installed in close proximity, and the isolated phase, neutral, and grounded conductors shall comply with 300.20(B).* (2) Grounding and Bonding Conductors. Equipment grounding conductors shall be permitted to be installed outside a raceway or cable assembly in accordance with 250.130(C) for certain existing installations or in accordance with 250.134, Exception No. 2, for dc circuits. Equipment bonding conductors shall be permitted to be installed on the outside of raceways in accordance with 250.102(E). (3) Nonferrous Wiring Methods. Conductors in wiling methods with a nonmetallic or other nonmagnetic sheath, where run in different

		nonmagnetic sheath, where run in different raceways, auxiliary gutters, cable trays, trenches, cables, or cords, shall comply with 300.20(B). Conductors in single-conductor Type MI cable with a nonmagnetic sheath shall comply with 332.31. Conductors of single conductor Type MC cable with a nonmagnetic sheath shall comply with 330.31, 330.116, and 300.20(B). (4) Column-Width Panelboard Enclosures. Where an auxiliary gutter runs between a column-width panelboard and a pull box, and the pull box includes neutral terminations, the neutral conductors of circuits supplied from the panelboard shall be permitted to originate in the pull box. (C) Conductors of Different Systems. (1) 1000 Volts ac, 1500 volts dc, Nominal, or Less. Conductors of ac and dc circuits rated 1000 volts ac, 1500 volts dc, nominal, or less shall be permitted to occupy the same equipment wiring enclosure, cable, or raceway. All conductors shall have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the enclosure, cable, or raceway. Secondary wiring to electric-discharge lamps of 1000 volts ac, 1500 volts dc, or less, if insulated for the secondary voltage involved, shall be permitted to occupy the same	raceways, auxiliary gutters, cable trays, trenches, cables, or cords, shall comply with 300.20(B). Conductors in single-conductor Type MI cable with a nonmagnetic sheath shall comply with 332.31. Conductors of single conductor Type MC cable with a nonmagnetic sheath shall comply with 330.31, 330.116, and 300.20(B). (4) Column-Width Panelboard Enclosures. Where an auxiliary gutter runs between a column-width panelboard and a pull box, and the pull box includes neutral terminations, the neutral conductors of circuits supplied from the panelboard shall be permitted to originate in the pull box. (C) Conductors of Different Systems. (1) 1000 Volts ac, 1500 volts dc, Nominal, or Less. Conductors of ac and dc circuits rated 1000 volts ac, 1500 volts dc, nominal, or less shall be permitted to occupy the same equipment wiring enclosure, cable, or raceway. All conductors shall have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the enclosure, cable, or raceway. Secondary wiring to electric-discharge lamps of 1000 volts ac, 1500 volts dc, or less, if insulated for the secondary voltage involved, shall be permitted to occupy the same luminaire, sign, or outline lighting enclosure as the branch-circuit conductors.

		luminaire, sign, or outline lighting enclosure as the branch-circuit conductors. Informational Note No. 1: See 725.136(A) for class 2 and Class 3 circuit conductors. Informational Note No. 2: See 690.31(B) for photovoltaic source and output circuits. (2) Over 1000 Volts ac, 1500 Volts dc, Nominal. Conductors of circuits rated over I000 volts ac, 1500 volts dc, nominal, shall not occupy the same equipment wiring enclosure, cable, or raceway with conductors of circuits rated 1000 volts ac, 1500 volts dc, nominal, or less unless permitted in accordance with 305.4. **(D) Separation from Corrugated Stainless Steel Tubing.** **All wiring methods shall be isolated from corrugated stainless steel tubing by a space separation of not less than 2 inches except where the bonding connection is made.**	Informational Note No. 1: See 725.136(A) for class 2 and Class 3 circuit conductors. Informational Note No. 2: See 690.31(B) for photovoltaic source and output circuits. (2) Over 1000 Volts ac, 1500 Volts dc, Nominal. Conductors of circuits rated over I000 volts ac, 1500 volts dc, nominal, shall not occupy the same equipment wiring enclosure, cable, or raceway with conductors of circuits rated 1000 volts ac, 1500 volts dc, nominal, or less unless permitted in accordance with 305.4. (D) Separation from Corrugated Stainless Steel Tubing. All wiring methods shall be isolated from corrugated stainless steel tubing by a space separation of not less than 2 inches except where the bonding connection is made.
675 IAC 17-1.9-32	314.16 (B)(2)	(B) Box Fill Calculations. The volumes in 314.16(B)(1) through (B)(6), as applicable, shall be added together. No allowance shall be required for small fittings such as locknuts and bushings. Each space within a box installed with a barrier shall be calculated separately. (1) Conductor Fill. Each conductor that originates outside the box and terminates or is spliced within the box shall be counted	(B) Box Fill Calculations. The volumes in 314.16(B)(1) through (B)(6), as applicable, shall be added together. No allowance shall be required for small fittings such as locknuts and bushings. Each space within a box installed with a barrier shall be calculated separately. (1) Conductor Fill. Each conductor that originates outside the box and terminates or is spliced within the box shall be counted

		once, and each conductor that passes through the box without splice or termination shall be counted once. Each loop or coil of unbroken conductor not less than twice the minimum length required for free conductors in 300.14 shall be counted twice. The conductor fill shall be calculated using Table 314.16(B)(1). A conductor, no part of which leaves the box, shall not be counted. *Exception: An equipment grounding conductor or conductors or not over four fixture wires smaller than 14 AWG, or both, shall be permitted to be omitted from the calculations where they enter a box from a domed luminaire or similar canopy and terminate within that box*. (2) Clamp Fill. Where one or more internal cable clamps, whether factory or field supplied, are present in the box, a single volume allowance in accordance with Table 314.16(B)(1) shall be made based on the largest conductor present in the box~~. No allowance shall be required for a cable connector with its clamping mechanism outside the box.~~ **No allowance shall be required for a cable connector with its clamping mechanism outside the box or for clamps that are an integral part of a nonmetallic box that do not protrude more than 1/8 inch into the box.**	once, and each conductor that passes through the box without splice or termination shall be counted once. Each loop or coil of unbroken conductor not less than twice the minimum length required for free conductors in 300.14 shall be counted twice. The conductor fill shall be calculated using Table 314.16(B)(1). A conductor, no part of which leaves the box, shall not be counted. *Exception: An equipment grounding conductor or conductors or not over four fixture wires smaller than 14 AWG, or both, shall be permitted to be omitted from the calculations where they enter a box from a domed luminaire or similar canopy and terminate within that box*. (2) Clamp Fill. Where one or more internal cable clamps, whether factory or field supplied, are present in the box, a single volume allowance in accordance with Table 314.16(B)(1) shall be made based on the largest conductor present in the box. No allowance shall be required for a cable connector with its clamping mechanism outside the box or for clamps that are an integral part of a nonmetallic box that do not protrude more than 1/8 inch into the box.

