SUMMARY OF PROPOSED INDIANA AMENDMENTS TO THE 2020 NATIONAL ELECTRICAL CODE

As substantively approved by the Indiana Electrical Code Update Committee September 28, 2022.

Adoption by Reference

Amend as follows:

> That certain document, being titled as National Electrical Code, ~~2008 Edition, first printing~~ **2020 Edition, first printing**, published by the National Fire Protection Association, One Batterymarch Park, Quincy, Massachusetts 02169-7471, is hereby incorporated by reference and made a part of the rule, except those portions as are amended and adopted in sections 3 through (to be determined) of this rule.

Availability

Amend as follows:

(a) This rule shall be known as the Indiana Electrical Code, ~~2009~~ **2024** Edition, and shall be published, except for incorporated documents, by the department of homeland security, legal and code services, for general distribution and use under the title. Whenever the term "this code" is used within this rule, including incorporated documents, it shall mean the ~~2009~~ **2024** Indiana Electrical Code. (b) This rule, with the incorporated National Electrical Code, 2020 Edition, is available for review and reference at the Department of Homeland Security, 402 West Washington Street, Room W246, Indianapolis, Indiana 46204.

90.2 – Scope

Amend indicated sections as follows:

> (A) Covered.
>
> This Code covers the installation and removal of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cables **within or on Class 1 and Class 2 structures, including industrialized building systems, and other premises wiring covered by rules of the Commission in this title** for the following:

(6) Installations used to export electric power from vehicles to premises wiring or for bidirectional current flow

Class 1 and Class 2 structures covered by the Indiana Residential Code shall be made to comply with the provisions of this code, or the electrical provisions of the Indiana Residential Code (675 IAC 14).

(B) Not covered.

(1) Installations in ships, watercraft other than floating buildings **that are Class 1 or Class 2 structures**, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles

~~(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 port authorities and state agencies and departments, and lands owned by railroads.~~

(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, 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).

Article 90.4 -- Enforcement

Delete Section 90.4 and substitute the following:

Requirements covering enforcement, granting of variances, and approval of alternate methods or materials are covered in Indiana statutes and 675 IAC 12, the General Administrative Rules of the commission.

90.6 – Formal Interpretations

Delete section 90.6 in its entirety without substitution.

Article 90.8 – Wiring Planning

Delete section 90.8 in its entirety without substitution.

Article 100 – Definitions

In Part I of Article 100, delete the text of the definition of APPROVED and substitute to read as follows:

> 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.

In Part I of Article 100, delete the text of the definition of AUTHORITY HAVING JURISDICTION and substitute to read as follows:

> AUTHORITY HAVING JURISDICTION. The division of fire and building safety authorized under IC 22-15-2-7 and IC 10-19-2; the local building official authorized under IC 36-7-2-9 and local ordinance; the local fire department authorized under IC 36-8-17-8.

In Part I of Article 100, in the definition of DWELLING UNIT, after sleeping, insert **eating,**

In Part I of Article 100, delete the definition of LABELED and substitute to read as follows:

> LABELED. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization engaged in 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.

In Part I of Article 100, delete the definition of LISTED and substitute to read as follows:

> LISTED. Equipment or materials included in a list published by an organization engaged in product evaluation that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

In Part I of Article 100, delete the text of the definition of SPECIAL PERMISSION and substitute to read as follows:

> SPECIAL PERMISSION. A variance granted by the commission under IC 22-13-2-11 or a variance granted by a political subdivision and approved by the commission under IC 22-13-2-7(b).

110.15 – High-Leg Marking

Add an informational note to 110.15 as follows:

> 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 made if the grounded conductor is also present.

Informational Note: The higher phase voltage to ground is normally on the right-hand side in meters and on the bottom inside meter cabinets. Some electric utilities require specific colors or marking inside metering equipment and at the service termination.

110.26(A)(1)(b) – Depth of Working Space

Amend as follows:

(b) Low Voltage. **When approved** ~~By special permission~~, 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.

