

Welcome Iowa Electricians!

What Does Iowa Require?

18-Hours of Continuing Education Required

- The Iowa electrician must complete no less than 18 Continuing Education Units (CEUs) in each three-year license cycle.
- No less than 6 of those 18 CEUs must focus on the most recent Iowa electrical code.
- JADE Learning's two-hour VILT sessions satisfy ALL of Iowa's requirements for electrical continuing education.
- **9 VILT sessions provides you all 18 hours.**



1

2023 NEC Changes

Important Changes from the 2023 NEC

6:00 PM Eastern Time

← 5 PM in Iowa


5:45 PM – 6:00 PM Eastern	Registration / Check In
6:00 PM – 7:00 PM Eastern	NEC Chapter 6 <i>with poll questions</i>
7:00 PM – 7:10 PM Eastern	Break
7:10 PM – 8:00 PM Eastern	NEC Chapter 6 continued <i>with poll questions</i>
8:00 PM Eastern	Questions for the instructor?

2

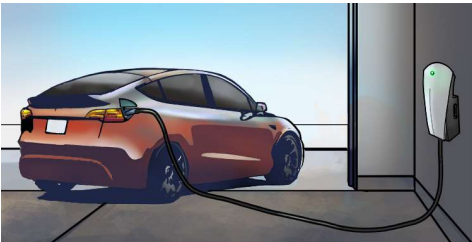


3

625.40 Electric Vehicle Branch Circuit



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- **The 2023 NEC** updates the requirements for 625.40, now calling the equipment ***Electric Vehicle Supply Equipment (EVSE)***.
- **In the 2020 NEC**, only one outlet for charging electric vehicles was permitted on a single branch circuit.
 - **The 2023 NEC allows more than one EV charging outlet to be on a single branch circuit as long as the equipment is rated 120-volts or less and 16-amperes or less.**
- Additionally, there is a new exception that **sends installers to 625.42(A) or (B) when attempting to install more than one charging outlet on a single branch circuit**

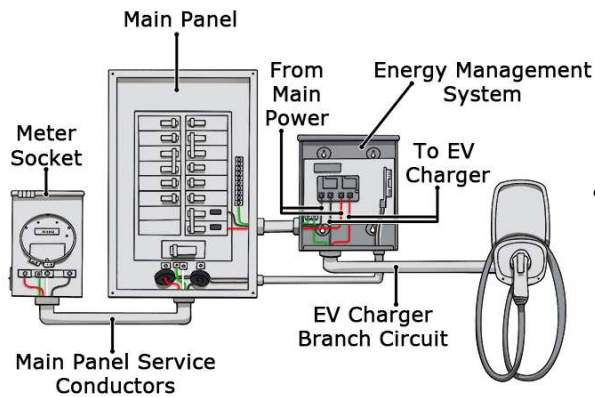
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4

Article 625.42 Rating

Electric Vehicle Supply Equipment (EVSE) controlled by Emergency Management System (EMS)



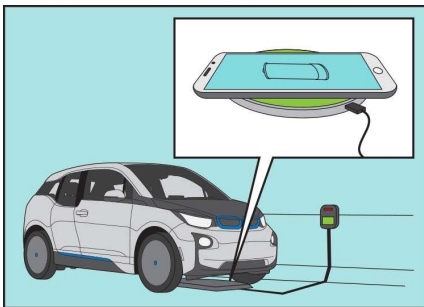
- **The 2023 NEC** revises Section 625.42 to correspond with similar terminology changes. What was previously referred to as power transfer equipment is now called **electric vehicle supply equipment (EVSE)**
- 625.42(A) and (B) are both new sections.
 - **(A) Energy Management System (EMS)**
 - **(B) EVSE with Adjustable Settings**

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5

625.43 Disconnecting Means



- **In the 2023 NEC**, 625.43 is revised for clarity and to discuss remote disconnecting means for the charging equipment.
- Now, the section specifically states:
 - **For Electric Vehicle Supply Equipment (EVSE)**
 - **and Wireless Power Transfer Equipment**
- The following sentence is also added:
 - **If the disconnecting means is installed remote from the equipment, a plaque shall be installed on the equipment denoting the location of the disconnecting means.**