675 IAC 17-1.9-33	372.20	Size of Conductors. No conductor larger than 1/0 AWG shall be installed, except ~~by special permission.~~ **where approved.**	Size of Conductors. No conductor larger than 1/0 AWG shall be installed, except where approved.
675 IAC 17-1.9-34	374.20	Size of Conductors. No conductor larger than 1/0 AWG shall be installed, except ~~by special permission.~~ **where approved.**	Size of Conductors. No conductor larger than 1/0 AWG shall be installed, except where approved.
675 IAC 17-1.9-35	394.10(1)	Uses Permitted. Concealed knob-and-tube wiring shall be permitted to be installed in the hollow spaces of walls and ceilings, or in unfinished attics and roof spaces as provided by 394.23, only as follows: ~~(1) For extensions of existing installations~~ ~~(2)~~ **(1)** Elsewhere by special permission **Informational Note: Knob-and-tube wiring can be dangerous because of the installation of insulation around the conductors. Concealed knob-and-tube wiring is designed for use in hollow spaces of walls, ceilings, and attics and utilizes the free air in such spaces for heat dissipation.**	Uses Permitted. Concealed knob-and-tube wiring shall be permitted to be installed in the hollow spaces of walls and ceilings, or in unfinished attics and roof spaces as provided by 394.23, only as follows: (1) Elsewhere by special permission Informational Note: Knob-and-tube wiring can be dangerous because of the installation of insulation around the conductors. Concealed knob-and-tube wiring is designed for use in hollow spaces of walls, ceilings, and attics and utilizes the free air in such spaces for heat dissipation.
675 IAC 17-1.9-36	395.30 (C)(3)	(C) Insulators. Insulators used to support conductors shall be rated for all of the following: (1) Applied phase-to-phase voltage (2) Mechanical strength required for each individual installation (3) Impulse withstand BIL in accordance with Table ~~490.24(a)~~ **495.24** Informational Note: See 395.30(A), (B), and (C), which are not all-inclusive lists.	(C) Insulators. Insulators used to support conductors shall be rated for all of the following: (1) Applied phase-to-phase voltage (2) Mechanical strength required for each individual installation (3) Impulse withstand BIL in accordance with Table 495.24 Informational Note: See 395.30(A), (B), and (C), which are not all-inclusive lists.

675 IAC 17-1.9-37	422.5 (A)	(A) General. Appliances identified in 422.5(A)(1) through (A)(7) 150 volts or less to ground and 60 amperes or less, single- or 3-phase, shall be provided with Class A protection for personnel. Multiple Class A protective devices shall be permitted but shall not be required. (1) Automotive vacuum machines (2) Drinking water coolers and bottle fill stations (3) Cord-and-plug-connected high-pressure spray washing machines (4) Tire inflation machines (5) Vending machines (6) Sump pumps (7) Dishwashers Informational Note **No.1**: Section 210.8 specifies requirements for GFCI protection for the branch-circuit outlet where the covered location warrants such protection. **Informational Note 2: Class A GFCI receptacles with integral, audible alarms located in readily accessible areas can alert the occupant of a fault condition and prevent damage from appliance inoperability.**	(A) General. Appliances identified in 422.5(A)(1) through (A)(7) 150 volts or less to ground and 60 amperes or less, single- or 3-phase, shall be provided with Class A protection for personnel. Multiple Class A protective devices shall be permitted but shall not be required. (1) Automotive vacuum machines (2) Drinking water coolers and bottle fill stations (3) Cord-and-plug-connected high-pressure spray washing machines (4) Tire inflation machines (5) Vending machines (6) Sump pumps (7) Dishwashers Informational Note No.1: Section 210.8 specifies requirements for GFCI protection for the branch-circuit outlet where the covered location warrants such protection. Informational Note 2: Class A GFCI receptacles with integral, audible alarms located in readily accessible areas can alert the occupant of a fault condition and prevent damage from appliance inoperability.
675 IAC 17-1.9-38	430.22 (E)	(E) Other Than Continuous Duty. Conductors for a motor used in a short-time, intermittent, periodic, or varying duty application shall have an ampacity of not less than the percentage of the motor nameplate current	(E) Other Than Continuous Duty. Conductors for a motor used in a short-time, intermittent, periodic, or varying duty application shall have an ampacity of not less than the percentage of the motor nameplate current rating shown in

		rating shown in Table 430.22(E), unless ~~the authority having jurisdiction grants special permission for~~ **special permission is granted for** conductors of lower ampacity.	Table 430.22(E), unless special permission is granted for conductors of lower ampacity.
675 IAC 17-1.9-39	430.111 (B)(3)	**(B) Type.** The device shall be one of the types specified in 430.111 (B)(1), (B)(2), or (B)(3). **(1) Air-Break Switch.** An air-break switch, operable directly by applying the hand to a lever or handle. **(2) Inverse Time Circuit Breaker.** An inverse time circuit breaker operable directly by applying the hand to a lever or handle. The circuit breaker shall be permitted to be both power-operable and manually operable. (3) **Oil Switch.** An oil switch used on a circuit whose rating does not exceed 1000 volts or 100 amperes, or ~~by special permission~~ **when approved** on a circuit exceeding this capacity where under expert supervision. The oil switch shall be permitted to be both power-operable and manually operable.	(B) Type. The device shall be one of the types specified in 430.111 (B)(1), (B)(2), or (B)(3). (1) Air-Break Switch. An air-break switch, operable directly by applying the hand to a lever or handle. (2) Inverse Time Circuit Breaker. An inverse time circuit breaker operable directly by applying the hand to a lever or handle. The circuit breaker shall be permitted to be both power-operable and manually operable. (3) Oil Switch. An oil switch used on a circuit whose rating does not exceed 1000 volts or 100 amperes, or when approved on a circuit exceeding this capacity where under expert supervision. The oil switch shall be permitted to be both power-operable and manually operable.
675 IAC 17-1.9-40	500.8 (E)	(E) Threading. The supply connection entry thread form shall be NPT or metric. Conduit and fittings shall be made wrench-tight to prevent sparking when fault current flows through the conduit system, and to ensure the explosionproof integrity of the conduit system where applicable. Equipment provided with threaded entries for field wiring connections shall be installed in accordance with 500.8(E)(1) or (E)(2) and with (E)(3). **Non-**	(E) Threading. The supply connection entry thread form shall be NPT or metric. Conduit and fittings shall be made wrench-tight to prevent sparking when fault current flows through the conduit system, and to ensure the explosionproof integrity of the conduit system where applicable. Equipment provided with threaded entries for field wiring connections shall be installed in accordance with 500.8(E)(1) or (E)(2) and with (E)(3). Non-