210.8(A)(5) – Ground-Fault Circuit-Interrupter Protection for Personnel – Basements

Amend as follows:

210.8(A)(5) ~~Basements~~ **Unfinished portions or areas of the basement not intended as habitable rooms**

210.8(F) Ground-Fault Circuit-Interrupter Protection for Personnel – Exception

Amend as follows:

210.8(F) Outdoor Outlets.

All outdoor outlets for dwellings, other than those covered in 210.8(A)(3), Exception to (3), that are supplied by single-phase branch circuits rated 150 volts to ground or less, 50 amperes or less, shall have ground-fault circuit-interrupter protection for personnel.

~~This requirement shall become effective on January 1, 2023, for mini-split-type heating/ventilating/air-conditioning (HVAC) equipment and other HVAC units employing power conversion equipment as a means to control compressor speed.~~

~~Informational Note: Power conversion equipment is the term used to describe the components used in HVAC equipment that is commonly referred to as a variable speed drive. The use of power conversion equipment to control compressor speed differs from~~

~~multistage compressor speed control.~~

Exception No. 1: Ground-fault circuit-interrupter protection shall not be required on lighting outlets other than those covered in 210.8(C).

Exception No. 2: Ground-fault circuit-interrupter protection shall not be required for listed HVAC equipment. This exception shall expire September 1, 2026.

210.52(C)(2) – Dwelling Unit Receptacle Outlets – Countertops and Work Surfaces – Island and Peninsular Countertops and Work Surfaces

Delete (C)(2) and substitute as follows:

Receptacle outlets shall be installed in accordance with 210.52(C)(2)(a).

(a) At least one receptacle outlet shall be provided for the countertop or work surface.

(b) The location of the receptacle outlets shall be in accordance with 210.52(C)(3).

210.52(G)(1) – Garage, Basement, and Accessory Building Receptacles

Amend as follows:

210.52(G)(1) Garages. A receptacle outlet is required in each vehicle bay of a garage with electric power and must be installed no higher than 5 ft 6 in above the floor. Exception: A receptacle outlet is not required ~~in a garage space not attached to an individual dwelling unit of a multifamily dwelling~~ **for multifamily units where the vehicle bay is in a detached garage building or is not directly connected to an individual dwelling unit through a dedicated intersecting door.**

210.52(I) – Foyers

Delete and substitute as follows:

Foyers that are not part of a hallway in accordance with 210.52(H) and that have an area that is greater than one hundred (100) square feet (9.3 sq meters) shall have a receptacle located in each wall space that is 4 feet or more in width. The four (4) foot (1.2 meters) 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.

220.53 – Appliance Load – Dwelling Units

Add:

(5) Electric Vehicle Supply Equipment

225.30(C) – Special Occupancies

Amend as follows:

~~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

230.2(B) – Number of Services

Amend (B) and (C)(3) as follows:

(B) Special Occupancies. ~~By special permission~~ **When approved**, additional services shall be permitted for either of the following:

(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**

230.67(D) – Replacement

Delete section 230.67(D) in its entirety without substitution.

230.85 – Emergency Disconnects

Delete section 230.85 in its entirety without substitution.

240.81 – Indicating

Amend as follows:

Circuit breakers shall clearly indicate whether they are in the open “off” or closed “on” position.

Where circuit breaker handles are operated vertically rather than rotationally or horizontally, the “up” position of the handle shall be the “on” position.

Exception:
Where molded case circuit breakers are installed in a panelboard that is mounted horizontally, the "up" position of the handle shall be permitted to be the "off" position.

240.85 – Applications

Add another sentence to the end of Section 240.85 as follows:

A circuit breaker with a straight voltage rating, such as 240V or 480V, shall be permitted to be applied in a circuit in which the nominal voltage between any two conductors does not exceed the circuit breaker’s voltage rating. A two-pole circuit breaker shall not be

used for protecting a 3-phase, corner-grounded delta circuit unless the circuit breaker is marked 1φ–3φ to indicate such suitability.

