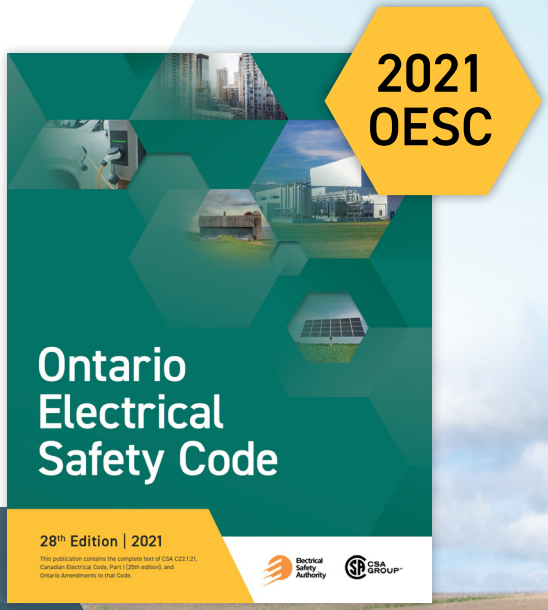
News, Views and Updates from the Electrical Safety Authority

PLUGGED IN

WINTER 2022



New Requirements for Energy Storage Systems

Electrical Safety Authority

1-877-ESA-SAFE

ESASAFE.COM

Convictions

Nov. 1, 2021 – Jan. 31, 2022

UNLICENSED

Saman Chhom o/a Signal One Inc.

Installed a fire alarm at apartment building.

- $3,000.00 fine, plus $750.00 victim surcharge – No EC license

Wilco Kanters

Renovations at residence – 1 site – repeat offender

- $4,000.00 fine, plus $1,000.00 victim surcharge – No EC license
- $4,000.00 fine, plus $1,000.00 victim surcharge – Failure to Apply for Permit
- $4,000.00 fine, plus $1,000.00 victim surcharge – Leave Hazards

2484124 ON Inc./Dutch Design & Trim

Renovations at residence – 1 site – repeat offender

- $3,000.00 fine, plus $750.00 victim surcharge – No EC license
- $3,000.00 fine, plus $750.00 victim surcharge – Failure to Apply for Permit
- $4,000.00 fine, plus $1,000.00 victim surcharge – Leave Hazards

John D'Alelio

Renovations at residence, 1 site

- $3,000.00 fine, plus $750.00 victim surcharge – No EC license
- $1,500.00 fine, plus $375.00 victim surcharge – Failure to Apply for Permit

Joanna Yu, President of J&Y Construction

Renovations at residence, 1 site

- $3,000.00 fine, plus $750.00 victim surcharge – No EC license
- $3,000.00, plus $750.00 victim surcharge – Notification of Work

J&Y Construction (ON Corp. 2407554)

Renovations at residence, 1 site

- $3,000.00 fine, plus $750.00 victim surcharge – No EC license
- $3,000.00, plus $750.00 victim surcharge – Notification of Work

Dong Jiang

Advertised electrical services on Kijiji while not licensed

- $500.00 fine, $110.00 victim surcharge – advertising

Convictions (Continued)

Nov. 1, 2021 – Jan. 31, 2022

UNLICENSED

Fateh Ali Tipu

Advertised electrical services on Kijiji while not licensed

- $500.00 fine, $110.00 victim surcharge – advertising

Derron Grey

Advertised electrical services on Kijiji while not licensed

- $500.00 fine, $110.00 victim surcharge – advertising

Jatinder Singh Pandher

Advertised electrical services on Kijiji while not licensed

- $500.00 fine, $110.00 victim surcharge – advertising

Justin Coke

Advertised electrical services on Kijiji while not licensed

- $500.00 fine, $110.00 victim surcharge – advertising

Vitali Fivchuk

Advertised electrical services on Kijiji while not licensed

- $500.00 fine, $110.00 victim surcharge – advertising

If you are aware of anyone doing electrical work in violation of the Ontario Electrical Safety Code or electrical contractor licensing regulations, report it to ESA at **1-877-372-7233** or at esasafe.com and you can do so confidentially. ESA looks into every such report we receive.

