

# ELECTRICAL CURRENTS

A Newsletter from the Office of L&I Chief Electrical Inspector Wayne Molesworth

March 2023

## Question of the Month:

What is the minimum size of a single supply side bonding jumper used for bonding a CT metering enclosure to the grounded conductor when the service consists of two separate service disconnects supplied each by a set of 3/0 copper service entrance conductors originating from the CT enclosure?

See correct answer on page 2.

## Pre-manufactured Floor Heating Mats

The placement of pre-manufactured heat mats is Class A basic electrical work (i.e. work that does not require a permit). Electrical connections associated with the installation of the heat mat require a permit and inspection.

The setting of these “pre-manufactured” listed mats does not require an electrical permit or inspection, and the mat can be covered with grout by the tile setter. Laying these mats on the floor and covering them with grout is not an electrical installation.

However, the installation of any wiring, including sensor installation, routing the lead-in conductors to the thermostat or controller location, and any alteration of the heating mat is an electrical installation and must be performed by appropriately certified electricians employed by licensed electrical contractors.

To be eligible for placement by the tiles setter, the pre-manufactured mat must not be cut in any way and must be installed in its original factory condition.

Learn more: WAC [296-46B-901\(7\)\(b\)\(iv\)](#).

## Now Hiring – Become an Electrical Inspector!

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Being an electrical inspector is a great job for people who like people. If this describes you, and you are a Washington 01 master electrician or Washington 01 journey level electrician who has held that certificate for at least 4 years, this could be a great fit for you.

For questions, please contact: [Jobs@Lni.wa.gov](mailto:Jobs@Lni.wa.gov).

## Safety Tip of the Month

The work of an electrician is very challenging and rewarding. Knowledge of safe work practices and electrical laws, codes, and rules are essential to maintaining worker safety and ensuring installations meet the minimum requirements for safety to life and property.

Those learning the trade do not have the experience and knowledge required to make safe installation choices and must be supervised throughout their training period.

[RCW 19.28.161\(3\)](#) and [WAC 296-](#)

[46B-100](#) describe proper supervision. Proper supervision consists of the trainee being on the same job site and under the control of an appropriately certified supervising electrician.

Lack of proper supervision not only creates potentially hazardous conditions, it is illegal and could result in civil penalties being assessed to the contractor, administrator, and trainee.

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## L&I adopts the good cause rule

The [Washington State Department of Labor & Industries](#) (L&I) has adopted changes that provide more opportunities to qualify for the journey level electrician examination. These changes take effect July 1.

L&I filed a CR-103 Rulemaking Order to adopt the changes on Feb. 14. You can review the amended rule [here](#) or by clicking on the program's "[Laws, Rules, and Policies](#)" page.

The changes affect [Washington Administrative Code 296-46B-945](#).

The adopted rule allows journey-level candidates to take the journey level examination based on a "good cause" exemption available under law. The exemption will be in effect through July 1, 2025. The adopted rule, in part, will:

- Recognize other existing paths toward 01 exam qualification in addition to apprenticeship completion. These include: military service recognition; state-licensed electricians from other jurisdictions; electricians with proof of 16,000 hours of experience; and recognition of individuals with 4,000 hours of industrial/commercial work accrued prior to July 1, 2023.
- Address the period between completion of an apprenticeship program and passage of the exam.

The adopted rule also includes updates, clarification, and housekeeping changes to the examination qualification requirements.

For more information about qualifying for the 01 exam and the changing requirements, please view this [publication](#).

See [www.Lni.wa.gov/ElectricalApprenticeship](http://www.Lni.wa.gov/ElectricalApprenticeship) to find more information.

Questions? Contact [SSB6126Implementation@Lni.wa.gov](mailto:SSB6126Implementation@Lni.wa.gov).

## Affidavit Deadline for Trainees who are not Registered Apprentices

**TRAINEES:** From the expiration date your training certificate; you have 180 days to turn in affidavits for the previous 2 years. Affidavits received by L&I after the deadline are not approvable. For receipt of delivery, use certified mail. Affidavits are date stamped upon receipt at L&I. Find the mailing address and other instructions on the form: [Affidavit of Experience for Washington Electrical Trainees](#) (F500-149-000).

**EMPLOYERS:** You must supply a completed affidavit to any trainee within 20 days of request. Any employer who refuses to supply an affidavit are subject to civil penalties. Learn about [reporting hours of experience](#) and check out [WAC 296-46B-942\(8\)\(d\)](#) for more information.

## Answer to the Question of the Month:

The size of the bonding jumper is based on the sum areas of corresponding ungrounded conductors.

NEC Chapter 9, Table 8 lists the area of 3/0 copper as 167,800 circular mils. Two 3/0 conductors would be equal to 335,600 circular mils. Using NEC Table 250.102(C)(1), 335,600 circular mils of service entrance conductor requires a #2 AWG copper or 1/0 aluminum equipment bonding jumper.

**Picture of the Month:** Do you see the problem? A sharp eyed inspector found this installation where the breaker handle is marked "100" and "200 A" on the label. Wrong handle or wrong label?



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