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6

Article 626

Electrified Truck Parking Spaces

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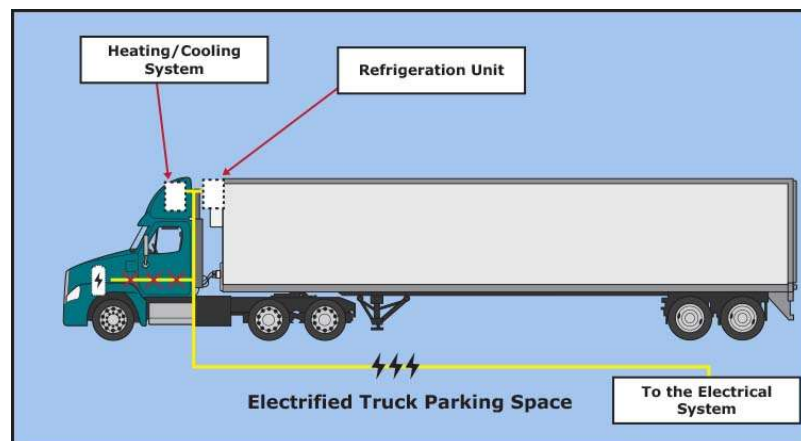
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626.1 Electrified Truck Parking Spaces. Scope

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Section 626.1 has some minor revisions **in the 2023 NEC.**

- It now states: Non-propulsion electrical elements of trucks are what will be connected to a supply of electricity at an electrified truck parking space.



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8



Article 630 Electric Welders

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9

630.8 Ground-Fault Circuit-Interrupter Protection for Personnel

- Section 630.8 is all new **for the 2023 NEC.**
- It now requires ***Class A type GFCI protection for all single-phase, 125-volt 15- and 20-amp receptacles installed in work areas where it is determined that an electric welders are operated.***

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10

Article 646

Modular Data Centers

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11

646.19 Entrance to and Egress from Working Space

- Section 646.19 is another all-new section **for 2023 NEC.**
- It has two sections addressing entrance to and egress from modular data centers.
- 646.19 states that: *Doors shall open to the full extent of their designed egress opening and be equipped with listed panic hardware or listed fire exit hardware.*



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12



13

680.5 GFCI and Special Purpose GFCI (SPGFCI) Protection

Section 680.5 previously only provided minimal information in the 2020 NEC.

The 2023 NEC expands it to cover more information on GFCI protection and adds Special Purpose Ground-Fault Circuit Interrupter (SPGFCI) devices for protecting pool motors that operate at above 150 volts measured to ground.





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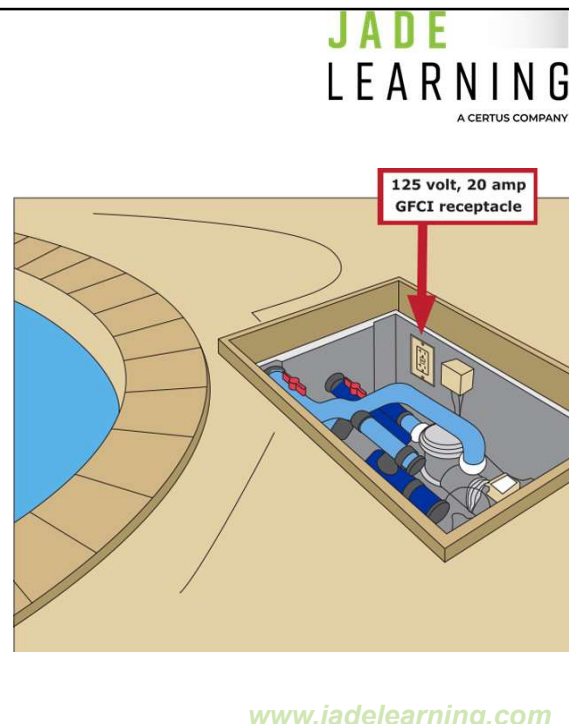
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680.12 Equipment Rooms, Vaults, and Pits

Section 680.12 is expanded **in the 2023 NEC** to include information on Receptacles.