A listing of all Convictions is available on esasafe.com here.

Energy storage system (ESS) in Residential occupancies

As we continue to move toward net zero, the need for ESSs will continue to rise in both residential and non-residential applications. Unfortunately, some confusion has arisen around 2021 Canadian Electrical Code (CE Code) requirements for residential applications. The main topic of this article is exploring the rules for ESSs in a dwelling unit.

The Code introduced two definitions for Residential and Non-Residential Use ESS. Residential Use ESS is defined as ESS marked as being suitable for residential use and conforming to the requirements of ANSI/CAN/UL 9540. Further an Appendix B Note to Rule 64-918 (1) clarifies that UL 9540 requires ESS intended for dwelling units to be marked "Suitable for Use in Residential Dwelling Units Where Permitted". Non-Residential Use ESS is defined as ESS not marked as being suitable for residential use.

These definitions introduce a restriction that seems to be based on UL 9540, but such a restriction is not actually intended by the standard. Moreover, as of today, there are no energy storage systems marked "Suitable for use in residential dwelling units where permitted" available on the market.

In fact, the purpose of UL 9540 marking of ESS with "Suitable for Use in Residential ..." is to permit units which pass additional rigorous testing (CAN/UL standard UL9540 A) to be installed in the living or habitable areas of a dwelling unit (where permitted by AHJ).

Rule 64-918 (1) further prohibits ESSs with storage capacity greater than 1 kWh or utilizing lithium-ion batteries from being installed in dwelling units. Period.

However, UL 9540 allows certified ESSs that are not marked for "Residential use" but meet the regular tests in the standard to be installed in non-living or non-habitable spaces of a dwelling unit (e.g.utility closets, attached garages or storage spaces). This is evident in Table E.1 "Residential use ESS" of the UL standard where it is further clarified by showing the capacity and separation requirements of ESSs permitted in dwelling units.

This restriction in the CE Code is also in contradiction of NFPA 855 "Installation of Stationary Energy Storage Systems". Clause 15.6.1 permits ESS to be installed in attached and detached garages; in enclosed utility closets and storage spaces.

Energy storage system (ESS) in Residential occupancies (Continued)

NFPA 855 further clarifies that if the room or space where the ESS is to be installed is not finished, the walls and ceiling shall be protected with not less than 5/8 " type X gypsum board. (Note: NFPA 855 requires ESS to conform to UL 9540).

Sub-rule 64-918 (2) which prohibits installing ESS utilizing batteries below grade, is also raising questions because it is not clear if it applies to dwelling units. If there is any consideration by an AHJ to permit ESS in dwelling units, should they be permitted in basements? In a typical house, a utility room in a basement, or an unfinished basement is a not habitable area. Therefore, a basement could be a good location for ESS. However, other factors should be taken into consideration, (e.g. flood hazard area) Sub-rule 64-918 (6) permits " Residential Use" ESS to be installed in garages of dwelling units.

A question if the rule actually intended to permit ESS - approved to UL 9540 – to be installed in the garage of a dwelling unit. That approach would align with NFPA 855.

ESA is planning to publish a bulletin to clarify the requirements and consider site specific deviation requests to permit ESS in non-living areas of a dwelling unit where alternative measures are in place to ensure safety. It is important to review and consult ESA's bulletins during the design phase for projects involving ESS installations in residential occupancies.

ESA's bulletin is intended to align with a proposal that the (CE Code) Section 64 Technical Subcommittee is working. The proposal will update ESS rules specific for residential applications. Stay involved and check the CSA website for public reviews https://publicreview.csa.ca/.

Message from the Director of Licensing

by Soussanna Karas,
Director of Licensing

As another year has gone by, I would like to use this opportunity to highlight a few key updates and accomplishments from 2021. Over the past year, the Licensing team, supported by our colleagues across ESA, worked hard to deliver services to licence holders, monitor compliance, take steps to curtail the underground economy and engage with our stakeholder community.

Moving Forward with Digitalization

Leveraging technology, reducing burden and adding value to licence holders has been a focus of the Licensing Plan and certainly top of mind for the Licensing team. We have developed and launched the first virtual Master Electrician (ME) exam platform. This allows ME candidates to take the exam in the safety and convenience of their own home or office.

