



THE WIRE

Published by
The Electrical Clearing House of Louisville
Established: 1912

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www.echlky.com

APRIL 2022

PRESIDENTS LETTER

Our March 2022 general membership meeting had the best attendance since we started back up in August with 68 members present. The presentation on Article 625 Electric Vehicle Power Transfer System resulted in a lot of discussion and questions. The 50/50 drawing was for \$68 and was won by Mike Bevin.

Our April 11th presentation will be given by Metro Electrical Inspectors Arnold Hornback and Norb Thorpe. Their last presentation was very informative and generated a lot of excellent questions.

As mentioned last month, we have been told that the Department of Housing, Building, and Construction is giving license holders until May 16, 2022 to obtain their continuing education requirement(s) that may have been delayed under the State of Emergency. In addition, the Department has gone to a new data base system which will no longer allow users to search for their licenses or their continuing education hours. We have also been told by some members that their hours were not transferred from the old data base into the new one. So, for more information or any problem please call the Department at (502) 573-2002.

Hope you will be able to attend the April 11th meeting. It starts at 7:00 pm with sign-ins beginning at 6:30 pm. The location is at the Elks Lodge 2824 Klondike Lane.

As Always Stay Safe and Work Safe
Steve Willinghurst
ECHL President

April 11, 2022 Code Program

Sign-in 6:30 P.M. - Program at 7:00 P.M.

ELKS LODGE # 8 - 2824 KLONDIKE LN -

Our April program will address code violations in the Louisville Metro Service Territory.

This program will be presented by Our Electrical Inspectors, Norbert Thorpe and Arnold Hornback.

We encourage you to participate by asking questions.

See you Monday Evening at 6:30 pm.

Bring a Friend!!

Dennis will go over the Code Questions in the April 2022 Wire.

Stay Informed, Work Smart & Stay Alert!

Supporting our Industry

**** Electrical Equipment Needed ****

ECHL is committed to supporting the electrical industry and the training required to further the trade. In doing so, we ask for your old equipment / inventory to use for training.

ECHL contractors and or suppliers - if you are cleaning out your old Inventory and have material (electrical equipment) that is taking up space in your warehouse, the Iroquois High School Electrical Program is seeking material that can be used for teaching students about electrical products they may encounter in the field. Educating our future apprentices is the goal.

IEC is the hub for most of the surrounding area's for the electrical trade training schools. She has contacts for Jefferson County, Bullitt County, to Hardin County.

If you would call, Erin Pretorius or Stephanie at 502-493-1590 or email Erin at erin@iec-kyin.com to make arrangements for pick up or delivery.

Old or new!

Thanks for your support!

APRIL Code Questions

- 1) A run of Flexible Metal Conduit is required to be fastened in place by an approved means within _____ of a conduit termination?

A. 18" C. 12"
B. 24" D. 6"

Section _____

2. You have 6 number 12 THHN in a conduit installed in an ambient temperature of 13c with a 75c rated conductor, what is the allowable ampacity of the conductor?

A. 21a C. 20a
B. 25a D. 23a

Section _____

3. If you have a Cable Tray mark NEMA 20C and you would need to support this tray every _____ to carry 100lbs a foot?

A. 12' C. 20'
B. 25' D. 10'

Section _____

4. Can a branch circuit serving a patient's bed receptacle in a general care area of a hospital be supplied by a multi-wire branch circuit?

YES NO

Section _____

5. When calculating a single motor for a Crane or Hoist what percentage of the nameplate should you use?

A. 100 C. 175
B. 125 D. 150

Section _____

6. Does Article 408 that covers Switchboard and Panelboards apply to 1,000 volts rated and above?

YES NO

Section _____

Code Corner

Article 240 Overcurrent Protection

Article 240 Part 1 through 7 covers the general requirements for overcurrent protection and overcurrent protective devices not more than 1,000 volts, nominal. Part 8 covers overcurrent protection for those portions of supervised industrial installations operating at voltages of not more than 1,000 volts, Nominal and part 9 overcurrent protection over 1,000 volts, nominal. There is an Information Note that refers you to Section 110.9 which is important when selecting the overcurrent protective device.