		tapered "all thread" conduit shall not be used in any location where at least five threads fully engaged are required.	tapered "all thread" conduit shall not be used in any location where at least five threads fully engaged are required.
675 IAC 17-1.9-41	501.15 (D)	Cable Seals, Class I, Division 1. In Division 1 locations, cable seals shall be located according to ~~501.15(D)(2) through (D)(3).~~ **501.15 (D)(1) through (D)(3).**	Cable Seals, Class I, Division 1. In Division 1 locations, cable seals shall be located according to 501.15 (D)(1) through (D)(3).
675 IAC 17-1.9-42	505.9 (E)	Threading. The supply connection entry thread form shall be NPT or metric. Conduit and fittings shall be made wrench-tight to prevent sparking when fault current flows through the conduit system, and to ensure the explosionproof or flameproof integrity of the conduit system where applicable. Equipment provided with threaded entries for field wiring connections shall be installed in accordance with 505.9(E)(1) or (E)(2) and with (E)(3). **Non-tapered "all thread" conduit shall not be used in any location where at least five threads fully engaged are required.**	Threading. The supply connection entry thread form shall be NPT or metric. Conduit and fittings shall be made wrench-tight to prevent sparking when fault current flows through the conduit system, and to ensure the explosionproof or flameproof integrity of the conduit system where applicable. Equipment provided with threaded entries for field wiring connections shall be installed in accordance with 505.9(E)(1) or (E)(2) and with (E)(3). Non-tapered "all thread" conduit shall not be used in any location where at least five threads fully engaged are required.
675 IAC 17-1.9-43	513.7 (F)	(F) Mobile Stanchions. Mobile stanchions with electrical equipment complying with 513.7(E) shall carry at least one permanently affixed warning sign with the following words or equivalent: WARNING KEEP 5 FT CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS or WARNING	(F) Mobile Stanchions. Mobile stanchions with electrical equipment complying with 513.7(E) shall carry at least one permanently affixed warning sign with the following words or equivalent: WARNING KEEP 5 FT CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS or WARNING

		KEEP 1.5 ~~FT~~ **METERS** CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS	KEEP 1.5 METERS CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS
674 IAC 17-1.9-44	513.10 (B)	(B) Aircraft Battery Charging and Equipment. Battery chargers and their control equipment shall not be located or operated within any of the Class 1 locations defined in 513.3 and shall be located in a separate building or in an area defined in 513.3(D). Mobile chargers shall carry at least one permanently affixed warning sign with the following words or equivalent: WARNING KEEP 5 FT CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS or WARNING KEEP 1.5 METERS CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS ~~WARNING~~ ~~KEEP 1.5 METERS CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS~~ Tables, racks, trays, and wiring shall not be located within a Class 1 location and shall comply with the requirements of 480.9 and 480.10.	(B) Aircraft Battery Charging and Equipment. Battery chargers and their control equipment shall not be located or operated within any of the Class 1 locations defined in 513.3 and shall be located in a separate building or in an area defined in 513.3(D). Mobile chargers shall carry at least one permanently affixed warning sign with the following words or equivalent: WARNING KEEP 5 FT CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS or WARNING KEEP 1.5 METERS CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS Tables, racks, trays, and wiring shall not be located within a Class 1 location and shall comply with the requirements of 480.9 and 480.10.
675 IAC 17-1.9-45	517.71 (C)	Over 1000-Volt Supply. Circuits and equipment operated on a supply circuit of over 1000 volts shall comply with Parts I through IV of Article ~~490~~ **495**.	Over 1000-Volt Supply. Circuits and equipment operated on a supply circuit of over 1000 volts shall comply with Parts I through IV of Article 495.

675 IAC 17-1.9-46	550.18 (B)(3)	Total Load for Determining Power Supply. Total load for determining power supply is the sum of the following: (1) Lighting and small-appliance load as calculated in 550.1(A)(5). (2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere power-supply cord is provided, allow 15 amperes per leg for air conditioning. (3) Twenty-five percent of current of largest motor in Table ~~550.18(B).~~ **550.18 (B)(2).**	Total Load for Determining Power Supply. Total load for determining power supply is the sum of the following: (1) Lighting and small-appliance load as calculated in 550.1(A)(5). (2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere power-supply cord is provided, allow 15 amperes per leg for air conditioning. (3) Twenty-five percent of current of largest motor in Table 550.18 (B)(2).
675 IAC 17-1.9-47	600.1	**Scope.** This article covers the installation of conductors, equipment, and field wiring for electric signs, retrofit kits, and outline lighting, regardless of voltage **for electric signs and outline lighting as defined in Article 100 of this code that are within or connected to Class 1 or Class 2 buildings or structures.** All installations and equipment using neon tubing, such as signs, decorative elements, skeleton tubing, or art forms, are covered by this article. Informational Note: Sign and outline lighting illumination systems include, but are not limited to, cold cathode neon tubing, high-intensity discharge lamps (HID), fluorescent	Scope. This article covers the installation of conductors, equipment, and field wiring for electric signs, retrofit kits, and outline lighting, regardless of voltage for electric signs and outline lighting as defined in Article 100 of this code that are within or connected to Class 1 or Class 2 buildings or structures. All installations and equipment using neon tubing, such as signs, decorative elements, skeleton tubing, or art forms, are covered by this article. Informational Note: Sign and outline lighting illumination systems include, but are not limited to, cold cathode neon tubing, high-intensity discharge lamps (HID), fluorescent or incandescent lamps, light-emitting diodes