We have also launched the ME licence renewal and payment platform, which allows MEs to renew and pay for their licences online, bypassing the delays that come from submitting paper applications and cheques.

Started in 2021 and continuing this year, we have been working on a comprehensive licence holder portal. Once launched, this will allow MEs and LECs to file forms, print off their licences, pay for renewal and submit documents, all online.

To that end, I am asking for your support in spreading the word and, if you haven't already, adopting these digital solutions to make your interactions with ESA faster, easier and more streamlined. In this regard, we will be slowly phasing out the use of faxes and the acceptance of cheques as a mode of payment. If you have not already done so please ensure you have a valid email address on file with the Licensing group for both your ME and EC licence, and elect to get your licence-related correspondence via email.

Implementing Auditor General Recommendations

The Licensing team has been very busy addressing Auditor General (AG) Recommendations articulated in the AG Report issued in December 2020. Below are some examples:

1 ME Exam

In 2021, we made great strides in strengthening the ME Exam. In partnership with ECRA Advisory Council (ECRA AC) and the Master Examining Committee of ECRA AC, 200 new questions have been added to the ME exam, making the ME exam robust and reliable.

Check out the statistics on the ME exam in this issue.

2 Mandatory Continuing Education

We have put together and carried out stakeholder consultation on a mandatory continuing education framework for MEs. Feedback from our key industry stakeholders, via the Contractor Advisory Council, ECRA AC and the Consumer Advisory Council, has been incorporated into a proposed framework that is generally supported.

This framework has been shared with the Ministry of Consumer and Government Services (MGCS). If MGCS decides to implement mandatory continuing education, another public consultation will be held on the regulatory proposal. ESA believes that lifelong learning is a key factor in safety and we looking forward to working with MGCS, ECRA AC and other stakeholders supporting this important initiative.

3 Disclosure of Information about LECs

We are also working on improving the transparency of the licensing system and enhancing consumer protection by disclosing pertinent information about LECs. We believe that transparency will strengthen the trust consumers have in the industry and will distinguish LECs with clean compliance history.

We continue to rely on the feedback and expert advice from ECRA AC and other Advisory Councils in delivering AG recommendations to enhance electrical safety.

Enforcement/RCP Update

The Licensing team, in partnership with internal and external stakeholders, has completed a number of initiatives aimed at curtailing the Underground Economy over the past year. Look for the enforcement update on the Worker Safety Insurance Board (WSIB) and Electric Vehicle (EV) Chargers compliance pilots included in this issue.

WSIB Pilot – Round Two

Last year we provided an update on the WSIB pilot, where ESA contacted businesses that were registered with WSIB with the designation "Electrical contractor and other wiring installation contractor", but did not hold an Electrical Contractor Licence with ESA. The goal of the pilot was to identify and educate businesses about the licensing requirements for electrical contractors.

Recently, the Licensing Department expanded the pilot and followed up on those that either did not respond to last year's pilot, admitted to being a subcontractor or had submitted an LEC application. Through letters and phone calls, 132 (69%) contractors have now come into compliance by either becoming a LEC, going on the payroll of a LEC, or removing themselves from the "Electrical contractor and other wiring installation contractor" category due to being placed in the incorrect category. Nine businesses were escalated to investigation to determine if they were performing electrical work without an Electrical Contractor Licence with ESA. The remainder of the businesses have been documented and are being monitored.

In addition, those newly registered with WSIB in the "Electrical contractor and other wiring installation contractor" category were cross-referenced with the listing of all LECs. Only one business was not licensed and has been contacted to ensure compliance with licensing requirements.

2021 Annual Licence Holder Meeting Summary

In collaboration and partnership with the ECRA AC, ESA held another successful virtual Annual Licence Holder meeting on Nov.18, 2021. In total, 451 representatives from the electrical industry (LECs and MEs), MGCS, ESA staff and other stakeholders attended the 'virtual' meeting.

The meeting opened with greetings from Minister Ross Romano, MGSC. Attendees then received a report from ECRA AC Council Chair. The agenda included an update from the Licensing Director, Licensing Report, ESA Communications campaign update, and enforcement activities to address the Underground Economy.