There are now two sections:

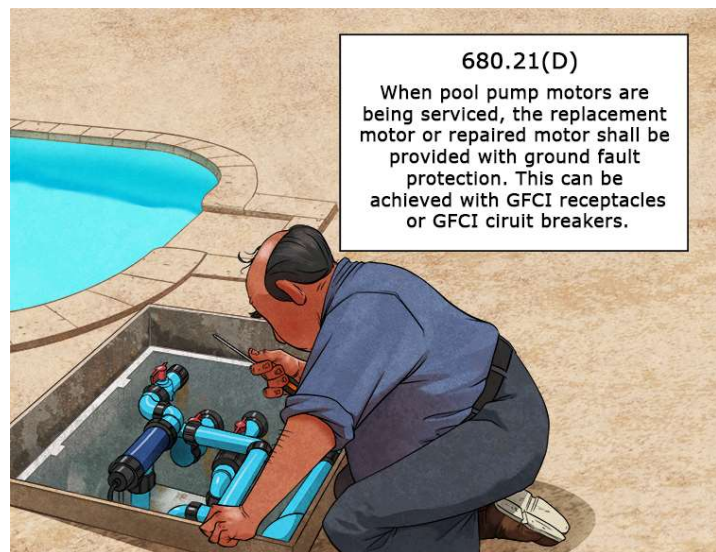
- **(A) Drainage**
 - This section contains the same information as the 2020 NEC, with some small verbiage changes to include vaults
- **(B) Receptacles**
 - This is a new section that addresses GFCI receptacle(s) within an equipment room.



15

680.21(D) Pool Pump Motor Replacement

In 2023 NEC, Section 680.21(D) has been revised so that anytime a pool pump motor is replaced or repaired, either the replacement or repaired pump motor shall be provided with GFCI protection.

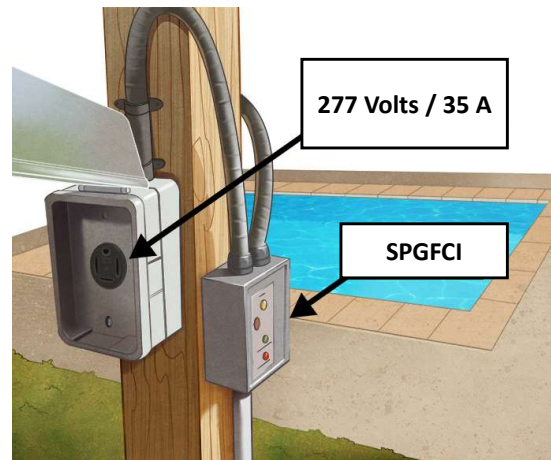


16

680.22(A)(4) Receptacles

Section 680.22(A)(4) has been retitled to include special purpose ground fault circuit interrupters (SPGFCI) in addition to the GFCIs previously covered in the 2020 NEC.

- **In the 2020 NEC:** All 15- and 20-amp, single-phase 125-volt receptacles within 6 feet of the inside wall of a pool required Class A GFCI protection.
- **In the 2023 NEC:** All receptacles rated 125 volts through 250 volts, 60 amps or less, within 6 feet of the inside wall of a pool require either GFCI or SPGFCI protection [See 680.5(B) and 680.5(C), GFCI and SPGFCI for applicable protection rules].



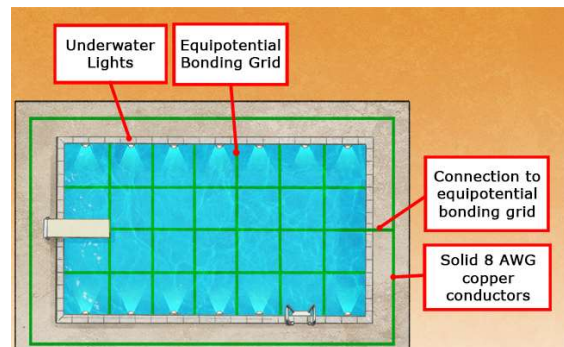
2023 NEC Changes

17

680.26 Equipotential Bonding

All changes in 680.26 were verbiage or structure revisions to make the 2020 NEC material clearer for the new 2023 NEC.