		or incandescent lamps, light-emitting diodes (LEDs), and electroluminescent and inductance lighting.	(LEDs), and electroluminescent and inductance lighting.
675 IAC 17-1.9-48	600.3	Listing. Fixed, mobile, or portable electric signs, section signs, outline lighting, photovoltaic (PV) powered signs, and retrofit kits, regardless of voltage, shall be listed and labeled, provided with installation instructions, and installed in conformance with that listing, unless otherwise approved ~~by special permission~~.	Listing. Fixed, mobile, or portable electric signs, section signs, outline lighting, photovoltaic (PV) powered signs, and retrofit kits, regardless of voltage, shall be listed and labeled, provided with installation instructions, and installed in conformance with that listing, unless otherwise approved.
675 IAC 17-1.9-49	680.26 (A)	Performance. The equipotential bonding required by 680.26(B) and (C) to reduce voltage gradients in the pool area shall be installed for pools with or without associated electrical equipment related to the pool. **Informational Note No. 1: Some causes of voltage gradients originate outside the premises wiring system and are not within the scope of the *NEC*. Measures identified in Rule 097D2 of ANSI C2, *National Electrical Safety Code* can also serve to address voltage gradients originating on the utility side of the service point.** **Informational Note No. 2: By its nature, equipotential bonding of swimming pools and perimeter surfaces involves contact between various metallic materials and the earth. This can, in some cases, expose various specific metals to a corrosive environment, depending on factors such as**	Performance. The equipotential bonding required by 680.26(B) and (C) to reduce voltage gradients in the pool area shall be installed for pools with or without associated electrical equipment related to the pool. Informational Note No. 1: Some causes of voltage gradients originate outside the premises wiring system and are not within the scope of the *NEC*. Measures identified in Rule 097D2 of ANSI C2, *National Electrical Safety Code* can also serve to address voltage gradients originating on the utility side of the service point. Informational Note No. 2: By its nature, equipotential bonding of swimming pools and perimeter surfaces involves contact between various metallic materials and the earth. This can, in some cases, expose various specific metals to a corrosive environment, depending on factors such as the type and chemical

		the type and chemical content of the soil and the specific metal. Corrosive environments are also addressed in 680.14.	content of the soil and the specific metal. Corrosive environments are also addressed in 680.14.
675 IAC 17-1.9-50	680.26 (B)(2)	Perimeter Surfaces. ~~The perimeter surface to be bonded shall be considered to extend for 1 m (3 ft) horizontally beyond the inside walls of the pool and shall include unpaved surfaces and other types of paving. Perimeter surfaces separated from the pool by a permanent wall or building 1.5 m (5 ft) in height or more shall require equipotential bonding only on the pool side of the permanent wall or building. Bonding to perimeter surfaces shall be provided as specified in 680.26(B)(2)(a), (B)(2)(b), or (B)(2)(c) and shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four points uniformly spaced around the perimeter of the pool. For nonconductive pool shells, bonding at four points shall not be required.~~ **The perimeter surface to be bonded shall be considered to extend for 900 mm (3 ft) horizontally beyond the inside walls of the pool while also at a height between 900 mm (3 ft) above and 600 mm (2 ft) below the maximum water level. The perimeter surface shall include unpaved surfaces, concrete, and other types of paving. Perimeter surfaces separated from the pool by a permanent wall or building 1.5 m**	Perimeter Surfaces. The perimeter surface to be bonded shall be considered to extend for 900 mm (3 ft) horizontally beyond the inside walls of the pool while also at a height between 900 mm (3 ft) above and 600 mm (2 ft) below the maximum water level. The perimeter surface shall include unpaved surfaces, concrete, and other types of paving. Perimeter surfaces separated from the pool by a permanent wall or building 1.5 m (5 ft) in height or more shall require equipotential bonding only on the pool side of the permanent wall or building. Bonding to perimeter surfaces shall be provided as specified in 680.26(B)(2)(a), (B)(2)(b), (B)(2)(c), and (B)(2)(d). For conductive pool shells where bonding to perimeter surfaces is required, it shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four points uniformly spaced around the perimeter of the pool, or if the bonded perimeter surface does not surround the entire pool, it shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four uniformly spaced points along the bonded perimeter surface. For nonconductive pool shells where bonding to the perimeter surfaces is required, bonding at four points shall not be required,

		(5 ft) in height or more shall require equipotential bonding only on the pool side of the permanent wall or building. Bonding to perimeter surfaces shall be provided as specified in 680.26(B)(2)(a), (B)(2)(b), (B)(2)(c), and (B)(2)(d). For conductive pool shells where bonding to perimeter surfaces is required, it shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four points uniformly spaced around the perimeter of the pool, or if the bonded perimeter surface does not surround the entire pool, it shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four uniformly spaced points along the bonded perimeter surface. For nonconductive pool shells where bonding to the perimeter surfaces is required, bonding at four points shall not be required, and the perimeter bonding shall be attached to the 8 AWG copper equipotential bonding conductor and, if present, to any conductive support structure for the pool. **Informational Note: Because the perimeter surface can incorporate various types of materials at various locations and elevations above and below maximum water level, the perimeter surface required to be bonded might not surround the entire pool. The 8 AWG copper equipotential**	and the perimeter bonding shall be attached to the 8 AWG copper equipotential bonding conductor and, if present, to any conductive support structure for the pool. Informational Note: Because the perimeter surface can incorporate various types of materials at various locations and elevations above and below maximum water level, the perimeter surface required to be bonded might not surround the entire pool. The 8 AWG copper equipotential bonding conductor can encircle the entire pool to facilitate connection of bonded parts. (a) *Conductive Paved Portions of Perimeter Surfaces*. Conductive paved portions of perimeter surfaces, including masonry pavers, if used, shall be bonded with unencapsulated structural reinforcing steel in-accordance with 680.26 (B)(1)(a), or with unencapsulated steel structural welded wire reinforcement (welded wire mesh, welded wire fabric), bonded together by steel tie wires or the equivalent. Steel welded wire reinforcement shall be fully embedded within the pavement unless the pavement will not allow for embedding. If the reinforcing steel is absent, or is encapsulated in a nonconductive compound, or embedding is not possible, unencapsulated welded wire steel reinforcement or a copper conductor grid shall be provided and shall be secured directly