The highlight of the meeting was a key-note speaker, who is a Licensed Electrical Contractor and a Master Electrician. The speaker shared his experience with life-changing serious injuries he sustained due to an electrical explosion in 2018. He spoke passionately about the importance of electrical safety, the role of MEs in enhancing workplace safety and zero tolerance for working live.

Attendees had the opportunity to ask questions during the meeting to representatives from Licensing, Operations, and Regulatory as well as Technical Advisors. To view the meeting which includes the **Technical Advisor Q & A**, visit https://esasafe.com/meetings-events/licence-holder-meetings/

By the Numbers

451 attendees

9 speakers

21 ESA LHM project team members

8 questions answered live from those submitted from LECs in advance

65 live questions answered by **4** Technical Advisors

Thank you to everyone who contributed and made it another successful event!

Electric Vehicle Charger Pilot Update

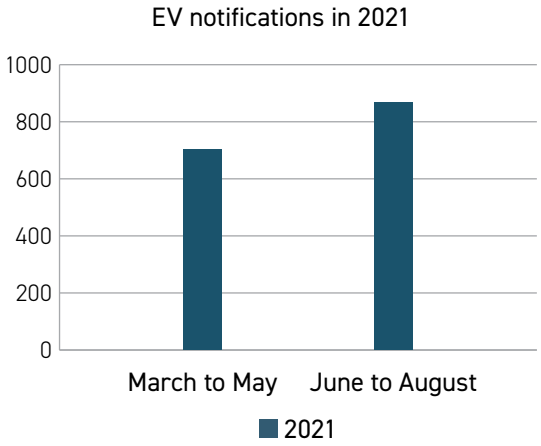
As Electric Vehicles (EVs) grow in popularity, and more people choose to install charging stations at their homes, ESA has seen a recent trend of EV charging systems being installed without filing a notification. When those installations are inspected, numerous defects have been identified that put consumers at risk.

ESA, utilizing its Regulatory Compliance Program resources, rolled out a public awareness campaign this past summer that focused on EVs. The campaign objectives were to remind LECs to file notifications, and inform consumers of the requirements to have the charging system installed by a LEC, have it inspected and request a copy of the Certificate of Acceptance. This was a recent topic of the Grounded in Ontario podcast.

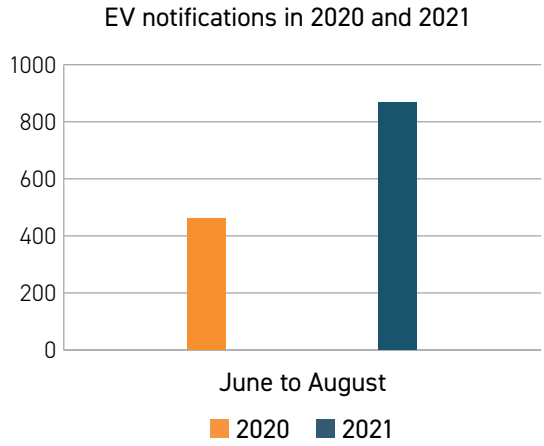
The pilot focused on the City of Toronto as we noticed a large number of installations without a notification in the area. As you can see from the data below, the EV pilot was effective: the number of EV related notifications increased by 23% compared to the previous three months of 2021 and by 87% compared to the same three months of 2020. ESA's Regulatory Compliance Program's goal is to identify and follow up on trends related to unlicensed and non-compliant electrical installations and create pilots to address those trends to pursue those operating in the Underground Economy.

Electric Vehicle Charger Pilot Update (Continued)

EV CHARGER PILOT RESULTS



ESA notifications related to EV chargers in 2021 **increased** when comparing to the previous three-month period (702 to 866, +23%)



ESA notifications related to EV chargers in 2021 **increased** when comparing to the same time period in 2020 (462 to 866, +87%)

Master Electrician Exam Update

ESA offers two options to take the Master Electrician exam – In-person or virtually.