- (A) now specifies **required by (B) and (C)**, instead of the whole section
- (B) adds a statement on **vinyl liners and fiberglass composite shells**
- (5) was revised for clarity and not required items are now listed in an exception
- (6) was revised for clarity to now list out the 3 metal parts. The Exception remains the same.
- (7) was revised for clarity. 2 exceptions were moved into the exception itself. 1 exception remains unchanged
- (C) Verbiage revision to mention (B)(1)-(7)



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18

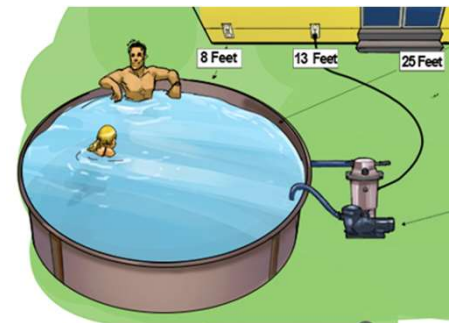
680.32 Ground-Fault Circuit-Interrupter (GFCI) and Special Purpose Ground-Fault Circuit-Interrupter (SPGFCI) Protection

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Similar to other changes in 2023 NEC, Section 680.32 follows suit by including **Special Purpose Ground-Fault Circuit-Interrupters (SPGFCI)**

New in 2023 NEC: 680.32 now states that electrical equipment used with storable pools must comply with GFCI protection rules of 680.5(B) or SPGFCI protection rules of 680.5(C)

New in 2023 NEC: Ground Fault protection was required for just **125-Volt, 15- and 20-ampere receptacles...but is now required for receptacles rated 125-250 volts, up to 60 amps** within 20 ft of the inside walls of the storable pools, spas, or hot tubs.



2023 NEC Changes

19

680.43 Indoor Installations

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- To follow suit with the SPGFCI changes, section 680.43 also has two small revisions in the 2023 NEC.
 - (A)(2) adds SPGFCI to the title and to the content of the subsection
 - (A)(3) adds less than 150 volts to the subsection to specify that a GFCI is required and SPGFCI is not allowed.



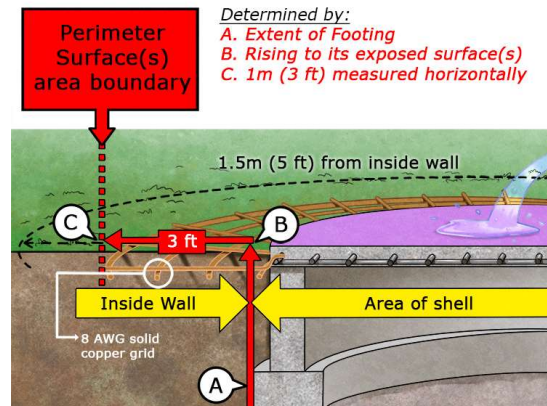
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20

680.54(B), (C) Bonding, Equipotential Bonding of Splash Pads

- In Section 680.54(B), the 2023 NEC now requires **a minimum of 8 AWG solid copper conductors for the bonding conductor.**
- Section 680.54(C) is a new section for the 2023 NEC and it provides **clarification on the specific area of splash pads that are subject to the equipotential bonding rules.**



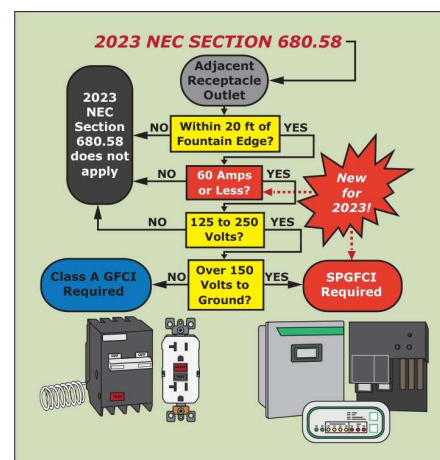
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21

680.58 GFCI, SPGFCI Protection for Adjacent Receptacle Outlets

- Section 680.58, similar to many other sections in Article 600, adds SPGFCI Protection to its requirements.
- It also adds the requirement of 60amps or less for GFCI or SPGFCI protection to be required.