		bonding conductor can encircle the entire pool to facilitate connection of bonded parts. (a) ~~*Structural Reinforcing Steel*. Structural reinforcing steel shall be bonded in accordance with 680.26(8)(1)(a).~~ ***Conductive Paved Portions of Perimeter Surfaces*.** **Conductive paved portions of perimeter surfaces, including masonry pavers, if used, shall be bonded with unencapsulated structural reinforcing steel in accordance with 680.26 (B)(1)(a), or with unencapsulated steel structural welded wire reinforcement (welded wire mesh, welded wire fabric), bonded together by steel tie wires or the equivalent. Steel welded wire reinforcement shall be fully embedded within the pavement unless the pavement will not allow for embedding. If the reinforcing steel is absent, or is encapsulated in a nonconductive compound, or embedding is not possible, unencapsulated welded wire steel reinforcement or a copper conductor grid shall be provided and shall be secured directly under the paving, and not more than 150 mm (6 in.) below unfinished grade. Unencapsulated steel welded wire reinforcement that is not fully embedded in concrete, and copper grid regardless of**	under the paving, and not more than 150 mm (6 in.) below unfinished grade. Unencapsulated steel welded wire reinforcement that is not fully embedded in concrete, and copper grid regardless of location, where used for equipotential bonding, shall be listed for corrosion resistance and mechanical performance. This listing requirement shall become effective January 1, 2025. The copper grid or unencapsulated steel welded wire reinforcement shall also meet the following: (1) Copper grid is constructed if 8 AWG solid bare copper and arranged in accordance with 680.26 (B)(1)(b)(3). (2) Steel welded wire reinforcement is minimum ASTM 6x6-W2.0 x W2.0 or minimum No. 3 rebar constructed in a 300 mm (12 in.) grid. (3) Copper grid and steel welded wire reinforcement follow the contour of the perimeter surface extending not less than 900 mm (3 ft) horizontally beyond the inside walls of the pool. (4) Only listed splicing devices or exothermic welding are used. Informational Note No. 1: Performance of the equipotential bonding system at the perimeter surface

		location, where used for equipotential bonding, shall be listed for corrosion resistance and mechanical performance. This listing requirement shall become effective January 1, 2025. The copper grid or unencapsulated steel welded wire reinforcement shall also meet the following: **(1) Copper grid is constructed if 8 AWG solid bare copper and arranged in accordance with 680.26 (B)(1)(b)(3).** **(2) Steel welded wire reinforcement is minimum ASTM 6x6-W2.0 x W2.0 or minimum No. 3 rebar constructed in a 300 mm (12 in.) grid.** **(3) Copper grid and steel welded wire reinforcement follow the contour of the perimeter surface extending not less than 900 mm (3 ft) horizontally beyond the inside walls of the pool.** **(4) Only listed splicing devices or exothermic welding are used.** **Informational Note No. 1: Performance of the equipotential bonding system at the perimeter surface is improved as the distance between the bonding means and finished grade is minimized, either by embedding within, or by direct**	is improved as the distance between the bonding means and finished grade is minimized, either by embedding within, or by direct contact with the underside of, the finished pavement. Informational Note No. 2: See ASTM A615/A615M, *Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement*; A1064/A1064M *Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete*; A1022/A1022M *Standard Specification for Deformed and Plain Stainless Steel Wire and Welded Wire for Concrete Reinforcement*; A1060A/A1060M *Standard Specification for Zinc-Coated (Galvanized) Steel Welded Wire Reinforcement, Plain and Deformed, for Concrete*; and ACI Standard ACI 318, *Building Code Requirements for Structural Concrete*, for examples of standards currently used in the listing of reinforcing steel bars and steel welded wire reinforcement. (b) *Unpaved Portions of Perimeter Surfaces*. Unpaved portions of perimeter surfaces shall be bonded with any of the following methods:

		contact with the underside of, the finished pavement. **Informational Note No. 2: See ASTM A615/A615M, *Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement*; A1064/A1064M *Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete*; A1022/A1022M *Standard Specification for Deformed and Plain Stainless Steel Wire and Welded Wire for Concrete Reinforcement*; A1060A/A1060M *Standard Specification for Zinc-Coated (Galvanized) Steel Welded Wire Reinforcement, Plain and Deformed, for Concrete*; and ACI Standard ACI 318, *Building Code Requirements for Structural Concrete*, for examples of standards currently used in the listing of reinforcing steel bars and steel welded wire reinforcement.** ~~(b) *Copper Ring*. Where structural reinforcing steel is not available or is encapsulated in a nonconductive compound, a copper~~	(1) Copper conductor(s) shall meet the following: (a) At least one minimum 8 AWG bare solid copper conductor, including the 8 AWG copper equipotential bonding conductors if available. (b) The conductors follow the contour of the perimeter surface. (c) Only listed splicing devices or exothermic welding are used. (d) The conductor(s) is 450 mm to 600 mm (18 in. to 24 in.) from the inside walls of the pool. (e) The conductor(s) is under the unpaved portion of the perimeter surface 100 mm to 150 mm (4 in. to 6 in.) below finished grade. (f) Be installed only in perimeter surfaces not intended to have direct access to swimmers in the pool. (2) Copper grid or unencapsulated steel welded wire reinforcement used for equipotential bonding of unpaved portions of perimeter surfaces shall meet the following: (a) Be installed in accordance with 680.26 (B)(2)(a). (b) Be located within unpaved surface(s) between 100 mm to 150 mm (4 in. to 6 in.) below finished grade.