Between April 1 and December 31, 2021, 897 individuals attempted the Master Electrician exam:

- 51 virtual sessions – 398 individuals
- 31 in-person written exam sessions – 241 individuals
- 20 in-person computer sessions – 258 individuals

Due to Covid-19, many in person exams had to be cancelled; however, the virtual exam option allowed individuals to safely challenge the exam from their home or office. To learn more about the taking the exam virtually, visit www.esasafe.com/contractors/me-exam/virtually-proctored-exam/

Operations Update

INSPECTION SCHEDULING

As part of Risk-based Oversight (RBO), each wiring notification submitted to ESA is reviewed and ranked by our risk assessment system as well as an Inspector prior to making a decision to visit. The risk ranking is assigned to every notification when it is processed. When scheduled, notifications are sorted into like groupings for each Contractor based on risk and the risk ranking determines the visit ratio for that group of notifications.

The visit ratio within selective inspection is one of RBO's key benefits:

- 1 visit for every 5 (1:5) notifications filed by a contractor ranked low-risk
- 1 visit for every 2 (1:2) notifications filed by a contractor ranked medium-risk
- 1 visit for every notification (1:1) filed by a contractor ranked high-risk

Contractors are advised that an Inspector can still choose to make a site visit regardless of the risk ranking (L, M or H) or site visit recommendation. Providing ESA with scheduling requests in advance, however, helps Inspectors evaluate the work and in turn provide notice to the Contractor.

ESA will make best efforts to communicate visit intentions with the Contractor via text or email based on the timing of the scheduled requests. If the Contractor does not receive notice from ESA that the notification has been passed without a visit or scheduled for a different day, they are to assume ESA will attend the site. Contractors must also ensure site access until 4:30 pm.

For more details, please refer to the RBO Guidebook on our website.

CONTRACTOR PORTAL IMPROVEMENTS

One of ESA's objectives is to reduce the burden on contractor time and workflow and we have been taking steps to improve our systems and processes.

We recently added inspection flag options to the Contractor portal to make it easier for Contractors to provide required information to ESA. Two examples of this would be:

1 **Improvements to 'Site Details' Page:** Contractors can now select applicable flags to identify a Hoarding, Meth Lab or Grow Op site, if known. This feature eliminates a validation step to generate the notification and creates a record of important health and safety and inspection information for Inspectors.

Operations Update (Continued)

2 **Applying for Repairs Following Storms/Disasters:** Contractors can now file online rather than calling the Customer Service Centre. Contractors can check the Storm/Disaster toggle on the 'Job' page and select from a list of applicable events such as fire, flood, wind, and lightening strike to identify the specific event.

DEFECT RATIOS EXPLAINED

Contractor performance (excluding HVAC installers) is measured by their defect ratio, which is one factor that determines risk ranking for selective inspection and other RBO benefits. The formula below explains how a defect ratio is calculated.

Formula for calculating defect ratio:

Number of Notifications with defect(s)
Number of Notifications visited

= % Defect Ratio

Note:

- The number of defective notifications and notifications visited are from the previous 12-month rolling window.
- One technical defect is equal to one defect.
- Five warning defects are equal to one defect.
- Administrative and postponement defects are not included in the defect ratio calculation.

UNDERSTANDING CLASSIFICATION OF DEFECTS

- **Life and/or Property –** Inspector determines that the electrical installation does not comply with the OESC and presents a high likelihood of shock or fire.
- **Defect –** Inspector determines that the electrical installation does not comply with the OESC; however, the deficiency does not present a high likelihood of shock or fire. The ESA Inspector determines that the non-compliant installation represents moderate risk.
- **Warning Defect –** Inspector determines that the electrical installation does not comply with the OESC however, the likelihood of shock and fire is low or the likelihood of exposure is low. The ESA Inspector determines that the non-compliant installation represents low risk.

The OESC permits postponements or deviation from the Code requirements as outlined below:

- **Postponement –** Inspector determines that the electrical installation does not comply with the OESC. However, the installation does not create undue hazard to persons or property and presents a minor degree of deviation from the OESC requirements specific to the site.

Operations Update (Continued)

- **Deviation –** The electrical installation does not comply with the OESC; however, alternative measures have been taken so that safety of the installation is not compromised. A request for deviation has to be filed by the designer/installer, acknowledged by the property owner, and submitted to the ESA Technical Advisor. These requests, when approved, are site and project specific.