Section 110.9 States: *Equipment intended to interrupt current at fault levels shall have an interrupting rating at nominal circuit voltage at least equal to the current that is available at the line terminals of the equipment.*

When was the last time you may have replaced a circuit breaker in a commercial or industrial application? What information did you look for on the breaker to get a replacement breaker, the manufacture, the amperage, the voltage and possibly the frame type? Did you check the IAC rating of the breaker? Probably not, I ask a counter person at a distributor and he said in his 20 years on the counter he was only ask one time for a higher IAC rating on the replacement breaker.

So why is this important? First it would be in violation of Section 110.9 if the available fault level is higher than the replacement breaker. The breaker you took out could have had a 65K rating and you replaced it with a 10K breaker, that panel would now be a 10K rated panel. Breakers unlike fuses do not have a rejection feature allow you to install a lesser rated breaker. The next thing to consider is liability, if there may be an Arc Flash incident in that panel and it was a 65K rated panel and under the investigation it was discovered there was a 10K breaker installed by you or your company who would be held responsible?

This is something you need to consider the next time you are replacing a breaker in a commercial or industrial application.

Submitted by Dennis Steier

Top Three Code Violations Louisville Metro Inspections

APRIL 2022

These violations are costing you time and money.

1. 250.92 SERVICES

Bonding jumpers meeting the requirements of this article shall be used around impaired connections, such as reducing washers or oversized, concentric, or eccentric knockouts. Standard locknuts or bushings shall not be the only means for the bonding required by this section but shall be permitted to be installed to make mechanical connection of the raceway(s).

NEC Article # 250.92(B)
Method of Bonding at the Service

2. 250.64 GROUNDING ELECTRODE

A 6 AWG or larger copper or aluminum grounding electrode conductor exposed to physical damage shall be protected in rigid metal conduit (RMC), intermediate metal conduit (IMC), rigid polyvinyl chloride conduit (PVC), reinforced thermosetting resin conduit TYPE XW (RTRC-XW), electrical metallic tubing (EMT), or cable armor.

NEC Article # 250.64(B)(2)
Exposed to Physical Damage

3. 200.4 NEUTRAL CONDUCTORS

Where more than one neutral conductor associated with different circuits is in an enclosure, grounded circuit conductors of each circuit shall be identified or grouped to correspond with the ungrounded circuit conductor(s) by wire makers, cable ties, or similar means in at least one location within the enclosure.

NEC Article # 200.4(B)
Multiple Circuits

Please review the NEC articles above. Each of these articles are associated with a violation. Please keep in

Top Three Code Violations Cont's

mind to follow through with the current approved CODE..

Being Turned down on a project, you lose money and time required to return to the job site for repairs to correct the violation.

We hope this will help save you time and money on inspection fees by reviewing the articles and making sure you have not violated the code before calling for the initial inspection.

*Submitted by Arnold Hornback
Assistant Chief Electrical Inspector
Louisville Metro Dept. of Codes and Regulations*

LG&E NEWS

Timetable for a Job to be completed

Just a reminder that the typical timeline it takes to give service to a customer is 4 to 6 weeks. Therefore, it is important for the electrician to complete the "load sheet" and return it to the locator to initiate moving the project toward construction.

The lead time may involve getting easements, collecting any payments necessary and any easements necessary.

If a State or Metro road permit is necessary, it could take up to 30 days to receive.

Therefore, it is imperative to get things started early and on time for your project to be completed on time.

*Submitted by Henry Ford
Team Leader Electric Design*

March 2022 Code Answers!

- 1) Class1 Division 1 Table 511.3
- 2) No, 460.24 A 1
- 3) No, 455.6 A 2
- 4) Yes 4.30.83 A 3
- 5) None of Above - 6, 366.30 A
- 6) No, 344.14.