		~~conductor(s) shall be utilized where the following requirements are met:~~ ~~(1) At least one minimum 8 AWG bare solid copper conductor shall be provided.~~ ~~(2) The conductors shall follow the contour of the perimeter surface.~~ ~~(3) Only listed splicing devices or exothermic welding shall be permitted.~~ ~~(4) The required conductor shall be 450 mm to 600 mm (18 in. to 24 in.) from the inside walls of the pool.~~ ~~(5) The required conductor shall be secured within or under the perimeter surface 100 mm to 150 mm (4 in. to 6 in.) below the subgrade.~~ ***Unpaved Portions of Perimeter Surfaces*.** **Unpaved portions of perimeter surfaces shall be bonded with any of the following methods:** **(1) Copper conductor(s) shall meet the following:** **(a) At least one minimum 8 AWG bare solid copper conductor, including the 8 AWG copper equipotential bonding conductors if available.** **(b) The conductors follow the contour of the perimeter surface.** **(c) Only listed splicing devices or exothermic welding are used.** **(d) The conductor(s) is 450 mm to 600 mm (18 in. to 24 in.) from the inside walls of the pool.**	(c) *Nonconductive Perimeter Surfaces*. Equipotential bonding shall not be required for nonconductive portions of perimeter surfaces that are separated from earth or raised on nonconducting supports, and it shall not be required for any perimeter surface that is electrically separated from the pool structure and raised on nonconductive supports above an equipotentially bonded surface. Informational Note: Nonconductive materials include, but are not limited to, wood, plastic, wood-plastic composites, fiberglass, and fiberglass composites. (d) *Interconnection of Bonded Portions of Perimeter Surfaces.* All surfaces where equipotential bonding is required shall be interconnected using listed splicing devices or exothermic welding. Where copper wire is used for this purpose, it shall be solid copper, not smaller than 8 AWG. The conductor shall be permitted to encircle the pool to facilitate bonding connections to portions of the perimeter covered in 680.26 (B)(2)(a) and (B)(2)(b) that are not contiguous.

		(e) The conductor(s) is under the unpaved portion of the perimeter surface 100 mm to 150 mm (4 in. to 6 in.) below finished grade. **(f) Be installed only in perimeter surfaces not intended to have direct access to swimmers in the pool.** **(2) Copper grid or unencapsulated steel welded wire reinforcement used for equipotential bonding of unpaved portions of perimeter surfaces shall meet the following:** **(a) Be installed in accordance with 680.26 (B)(2)(a).** **(b) Be located within unpaved surface(s) between 100 mm to 150 mm (4 in. to 6 in.) below finished grade.** ~~(c) *Copper Grid*. Where structural reinforcing steel is not available or is encapsulated in a nonconductive compound, copper grid shall be utilized where the following requirements are met:~~ ~~(1) The copper grid shall be constructed of 8 AWG solid bare copper and be arranged in accordance with 680.26 (B)(1)(b)(3).~~ ~~(2) The copper grid shall follow the contour of the perimeter surface extending 1 m (3 ft) horizontally beyond the inside walls of the pool.~~	

		~~(3) Only listed splicing devices or exothermic welding shall be permitted.~~ ~~(4) The copper grid shall be secured within or under the deck or unpaved surfaces between 100 mm to 150 mm (4 in. to 6 in.) below the subgrade.~~ ***Nonconductive Perimeter Surfaces*.** **Equipotential bonding shall not be required for nonconductive portions of perimeter surfaces that are separated from earth or raised on nonconducting supports, and it shall not be required for any perimeter surface that is electrically separated from the pool structure and raised on nonconductive supports above an equipotentially bonded surface.** **Informational Note: Nonconductive materials include, but are not limited to, wood, plastic, wood-plastic composites, fiberglass, and fiberglass composites.** **(d) *Interconnection of Bonded Portions of Perimeter Surfaces*. All surfaces where equipotential bonding is required shall be interconnected using listed splicing devices or exothermic welding. Where copper wire is used for this purpose, it shall be solid copper, not smaller than 8 AWG. The conductor shall be permitted to encircle the pool to facilitate bonding connections to portions of the perimeter**	

		covered in 680.26 (B)(2)(a) and (B)(2)(b) that are not contiguous.	
675 IAC 17-1.9-51	695.4 (B)(3)	Disconnecting Means. All disconnecting devices that are unique to the fire pump loads shall comply with items 695.4(B) (3)(a) through (B)(3)(e). (a) *Features and Location - Normal Power Source.* The disconnecting means for the normal power source shall comply with all of the following: [20:9.2.3.1] (1) Be identified as suitable for use as service equipment. (2) Be lockable in the closed position. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch or circuit breaker used as the disconnecting means and shall remain in place with or without the lock installed. (3) Not be located within the same enclosure, panelboard, switchboard, switchgear, or motor control center, with or without common bus, that supplies loads other than the fire pump. (4) Be located sufficiently remote from other building or other fire pump source disconnecting means such that inadvertent operation at the same time would be unlikely. *Exception to 695.4(B)(3)(a): For a multibuilding campus-style complex(s) installed under the provisions of 695.3(C), only the requirements in 695.4(B)(3)(a)(2)*	Disconnecting Means. All disconnecting devices that are unique to the fire pump loads shall comply with items 695.4(B) (3)(a) through (B)(3)(e). (a) *Features and Location - Normal Power Source.* The disconnecting means for the normal power source shall comply with all of the following: [20:9.2.3.1] (1) Be identified as suitable for use as service equipment. (2) Be lockable in the closed position. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch or circuit breaker used as the disconnecting means and shall remain in place with or without the lock installed. (3) Not be located within the same enclosure, panelboard, switchboard, switchgear, or motor control center, with or without common bus, that supplies loads other than the fire pump. (4) Be located sufficiently remote from other building or other fire pump source disconnecting means such that inadvertent operation at the same time would be unlikely. *Exception to 695.4(B)(3)(a): For a multibuilding campus-style complex(s) installed under the provisions of 695.3(C), only the requirements in 695.4(B)(3)(a)(2) shall apply for normal power source disconnects.*