For more details, please refer to OESC Bulletin 2-21-5.

Important Information to Include When Submitting a Notification Application to ESA

When submitting an application for a notification to ESA, Contractors should provide the following information:

- Accurate and detailed site location
- Site contact information
- Additional important details are important especially on large sites and/or for multi-phase installations.

All of this information is provided to the Inspector to ensure inspection visits are as efficient as possible.

REMINDER: 2021 Ontario Electrical Safety Code 28th Edition Effective May 5, 2022

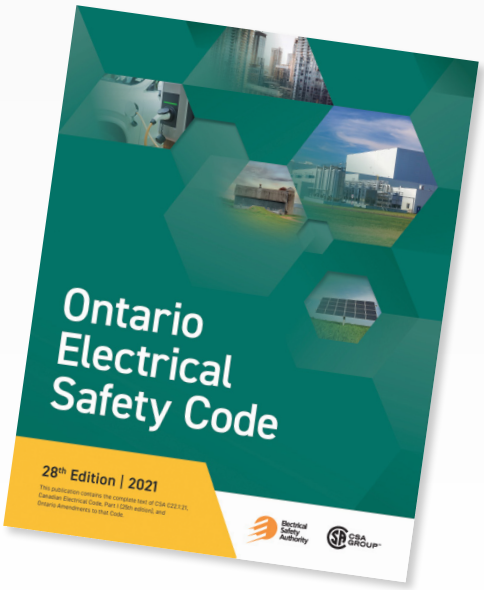
The Electrical Safety Authority is advising stakeholders that the 28th edition of the Ontario Electrical Safety Code (OESC) will become effective on May 5, 2022. Electrical work conducted on notifications (or plan review submittals) taken out after May 5, 2022 must meet the updated requirements. ESA strongly recommends that stakeholders familiarize themselves with these important changes ahead of the May 5, 2022 effective date. The OESC has been updated to reflect changes in technology and the marketplace, and incorporates feedback from stakeholders, technical reviews and new safety insights. The changes are designed to enhance electrical safety and protect workers and the public. You can learn more about the new OESC here. In addition, you can view all Ontario-specific amendments included in the 28th Ontario Electrical Safety Code and they can be found here.

Order Your Copy of the 2021 OESC Today!

The 2021 OESC is available for purchase. The hardcopy of the OESC will be available for $223, as well as an electronic and PDF-version available for $199. These prices will include free access to the bulletins on CSA Community of Interest website over the whole period of the OESC cycle.

ESA is partnering with the CSA Group to offer the OESC and all ESA bulletins – which provide important updates and interpretations – together for one price in a searchable, digital format for $199 – accessible on smart phones, tablets and desktops and compatible with Windows and iOS. The bulletin package will be available in May 2022.

To order a copy of the OESC, please visit csagroup.org/oesc or call 800-463-6727.



ESA RELEASES PODCAST EPISODE ON CODE CHANGES

It's an exciting time at ESA as we're ramping up to publish the 28th edition of the Ontario Electrical Safety Code. We know how detailed the updates can be, which is why we've dedicated a full episode of *Grounded in Ontario* to cover all you need to know.

For those that don't know, Grounded in Ontario is a podcast made especially for Licensed Electrical Contractors, Master and certified electricians and aspiring professionals. In the sixth episode, host Josie Erzetic, A/Vice President, Operations, ESA speaks with Nansy Hanna, Senior Director, Engineering and Regulations at ESA to go through the most significant OESC updates to watch out for. We strongly encourage all LECs to seek the training needed to understand the OESC changes.

If you haven't already, please make sure to share with your teams and peers. Anyone can subscribe and listen through Apple, Spotify, Amazon or Google.

If you have a topic or technical question you would like addressed in a future episode, please email us at podcast@esasafe.com.

Stay informed and stay grounded!

Tamper Resistant Receptacles – 26-706

MORE THAN 1,400 DEFECTS WRITTEN FOR TAMPER-RESISTANT RECEPTACLES LAST YEAR!