A circuit breaker with a slash rating, such as 120/240V or 480Y/277V, shall be permitted to be applied in a solidly grounded circuit where the nominal voltage of any conductor to ground does not exceed the lower of the two values of the circuit breaker's voltage rating and the nominal voltage between any two conductors does not exceed the higher value of the circuit breaker's voltage rating. **A circuit breaker marked 120/240 volts shall not be permitted to be used on a delta-connected 240-volt three-phase circuit.**

242.54(C) – Interconnections – By Special Permission

Amend to read as follows:

(C) ~~By Special Permission~~ **Where Approved**

An interconnection of the surge-arrester ground and the secondary neutral conductor, other than as provided in 242.54(A) or (B), shall be permitted to be made only ~~by special permission~~ **where approved**.

250.52(A)(5)(b) – Rod Electrodes

Amend to read as follows:

Rod-type grounding electrodes of stainless steel and copper or zinc coated steel shall be at least 5⁄8 in. in diameter, unless listed **and not less than 1⁄2 in. in diameter**."

250.90 – Bonding – General

Add an exception as follows:

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.

250.104(A)(1) – Metal Water Piping – General (Revised)

Add an exception as follows:

> **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.**

250.104(B) – Bonding of Piping Systems and Exposed Structural Metal – Other Metal Piping

Add list item (6) as follows:

> **(6) All metal gas piping upstream from the equipment shutoff valve(s) shall be electrically continuous.**

250.110 – Equipment Fasted in Place (Fixed) or Connected by Permanent Wiring Methods

Amend as follows:

> 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.

250.114 – Equipment Connected by Cord and Plug

Amend as follows:

> 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 grounding conductor, in which case the frames shall be permanently and effectively insulated from ground.

300.3 – Conductors

Add the following section:

> **(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.

Table 310.4(A) – Conductor Applications and Insulations Rated 600 Volts

In the column, "Application Provisions" and line "Paper", amend as follows:

For underground service conductors, or ~~by special permission~~ **where approved**

310.15(C)(1) – Adjustment Factors – More than Three Current-Carrying Conductors

Add item (e) as follows:

(e) Dwelling Units Only.

Adjustment factors shall not apply to bundled cables ran in bored holes, or cut notches in joists or interior walls in dwellings where cables are not surrounded by thermal insulation and the following conditions are met:

(1) Ambient temperature will not exceed 86F (30C) in normal use.
(2) Circuit ampacity does not exceed 20 amperes.

Amend as follows:

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 does not protrude more than 1/8 inch into the box**.

372.20 – Size of Conductors

Amend as follows:

No conductor larger than 1/0 AWG shall be installed, except **where approved** ~~by special permission~~.

374.20 – Size of Conductors

Amend as follows:

No conductor larger than 1/0 AWG shall be installed, except **where approved** ~~by special permission~~.

422.5(B) – Ground-Fault Circuit-Interrupter (GFCI) Protection for Personnel – Type and Location

Add Informational Note to 422.5(B)

Informational Note: 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.

422.23 – Other Installation Methods

Amend as follows:

Appliances employing methods of installation other than covered by this article shall be permitted to be used only **where approved** ~~by special permission~~."

424.10 – Fixed Electric Space-Heating Equipment

Amend as follows:

~~Special Permission~~ **Approval**

Fixed electric space-heating equipment and systems installed by methods other than those covered by this article shall be permitted only **where approved** ~~by special permission~~."

425.8(B) – General – Working Space

Amend as follows:

(B) Working Space. Working space about electrical enclosures for fixed industrial process heating equipment that require examination, adjustment, servicing, or maintenance while energized shall be accessible, and the work space for personnel shall comply with 110.26 and 110.34, based upon the utilization voltage to ground.

Exception: ~~With special permission~~ **Where approved**, in industrial establishments only, where conditions of maintenance and supervision ensure that only qualified persons will

service the installation, working space less than that required in 110.26 or 110.34 shall be permitted.