		shall apply for normal power source disconnects. (b) *Features and Location — On-Site Standby Generator*. The disconnecting means for an on-site standby generator(s) used as the alternate power source shall be installed in accordance with 700.10(8)(6) for emergency circuits and shall be lockable in the closed position. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch or circuit breaker used as the disconnecting means and shall remain in place with or without the lock installed. (c) *Disconnect Marking*. The disconnecting means shall be marked "Fire Pump Disconnecting Means." The letters shall be at least 25 mm (1 in.) in height, and they shall be visible without opening enclosure doors or covers. [20:9.2.3.1 (5)] (d) *Controller Marking*. A placard shall be placed adjacent to the fire pump controller, stating the location of this disconnecting means and the location of the key (if the disconnecting means is locked). [20:9.2.3.2] (e) *Supervision*. The disconnecting means shall be supervised in the closed position by one of the following methods: (1) Central station, proprietary, or remote station signal device	(b) *Features and Location — On-Site Standby Generator*. The disconnecting means for an on-site standby generator(s) used as the alternate power source shall be installed in accordance with 700.10(8)(6) for emergency circuits and shall be lockable in the closed position. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch or circuit breaker used as the disconnecting means and shall remain in place with or without the lock installed. (c) *Disconnect Marking*. The disconnecting means shall be marked "Fire Pump Disconnecting Means." The letters shall be at least 25 mm (1 in.) in height, and they shall be visible without opening enclosure doors or covers. [20:9.2.3.1 (5)] (d) *Controller Marking*. A placard shall be placed adjacent to the fire pump controller, stating the location of this disconnecting means and the location of the key (if the disconnecting means is locked). [20:9.2.3.2] (e) *Supervision*. The disconnecting means shall be supervised in the closed position by one of the following methods: (1) Central station, proprietary, or remote station signal device (2) Local signaling service that causes the sounding of an audible signal at a constantly attended point

		(2) Local signaling service that causes the sounding of an audible signal at a constantly attended point (3) Locking the disconnecting means in the closed position ~~(f)~~ **(4)** Sealing of disconnecting means and approved weekly recorded inspections when the disconnecting means are located within fenced enclosures or in buildings under the control of the owner [20:9.2.3.3]	(3) Locking the disconnecting means in the closed position (4) Sealing of disconnecting means and approved weekly recorded inspections when the disconnecting means are located within fenced enclosures or in buildings under the control of the owner [20:9.2.3.3]
675 IAC 17-1.9-52	701.12 (I)	Battery-Equipped Emergency Luminaires, Used for Legally Required Standby Systems. Battery-equipped emergency luminaires used for legally required standby systems shall comply with ~~701.12 (H)~~ **700.12 (H)**.	Battery-Equipped Emergency Luminaires, Used for Legally Required Standby Systems. Battery-equipped emergency luminaires used for legally required standby systems shall comply with 700.12 (H).
675 IAC 17-1.9-53	702.4 (A)(2)	(A) System Capacity. (1) Manual and Nonautomatic Load Connection. If the connection of load is manual or nonautomatic, an optional standby system shall have adequate capacity and rating for the supply of all equipment intended to be operated at one time. The user of the optional standby system shall be permitted to select the load connected to the system. Informational Note: Manual and nonautomatic transfer equipment require human intervention. (2) Automatic Load Connection. If the connection of load is automatic, an optional standby system shall comply with	(A) System Capacity. (1) Manual and Nonautomatic Load Connection. If the connection of load is manual or nonautomatic, an optional standby system shall have adequate capacity and rating for the supply of all equipment intended to be operated at one time. The user of the optional standby system shall be permitted to select the load connected to the system. Informational Note: Manual and nonautomatic transfer equipment require human intervention. (2) Automatic Load Connection. If the connection of load is automatic, an optional standby system shall comply with

		702.4(A)(2)(a) or ~~(B)(2)(b)~~ **(A)(2)(b)** in accordance with Parts I through IV of Article 220 or by another approved method. (a) *Full Load*. The standby source shall be capable of supplying the full load that is automatically connected. (b) *Energy Management System (EMS)*. Where a system is employed in accordance with 750.30 that will automatically manage the connected load, the standby source shall have a capacity sufficient to supply maximum load that will be connected by the EMS.	702.4(A)(2)(a) or (A)(2)(b) in accordance with Parts I through IV of Article 220 or by another approved method. (a) *Full Load*. The standby source shall be capable of supplying the full load that is automatically connected. (b) *Energy Management System (EMS)*. Where a system is employed in accordance with 750.30 that will automatically manage the connected load, the standby source shall have a capacity sufficient to supply maximum load that will be connected by the EMS.
675 IAC 17-1.9-54	706.1 (C)	**(A)** Scope. This article applies to all energy storage systems (ESS) having a capacity greater than 3.6 MJ (1 kWh) that may be stand-alone or interactive with other electric power production sources. These systems are primarily intended to store and provide energy during normal operating conditions. Informational Note No. 1: See Article 480 for installations that meet the definition of *stationary standby batteries*. Informational Note No. 2: For batteries rated in ampere hours, kWh is equal to the nominal rated voltage times ampere-hour rating divided by 1000. Informational Note No. 3: The following standards are frequently referenced for the installation of ESSs: (1) NFPA 1-2021, *Fire Code*	(A) Scope. This article applies to all energy storage systems (ESS) having a capacity greater than 3.6 MJ (1 kWh) that may be stand-alone or interactive with other electric power production sources. These systems are primarily intended to store and provide energy during normal operating conditions. Informational Note No. 1: See Article 480 for installations that meet the definition of *stationary standby batteries*. Informational Note No. 2: For batteries rated in ampere hours, kWh is equal to the nominal rated voltage times ampere-hour rating divided by 1000. Informational Note No. 3: The following standards are frequently referenced for the installation of ESSs: (1) NFPA 1-2021, *Fire Code*