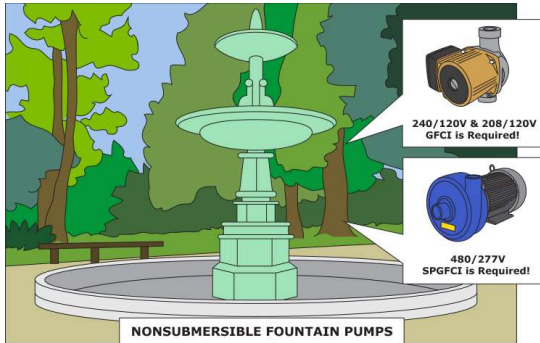
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22

680.59 GFCI and SPGFCI Protection for Permanently Installed Nonsubmersible Pumps

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- There are several changes to the Section 680.59 in the 2023 NEC:
 - SPGFCIs are now included, adding the statement that they must comply with 680.5(C)
 - GFCI protection must comply with 680.5(B)
 - This section no longer applies to nonsubmersible pump motors rated 250 volts or less and 60 amperes or less.
 - An exception is added to allow certain low-voltage motors to forego GFCI and SPGFCI protection entirely.

2023 NEC Changes

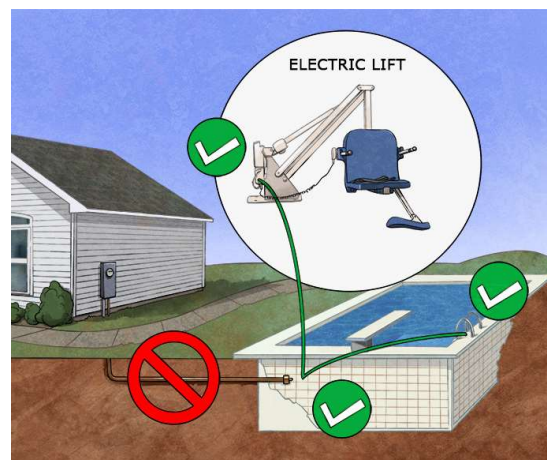
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23

680.83 Equipotential Bonding

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- Section 680.83 in the 2020 NEC points installers to 680.26(B)(5) and 680.26(B)(7) for bonding requirements
- In the 2023 NEC, these are kept, but additional information on the bonding conductors were added:
 - 8 AWG
 - Solid copper
 - Insulated, covered, or bare
 - Bonding connections must be made with one of the 8 different approved connection types outlined in 250.8 of the 2023 NEC
 - Bonding conductor to reduce gradients in the pool lift area is not required to extend to attach to remote panelboards, service equipment, or electrodes.



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24

Article 690

Solar Photovoltaic (PV) Systems

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25

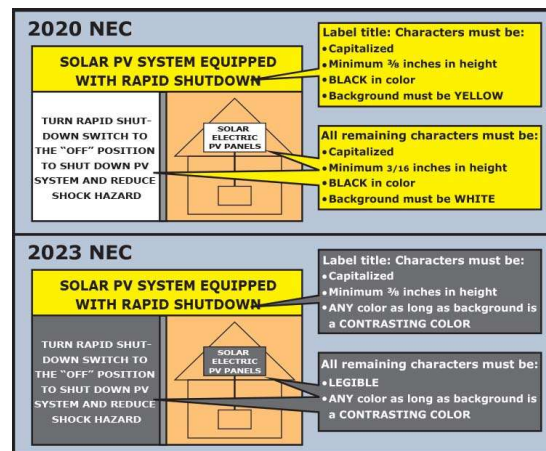
25

690.12(D) Buildings with Rapid Shutdown

- In the 2023 NEC, Section 690.12(D) is retitled Buildings with Rapid Shutdown from equipment.
- In addition, there is now more clarity provided with the requirements for Solar PV Systems with Rapid Shutdown and 2 subsections:
 - **(1) Buildings with More than One Rapid Shutdown Type**
 - **(2) Rapid Shutdown Switch**

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26




27

695.1 Fire Pumps. Scope.

- Section 695.1 in the 2023 NEC covers the same material as it did in the 2020 NEC.
- The changes in this section are to what is not covered:
 - ***Water Pumps installed in One- and Two-Family Dwellings and Used for Fire Suppression***
 - This includes an informational note to see NFPA 13D-2019





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28

THANK YOU FOR ATTENDING!

Questions?

For additional instructor support, please contact
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For questions about your continuing education, please
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29