425.10 – Special Permission

Amend as follows:

~~Special Permission~~ **Approval**

Fixed industrial process heating equipment and systems installed by methods other than covered by this article shall be permitted only **where approved** ~~by special permission~~."

426.14 – Fixed Outdoor Electrical De-icing and Snow-Melting Equipment

Amend as follows:

~~Special Permission~~ **Approval**

Fixed outdoor deicing and snow-melting equipment employing methods of construction or installation other than covered by this article shall be permitted only **where approved** ~~by special permission~~.

430.22(E) – Single Motor – Other Than Continuous Duty

Amend as follows:

(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 Table 430.22(E), unless the authority having jurisdiction **approves** ~~grants special permission for~~ conductors of lower ampacity.

500.8(E) – Equipment – Threading

Amend as follows:

(E) Threading.

The supply connection entry thread form shall be NPT or metric. Conduit and fittings shall be made wrenchtight 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 is required.**

547.1 – Scope

Amend as follows:

This article ~~applies~~ **shall apply** to the following agricultural buildings or that part of a building or adjacent areas of similar or like nature as specified in 547.1(A) or (B) **below, unless the building is not a Class 1 structure. Agricultural buildings that are not Class 1 structures may be regulated by local ordinance**.

600.1 – Scope

Amend as follows:

600.1 Scope. This article covers the installation of conductors and 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.

620.37(C)(1) – Wiring in Hoistways, Machine Rooms, Control Rooms, Machinery Spaces, and Control Spaces

Amend as follows:

(C) Main Feeders.

Main feeders for supplying power to elevators and dumbwaiters shall be installed outside the hoistway unless as follows:

(1) ~~By special permission~~ **Where approved,** feeders for elevators shall be permitted within an existing hoistway if no conductors are spliced within the hoistway.

(2) Feeders shall be permitted inside the hoistway for elevators with driving machine motors located in the hoistway or on the car or counterweight."

625.40 – Electric Vehicle Branch Circuit

Add an exception as follows:

Exception: Branch circuits shall be permitted to feed multiple EVSEs provided a load management system is used.

625.54 – Ground-Fault Circuit-Interrupter Protection for Personnel

Delete and substitute as follows:

All receptacles installed for the connection of electric vehicle charging shall have ground-fault circuit interrupter protection for personnel. Fixed equipment containing integral GFCI protection shall not require additional branch circuit GFCI protection.

680.26(B)(1) – Conductive Pool Shells

Amend (a) as follows:

(a) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent. Where structural reinforcing steel is encapsulated in a nonconductive compound, a copper conductor grid shall be installed in accordance with 680.26(B)(1)(b). **Reinforcing steel shall not extend into soil beyond the concrete envelope.**

After 680.26(B)(1)(b), insert an exception as follows:

Exception to (b): The equipotential bonding grid shall not be required to be installed under the bottom or vertically along the walls of vinyl lined polymer wall, fiberglass composite, or other pools constructed of nonconductive materials.

680.26(B)(2) – Perimeter Surfaces

Amend as follows:

> 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 **, concrete, asphalt, flagstone, brick, tile, concrete pavers, and other paving materials considered to be conductive.** ~~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.
>
> **Exception to (2): The equipotential bonding grid shall not be required to be installed under pool decks of nonconductive materials.**

Reference 225.30 Errata No. 70-20-3

Number of Supplies. First paragraph, 3rd line. Change 225.30(A) through--(E)-- to

++(F)++.

Second paragraph, last line. Change 225.30(A) through--(E)-- to ++(F)++.

Reference 700.16(B) Errata No. 70-20-1

Amend as follows:

> System Reliability. In last sentence, Change 700.12~~(F)~~**(I)**

Reference 706.30(B) Errata No. 70-20-4

(B) Conductor Ampacity. Last sentence of paragraph. Delete the --(A)-- in front of the (2). To read, in accordance with 706.30(A)(1) or (2) the rating.....

Reference Table C.16 Errata No. 70-20-2

Correct the headings for the columns under “Ventilated Tray Width.”

Appendices A through J

Appendices A through J are adopted and approved for use.