<table>
<tr>
<td></td>
<td></td>
<td>(2) NFPA 111-2019, Standard on Stored Electrical Energy Emergency and Standby Power Systems
(3) NECA 416-2016, Recommended Practice for Installing Energy Storage Systems (ESS)
(4) UL 810A, Electrochemical Capacitors
(5) NFPA 855-2020, Standard for the Installation of Stationary Energy Storage Systems
(6) UL 1973, Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power, and Light Electric Rail (LER) Applications
(7) UL 1989, Standard for Standby Batteries
(8) UL 9540, Standard for Safety Energy Storage Systems and Equipment
(9) UL Subject 2436, Spill Containment For Stationary Lead Acid Battery Systems
(B) Regulation of Utility Battery Energy Storage Systems. See Indiana Code 22-14-8.</td>
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</tr>
<tr>
<td>675 IAC 17-1.9-55</td>
<td>Informative Annex C</td>
<td>
<table>
<tr><th>Table</th><th>Page</th></tr>
<tr><td>C.1 – Electrical Metallic Tubing (EMT)</td><td><s>730</s> 744</td></tr>
<tr><td>C.1(A)* - Electrical Metallic Tubing (EMT)</td><td><s>734</s> 777</td></tr>
<tr><td>C.2 – Electrical Nonmetallic Tubing (ENT)</td><td><s>736</s> 778</td></tr>
<tr><td>C.2(A)* - Electrical Nonmetallic Tubing (ENT)</td><td><s>740</s> 781</td></tr>
</table>
</td>
<td>
<table>
<tr><th>Table</th><th>Page</th></tr>
<tr><td>C.1 – Electrical Metallic Tubing (EMT)</td><td>744</td></tr>
<tr><td>C.1(A)* - Electrical Metallic Tubing (EMT)</td><td>777</td></tr>
<tr><td>C.2 – Electrical Nonmetallic Tubing (ENT)</td><td>778</td></tr>
<tr><td>C.2(A)* - Electrical Nonmetallic Tubing (ENT)</td><td>781</td></tr>
</table>
</td>
</tr>
</table>

		C.3 – Flexible Metal Conduit (FMC)	~~742~~ **782**		C.3 – Flexible Metal Conduit (FMC)	782
		C.3(A)* - Flexible Metal Conduit (FMC)	~~746~~ **785**		C.3(A)* - Flexible Metal Conduit (FMC)	785
		C.4 – Intermediate Metal Conduit (IMC)	~~748~~ **786**		C.4 – Intermediate Metal Conduit (IMC)	786
		C.4(A)* - Intermediate Metal Conduit (IMC)	~~752~~ **789**		C.4(A)* - Intermediate Metal Conduit (IMC)	789
		C.5 – Liquidtight Flexible Nonmetallic Conduit (LFNC-A)	~~754~~ **790**		C.5 – Liquidtight Flexible Nonmetallic Conduit (LFNC-A)	790
		C.5(A)* - Liquidtight Flexible Nonmetallic Conduit (LFNC-A)	~~758~~ **793**		C.5(A)* - Liquidtight Flexible Nonmetallic Conduit (LFNC-A)	793
		C.6 – Liquidtight Flexible Nonmetallic Conduit (LFNC-B)	~~760~~ **794**		C.6 – Liquidtight Flexible Nonmetallic Conduit (LFNC-B)	794
		C.6(A)* - Liquidtight Flexible Nonmetallic Conduit (LFNC-B)	~~764~~ **797**		C.6(A)* - Liquidtight Flexible Nonmetallic Conduit (LFNC-B)	797
		C.7 – Liquidtight Flexible Nonmetallic Conduit (LFNC-C)	~~766~~ **798**		C.7 – Liquidtight Flexible Nonmetallic Conduit (LFNC-C)	798
		C.7(A) – Liquidtight Flexible Nonmetallic Conduit (LFNC-C)	~~770~~ **802**		C.7(A) – Liquidtight Flexible Nonmetallic Conduit (LFNC-C)	802
		C.8 – Liquidtight Flexible Metal Conduit (LFMC)	~~772~~ **803**		C.8 – Liquidtight Flexible Metal Conduit (LFMC)	803

		C.8(A)* - Liquidtight Flexible Metal Conduit (LFMC)	~~776~~ **806**		C.8(A)* - Liquidtight Flexible Metal Conduit (LFMC)	806
		C.9 – Rigid Metal Conduit (RMC)	~~778~~ **807**		C.9 – Rigid Metal Conduit (RMC)	807
		C.9(A)* - Rigid Metal Conduit (RMC)	~~782~~ **810**		C.9(A)* - Rigid Metal Conduit (RMC)	810
		C.10 – Rigid PVC, Conduit Schedule 80	~~784~~ **811**		C.10 – Rigid PVC, Conduit Schedule 80	811
		C.10(A)* - Rigid PVC, Conduit Schedule 80	~~788~~ **814**		C.10(A)* - Rigid PVC, Conduit Schedule 80	814
		C.11 – Rigid PVC Conduit, Schedule 40 and HDPE Conduit	~~790~~ **815**		C.11 – Rigid PVC Conduit, Schedule 40 and HDPE Conduit	815
		C.11(A)* - Rigid PVC Conduit, Schedule 40 and HDPE Conduit	~~794~~ **818**		C.11(A)* - Rigid PVC Conduit, Schedule 40 and HDPE Conduit	818
		C.12 – Type A, Rigid PVC Conduit	~~796~~ **819**		C.12 – Type A, Rigid PVC Conduit	819
		C.12(A)* - Type A, Rigid PVC Conduit	~~800~~ **822**		C.12(A)* - Type A, Rigid PVC Conduit	822
		C.13 – Type EB, PVC Conduit	~~802~~ **823**		C.13 – Type EB, PVC Conduit	823
		C.13(A)* - Type EB, PVC Conduit	~~806~~ **826**		C.13(A)* - Type EB, PVC Conduit	826
		C.14 – Type MC Cables Permitted in Cable Tray	~~808~~ **827**		C.14 – Type MC Cables Permitted in Cable Tray	827
		C.15 – Type MC Cables Permitted in Cable Tray	~~809~~ **828**		C.15 – Type MC Cables Permitted in Cable Tray	828
		C.16 – Type TC Cables Permitted in Cable Tray	~~810~~ **829**		C.16 – Type TC Cables Permitted in Cable Tray	829

		C.17 – Type TC Cables Permitted in Cable Tray	~~811~~ **830**	C.17 – Type TC Cables Permitted in Cable Tray	830
		C.18 – Single Conductor Cables Permitted in Cable Tray	~~812~~ **831**	C.18 – Single Conductor Cables Permitted in Cable Tray	831
		C.19 – Single Conductor Cables Permitted in Cable Tray	~~813~~ **832**	C.19 – Single Conductor Cables Permitted in Cable Tray	832
		C.20 – Single Conductor Cables Permitted in Cable Tray	~~814~~ **833**	C.20 – Single Conductor Cables Permitted in Cable Tray	833