Every year in Ontario, about 80 children under the age of 10 are brought to the emergency department because of a severe shock or electrical burn. Many of these injuries happen when little fingers, pens, utensils and other objects find their way into unprotected power outlets. By installing Tamper-Resistant Receptacles, you add another level of safety that prevents little ones from inserting foreign objects into outlets causing a high risk of shock.

DO YOU KNOW THE REQUIREMENTS?

The requirement for Tamper-Resistant Receptacles applies to new or replacement outlets in homes installed two meters or less from the floor. Although it's not required to bring current outlets up to the Code if they were installed prior to the 2009 Ontario Electrical Safety Code – replacing the old ones with Tamper-Resistant Outlets can help keep kids safe from potentially serious electrical injuries.

26-706 Tamper Proof Receptacle Requirements

Unless located above 2 meters from the floor or grade, or those intended for a stationary appliance and located such that they are inaccessible, all receptacles of CSA configuration 5-15R and 5-20R installed in the following locations shall be tamper-resistant receptacles and shall be so marked:

a. Child-care facilities

b. Guest rooms and suites of hotels and motels;

c. preschools and elementary education facilities; or

d. dwelling units.

Standard C22.2 No. 42, Clause 6.18 Marking

Tamper-Resistant Receptacles are marked with "TR"

See Bulletin 26-25-* for additional information.

CODE CONUNDRUM

Q1

A Class 2 power supply unit may be installed in a wet location:

a. With no restrictions

b. Only if marked as such

c. Only if equipped with GFCI protection

d. None of the above, Class 2 power supplies are not permitted in wet locations

Q2

Grounding conductors for electrical services are:

a. Required to be electrically continuous

b. Required to be mechanically continuous

c. Allowed to be joined using approved components

d. A & B

e. A & C

Q3

The point of attachment of overhead supply service conductors shall be:

a. On the same side of the building as the consumer's service head or equivalent

b. Solidly anchored to the structure or service mast

c. In a position that allows the overhead service conductors or cables to have an angle away from the structure

d. In compliance with the requirements of the supply authority

e. All of the above

ANSWERS:

Question 1: b. *Only if marked as such (Ref: Rule 16-204)*

Question 2: e. *A & C (Ref: Rule 10-116 1)*

Question 3: e. *All of the above (Ref: Rule 6-112 2)*

2021 Ontario Electrical Safety Code

Electrical Safety Authority

2021 Ontario Electrical Safety Code (OESC) comes into effect May 5, 2022.

Courses available In-person Classroom, Virtual Instructor-led and Online.

Course Highlights:

- GFCI protection required for all outdoor receptacles to mitigate the potential for electrical shock hazard
- Keeping reduced conductor sizes for services and feeders for dwelling units by following current installation practices
- Clear electrical safety installation requirements for energy storage systems (ESS), harmonized with other codes and standards
- Introducing guidance for electrical installations in flood hazard zones, and when electrical equipment has been exposed to water, to mitigate risk
- Additional receptacles required for mobile structures connected to transfer equipment
- Mitigating the potential for shock or electrocution when structures are erected in close proximity to customer-owned powerlines

Training is a non-regulatory service offered by the Electrical Safety Authority (ESA).
For more information visit **esasafe.com/non-regulatory-business**

Training Registration is Now Open!

- **Courses will begin on April 1, 2022.**
- $250* for in-person classroom and virtual instructor-led
- $199* for online

*CSA National Code License Fee of $10 will apply.

Private on-site courses are also available! Email a Client Safety Specialist for details at CSS.ContactUs@electricalsafety.on.ca

To find a course near you and to submit your course registration online visit:
esasafe.com/2021oesctraining

2022 ONTARIO ELECTRICAL SAFETY AWARDS CALL FOR NOMINATIONS NOW OPEN!

Submit Your Safety Nomination Today!

Submissions are being accepted from March 1 – June 3 @ 5 p.m. in the following three categories:

- **Powlerline Safety**
- **Worker safety**
- **Consumer and Home Safety**

The awards will be presented at the ESA Annual Meeting and Ontario Electrical Safety Awards on Sept. 29, 2022.

Here's how to submit a nomination:

Visit www.esasafe.com/2022Awards and either complete and email the fillable pdf or submit using the online form.

Electrical Safety Authority

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WE'D LIKE YOUR INPUT

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