Why You Shouldn't DIY Electrical Work

There are few aspects of home improvement that can be as fraught with danger as that of "Do-It-Yourself" electrical repairs. And while it may be a tempting prospect to forgo calling an electrician with the idea of saving a few bucks, then end results can be catastrophic. Here are some reasons why you shouldn't DIY with electrical work.

Electrical Shock

It is no secret that one of the foremost concerns when working around electricity is the danger of being shocked. Electrical shock can be deadly at nearly any voltage level, and this is especially true when working with higher voltages. In most residential homes the average voltage for lighting and power outlets is around 10 volts. That's certainly enough to give you a nice jolt, but the voltage levels for certain appliances, such as ovens and dryers, can reach 240 volts – a deadly amount of current. It is for this reason that residential electricians go through years of training to learn how to safely work around electricity. Sure, you can always turn off the power at the breaker box, but all too often DIYers either neglect this step or switch off the incorrect breaker and this leads to a dangerous situation.

Fire Hazards

As with electrical shock, the danger of causing a fire due to faulty wiring is a real concern for DIYers. With so many different electrical components to work with, it can be confusing trying to solve wiring issues. All it takes is the placement of a single wire in the wrong spot and the chances of an electrical fire significantly increase. And unlike electrical shock, where the results will be immediate, electrical fire hazards can remain dormant for months. This can lead electrical DIYers into a false sense of security after completing a project, and then weeks later the wiring shorts out causing a fire. This is why you should always hire an experienced electrician when there are problems with the electrical system.

Inspection Issues

All electrical components in a home are required to pass inspection before they can be used, and this is an aspect of do-it-yourself electrical repair that is often overlooked. Not only does the failure to have an electrical repair inspected present a danger, but it can also lead to heavy fines. Some homeowners incorrectly assume that they can hide repairs behind walls and in the attic only to run into problems when they go to sell the home because it fails to meet the criteria to pass inspection. By hiring a professional electrician, you can rest assured that every electrical repair will pass inspection.

DIY Electrical - Cont'd

GFI Implementation

There are certain electrical components that are used specifically to keep homeowners safe and one of those is the ground fault interrupter or GFI. A GFI is a certain type of component, usually a switch or outlet, that has a built-in fault sensor which prevents users from getting shocked in the event of a faulty connection. Typically, ground fault interrupters are used in areas where the presence of moisture is an issue, such as in bathrooms and for outlets that are located outdoors. Unfortunately, most electrical DIYers are unfamiliar with the concept of the GFI and therefore they often neglect its use and instead install a standard outlet which presents an immediate danger to users. A certified electrician will be able to go through the home to determine all of the areas that will require the installation of a GFI outlet or switch.

Hidden Electrical Dangers

With all of the electrical components in a home, there are bound to be some hidden electrical connections, such as those leading to junction boxes, and these can present electrical shock hazards. One area of the home where there is an increased risk of being shocked by one of these hidden hazards is in the attic. However, as the idea of these hidden junction boxes is to keep the component out of sight, this also means that it will be more difficult to locate, which raises the chance of inadvertent electrical shock.

In Summary

As has been shown, there are a plethora of dangers that homeowners need to take into consideration when attempting DIY electrical repairs. A primary concern needs to be the increased potential for an electrical shock to occur when messing around with electrical components such as outlets and switches. In addition to electrical shock, there is a higher probability for a fire to occur when repairs are not completed correctly, especially if the result is faulty wiring. Furthermore, homeowners need to be aware of the various aspects of the electrical code, as this is necessary for the repairs to pass inspection. A failure to recognize this facet could lead to fines. It may also mean a decrease in the value of the home if these issues come up during an inspection. It is for these reasons that homeowners should always hire a trained electrician when in need of electrical repairs.

Source: by [Homeowners Hub](#) | Jun 22, 2017

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